APPENDICES TO THE
DRAFT ENVIRONMENTAL IMPACT REPORT

PIRAEUS POINT

Case No.: MULTI-005158-2022; CDP-005161-2022; SUB-005159-2022; SUB-005391-2022; and DR-005160-2022

SCH No. 2022050516

Lead Agency:

City of Encinitas, Planning Division
505 South Vulcan Avenue
Encinitas, CA 92024

Preparer:

Michael Baker International
5050 Avenida Encinas, Suite 260
Carlsbad, CA 92008

DECEMBER 2022

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APPENDIX A.
NOTICE OF PREPARATION AND SCOPING DOCUMENTS

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CITY OF ENCINITAS

Notice of Preparation of a Draft Environmental Impact Report

FROM: City of Encinitas,
Development Services
505 S. Vulcan Avenue
Encinitas, California 92024

TO: State Clearinghouse, Responsible Agencies, Trustee Agencies, and Interested Persons

PROJECT TITLE: Piraeus Point

PROJECT APPLICANT: Lennar Homes of California, LLC.

PROJECT LOCATION: NE corner of Piraeus Street and Plato Place, Encinitas, CA 92024; County Assessor Parcel Nos. 254-144-01-00 and 216-110-35-00

PROJECT CASE NUMBERS: MULTI-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022; and SUB-005391-2022

Pursuant to the California Environmental Quality Act (CEQA), the City of Encinitas (City) is issuing this Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the proposed project. Implementation of the project may require approvals from public agencies. As such, the City seeks input as to the scope and content of the EIR based on your agency's purview of the project (if any). In addition, comments are being solicited from other interested persons. Comments received in response to this NOP will be reviewed and considered by the City in determining the scope of the EIR.

PROJECT DESCRIPTION AND LIKELY ENVIRONMENTAL EFFECTS:

Lennar Homes of California, LLC. (applicant) proposes the development of a 149-home residential townhome community on an approximately 11.8-acre site in the City of Encinitas. A portion of the project site is identified as one of 16 sites included in the City of Encinitas Housing Element Update, which the City adopted on March 13, 2019. The community would consist of 52 one-bedroom homes, 37 two-bedroom homes, and 60 three-bedroom homes for a total of 149 residential homes, which would be built within 16 separate three-story residential buildings. A total of 256 parking spaces are planned, including private garage spaces and outdoor shared parking. Proposed amenities include a pool, spa, pool house, and lounge seating. Of the 149 residential homes, 134 would be market-rate homes and 15 would be "very low" (50 percent of area median income) affordable residential homes. More than 50 percent of the project site would be permanently preserved and managed as biological open space. A Road Vacation on a 0.25 acre area of Plato Place is also proposed adjacent to the site.

The Project site is designated as R30 OL (Residential 30 Overlay), RR1 [Rural Residential; 0.51-1.0 dwelling units per acre (du/ac)] and RR2 (Rural Residential; 1.01-2.0 du/ac) by the City's General Plan and zoned as R30 OL (Residential 30 Overlay); RR1 (Rural Residential 1); and RR2 (Rural Residential 2). These land use and zoning designations are intended to support residential uses. The Project site is located within the Coastal Zone. City approval of a Density Bonus Tentative Map, Design Review Permit, Coastal Development Permit, and a Vacation (MULTI-005158-2022; SUB-005159-2022; CDP-005161-2022; DR-005160-2022; and SUB-005391-2022) will be required.

Additional information regarding the project, including project plans, may be reviewed on the City's website at: https://encinitasca.gov/I-Want-To/Public-Notices/Development-Services-Public-Notices under "Environmental Notices." It is anticipated that the EIR will focus on the following environmental issue areas: aesthetics, air quality, biological resources, cultural resources, energy, greenhouse gas emissions, geology and soils, hazards and hazardous materials, hydrology/water quality, mineral resources, noise, public services and recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire.

COMMENT PERIOD:

Please send your comments to Nick Koutoufidis, Senior Planner, Encinitas Development Services Department, 505 S. Vulcan Avenue, Encinitas, CA 92024, or via email to nkoutoufidis@encinitasca.gov. **All comments must be received by no later than 5:00 p.m. on June 29, 2022.**

This Notice of Preparation can also be reviewed at the Encinitas Library at 540 Cornish Drive, Encinitas, CA 92024 and the Cardiff-by-the-Sea Library at 2081 Newcastle Avenue, Cardiff-by-the-Sea, CA 92007.

Nicholas Koutoufidis

May 27, 2022

Nick Koutoufidis, Senior Planner
City of Encinitas, Development Services Department

Date

PROBABLE ENVIRONMENTAL EFFECTS: The environmental factors checked below would be potentially affected by this project and involve at least one impact that is a "Potentially Significant Impact" or a "Less Than Significant With Mitigation Incorporated," as indicated by the checklist on the following pages.

☒ Aesthetics	☐ Agriculture/Forestry Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Energy
☒ Geology/Soils	☒ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials
☒ Hydrology/Water Quality	☐ Land Use & Planning	☒ Mineral Resources
☒ Noise	☐ Population & Housing	☒ Public Services
☒ Recreation	☒ Transportation	☒ Utilities/Service Systems
☒ Wildfire	☒ Tribal Cultural Resources	☒ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Please note that the NOP signifies the beginning of the EIR review and public participation process. At the same time, the City contemplates further agency and public input as the Project proceeds through the City's environmental review process. During this process and before public circulation of the Draft EIR, the City anticipates some changes or additions to the Project, its description, and probable impacts in response to this NOP, and ongoing County staff input as it independently reviews the Project application and supporting documents. The iterative process is a necessary part of the City's EIR review process. However, the City does not anticipate circulating any new or revised Notices of Preparation for the Project provided the project-related changes or additions do not trigger substantial changes in the Project or its circumstances, or present new information of substantial importance as defined by CEQA. Instead, the Draft EIR that will be circulated for agency and public review will provide all interested entities and parties the opportunity to further comment on the Project and its probable environmental impacts when submitting public comments on the Draft EIR. Those comments also will be the subject of written responses that will be included in the Final EIR.



Michael Baker INTERNATIONAL

0 250 500 Feet

Source: ESRI, Nearmap, SanGIS

PIRAEUS POINT

Project Location Map

Figure 1

From:	Dodson, Kimberly@DOT
To:	Nick Koutoufidis
Cc:	State.Clearinghouse@opr.ca.gov; Eaton, Maurice A@DOT
Subject:	Piraeus Point NOP MND SCH#2022050516
Date:	Tuesday, June 28, 2022 11:56:35 AM
Attachments:	SD_5_44.065_Piraeus Point NOP 06-28-2022.pdf

[**NOTICE:** Caution: External Email]

Hi Nick,

Please see the attached comment letter for the Piraeus Point project NOP SCH # 2022050516.

Thank you,

Kimberly D. Dodson, GISP, M. Eng.
Associate Transportation Planner
Caltrans District 11 LDR Branch
4050 Taylor St., MS-240
San Diego, CA 92110
Kimberly.Dodson@dot.ca.gov
Telework phone: 619-985-1587

California Department of Transportation

DISTRICT 11
4050 TAYLOR STREET, MS-240
SAN DIEGO, CA 92110
(619) 709-5152 | FAX (619) 688-4299 TTY 711
www.dot.ca.gov

June 28, 2022

11-SD-5
PM 44.065
Piraeus Point
NOP/SCH#2022050516

Mr. Nick Koutoufidis
Senior Planner
City of Encinitas
505 South Volcan Ave.
Encinitas, CA 92024

Dear Mr. Koutoufidis:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Notice of Preparation for the Piraeus Point Project located near Interstate 5 (I-5). The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities.

Safety is one of Caltrans' strategic goals. Caltrans strives to make the year 2050 the first year without a single death or serious injury on California's roads. We are striving for more equitable outcomes for the transportation network's diverse users. To achieve these ambitious goals, we will pursue meaningful collaboration with our partners. We encourage the implementation of new technologies, innovations, and best practices that will enhance the safety on the transportation network. These pursuits are both ambitious and urgent, and their accomplishment involves a focused departure from the status quo as we continue to institutionalize safety in all our work.

Caltrans is committed to prioritizing projects that are equitable and provide meaningful benefits to historically underserved communities, to ultimately improve transportation accessibility and quality of life for people in the communities we serve.

We look forward to working with the City of Encinitas in areas where the City and Caltrans have joint jurisdiction to improve the transportation network and connections between various modes of travel, with the goal of improving the experience of those who use the transportation system.

Caltrans has the following comments:

Traffic Impact Study

- A Vehicle Miles of Travel (VMT) based Traffic Impact Study (TIS) should be provided for this project. Please use the Governor's Office of Planning and Research Guidance to identify VMT related impacts.[1]

- The TIS may also need to identify the proposed project's near-term and long-term safety or operational issues, on or adjacent any existing or proposed State facilities.

Hydrology and Drainage Studies

- Please provide hydraulics studies, drainage and grading plans to Caltrans for review.
- Provide a pre and post-development hydraulics and hydrology study. Show drainage configurations and patterns.
- Provide drainage plans and details. Include detention basin details of inlets/outlet.
- Provide a contour grading plan with legible callouts and minimal building data. Show drainage patterns.
- On all plans, show Caltrans' Right of Way (R/W).
- Early coordination with Caltrans is recommended.
- Caltrans generally does not allow development projects to impact hydraulics within the State's Right-of-Way. Any modification to the existing Caltrans drainage and/or increase in runoff to State facilities will not be allowed.

Complete Streets and Mobility Network

Caltrans views all transportation improvements as opportunities to improve safety, access and mobility for all travelers in California and recognizes bicycle, pedestrian and transit modes as integral elements of the transportation network. Caltrans supports improved transit accommodation through the provision of Park and Ride facilities, improved bicycle and pedestrian access and safety improvements, signal prioritization for transit, bus on shoulders, ramp improvements, or other enhancements that promotes a complete and integrated transportation network. Early coordination with Caltrans, in locations that may affect both Caltrans and the City of Encinitas, is encouraged.

[1] California Governor's Office of Planning and Research (OPR) 2018. "Technical Advisory on Evaluating Transportation Impacts in CEQA." http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

To reduce greenhouse gas emissions and achieve California's Climate Change target, Caltrans is implementing Complete Streets and Climate Change policies into State Highway Operations and Protection Program (SHOPP) projects to meet multi-modal mobility needs. Caltrans looks forward to working with the City to evaluate potential Complete Streets projects.

Bicycle, pedestrian, and public transit access during construction is important. Mitigation to maintain bicycle, pedestrian, and public transit access during construction is in accordance with Caltrans' goals and policies.

Land Use and Smart Growth

Caltrans recognizes there is a strong link between transportation and land use. Development can have a significant impact on traffic and congestion on State transportation facilities. In particular, the pattern of land use can affect both local vehicle miles traveled and the number of trips. Caltrans supports collaboration with local agencies to work towards a safe, functional, interconnected, multi-modal transportation network integrated through applicable "smart growth" type land use planning and policies.

The City should continue to coordinate with Caltrans to implement necessary improvements at intersections and interchanges where the agencies have joint jurisdiction.

Noise

The applicant must be informed that in accordance with 23 Code of Federal Regulations (CFR) 772, the Department of Transportation (Caltrans) is not responsible for existing or future traffic noise impacts associated with the existing configuration of I-5.

Environmental

Caltrans welcomes the opportunity to be a Responsible Agency under the California Environmental Quality Act (CEQA), as we have some discretionary authority of a portion of the project that is in Caltrans' R/W through the form of an encroachment permit process. We look forward to the coordination of our efforts to ensure that Caltrans can adopt the alternative and/or mitigation measure for our R/W. We would appreciate meeting with you to discuss the elements of the EIR that Caltrans will use for our subsequent environmental compliance.

An encroachment permit will be required for any work within the Caltrans' R/W prior to construction. As part of the encroachment permit process, the applicant must provide approved final environmental documents for this project, corresponding technical studies, and necessary regulatory and resource agency permits. Specifically, CEQA determination or exemption. The supporting documents must address all environmental impacts within the Caltrans' R/W and address any impacts from avoidance and/or mitigation measures.

We recommend that this project specifically identifies and assesses potential impacts caused by the project or impacts from mitigation efforts that occur within Caltrans' R/W that includes impacts to the natural environment, infrastructure including but not limited to highways, roadways, structures, intelligent transportation systems elements, on-ramps and off-ramps, and appurtenant features including but not limited to lighting, signage, drainage, guardrail, slopes and landscaping. Caltrans is interested in any additional mitigation measures identified for the project's draft Environmental Document.

Broadband

Caltrans recognizes that teleworking and remote learning lessen the impacts of traffic on our roadways and surrounding communities. This reduces the amount of VMT and decreases the amount of greenhouse gas (GHG) emissions and other pollutants. The availability of affordable and reliable, high speed broadband is a key component in supporting travel demand management and reaching the state's transportation and climate action goals.

Right-of-Way

- Per Business and Profession Code 8771, perpetuation of survey monuments by a licensed land surveyor is required, if they are being destroyed by any construction.
- Any work performed within Caltrans' R/W will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans' R/W prior to construction.

Additional information regarding encroachment permits may be obtained by contacting the Caltrans Permits Office at (619) 688-6158 or emailing D11.Permits@dot.ca.gov or by visiting the website at https://dot.ca.gov/programs/traffic-operations/ep. Early coordination with Caltrans is strongly advised for all encroachment permits.

If you have any questions or concerns, please contact Kimberly Dodson, LDR Coordinator, at (619) 985-1587 or by e-mail sent to Kimberly.Dodson@dot.ca.gov.

Sincerely,

Maurice A. Eaton

MAURICE EATON
Branch Chief
Local Development Review

From:	Ludovissy, Jennifer@Wildlife
To:	Nick Koutoufidis
Cc:	Mayer, David@Wildlife; Hailey, Cindy@Wildlife; Lane, Jessie@Wildlife; OPR State Clearinghouse; Snyder, Jonathan
Subject:	Copy of letter re: Piraeus Point Project
Date:	Wednesday, June 29, 2022 3:31:52 PM
Attachments:	image001.png image002.png 2022050516 Piraeus Point NOP.pdf

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[**NOTICE:** Caution: External Email]

Mr. Koutoufidis,

Please see attached copy for your records. If you have any questions, please contact Jessie Lane at Jessie.Lane@wildlife.ca.gov.

Thank you,
Jenny

JENNY LUDOVISSY | Staff Services Analyst
She/Her/Hers
Create Account

South Coast Region 5
3883 Ruffin Rd, San Diego, CA 92123
Office (858) 467-2702 | Cell (858) 716-7147

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

June 29, 2022

Nick Koutoufidis
City of Encinitas
505 South Vulcan Ave.
Encinitas, CA 92024
NKoutoufidis@encinitasca.gov

Subject: Piraeus Point (Project), Notice of Preparation (NOP), SCH #2022050516

Dear Mr. Koutoufidis:

The California Department of Fish and Wildlife (CDFW) received a Notice of Preparation (NOP) of an Environmental Impact Report (EIR) from the City of Encinitas for the Project pursuant the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the state. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381.) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code. CDFW also oversees the Natural Community Conservation Planning (NCCP) program. The City prepared a draft NCCP Subarea Plan under the Subregional Multiple Habitat Conservation Program (MHCP) addressing the cities in north San Diego County; however, the plan was never finalized, and applicable permits have not been issued by the either CDFW or the U.S. Fish and Wildlife Service (USFWS).

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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PROJECT DESCRIPTION SUMMARY

Proponent: City of Encinitas (City)

Objective: The objective of the Project is to construct a 149-home residential community on an 11.8-acre site in Encinitas.

Location: The Project site is located on the northeast corner of Piraeus Street and Plato Place in Encinitas, CA. The Project site runs parallel to Interstate 5, bounded by La Costa Avenue to the north, extending southward beyond Sky Loft Road, and bounded by Plato Place to the south. Batiquitos Lagoon is located just north of the Project site, across La Costa Avenue.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the document.

To enable CDFW to adequately review and comment on the proposed Project from the standpoint of the protection of plants, fish, wildlife, and natural habitats, we recommend the following information be included in the EIR:

General Comments

1) **Biological Resource Inventory:** The document should contain a complete description of the Project, including purpose and need, that describes all habitats within or adjacent to the Project area, including all staging areas and access routes to the construction and staging areas. The Project area is described as the area in which potential effects may occur.

   The document should also provide a complete assessment of the flora and fauna within and adjacent to the Project area, with particular emphasis upon identifying endangered, threatened, sensitive, and locally unique species and sensitive habitats. This should include a complete floral and faunal species compendium of the entire Project site, undertaken at the appropriate time of year. Species to be addressed should include all those which meet the CEQA definition (see CEQA Guidelines, § 15380). This should include sensitive wildlife species. Seasonal variations in use of the Project area by wildlife should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with CDFW and USFWS.

2) **Biological Impacts:** To provide a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts, the following should be addressed in the EIR:

   a) Please provide a discussion of potential adverse impacts from lighting, noise, human activity, exotic species, recreational uses, and drainage. Mitigation measures proposed to alleviate such impacts should be included.

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b) Please provide a discussion regarding indirect Project impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands.

c) CDFW also recommends that a habitat gain/loss table be included, which calculates the expected net habitat losses and gains of each type of habitat area lost, restored, enhanced, and created.

3) **Special-status Species:** The EIR should thoroughly analyze direct, indirect, and cumulative impacts to any special-status species likely to occur in the Project area. Impacts to species designated as Fully Protected (FPS) must be completely avoided; FPS may not be taken or possessed at any time per section 3511 of the Fish and Game Code. Avoidance measures for avian species may include phasing construction to occur outside of the nesting season, conducting species-specific surveys when construction will occur within 500 feet of a nesting site, retaining a qualified biological monitor on-site during construction, and implementation of no-activity buffers around active nests.

   CDFW also considers adverse impacts to a species protected by the California Endangered Species Act (CESA), for the purposes of CEQA, to be significant without mitigation. As to CESA, take of any endangered, threatened, or candidate species that results from the Project is prohibited, except as authorized by state law (Fish & G. Code, §§ 2080, 2085). Consequently, if the Project, Project construction, or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends that the City seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from CDFW may include an incidental take permit (ITP) or a consistency determination in certain circumstances, among other options (Fish and G. Code §§ 2080.1, 2081, subds. (b),(c)). Early consultation is encouraged, as significant modification to a project and mitigation measures may be required to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation, monitoring, and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

4) **Mitigation for Project-related Biological Impacts:** The EIR should include mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible, or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be discussed.

5) **Cumulative Effects Analysis:** A cumulative effects analysis should be developed as described under CEQA Guidelines, section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant communities and wildlife habitats.

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Specific Comments

6) **Coastal California Gnatcatcher:** The Project site is entirely within designated Critical Habitat for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*). Protocol-level surveys should be conducted in accordance with protocols set forth by USFWS and the results included in the EIR.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a data base which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDB). The CNNDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

ENVIRONMENTAL DOCUMENT FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying Project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089.)

CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist the City in identifying and mitigating Project impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Jessie Lane, Environmental Scientist, at Jessie.Lane@wildlife.ca.gov.

Sincerely,

DocuSigned by:
David Mayer
D700B4520375406...

David Mayer
Environmental Program Manager
South Coast Region

ec: Cindy Hailey, CDFW – Cindy.Hailey@wildlife.ca.gov
State Clearinghouse, OPR – State.Clearinghouse@opr.ca.gov
Jonathan Snyder, USFWS – Jonathan_d_Snyder@fws.gov

From: Carney, Kaitlin@Coastal
To: Nick Koutoufidis
Subject: Automatic reply: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)
Date: Thursday, May 26, 2022 7:06:34 PM

[**NOTICE:** Caution: External Email]

Thank you for your message. I am out of the office and will get back to you when I return on Tuesday, October 19. Thanks, Kaitlin

From: buncelaw@aol.com
To: Nick Koutoufidis
Subject: Comments of Barona Band of Mission Indians on NOP for Pireaus Point project
Date: Friday, June 10, 2022 9:19:35 AM

[**NOTICE:** Caution: External Email]

Dear Mr. Koutoufidis,

I am writing in response to your Notice of Scoping Meeting for the EIR for the above project. I write on behalf of the Barona Band of Mission Indians, a federally-recognized Indian tribe whose reservation is located in rural east San Diego County, for which I serve as Tribal Attorney, and on whose behalf I respond to many environmental issues under the direction of Chairman Raymond Welch and the Tribal Council.

Has there been any notice regarding consultation under AB 52 regarding this project? The scope of this EIR should be sufficient to include an evaluation by a qualified cultural resource professional of the project site for apparent and non-apparent cultural resources prior to any ground disturbance. Please let me know the results of any such evaluation.

Sincerely,

Art Bunce
Tribal Attorney

June 6, 2022

Nick Koutoufidis, MBA

Development Services Department

South Vulcan Ave, Encinitas, CA

Via email

Re: Piraeus Point

Dear Mr. Koutoufidis,

The Jamul Indian Village, a Kumeyaay Nation and a federally recognized Tribal Government ("**Tribe**") is in receipt of the City of Encinitas("**Agency**") notice regarding the above stated project in Encinitas, CA ("**Project**"). The Tribe has reviewed the information provided and has determined that the Project falls within the boundaries of the Tribes area of traditional and cultural affiliation. In addition, there is the potential for the Project to impact Tribal Cultural Resources, as defined by Public Resources Code §21074. NE Corner of Piraeus Street and Plato Place. Therefore, the Tribe hereby requests consultation on the proposed Project, as described below.

The Tribe is part of the Kumeyaay Nation, which lived-in present-day San Diego Country, parts of Imperial County and northern Mexico for thousands of years. Although much of the Tribe's traditional use area is no longer under the jurisdiction of the Tribe, the Tribe's connection to the Tribal Cultural Resources outside of the reservation boundaries remains. Tribal Cultural Resources not only provide a connection to our past, but also serve an important role in our culture today. Therefore, the protection of Tribal Cultural Resources, on and off the reservation is of utmost importance to the Tribe and its citizens. To that end, the Tribe appreciates your compliance the California Environmental Quality Act and its guidelines and is hopeful that meaningful consultation, as defined by Government Code §65352.4, will result.

The Tribe requests for consultation under the provisions of the California Environmental Quality Act (Public Resources Code §21080.3.1) for the mitigation of potential Project impacts to Tribal Cultural Resources for the Project. The Tribe requests consultation on the following topics, which shall be included in consultation: (1) alternatives to the project; (2) recommended mitigation measures; and (3) significant effects of the Project.

The Tribe also requests consultation on the following discretionary topics checked below:

☒ Type of environmental review necessary

EMAIL: info@jamulindianvillage.com
TEL: 619.669.4785
FAX: 619.669.4817
ADDR: P. O. Box 612
Jamul, CA 91935

jamulindianvillage.com

☒ Significance of Tribal Cultural Resources, including any guidelines, regulations, policies or standards used by your Agency to determine the presence of Tribal Cultural Resources and their significance

☒ The Project's potential impacts on Tribal Cultural Resources

☒ Project alternatives and/or appropriate measures for preservation and/or mitigation that the Tribe may recommend, including, but not limited to:

(1) Avoidance and preservation of the resources in place, pursuant to Public Resources Code §21084.3, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks or other open space, to incorporate the resources with culturally appropriate protection and management criteria;

(2) Treating the resources with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resources, including but not limited to the following:

(a) Protecting the cultural character and integrity of the resource;
(b) Protection the traditional use of the resource; and
(c) Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

(4) Protecting the Tribal Cultural Resources in place.

Additionally, the Tribe would like to receive any cultural resources assessments or other assessments that have been completed on all or part of the Project's potential "area of Project effect" ("**APE**"), including, but not limited to:

(1) The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System ("**CHRIS**"), including, but not limited to:

(a) A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
(b) Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
(c) If the probability is low, moderate, or high that cultural resources are located in the APE.
(d) Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and
(e) If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

(2) The results of any archaeological inventory survey that was conducted, including:

(a) Any report that may contain site forms, site significance, and suggested mitigation measures.

(b) All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

(3) The results of any Sacred Lands File ("**SFL**") check conducted through Native American Heritage Commission. The request form can be found at http://www.nahc.ca.gov/slf_request.html. United States Geological Survey 7.5-minute quadrangle name, township, range, and section required for the search.

(4) Any ethnographic studies conducted for any area including all or part of the potential APE; and

(5) Any geotechnical reports regarding all or part of the potential APE.

The Tribe would like to remind your agency that CEQA Guidelines section 15126.4(b)(3) states that *preservation in place is the preferred manner of mitigating impacts to archaeological sites*. Section 15126.4(b)(3) of the CEQA Guidelines has been interpreted by the California Court of Appeal to mean that "feasible preservation in place must be adopted to mitigate impacts to historical resources of an archaeological nature unless the lead agency determines that another form of mitigation is available and provides superior mitigation of impacts." *Madera Oversight Coalition v. County of Madera* (2011) 199 Cal.App.4th 48, *disapproved on other grounds, Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* (2013) 57 Cal.4th 439.

The Tribe is requesting a face-to-face meeting between the Agency and the Tribe's representatives to initiate the consultation. Please contact me at your earliest convenience either by email or phone in order to make arrangements.

Sincerely,

Lisa K. Cumper

Lisa K. Cumper
Tribal Historic Preservation Officer
Jamul Indian Village of California

cc: Native American Heritage Commission

From: Angelina Gutierrez
To: Nick Koutoufidis
Cc: Desiree Morales Whitman; John Flores
Subject: Piraeus Point
Date: Friday, June 17, 2022 3:33:38 PM
Attachments: image001.png
Piraeus Point .pdf

[**NOTICE:** Caution: External Email]

Please see attached file thank you.

Respectfully,

Angelina Gutierrez
Tribal Historic Preservation Office-Monitor Supervisor
San Pasqual Environmental Department
angelinag@sanpasqualtribe.org
Phone (760) 651-5219
Cell: (760) 803-5648



IPAI

SAN PASQUAL BAND OF MISSION INDIANS

SAN PASQUAL RESERVATION

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Councilman

June 17, 2022

City of Encinitas
Nick Koutoufidis
Senior Planner
505 S. Vulcan Avenue
Encinitas CA. 92024

RE: Piraeus Point

Dear Mr. Koutoufidis ,

The San Pasqual Band of Mission Indians Tribal Historic Preservation Office has received your notification of the project referenced above. This letter constitutes our response on behalf of Desiree M. Whitman THPO Officer and San Pasqual Band of Mission Indians.

We have consulted our maps and determined that the project as described is not within the boundaries of the recognized San Pasqual Indian Reservation. It is, however, within the boundaries of the territory that the tribe considers its Traditional Use Area (TUA). Furthermore, we would like to engage in formal government to government consultation so that San Pasqual can have a voice in developing the measures that will be taken to protect these sites and mitigate any adverse impacts.

We would appreciate being given access to any cultural resource reports that have been or will be generated during the environmental review process so we can contribute most effectively to the consultation process.

We appreciate your involvement with your initiative and look forward to working with you on future efforts. If you have questions or need additional information, please do not hesitate to contact me by telephone at 760-803-5648 or by e-mail at Angelinag@sanpasqualtribe.org

Respectfully,

Angelina Gutierrez

Angelina Gutierrez
Tribal Historic Preservation Office, Monitor Supervisor
San Pasqual Band of Mission Indians

NATIVE AMERICAN HERITAGE COMMISSION

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nahc@nahc.ca.gov
NAHC.ca.gov

May 27, 2022

Nick Koutoufidis
City of Encinitas, Planning Division
505 S. Vulcan Ave.
Encinitas, CA 92024

Re: 2022050516, Piraeus Point Project, San Diego County

Dear Mr. Koutoufidis:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.

b. The lead agency contact information.

c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).

d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.

b. Recommended mitigation measures.

c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

a. Type of environmental review necessary.

b. Significance of the tribal cultural resources.

c. Significance of the project's impacts on tribal cultural resources.

d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.

b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (https://ohp.parks.ca.gov/?page_id=30331) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

ENCINITAS
COMMUNITY
COLLECTIVE

P.O. Box 235801 | Encinitas, CA 92023
encinitascommunitycollective@gmail.com | (760) 456-9042



June 29, 2022

Nick Koutoufidis, Senior Planner
Development Services Department
City of Encinitas
505 South Vulcan Avenue,
Encinitas, CA 92024

LETTER OF CONCERN

RE: City of Encinitas Case No., MULTI-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022, and SUB-005391-2022"

Dear Mr. Koutoufidis:

As per City of Encinitas Notice of Preparation dated May 20, 2022 of a DRAFT Scoping Environmental Impact Report, the ECC has completed an in-depth Review of the above referenced Case No., for the "Piraeus Point Townhomes" project and is hereby attached as if fully set forth for your review and the City's subsequent action.

The ECC supports the City's General Plan and the Multi Habitat Conservation Program (MHCP) in recognizing that the irreplaceable sensitive habitat inland bluffs in North County need to be protected as legacy property. This requires identifying all of the environmental and quality of life impacts to the Encinitas community of the proposed ***"Piraeus Point Townhomes."***

This inland bluff project site is an important extension of the northern scenic visual corridor renowned as the "Gateway to Encinitas" as identified in the City of Encinitas General Plan. It is highly valued and appreciated by the City's residents, visitors and all travelers of the Interstate Hwy-5 Corridor.

The subject property is clearly a legacy environmental connectivity inland bluff site that has been shown on several environmental studies for and behalf of State Agencies, see attached Appendices D.

It is evident that this environmentally sensitive bluff site is totally inappropriate to construct 16 monolithic densely packed 3-story structures with 149 Townhomes housing more than 350 to 500 people, with an excess of 300 vehicles.

The project is undeniably, ill-conceived.

The following is a synopsis of the attached ECC ***Piraeus Point Townhomes Environmental Analysis*** which addresses the issues of concern to this rural community, in depth and detail.

Outline of Concerns Related to the proposed *Piraeus Point Townhomes*:

1. Environmental Setting. The proposed development is incompatible with the rural/residential character of the existing community, and will be a permanent blight on the existing neighborhood. It will degrade both the "quality of life" for the Piraeus Point Townhomes future residents, and the values of the existing surrounding properties.

2. Aesthetics. The site has significant natural attributes with endangered species and flora, that make it a highly inappropriate choice for such a high density development.

3. Air Quality. The project is located within 200 meters of I-5 Interstate/international Highway where more than 125,000 to 250,000 vehicles travel 24/7 to Mexico and Canada. The location is also in a Non-Attainment Ambient Air Quality Standards Area. The U.S. EPA Administrator finds that the current and projected concentrations of the six key well-mixed GHGs— CO2, CH4, N2O, HFCs, PFCs, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations. Why would the City allow 500 future residents breathe the 250,000 vehicle emissions 24/7 for what purpose?

4. Biological Resources. Coastal Sage Scrub (CSS) and Southern Maritime Chapparal have been identified and are a part of the Cannon Property Parcels A and B whereby nesting Gnatcatchers, an endangered species, have been observed. See Appendices D.

Environmental Mitigation Credits Target Property - Parcel A APN 254-144-01-00 (6.93 Acres Gross/Net) and B APN 216-110-35-00 (4.39 Acres). The goal of a preservation and environmental mitigation program is to protect the "Target" properties, i.e., Parcels A and B, from being developed. The said program would enhance the disturbed areas of CSS, reintroduce endangered species, through rehabilitation efforts and preserve existing high quality upland habitat through site protection (easements and fences), and manage the "Target" Parcels A and B, in perpetuity by a designated 3rd Party. Note this property was pursued by the City of Encinitas and SANDAG 2018 to purchase as a Protected Environmental Habitat. Why not again, this time follow through and act.

5. Geology and Soils. The project site is located on or within very close proximity to the State Recorded La Costa Avenue Fault as initially identified by noted geologist Leonard Eisenberg and confirmed by Norrie Robbins, PhD (Professor Geology, San Diego State University). See Appendices A.

6. Hazardous Material/Hazardous Waste. A 2-acre +/- area of Parcel A, was cultivated for use as a Commercial Agricultural growing business from approximately 1998 to 2010. The ECC has aerial photos of an agricultural operation. There are community witnesses of agricultural pesticides being sprayed on the crops (probably well beyond the scope of permitted activities). (Ref., Minor Use Permit, Coastal Development Permit Case No. 98-209 MIN/CDP). See Appendices C.

Additionally, a record exists of subsidence/landslide 2001 on this property, which blocked Piraeus for several days and a resultant lawsuit is on file related to same. (Among others, Ref., City of Encinitas v. Teresa M. Cannon and DOES-1 through 10, Case No GIN021848-1, Superior Court of the State of California, County of San Diego, North County Division, Vista.)

The property soils are of ancient origin and are unstable. The property is at risk.

7. Noise. The ambient Sound Pressure Level (SPL) emanating from the Interstate-5, Freeway traffic 24/7 located within 200 meters from the project site, was recorded 3:00 PM Saturday January 8, 2022. The average SPL recorded was 66.5 dBA with a peak SPL of 81.7 dBA. See Appendices B, photo of Sound Pressure Level reading location on the Cannon Property Parcel A. The ECC is also greatly concerned about the unhealthy increase in noise that this project will generate onsite from more than 300 vehicles, resulting in a significant contribution to the existing noise levels and the negative impact to the adjacent community.

8. Public Services and Facilities. The construction of the ***Piraeus Point Townhomes*** will without a doubt exacerbate the current "Safe Route to School" issue(s). The total lack of the City of Encinitas to provide for a meaningful SRTS program is a quantifiable negative significance per CEQA. With the "very low" income families with 50% of the median income and being subsidized by the U.S. Taxpayer and monitored by the IRS Code Section 142 and Section 42 per the Housing Economic Recovery Act (HERA) of 2008, to live in this future development is unconscionable that the neighborhood children cannot be protected by utilizing the same U.S, Taxpayer Funded Housing Bonds.

9. Transportation and Circulation. The number of daily vehicles trips from the ***Piraeus Point Townhomes*** project will be more than 300 vehicles multiplied by a factor of 3.0 +/- equals >890 vehicle daily trips. An allowance factor for service vehicles will also increase and exacerbate the traffic volume issue on Piraeus Street by a theoretical factor of 3.0 +/- for an estimated total of 900 +/- daily vehicle trips. This increase in vehicle traffic will seriously impact the intersection of Piraeus Street and La Costa Avenue resulting in a Level of Service (LOS) of an F-Rating. The lateral roads intersections of Plato Place, Olympus Road and Normandy Road will be seriously impacted. There is no public transit serving this area. Vehicular traffic flow south on Piraeus Street to Leucadia Blvd., is not possible due to its closure in 1998 by Caltrans I-5 Widening Program.

10. Utilities and Service Systems – Wastewater. The proposed ***Piraeus Point Townhomes*** 149 Equivalent Dwelling Units (EDU's) - with a population of 455* or more, persons - new connections having the potential to disrupt wastewater flow. The ECC is

very much concerned with the present discharge capacity let alone discharging an additional *34,125 gallons per day (GPD) into a 70 year +/- 8-inch gravity flow sewer line

(*306 bedrooms + 149 persons for 2-person bedroom occupancy) = 455 persons x 75 gallons/day = 34,125 GPD).

10.1 Water. ***The Piraeus Point Townhomes*** will use an average of 75 GPD. [per the current Water Agencies Standards, Guidelines/San Dieguito Water District (SDWD)] including the irrigation water for drought tolerant plantings and trees. Based on 455 x 75 GPD capita per day usage the overall volume of water that will be consumed by this project equates to approximately 38-acre feet/year.

10.2 Drought Issues. Currently a Level 2 advisory water reduction is in effect (until June 10, 2023) for all SDWD customers. Level 2 means each customer shall voluntarily reduce their water consumption by 10% and landscaping irrigation for functional grass areas only. It appears incongruous that major residential projects that will consume more than 38-acre feet are being considered or worse approved, while existing customers are reducing their usage due to the 3rd year drought condition. At the very least a moratorium should be enacted on all construction projects during the 3rd year of a State wide drought condition.

10.3 Stormwater. The ***Piraeus Point Townhomes*** stormwater shall be pretreated prior to being discharged to the stormwater conveyance system. Stormwater overflows shall be discharged off site to an approved Best Available Control Technology (BACT) hydromodification pretreatment/retention location, possibly to the contiguous Environmental Mitigation Target Property Parcel B. Note all surface waters flow and subsurface drain to Batiquitos Lagoon.

11.0 General Design Review. It is to be noted that there are also no recreational yards associated with the ***Piraeus Point Townhomes*** since each stacked townhome shared walls with common 2-hour (see California Residential Construction Code) fire rated independent walls back-to-back and side-to-side. Note no common utilities in adjacent/shared walls shall be allowed. Because of the monolithic block concept a separation of 24ft., is designed for the drive-aisles. These drive-aisles are for access to the ground level garages and the Townhomes. Therefore, there are no ground level recreational yards. The Architect/Developer is utilizing the stepped roof(s) as a "recreational yard" however, the mandated solar photo voltaic panels (total 149 kW generation capability, plus A/C Heat Pump, outdoor furniture including BBQ equipment will need to be accommodated. It is to be noted, that during storm events 45 to 60 MPH winds or higher are quite common. Having loose furniture will be problematic. It is presumed the 149 Townhomes will have individual trash/recycling/organic waste containers x 3 = 437 separate containers. These will be located in the residents' garages, not clear that this is the case.

12.0 Parking Issues. There shall be no spillover or visitor parking allowed on Plato Place or Piraeus Street, as both are currently non-conforming rural roads. All 300 +/- cars whether residents, visitors or service delivery vehicles shall be parked on ***Piraeus Point Townhomes*** property only. Possibly, Lennar Homes will consider constructing underground parking to accommodate the overflow parking of the more than 300 vehicles that inevitably will happen.

13.0 Lighting. Street Lamp Poles are required per the City SAC Meeting Report, on Piraeus Street only for the west property line parallel to Piraeus Street. However, the ECC is requesting that there shall be no pole lamps or roof-deck lighting or lights that project light into the night sky or the surrounding community. LEUCADIA is a DARK SKIES Community because of the sensitivity and close proximity to Batiquitos Lagoon.

14.0 Trees and Plantings. The ECC believes that the following setbacks: 1) A 60-foot set back along Piraeus 2) A 15-foot set back at Plato Place 3) A 16-foot east property line setback to accommodate the existing SDG&E high voltage overhead, wooden power poles 4) A 50-foot setback - per CEQA - from the ravine at the north property line will limit the available area for the required planting of 30 native trees per acre. All plantings shall be native drought tolerant and non-invasive.

15.0 Low Income. The ECC is requesting that 15% of the "very low-income" townhome units in lieu of the prescribed 10%, shall be sold for home ownership to independent, qualified (with an annual income of 50% of the median income in San Diego County as per the Multifamily Housing Program for the Tax Subsidy Project Limits (per 2008 HERA/HUD) and promulgated by California Department Housing Community Development CA-DHCD). As enforced and monitored by IRS Code Sections 142 and 42. This request is a social-equity moral issue - not an economic one. Lennar Homes as a publicly traded corporation should consider the Public Relations of voluntarily embracing the social equity compliance of this change.

16.0 Application Project Review. The ECC conducted a review of the Applicants package as follows:

The Preliminary Hydrology Study prepared January 19, 2022, is in error per **Section 1.2 Existing Conditions**. The subject property does not have greenhouses nor a single-family dwelling.
Section 1.3 Proposed Project. There is no connection to Sidonia Street from the local stormwater conveyance system.

HERA 2008 Compliant: It is to be noted that since HERA 2008 Taxpayer Funds are financing this project then fully compliance shall be initiated whereby elevators shall be installed for each Townhome, e.g., vertical transportation aka elevators are required for residents 55 years or older or people with disabilities. Without these Code required amenities the housing project will be seen as an age discrimination project, i.e., only for people who are less than 40 years of age and also "Low Income."

Planned Application Supplement City of Encinitas Development Services Department Form S. A review of **Form S**, indicates that Parcel B is a strip of land that runs parallel to the east of a concrete drainage culvert contiguous with Piraeus Street north of Parcel A to south of Sky Loft Road thence from the north side of Sky Loft Road to La Costa Avenue. Parcel A area is 6.876 acres and Parcel B area is 4.93 acres. The parcels have been added to provide a gross acreage of 11.8 acres in order to meet the Encinitas Code Requirements

for **Lot Coverage of 65% Maximum**. This procedure of adding the two (2) parcels is invalid per Appendix C- 2013-2021 of the City Housing Element. Only APN 254-144-01-00, i.e., Parcel A area 6.93 acres is shown on page C-8 as Cannon Property (Piraeus) Site Number 02. The **"gross/net"** acreage for development is 6.93 acres. Therefore, **Form S, Lot Coverage** calculations need to be revised and resubmitted to the City for review. See Appendices E.

Further, Parcel B area 4.93 acres, is totally unbuildable and is located within the City of Encinitas Subarea Plan of the MHCP Coastal Sage Scrub (CSS) and Southern Maritime Chapparal and California Gnatcatchers. Additionally, SDG&E 12.6 kV distribution lines power poles - with stepdown transformers - crosses the south portion of Parcel B between Sky Loft Road and Plato Place, as per a ROW recorded easement and so noted within the Cannon Property Title Report.

Additionally, The City Housing Element Inclusionary Economic Analysis specifically for Townhomes - see pages 88-90/420 – indicate the allowable density of Townhomes is R-15, i.e., maximum of 15 townhomes per acre. Therefore, with approximately 4 acres of buildable acreage a quantity of 60 Townhomes is most likely the maximum quantity allowed for Parcel A. It is not clearly explained how 60 Townhomes per the City Housing Element can morph into 149 Townhomes. Is this magic or an illusion?

IN CONCLUSION, please be advised that this project is not welcomed by the surrounding community. It is ill-conceived, and if constructed, will be a permanent and an irreparable detriment to the existing community.

Piraeus Point Townhomes development will have a significant environmental impact within the Visual Scenic Corridor resulting from the destruction of this existing valuable wildlife habitat inland bluff. This project could never be perceived as a community benefit.

The ECC, as a Community Stakeholder, requests that they be kept informed in every stage of this pending development.

The ECC respectfully requests that Mr. Brian Grover and Mr. David Shepherd of Lennar Inc. exercise a thorough due diligence process including the evaluation of the multitude of critical issues that the ECC Draft Scoping EIR Review clearly identifies and describes. Each of these significant issues have to be addressed and resolved by Lennar Homes and the City to the satisfaction of the ECC. The ECC firmly believes that with careful and respectful evaluation, Lennar Homes will conclude that Piraeus Point Townhomes housing development project is neither an economical financial risk nor is it environmentally justifiable, that a major U.S. public corporation would be proud of. Further, when weighing each of the described CEQA categories, their sub-sets, the quantifiable data, Lennar Homes will be guided to choose not to exercise their "option to purchase" the Cannon Property and thereby avoiding to construct this "negative quality of life" constrained property

The ECC thanks you in advance for your review and careful consideration of these community concerns.

Sincerely,

ECC

Encinitas Community Collective

ENCINITAS
COMMUNITY
COLLECTIVE

PIRAEUS POINT TOWNHOMES

City of Encinitas Case No. MULTI-005158-2022;
CDP-005161-2022; DR-005160-2022[SUB-005159-2022
and SUB-005391-2022

AN ENVIRONMENTAL REVIEW
of a
DRAFT SCOPING CALIFORNIA ENVIRONMENTAL QUALITY ACT, ENVIRONMENTAL IMPACT REPORT SUBMITTED BY LENNAR HOMES

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Submitted to

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City of Encinitas, Development Services Department

June 29, 2022

ENCINITAS COMMUNITY COLLECTIVE

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ENCINITAS COMMUNITY COLLECTIVE

1.0 INTRODUCTION

1.1 The California Environmental Quality Act (CEQA) (aka Pub. Res. Code section 21000, et seq.) requires the City to identify significant environmental impacts of all projects that it approves, and to require the applicant to avoid or mitigate those impacts, if feasible. From an environmental impact standpoint, the ECC cannot overstate the importance of thoroughly analyzing the project based on an accurate description of the applicant's intended use of the project, especially where environmental impacts may be disguised or minimized by the applicant.

1.2 The proposed project does not comply with the City's Planned Residential Development regulations, which provide, in relevant portion: "Planned residential developments shall relate harmoniously to the topography of the site, shall make suitable provision for the preservation of steep slopes, water courses, drainage areas, wooded areas, rock outcroppings, and similar natural features, and shall otherwise be designed to retain such natural features to the greatest extent possible." Further, "[l]ots and structures shall be designed to follow and not significantly alter the natural contour of the land." (EMC § 30.16.020(B)3.)

- **1.3** During its Initial Draft Study (SCOPING), the City should be able to determine that the project will have a significant effect on the environment, requiring a thoroughly detailed Environmental Impact Report in compliance with CEQA complete with exhibits, maps, guidelines from each of the governing agencies at ALL levels including but not limited to U.S. EPA; U.S. Department of Education; U.S. Department of Transportation; U.S. Department of Health, Center for Disease Control; U.S. Department of Housing and Urban Development. Further the equivalent State, County and City Departments are hereby referenced, as if fully set forth. Further, in an aid to understand the overall impact of such a development the City shall listen to the citizens of the community where the proposed project is to be constructed. It is to be noted that a CPP meeting was held by the developer Lennar Homes on June 13, 2022 at the a Cost Resort Hotel, Carlsbad. For the record more than 70 community residents attended the CPP. Not one attendee supported the developers housing project. More than 25 attendees spoke about the project which they all were familiar with the design, location, architectural layout small cramped stacked shared walls townhomes with no yard all enjoined with 24 foot wide "drive-aisles." The townhomes have no yards but a cramped roof is used for the location of the units heat pump AC unit, solar panels, exhaust fans vents, plumbing piping vents, roof drains a small picnic table. Access is via a narrow stairwell 8 flights of stairs from the ground floor. A marvelous view of highway I-5 with all its noise and air pollutants, etc. This is not rural living this is high rise Townhome living next to an interstate freeway. No Microphones made available.

1.3.1 This EIR Review was previously submitted as an Environmental Analysis February 20, 2022 to Brian Grover, Nolan Communities, also to David Shepherd, and Jeff Roos, Lennar, Anna Colamussi and Nick Koutoufidis City of Encinitas. The Environmental Analysis was based on

known issues that are subject to and required by, a conforming CEQA compliant project. Subsequently since February 20, 2022 Lennar Homes have developed a CEQA driven DRAFT Scoping EIR that was made publicly available for review comments June 20, 2022.

Therefore, the ECC have revised their Environmental Analysis (EA) and revised same with the Lennar Draft Scoping EIR review comments and the EA document is now entitled "An Environmental Review of a Draft Scoping California Environment Quality Act, Environmental Impact Report. The EA CEQA issues have remained in the body of the EA, however the ECC review comments are identified in italics, to aid the reader. Many of the EA issues remain as is and it is the ECC's opinion that where the Lennar Draft Scoping EIR does not adequately address the CEQA issues the ECC provides such comments and thereby remain as such to be addressed by Lennar, et al., per their future - revised - DRAFT EIR.

The ECC observed environmental issues and conducted an analysis of the proposed housing development property, Parcel A, (APN: 254-144-01), to evaluate the stated impacts as described in this EIR Review. It is clear that the project would impose significant and unavoidable negative environmental impacts upon the sensitive flora and fauna of the undeveloped vacant natural inland bluff site, the endangered species, aesthetics, geological resources, interstate Highway 5 traffic noise, on-site traffic generated noise, nuisance cooking odors permeating the community, as well as the surrounding environment including the contiguous and adjacent La Costa Preservation Parcel(s) with Multi Habitat Conservation Program (HCP) pristine habitats and the nearby Batiquitos Lagoon-No Take). These negative impacts and more will require extensive mitigation to the satisfaction of the governing agencies and the community at large.

2.0 PROJECT DESCRIPTION, LOCATION AND ENVIRONMENTAL SETTING

2.1 Project Overview and Location

2.1.1 It is proposed that 149 Unit Multi-Family Residential Townhomes aka ***Piraeus Point Townhomes*** will be constructed on Parcel A, APN: 254-144-01-00, Zoned RR-2.0, vacant land. The applicant's proposed project, with its substantial grading *approximately 60,000 cubic yards (CY)* and the addition of 16 massive, bulky structures, would significantly degrade the existing scenic character and quality of the natural undisturbed inland bluffs and its surroundings. The ECC wants to be perfectly clear that this proposed 149 Unit ***Piraeus Point Townhomes*** Housing Element project is totally inappropriate for this specific location for the following reasons and concerns:

2.1.2 An analysis of the ***Piraeus Point Townhomes*** developed area per City Housing Element Appendix-C = 6.93 acres. Living space area = 171,000 sq. ft./43,560 sq. ft = 3.93 acres. Total buildings sq. ft. = 203,663/43,560 sq. ft. = 4.675 acres. Landscaping (includes internal roads

and drive aisles = 87,898 sq. ft/43,560 sq. ft. = 2.017 acres = Total developed acreage = 4.675 + 2.017 = 6.692 acres. Unaccounted acreage = 6.93 - 6.692 = 0.238 acres or 10,357 sq. ft.

2.1.3 Height issues. ECC is requesting a 35-foot maximum height limit for these units, inclusive of roof top equipment, plumbing pipe vents, solar panel(s), air-conditioning units, etc.

2.1.4 The City mandate of installing solar voltaic panels (SVP) system(s) and/or a DC microgrid system(s) for each townhome recreational flat roof deck may not be cost effective.

In consideration that each roof deck square footage is contingent upon the number of bedrooms. Thereby a single bedroom Townhome has only net 40 sq.ft available for solar panels, a 2 bedroom has approximately net 80 sq.ft and a 3 bedroom has net 120 sq.ft. Noting that solar panels are 20% +/- efficient they need to be installed at an array tilt of 20° facing 180° either west or east avoiding shading from, e.g., roof access stair well walls, neighbors 5-foot perimeter fences, potted plants, furniture, sun umbrellas, not counting dust, dirt, etc. Further, with multiple sanitary plumbing roof vents, bathroom exhaust vents, kitchen exhaust vents, roof deck drains, heat pump and electrical equipment code clearances, will also limit actual solar panel locations. These standard Building Code clearances are inherent restraints to (any) the solar panel power systems efficiency towards reducing the owner(s) SDG&E power bills. The ROI payback time may well exceed the useful life-cycle (economics) of the solar power system(s) components, e.g., DC to AC inverter(s) thereby negating any true electrical power savings. The City of Encinitas per the approved CAP requires residential solar voltaic panels produce 1 watt of power per sq.ft of residential area annually. The actual residential sq ft for the 149 Townhomes equals 171,300 sq. ft . Therefor the CAP is limited to 171 kWH total generation The DRAFT EIR indicates an overall PV generation of 245,206 kWH/yr. more than the CAP mandate. The calculations need to be verified.

Population: The population total of the residents of the 149 Unit ***Piraeus Point Townhomes*** for the purpose of this Environmental Analysis is based upon the following: Total of 306 bedrooms + 149 persons for 2-person bedroom occupancy = 455 persons, estimated.

3.0 ENVIRONMENTAL SETTING

Natural Grade

a. The existing natural grade elevations of the Cannon Property APN: 254-144-01, Parcel A are variable as determined by the existing topographical contours depicted in the Applicants package to the City. Of extreme concern to the ECC is the potential for an arbitrary grade location in the vicinity of the east property line that will impact the residences contiguous to the former Cannon Property (Parcel A) aka Piraeus Investments LLC, east property line/boundary.

b. The ECC's concern is extensive grading will be required where it is estimated within the DRAFT EIR more than 58,000 CY will be exported. The proposed east property setback reinforced concrete retaining wall height shall not be more than 4 feet above the existing east property line natural grade.

c. With the "top of wall" elevation established, the ECC requests that the maximum building height of the ***Piraeus Point Townhomes*** shall be lower, thereby not exceeding the "Top of wall" elevation, as noted.

Extensive reinforced concrete buttress type retaining walls will be required at the east and north property setbacks that have encroached into the >25% slope areas. Of concern to the ECC community is the imported fill aka landslide fill, by the City of Encinitas to stabilize the property after the 2001 subsidence, i.e., landslide that blocked Piraeus Street. The saturated soil caused by uncontrolled irrigation of an 2-acre agricultural activity caused soil expansion, slippage and separation of the different geological layers of the native soils as defined in Geocon Corporation Geological Investigations of the sites soils Standard Classifications. Knowing that natural seepage pathways are present (water table not found) within the site soils at various depths can be viewed as a unconfined aquifer with different layers of geological formations with different hydraulic conductivities. The overall gross transmissivity of the unconfined aquifer creates a cause of concern when storm events such as a 10-year, 25-year and quite recently back to back 100-years storms events occur. Again, drainage of the site is of utmost concern to the community to prevent another catastrophic subsidence event.

Geocon reports that the developer Lennar is proposing of using cantilevered-micropiles and/or horizontal bored "soil nail walls" at the east property line including >30 feet high buttress retaining wall at the north property line. These proposed methods of maximizing and stabilizing the perimeter excavations setbacks is interesting but has limitations due to the inherent instability of the existing geological layers with several possible unconfined aquifers at varying depths. Geocon reports that several borings conducted "perched" areas of moist geological layers, suggesting pathways of irrigation water or possible leaking underground water distribution piping.

Cantilevered-micropiles require penetration into bedrock for stability, so states the manufacturers of these systems.. The Geocon Report does not discuss bedrock, nor were the conducted borings advanced to encounter bedrock. In fact groundwater depth is also not known, however Piraeus Street at Plato Place is 80 ft +/- AMSL or Batiquitos Lagoon, 400 yards +/- to the north.

With the presence of the high voltage 12.6 kV distribution overhead power lines under tension supported by 45ft. +/- wooden poles with an "Underbuild" sub-transmission lines and multiple stepdown transformers provide utility power to the community. If a "soil nail wall" is constructed parallel to the Cannon Property east property line the multiple vertical and horizontal centerline distances of the 12 inch diameter horizontal west to east borings will potentially undermine the existing SDG&E power poles. With hundreds of horizontal borings each one represents a pathway for

subsurface water to travel and thereby potentially destabilizing the Cannon Property soils and the contiguous properties east of the Cannon Property.

It is strongly recommended therefore, that Lennar shall underground all electrical utilities and communication cables currently supported by the SDG&E power poles, to avoid undermining the existing power poles and contiguous properties to east.

Geocon stated that limited literature was available towards information on Earthquakes and Faults in San Diego County. The ECC reminds Geocon of a publication authored by Professor Phillip Kern, PhD, Geology SDSU, entitled ***Earthquakes and Faults in San Diego County, ed., 1989.***

3.1 AESTHETICS

3.1.1 Existing Conditions. The land is currently vacant. Two (2) acres were permitted to be used as an agricultural operation in accord with the EMC Title 30, 30.33 Urban Agriculture whereby the property was cultivated for agricultural purposes for approximately the years 1998 to 2010. See aerial photographs Appendices A. The property is subject to EMC Title 30, 30.32 Ecological Resource Zone; EMC Title 30, 30.34.030 Hillside/Inland Bluff Overlay Zone; EMC Title 30, 34.40 Floodplain Overlay Zone. Specifically the north property line overlies a natural floodplain ravine receiving water course surface waters from the contiguous and adjacent properties to the east property line.

- Historically unstable geology, with the known visible State of California registered "La Costa Fault" located 150 yards east of the Piraeus Street/La Costa Avenue juncture. The La Costa Fault is listed and depicted in the State Geologic files. As noted, the La Costa Fault is visible from La Costa Avenue inland north bluff face, south of Batiquitos Lagoon and traverses in a south westerly direction towards Piraeus Street. See page 7 and Appendices A.

3.1.2 Analysis of Project Effects and Determination as to significance. The Bulk and Mass of the proposed condominiums will be out of character with the community in violation of the EMC Title 30, 30.34.030 Hillside/Inland Bluff Overlay Zone. It is proposed that 149 Unit ***Piraeus Point Townhomes*** will be constructed on Zoned RR-2 vacant land. The gross calculated area is 6.692 acres (as submitted by the Applicant to the City, Form S, February 3, 2022) subject to EMC Title 30, 30.34.030 Hillside/Inland Bluff Overlay Zone, specifically grading of steep slopes. The net buildable area on APN: 254-144-01-00 is 6.692 acres +/-.

3.1.3 Cumulative **Impact Analysis.** The proposed project will have a highly visible and adverse impact on visual scenic vistas/corridors. The site is currently a vacant inland bluff, covered with native species. It is one of the first major landforms on the northern boundary of the City of Encinitas. Its visual character complements the Batiquitos Lagoon and existing State owned mitigated Pristine Habitat Preservation Parcel to the north and adds visual appeal for motorists on the I-5 freeway and La Costa Avenue. The Applicant's proposed project, with its substantial grading and the addition of 16 massive, bulky structures, would significantly degrade the existing visual scenic character and

quality of the inland bluffs and its surroundings. The ECC wants to be perfectly clear that this proposed 149 Unit ***Piraeus Point Townhomes*** Housing Element project is inappropriate for this specific location for the following reasons below and permission to construct shall be denied.

The ECC strongly recommends as previously proposed and supported by the City of Encinitas in 2017 that the Cannon Property be purchased for the sole purpose as mitigation property for habitat preservation and held in perpetuity by SANDAG as a preservation parcel.

3.2 AIR QUALITY. This section addresses potential air quality impacts that will result from construction and/or operation of the ***Piraeus Point Townhomes*** project. The following addresses the existing air quality conditions in the project area, identifies applicable regulations, identifies and analyzes environmental impacts, and recommends measures to reduce or avoid adverse impacts anticipated from implementation of the project.

3.2.1 Existing Conditions. Air quality and dispersion of air pollution in an area is determined by such natural factors as topography, meteorology, and climate, coupled with atmospheric stability. The factors affecting the dispersion of air pollution with respect to the air basin are discussed below.

Topography. The topography in the San Diego Air Basin (SDAB) varies greatly, from beaches on the west to mountains and desert to the east. The topography in between consists of inland coastal bluffs, mesa tops intersected by natural canyon areas. The region's topography influences air flow and the dispersal and movement of pollutants in the basin. The mountains to the east prevent air flow mixing and prohibit dispersal of pollutants in that direction.

- **Meteorology and Climate.** Encinitas, is a coastal area, has a Mediterranean climate characterized by warm, dry summers and mild, wet winters. The mean annual temperature in the City is 60 degrees Fahrenheit (°F). The average annual (wet season) precipitation is 11 inches, from November to April. Winter low temperatures average 54°F, and summer temperatures average 71°F. The average relative humidity is 69 percent and is based on the yearly average humidity at LindberghField.

- The dominant meteorological feature affecting the region is the Pacific High Pressure Zone, which produces the prevailing westerly to northwesterly winds. These winds tend to blow pollutants away from the coast toward the inland areas. Consequently, air quality near the coast is generally better than that at the base ofthe coastal mountain range. Most of the city consists of coastal plains, which lie adjacent to the Pacific Ocean and extend approximately 6 miles east of the Pacific Ocean. Because of its locational advantage, the easterly portion of the city has a mild climate with cool summers on the coast, where marine fog is common.

- The ***Piraeus Point Townhomes*** project is located within 200 meters of I-5 Interstate Highway where more than 125,000 vehicles travel each day. The location is also in a Non-Attainment

Ambient Air Quality Standards Area. The U.S. EPA Administrator finds that the current and projected concentrations of the six key well-mixed GHGs— CO2, CH4, N2O, HFCs, PFCs, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.

- This Environmental Analysis also provides information on Air Toxics which is integral with the air quality in the I-5 Interstate transportation corridor, to the developer and the City of Encinitas, the project lies within less than 200 meters on I-5 a major interstate freeway with more than 125,000 vehicles travelling each day, whereby the residents of ***Piraeus Point Townhomes*** of will be subjected daily to the identified Air Toxics.

- Toxic air pollutants-also known as Hazardous Air Pollutants or HAPs-are those that are known to cause or suspected of causing cancer or other serious life-threatening health ailments. The

  Clean Air Act Amendments of 1990 listed 188 HAPs and addressed the need to control toxic emissions from the transportation sector. In 2001, EPA issued its first Mobile Source Air Toxics Rule, which identified 21 Mobile Source Air Toxic (MSAT) compounds as being hazardous air pollutants that required regulation. A subset of six of these MSAT compounds were identified as having the greatest influence on health to the population living within a 200-meter radius of a major Interstate Freeway, i.e., I-5.

- It would be unconscionable for the City to ignore the data on known health effects and approve this densely compacted project thereby subjecting the ***Piraeus Point Townhome*** residents and the surrounding community to known carcinogen pollutants, i.e., benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter (DPM). The City and the developer are aware of the prevailing wind from the SW to the NW. Therefore, the emission gases and particulates from Interstate I-5 corridor, will circulate within the townhome structures will be breathed and thereby affect every one of the project 455 or more residents, adults and children. Exacerbating this indirect emission issue is the actual on-site generation of emissions including Green House Gases (GHG) emanating from the 300 or more residential and service vehicles making 1,980 Vehicle Trips per Day (MVT) or more than 693,500 MVT per year from this 2.017 internal roads/drive aisles acre site. This extreme concentration of cancer causing pollutants will be detrimental to the quality of life to the community.

- To address stakeholders concerns and requests for a MSAT analysis during project development and mitigation, the Federal Highway Administration (FHWA) developed the Interim Guidance on Air Toxic Analysis in the National Environmental Policy Act (NEPA) Documents.

3.2.2 Regulatory Framework

Federal

- **Non-Attainment Ambient Air Quality Standards Area.** The project location is in a Non-Attainment Ambient Air Quality Standards Area. The U.S. EPA Administrator finds that the current and projected concentrations of the six key well-mixed GHGs— CO2, CH4, N2O, HFCs, PFCs, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.

Green House Gases (GHG) Endangerment. In *Massachusetts v. Environmental Protection Agency* 549 U.S. 497 (2007),decided on April 2, 2007, the Supreme Court found that four GHGs, including CO_2, are air pollutants subject to regulation under Section 202(a)(1) of the Federal Clean Air

Act (CAA). The Court held that the EPA Administrator must determine whether emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. On December 7, 2009, the EPA Administrator signed two (2) distinct findings regarding GHGs under section 202(a) of the CAA:

- **Endangerment Finding.** The U.S. EPA Administrator finds that the current and projected concentrations of the six key well-mixed GHGs— CO2, CH4, N2O, HFCs, PFCs, and sulfur hexafluoride—in the atmosphere threaten the public health and welfare of current and future generations.

- **Cause or Contribute Finding.** The Administrator finds that the combined emissions of these well-mixed GHGs from motor vehicles and motor vehicle engines contribute to the GHG pollution, which threatens public health and welfare.

- These findings do not impose requirements on industry or other entities. However, this was a prerequisite for implementing GHG emissions standards for vehicles, as discussed. The U.S. Supreme Court upheld the EPA Administrator's findings.

CALIFORNIA

Legislative Actions to Reduce GHGs

- The State of California legislature has enacted a series of bills reduce GHGs. AB 32 was specifically enacted to address GHG emissions. Other legislation such as Title 24 and Title 20 energy standards were originally adopted for other purposes such as energy and water

conservation, but also provide GHG reductions.

- **AB 32**. The California State Legislature enacted AB 32, which requires that GHGs emitted in California as defined include CO_2, CH_4, N_2O, HFCs, PFCs, sulfur hexafluoride., and nitrogen trifluoride. The California Air Resources Board (CARB) is the state agency charged with monitoring and regulating sources of GHGs. AB 32 further states the following:

"Global warming poses a serious threat to the economic well-being of Californians, public health, natural resources, and the environment of California. The potential adverse impacts of global warming include the exacerbation of air quality problems, ……an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

Local

- The accumulation of on-site generated pollutants makes this project a likely candidate for the Applicant to submit to the San Diego County APCD a review of the Regulations Rule 20.3 for New Source Review (NSR) of vehicle emission pollutants whether stationary or mobile based on the health effects and GHG. Therefore, an NSR may be socially justified by SDC/APCD.

3.2.3 Analysis of Project Effects and Determination as to significance. Sensitive populations (sensitive receptors) in proximity to localized sources of toxics and carbon monoxide are of concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

- The >455 residents of ***Piraeus Point Townhomes*** are sensitive receptors to the emissions emitted from more than 300 motor vehicles making at least ***980*** motor vehicle trips per day with primarily gasoline fueled vehicles. or more than 358,000 MVT annually from the net 2.017 acres consisting of internal roads and drive aisles. The gasoline base emissions pollutants consist of but not limited to: O_3, CO, CO_2, benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and diesel particulate matter (DPM).

- The on-site source of airborne pollutants will rise vertically between the 149 townhome row type structures into open windows and also transported by the SW to NE prevailing wind to the community. Therefore, the carcinogen pollutants and particulates will be breathed, absorbed and will affect every one of the ***Piraeus Point Townhome*** residents and the surrounding community residents.

3.2.4 Cumulative Impact Analysis. The air quality impact of Piraeus Point Townhomes will be significant due to the density of the 149 townhomes on 6 93 acres or less. The surrounding drive

aisles or internal transit areas between the 3-story row type townhomes, used for egress and ingress is approximately 2.017 acres. The motor vehicle emissions will be concentrated in these narrow transit (drive aisles) areas as the residents exit and enter their garages. The accumulation of gasoline/petroleum base pollutants, i.e., Greenhouse Gases (GHG) will be significant and injurious to the health of not only the 455 residents or more but also to the surrounding community.

- An average motor vehicle per the US EPA emits annually 37,333 lbs/CO_2. With more than 300 vehicles including, service vehicles, trash trucks, moving vans, visitors, etc., entering/leaving on a daily basis making more than 1,980 motor vehicle trips per day all within a concentrated area of 2.017 acres cannot be ignored. The accumulation of pollutants makes this project a potential candidate for a NSR of the motor vehicle emissions and therefore consideration of an analysis by SDC/APCD Regulations NSR Rule 20.3.

- Further, as a cumulative effect the Municipal Solid Waste (MSW), i.e., household trash, generates GHG consisting of CH_4 (methane gas) CO_2e (carbon dioxide equivalency). The total of GHG generated by MSW at ***Piraeus Point Townhomes*** site is based on the following: *4.9lbs MSW/day/per person, x 375 (residents) x 365 = 670,687 lbs/yr or 335 tons. The percentage of recycled materials = 32.1% the net MSW transported to a landfill is 455,396 lbs. The amount of CH_4 and CO_2e = emitted from landfilled MSW = 39% or 88 Metric Tons (MTT).

- Therefore, the cumulative effect of vehicle exhaust gases and the MSW is significant and is harmful to the health and quality of life for the ***Piraeus Point Townhomes*** and the community.

- Re: The U.S. EPA states that GHG gases CH_4, CO_2e are a serious contributor to the overall GHG emissions. *Center for Sustainable Systems University of Michigan.

- **Construction Activities Emissions.** Project construction activities would generate CO_{2e} and CH_4 emissions. Detailed project construction equipment and scheduled future hours of operation are unknown to the ECC. Standard similar type construction equipment and duration are normally estimated and the results would be tabulated. Construction related emissions are expected from the construction activities per the following:
  - Crushing
  - Grading
  - Building Construction
  - Paving
  - Architectural Coating

<u>Construction Vehicle Trips</u>

Construction emissions for construction worker vehicles traveling to and from the Project site, as well as vendor trips (construction materials delivered to the Project site) etc., shall be conducted per CalEEMod, or equal and tabulated within the project EIR.

- **Construction Equipment.** Typical site specific construction fleet may vary due to specific project needs at the time of construction. The associated construction equipment by phase is detailed in Table 3.2.4:

TABLE 3.2.4 MOTORIZED CONSTRUCTION EQUIPMENT ASSUMPTIONS

Activity	Equipment	Amount	Hours Per Day
Site Preparation	Crawler Tractors	TBD	TBD
	Rubber Tired Dozers	TBD	TBD
Compaction	Roller	TBD	TBD
Grading/Trenching//Excavation	Crawler Tractors	TBD	TBD
	Excavators	TBD	TBD
	Graders	TBD	TBD
	Rubber Tired Dozers	TBD	TBD
Building Construction	Cranes	TBD	TBD
	Crawler Tractors	TBD	TBD
	Forklifts	TBD	TBD
	Generator Sets/Diesel	TBD	TBD
	Welders/Diesel Gen-Set	TBD	TBD
Paving	Pavers	TBD	TBD
	Paving Equipment	TBD	TBD
	Rollers	TBD	TBD
Architectural Coating	Air Compressors	TBD	TBD

Source: CalEEMod model output, See Appendix 3.1 detailed model outputs. Tabulation to be completed by others

- **Construction Emission Summary.** The construction phase Project emissions, GHGs shall be quantified and amortized over the life of the Project per the San Diego County Air Pollution Control District Published Regulations Rules and Guidelines.

- **Operational Emissions.** Operational activities associated with the proposed Project will result in emissions of CO_2, CH_4, and N_2O from the following primary on site mobile and stationary sources which shall be tabulated and presented in the EIR:
  - Area Source Emissions

- Energy Source Emissions
- Mobile Source Emissions
- Water Supply, Treatment, and Distribution
- Solid Waste
- BBQs
- HVAC

3.2.4 *Response to the DRAFT scoping EIR Air Quality is as follows*:

- *The Elimination of the Risk of Cancer to the Piraeus Point Townhome residents due to the proximity of the Interstate I-5 Freeway is preposterous and an assault on the commonsense of the proposed project residents and is based on a probability of use of the home to avoid cancer. The sampling points on the subject site indicated that a significant risk was evidentiary.*
- *However, the consultant discounted the health risk by indicating that air tight homes provide for protection form air bourn contaminants. There is no addressing the fact that these homes have roof top yards which are promoted by Lennar for the residents to use for recreation. Is Lennar going to install a sign for each roof top use the roof deck at your own risk since you will contract cancer when enjoying the view of the freeway.*
- *The all electric homes will have heat pumps to provide heating and cooling. Most likely a small manual outside air intake damper will be adjusted to provide 15 CFM per person when operational. This setting would be fixed, if it exists at all. With tight residential homes ventilation is required for bathrooms where there are no outside windows. Kitchen and bathroom exhaust air fans need make up air to complete the ventilation cycle. The makeup air will be drawn from the outside which is contaminated with pollutants from the freeway.*
- *Further, residential heat pumps not provided with MERVE 16 filters. MERVE 16 filters are for commercial installations such as hospitals, medical centers. The filter rating for residential units have MERVE 7 ratings or 30% per the Dust Spot Test. Further the residents will not operate their AC units 24/7 their electrical bills would be thousands of $$ per month at 60 cents kWH.*
- *The conclusion from LDN Consulting Inc., per Table 3 that freeway pollutants do not represent a cancer risk is patently false. LDN needs to talk to the community cancer survivors before publishing their false statement.*
- ***The ECC believes the Lennar Draft Scoping EIR does not address the Air Quality concerns as identified herein and therefor the responses are deemed inadequate.***

3.3 BIOLOGICAl RESOURCES

3.3.1 Existing Conditions. Coastal Sage Scrub (CSS) and Southern Maritime Chapparal have been identified and are a part of the Cannon Property Parcels A and B whereby nesting Gnatcatchers, an endangered species, have been observed.

Therefore, if the Gnatcatcher habitat is lost, which is probable, due to the proposed ***Piraeus Point Townhomes*** development, it is the ECC's understanding that the Cannon Family, per Brian Grover, January 1, 2022, proposed the following:

Mitigation Target Property - Parcel B – APN 216-110-35-00 (4.39 Acres)
The goal of a preservation and mitigation program is to remove the likelihood of a development potential of the "Target" property, i.e., Parcel B. The said program would enhance those areas of CSS where disturbed, through rehabilitation efforts and preserve existing high quality upland habitat through site protection (easements and fence), and manage the "Target" parcel in perpetuity by a designated 3rd Party.

The proposed preservation and management of the native uplands vegetation communities on Parcel B will preserve:

- Occupied California gnatcatcher habitat by removing extant habitat from the threat of development;
- Southern Maritime Chaparral and coastal sage scrub habitat and ecosystem continuity through connectivity between coastal wetlands and native uplands;
- Sensitive plants and cultural resources onsite;
- Wildlife connectivity with Batiquitos Lagoon and surrounding native open space that connects to Encinitas Creek and other drainages into the lagoon and out to the Pacific coastline; and,
- Natural topography adjacent to Batiquitos Lagoon that is highly visible from the I-5 Corridor and significantly contributes to the scenic quality and landscape character.

Again, it is understood that the following is a suggestion only whereby, should the Cannon Family Trust, aka Piraeus Investments LLC, decide to offer as "mitigation property, i.e., Parcel A and B" the said properties shall be dedicated and transferred by Quitclaim Deed, or other approved instrument, to, e.g., the Batiquitos Lagoon Foundation (BLF) a 501(3)(C), Corporation and/or SANDAG. The property shall be held in perpetuity and maintained as a "Natural Habitat and Environmental Preserve." The mitigation property would be administered by an independent 3rd Party, e.g., the BLF. Contact Batiquitos Lagoon Foundation, for further details. The BLF address: P.O. Box 131741, Carlsbad, CA 92013. BLF website: www.batiquittoslagoon.com.

- See **Appendices D.,** North Coast Corridor Public Works Plan/Transportation and Resource Enhancement Program Mitigation Site Assessment for the noted La Costa Preservation Parcel. Prepared by Dudek on behalf of Caltrans, and SANDAG August 2012. Within **Appendices D** are certified maps of the location of CSS, Southern Marine Chaparral, and the California Gnatcatcher. The Cannon Family Trust Properties, aka Piraeus Investments LLC. Parcel A and B are contiguous with the La Costa Mitigation Preservation Parcel thereby providing an existing habitat connectivity for the California Gnatcatcher parallel to the I-5 Scenic Visual Corridor frontage road.

3.3.2 Cumulative Impact Analysis. The loss of the Coastal Sage Scrub (CSS) the Southern Maritime Chapparal that have been identified on the Cannon Family Trust Property aka Piraeus Investment LLC, Parcels A and B including nesting Gnatcatchers, an endangered species, will be significant.

- ***The ECC believes the Lennar Draft Scoping EIR does not address the Biological Resources concerns as identified herein and therefor the responses are deemed inadequate***

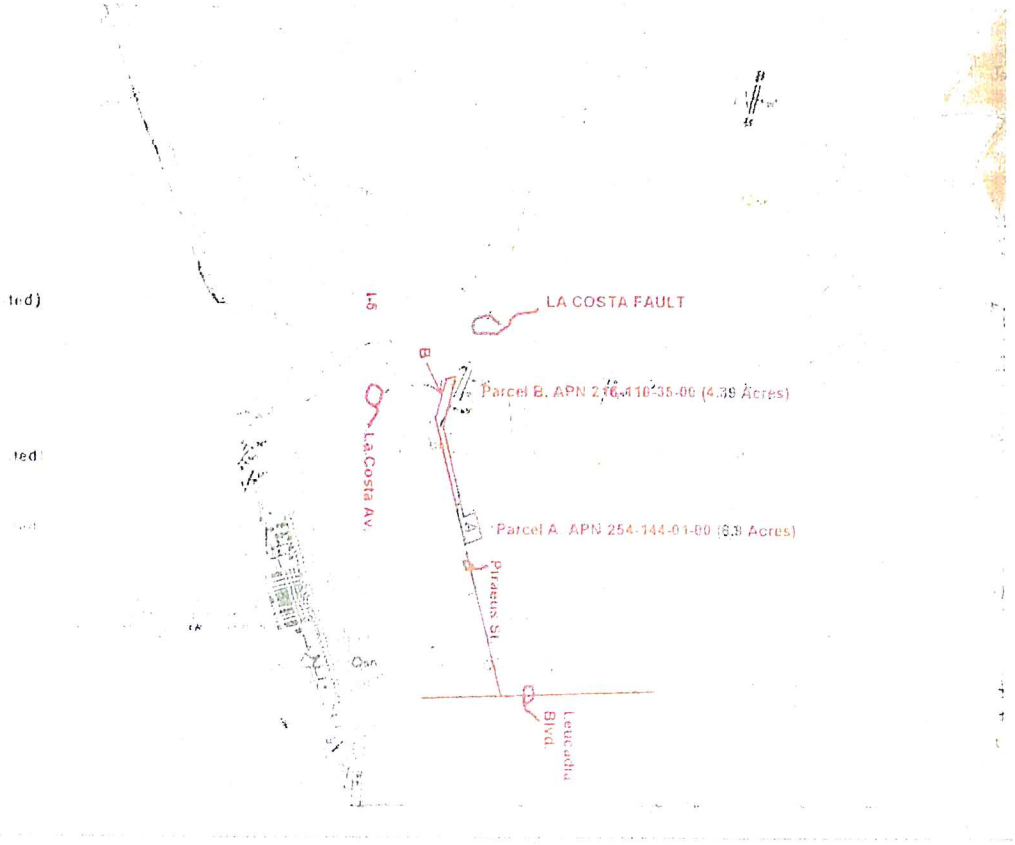
3.4 GEOLOGY and SOILS

3.4.1 Existing Conditions. The bluff and project areas were formed during the Eocene Epoch as the oceans rose and fell. The latest geologic outcroppings elevation 80 feet +/- above sea level (ASL) were developed during the Pleistocene Epoch when the Batiquitos Lagoon was formed and during the retreat of the last ice age known as the Holocene period of 11,800 years. Batiquitos Lagoon was formed as the inland waters meandered to the ocean, namely Encinitas Creek, the Escondido Creek and the San Marcos Creek all drain to Batiquitos Lagoon.

- The proposed project is to be constructed adjacent to pristine inland coastal bluffs that were formed during the early Eocene epoch. During the latter part of the Eocene epoch, a deep bench was formed. During the subsequent Pleistocene epoch, the transgressive and regressive ocean deposition of marine terrace (sandstone) took place. This deposition formed a cap over the bluff area. Over time, the bluff has eroded and deep canyons and rifts are clearly visible, e.g., the sites north property line.

- Based upon the ECC review of the Lennar Homes project Application Package it appears the project will require the export of a minimum of 60,000 +/- CYs of ancient marine terrace deposits and the importation of thousands of cubic yards of "engineered" soil. The soil will be required for compaction in order to establish a base foundation that can support the large 16 townhome structures anchored to monolithic concrete pads.

The project site is located on or within very close proximity to the La Costa Avenue Fault (depicted below), as initially identified by noted geologist Leonard Eisenberg and confirmed by Professor Norrie Robbins, PhD (Geology, San Diego State University).



(Source: Leonard Eisenberg)

3.4.2 Regulatory Framework. Pursuant to City of Encinitas Engineering Design Manual Chapter 3, Section 3.604.2 and EMC Chapter 23.24, prior to any Grading Plan Submittal, the project area needs to be investigated per the Alquist-Priolo Act of 1972.

- This requires a Registered Engineering Geologist to conduct a full geologic reconnaissance of the project area to determine potential hazard zones or areas and define the La Costa Avenue Fault Rupture Zone including **other** known faults underlying Batiquitos Lagoon.

- Geologic Investigations must conform with the California Geologic Survey's Guidelines for Evaluating the Hazard of Surface Fault Rupture and the California Board of Geologists and Geophysicists Geologic Guidelines for Earthquake and/or Fault Hazard Reports.

3.4.3 Threshold for Determination as to significance. The rupture of any known geologic fault has the potential for causing a landslide, should a seismic shaking occur on the high-pressure

water mains on the subject property, a potential exists towards causing a rupture of the underground water mains piping distribution system.

- **Site History** - ECC is very much aware and have the history - as does the City of Encinitas - towards how unstable the project site/property has been over the years, with several subsidence(s) events occurring 2 or 3 times over the past 25 years. The City did file a cause of action with the California State Superior Court, North County Division, Vista due to the endangerment of life and property due to overwatering by the Agricultural Business operator.

- The ECC requests in advance, a copy of the Geotechnical Investigation Soils Testing Report complete with a site layout indicating the location of the referenced test boreholes, including the water table elevation.

3.4.4 Analysis of Project Effects and Determination as to significance. Significant trenching for underground utilities will be required, and for irrigation landscaping. To protect the surrounding sensitive habitats preserved areas, plantings shall be native, drought tolerant and non-invasive.

- Note that ignoring the natural continuing erosion process and adding to it by removing the marine terrace deposits and then landscaping and irrigating with thousands of gallons per year is of great concern to the community.

3.4.5 Cumulative Impact Analysis. It is to be noted that a 4.1 moderate earthquake event occurred Sunday January, 2022 at 9:46 AM in Valley Center, San Diego County, approximately 28 miles NE of the project site. The seismic event was felt in the coastal cities of Encinitas, Carlsbad and Oceanside. Source: www.USGS.com

- Should the swimming pool be constructed with a typical volume of 25,000 to 45,000 gallons of water the weight of the water and construction would range from 200 to 300 tons respectfully. In the event of a seismic event this volumw/mass could potentially be destructive

- ***The ECC believes the Lennar Draft Scoping EIR does not address the Geology and Soils concerns as identified herein and therefor the responses are deemed inadequate.***

3.5 HAZARDS and HAZARDOUS MATERIALS

3.5.1 Existing Conditions. A 2-acre area of Parcel A, was cultivated for use as a Commercial Agricultural growing business from approximately 1998 to 2010. The ECC has aerial photos of an agricultural operation. There are community witnesses of agricultural pesticides being

sprayed on the crops (probably well beyond the scope of permitted activities). (Ref., Minor Use Permit, Coastal Development Permit Case No. 98-209 MIN/CDP). See Appendices C.
Additionally, a record exists of subsidence/landslide due to uncontrolled irrigation of the agricultural crops in 2001 and a resultant lawsuit is on file related to the same. (Among others, Ref., City of Encinitas v. Teresa M. Cannon and DOES, Case No GIN021848-1, Superior Court of the State of California, County of San Diego, North County Division, Vista.)

- **Standard Environmental Record Sources.** Aerial photos of the years in operation have been obtained. The photos and an analysis of the agricultural activities are attached as Appendices C.

3.5.2 Regulatory Framework. Regulated or banned pesticides as per U.S. 40 CFR, and California Proposition 65, Cancer Causing Agents, that are equal to or above the reportable limits shall be removed from the site to an approved Treatment Storage and Disposal Facility, if found.

3.5.3 Analysis of Project Effects and Determination as to significance. The ECC is requesting that the soil on the Cannon property "Parcel A" shall be sampled and analyzed by a State Certified Analytical Laboratory. The soil samples shall be obtained at depths of 1ft, 2ft, 3ft and 4ft on a 10ft x 10ft (maximum) matrix. The ECC hereby requests a certified copy of the Soil Sampling Report.

3.5.4 Cumulative Impact Analysis. In the event of positive sampling results of the regulated or banned pesticides as per U.S. 40 CFR, and California Proposition 65, Cancer Causing Agents, that are equal to or above the reportable limits, for residential developments, shall be removed from the site via a Manifest and transported to a licensed Treatment Storage and Disposal Facility, for treatment and disposal.

- ***Again, The ECC is requesting that ALL CONTAMINATED SOILS shall be REMOVED from the site and shall not be buried or encapsulated on site whether or not the Townhomes Project is constructed.***

- ***The ECC believes the Lennar Draft Scoping EIR (Geocon) did not address the Hazards and Hazardous Materials concerns as identified and discussed herein and therefor the responses are deemed inadequate. The Phase one ESA personnel were unaware of the 1998 to 2010 agricultural operations. No soil sampling or a lab analysis was conducted by Geocon. Therefore, the Phase One ESA needs to be reconducted and soil samples taken as per the Department Of Toxic Substances Control (DTSC) Interim Guidance for Sampling Agricultural Properties (3rd Rev) August 2008. A minimum of four (4) bore samplings shall be taken per acre. A total number of required samples shall be not less than eight (8). Sampling depth shall be 6 inches. Samples shall be analyzed at a California Certified Laboratory. The chemicals of concern are: arsenic, Organo Chlorine Phosphates (OCPs) , e.g., DDT, toxaphene, aldrin, dieldrin, Follow DTSC QA/QC protocol per SW-846.***

3.6 NOISE

3.6.1 Definition of Noise

Noise - unwanted sound.

- Sound pressure - small oscillatory pressure variations above and below ambient atmospheric pressure that produce the auditory sensation of sound (in N/m2 , where 1 Newton/meter2 = 1 pascal [Pa]).
- Sound pressure level - 20 times the common logarithm of the ratio of measured sound pressure over the reference sound pressure, expressed mathematically in decibels (dB), as follows: WAS Section 9.3 Design Guidelines Page 4 of 18 Revised: 05/01/2007 Sound pressure level (dB) = 20 LOG10 T Measured Sound Pressure Z; H Reference Sound Pressure -N Where the reference sound pressure = 20 micro-pascal (20 μPa).

- A-weighting - an acoustic frequency adjustment to a sound pressure level, which simulates the sensitivity of human hearing. An A-weighted sound pressure level (dBA) results from either manually or electronically applying the frequency dependent A-weighting factors.

- Noise level, sound level or overall sound level - the single number A-weighted sound pressure level as read on a sound level meter set to A-weighting. This level is also the energy sum of the A-weighted sound pressure level spectrum.

- Overall sound pressure level - the single number unweighted sound pressure level as read on a sound level meter set to linear. This level is also the energy sum of the sound pressure level spectrum.

- Leq - the equivalent continuous sound level or energy average sound level over a set period of time (usually one hour).

- TWA - the 8-hour time-weighted averaged occupational noise exposure level. 9. Octave band - the interval between two frequencies having a ratio of 2 to 1.

3.6.2 Existing Conditions. The ambient Sound Pressure Level (SPL) emanating from the Interstate-5, freeway traffic located within 200 meters from the project site. was recorded on Saturday January 8, 2022, at 3:00 PM. The average SPL recorded was 66.5 dBA with a peak SPL of 81.7 dBA. See photo of Sound Pressure Level reading at the Cannon Property Parcel A, Map, location. Appendices B.

3.6.3 Regulatory Framework

Federal

A proximity to major roadways estimates the percentage of people who live within 200 meters, or approximately 650 feet, of a high traffic roadway that carries over 125,000 vehicles per day. Data on the location of roads and traffic levels come from the 2011 National Transportation Atlas Database; data on population come from the 2010 Census.

- **Transportation and Health Connection.** According to CDC, more than 11 million people in the United States live within 150 meters (or approximately 500 feet) from a major highway (Boehmer et al., 2013). The vehicle traffic on these roadways is a major source of noise and air pollutants, such as particulate matter, nitrogen oxides, carbon monoxide, and ozone, which are known health hazards (U.S. EPA, 2010a, b, 2009, 2008).

- Specifically, exposure to traffic-related pollution is linked to asthma and other respiratory symptoms, development of childhood asthma, and cardiovascular disease and death (National Heart, Lung, and Blood Institute National Asthma Education and Prevention Program, 2007; Health Effects Institute, 2010).

- For example, one study estimated that 8% of childhood asthma cases in Los Angeles County, California, could be partly attributed to living close to a major road (Perez et al., 2012). Living near a major road also has been associated with decreased lung function in adults with asthma (Balmes et al., 2009). Increasing the distance from the road to more than 150 meters, or approximately 500 feet, might decrease concentrations of some air pollutants by at least 50% (Karner et al., 2010).

- Also, research has demonstrated that traffic noise at normal urban levels can also lead to stress and sleep disturbances, both of which can lead to a higher risk for type 2 diabetes (Sørensen et al, 2013).

- **Moving Forward Program.** This indicator may help inform how future roadways are designed and influence future land use development and land use policies affecting the environment near roadways. Shifting land use patterns and investing in strategies that increase air quality might lead to improved health outcomes.

- One Los Angeles County-based study estimated that a 20% reduction in regional air pollution and a 3.6% decrease in population living near major roadways would result in 5,900 fewer cases of asthma caused by near-roadway pollution exposure (Perez et al., 2012).

- Transportation officials can also use the information from this indicator to consider air pollution mitigation strategies, including using vegetative buffers or sound walls to dilute traffic emission concentrations in the near roadway environment (U.S. EPA, 2015; Baldauf et al., 2008).

References
Baldauf R, Thoma E, Khlystov A. Impacts of noise barriers on/near-road air quality. Atmospheric Environment 2008;42:7502
http://www.sciencedirect.com/science/article/pii/S1352231008005311.
Balmes JR; Earnest G, Katz PP; Yelin EH; Eisner MD; Chen H; Trupin L; Lurmann F, Blanc PD. Exposure to traffic: Lung fun.

State

- **California Noise Control Act of 1973.** California Health and Safety Code Sections 46000 through 46080, known as the California Noise Control Act, find that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The act also finds that there is a continuous and increasing bombardment of noise in urban, suburban, and rural areas. The act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the state's policy to provide an environment for all Californians that is free from noise that jeopardizes their health or welfare.

Local

- **City of Encinitas General Plan.** The City of Encinitas General Plan is the primary source of long-ranged planning and policy direction used to guide growth and preserve the quality of life within the City of Encinitas. The Encinitas General Plan states that a goal of the City is to analyze proposed land uses to ensure that the designations would contributeto a proper balance of land uses within the community. The relevant goals for the project include:

  GOAL 1: Provide an acceptable noise environment for existing and future residents of the City of Encinitas.

  Policy 1.7: Apply Title 24 of the California Administrative Code, associated with noise insulation standards, to single-family dwellings.

  GOAL 2: Require that new development be designed to provide acceptable indoor and outdoor noise environments.

  Policy 2.1: The Noise and Land Use Compatibility Guidelines and the accompanying discussion set forth the criteria for siting new development in the City of Encinitas.Any project which would be located in a normally unacceptable noise exposure area, based on the Land Use Compatibility Guidelines, shall require an acoustical analysis. Noise mitigation in the future shall be incorporated in the project as needed. As a condition of approval of a project, the City may require post- construction noise monitoring and sign off by an acoustician to ensure that City requirements have been met.

  GOAL 3: Ensure that residents are protected from harmful and irritating noise sources to the greatest extent possible.

  Policy 3.1: The City will adopt and enforce a quantitative noise ordinance to resolve neighborhood conflicts and to control unnecessary noise in the City of Encinitas. Examples of the types of noise sources that can be controlled through the use of aquantitative noise ordinance are

barking dogs, noisy mechanical equipment such as swimming pool and hot tub pumps, amplified music in commercial establishments, etc.

GOAL 4: Provide for measures to reduce noise impacts from stationary noise sources.

Policy 4.1: Ensure inclusion of noise mitigation measures in the design and operation of new and existing development.

- **City of Encinitas Municipal Code.** The City's Municipal Code establishes noise criteria to prevent noise and vibration that may jeopardize the health or welfare of the City's citizens or degrade their quality of life.
  Chapter 9.32 Noise Abatement and Control Ordinance, and Chapter 30.40, Performance Standards, establish property line noise level limits. These limits apply to existing uses, but will also apply to future uses and are used for evaluating potential impacts of future on-site generated noise levels.
  Chapter 9.32.410 states that it shall be unlawful for any person, including the City, to operate construction equipment at any construction site on Sundays, and days appointed by the President, Governor or the City Council for a public fast, thanksgiving or holiday. Notwithstanding the above, a person may operate construction equipment on the above-specified days between the hours of 10:00 a.m. and 5:00 p.m. No such equipment, or combination of equipment regardlessof age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 decibels for more than eight hours during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes.

- The permissible property line noise limits are summarized in Table 3.8-2. As stated in the Municipal Code: Every use shall be so operated that the noise generated does not exceed the following levels at or beyond the lot line and does not exceed the limits of any adjacent zone. Monitoring of the specific noise levels at the east property lines shall be conducted by the Developer and submit their findings to the City for evaluation and action as required to meet compliance. Said action shall be the responsibility of the Developer to the satisfaction of the community.

TABLE 3.6.3 CITY OF ENCINITAS EXTERIOR NOISE LIMITS

Adjacent Zone	Noise Level [dB(A)]	
	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
Rural Residential (RR), Rural Residential-1 RR-1), Rural Residential-2 (RR-2), Residential-3 (R-3), Residential-5 (R-5), Residential-8 (R-8)	50	45

Residential-11 (R-11), Residential Single Family-11 (RS-11), Residential-15(R-15), Residential-20 (R-20), Residential-25 (R-25), Mobile Home Park (MHP)	55	50
Office Professional (OP), Limited Local Commercial (LLC), Local Commercial (LC), General Commercial (GC), Limited Visitor ServingCommercial (L-VSC), Visitor Serving Commercial (VSC)	60	55
Light Industrial (L-I), Business Park (BP)	60	55

3.6.4 Analysis of Project Effects and Determination as to significance The ECC does not see the necessity of a Swimming Pool/Spa and operating equipment that will generate noise pollution day and night via its use, into the community. The ECC suggests instead, a water element, such as a fountain, waterfall, complete with a compact park/meeting area for the residents/families to enjoy as an enhanced amenity without traveling outside the confines of the ***Piraeus Point Townhomes.***

- Considerable sound energy absorbing construction material(s), e.g., doors, windows, sound transmission class (STC) rated exterior walls and condominium orientation may be required to attenuate the uncomfortable/disturbing noise (sound energy) to a level acceptable to the residents of ***Piraeus Point Townhomes*** and compliance with the City of Encinitas EMC residential sound ordinance.

- Swimming Pool: If constructed, any and all sounds generated even after construction will travel in an easterly direction to the existing residential community, where most of the affected neighborhoods are located. The incorporation of sound absorbent type construction materials, i.e., means and methods, will most likely be required, for compliance.

3.6.5 Cumulative Impact Analysis

Exposure of persons to, or generation of, noise levels in excess of Federal and State standards established in the local general plan or noise ordinance, or applicable standards of other agencies, shall be attenuated.

Exposure of persons to, or generation of, excessive ground borne vibration or ground borne noise levels, shall be attenuated.

A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project is an extreme annoyance and a significant factor.

The geographic extent of the cumulative setting for noise consists of the project site and its location to the I-5 Interstate Freeway, within 200 meters. Ambient noise levels in the project area are generated by vehicle traffic on Piraeus Street, Plato Place and the I-5 Interstate

Freeway. As a result,the primary factor for cumulative noise impact analysis is the consideration of future traffic noise levels along area roadways. Cumulative noise impacts would occur primarily as a result of increased traffic created by this proposed project of more than 980 vehicle trips per day.

When two identical sources (S1 = 80 dB and S2 = 80 dB) each are producing identical SPL, The sound intensity of S1 and S2 are combined via log 10 formula/calculation to obtain a sound intensity value. The sound intensity value is converted back to dBA via log 10 formula/calculations to obtain 83.1 dB. This value indicates that adding two unrelated sounds of the same intensity together is equivalent to a 3 dB increase in the total SPL

With regard to traffic noise intensity, traffic volumes would need to increase in volume order to provide to the receiver a perceptible change in ambient noise levels. As cumulative traffic volumes increase the SPL also increases proportionally, e.g., an approximately 27 percent increase in I-5 traffic volume, will also generate a significant cumulative noise impact as expected from the I-5 Interstate freeway as the traffic builds up say 5:00 AM (early hours) to its highest peak in the afternoon as normally expected. Accordingly, the project's estimated 1,980 MVT is a cumulatively significant factor.

- *The Lennar Draft Scoping EIR addresses the Noise concerns towards the requirement of construction materials to provide an increase sound attenuation and absorbance by requiring wood framing and thicker drywall materials to provide high STC rating of the perimeter wall constructions including doors and windows as identified herein and therefore the responses are deemed adequate for construction. Airbourne noise emanating from the Interstate -5 Freeway is a product of the this transportation corridor. The EIR recommends the installation of glass sound walls, fencing in and around the perimeters of the roof top "yards" or recreational patios, at a height of 5 feet above the roof surface to deflect the high sound levels from reaching the "Seated" occupants.*
- *The proposed swimming pool area will also have perimeter sound barriers of an unknown material to reduce or deflect the freeway noise levels.*
- *It is to be noted that the AC Heat Pump units will be roof mounted and will contribute to the noise and vibration levels within the perimeter parapet wall enclosure.*

3.7 PUBLIC SERVICES and FACILITIES

3.7.1 Existing Conditions. Without guarded crosswalks or stop signs at intersections, the ability of the children to walk to school safely is a most serious issue that the City of Encinitas has thus far, failed to address.

3.7.2 Regulatory Framework. Safe Routes to School (SRTS) programs are in place with the U.S. Government U.S. Centers for Disease Control and Prevention through the American Recovery and Reinvestment Act 2010 -2012. Other sources of funding Federal SRTS Grants are available. The

- State of California receives the U.S. Government SRTS Grant funds and provides those funds to the counties applying for them. The San Diego Association of Governments (SANDAG) provides funds to the 16 cities in San Diego County, including Encinitas. The city of Encinitas however has installed "traffic calming measures", i.e., rubber speed bumps. The installation of speed bumps is a far cry from the intent of the U.S. CDC SRTS program. The County of San Diego Health and Human Services Agency (HHSA) Healthy Works Program has a Plan organized around three (3) focal points.

  a. Existing Issues and Opportunities
  b. Existing Safe Routes to School Efforts, and
  c. Moving Forward – A Regional Safe Route to School Strategy

3.7.3 Analysis of Project Effects and Determination as to significance. Presently it is very dangerous and hazardous for children living in the existing residential community to walk to Capri Elementary School, a Grade K-6 school. The reason for these conditions is the absence of sidewalks, controlled crosswalks, street lighting and stop signs. Notwithstanding the ability of handicap students from accessing Capri School via the SRTS, programs.

- Further, the Encinitas School District does not provide transportation services for the 740 Capri Elementary School, students, nor guarded crosswalks for those students who prefer to walk to school.
- The construction of the ***Piraeus Point Townhomes*** will without a doubt exacerbate the current "Safe Route to School" issue(s). The total lack of the City of Encinitas to provide for a meaningful SRTS program is a quantifiable negative significance per CEQA.

3.7.4 Cumulative Impact Analysis. The ECC suggests a small private transit bus be provided by ***Piraeus Point Townhomes*** Homeowner's Association in perpetuity, to pick up and drop off the resident children to comply with the U.S. Government and SANDAG SRTS program

- This type of private transit vehicle for school children (K-6) service has been initiated for the Fox Pointe Development project, located in the City of Encinitas.

- It is to be noted that Capri School is at 95% capacity, whereas it is most likely that K-6 students will have to be transported to other K-6 public schools in the Encinitas Unified School District. This requirement will add to the residents transportations costs, increase vehicle trips per day and exacerbate the current Air Quality contaminant pollution issues in the community.

- Complete Streets Concept, Policies and Practices need to be considered in order to seriously consider the intent of the SRTS Programs. Complete Streets may vary significantly between urban, suburban and rural contexts but all are designed to balance safety and convenience for everyone using the road. By modifying polices so that the transportation system includes the needs of people on foot, those with disabilities, public transportation and bicycles, the City of

Encinitas shall provide more options for people in the community. Making these options more convenient, attractive and safe allows people to choose their preferred mode of travel rather than going straight to their automobiles. Ref. California SRTS State Network Complete Streets Action Team. National Complete Streets Coalition.

3.8 Transportation and Circulation

3.8.1 Existing Conditions. The Developer shall work with Caltrans to open Piraeus Street at the south end intersection onto Leucadia Blvd., for ingress and egress of traffic. Caltrans stated in 1989 when closing the south bound Piraeus Street traffic to Leucadia Blvd., it would only be reopened if supporting data were provided. Since closure, the residential roads have seen a dramatic increase in traffic warranting the City to install "Traffic Calming Measures" i.e., speed bumps, based on citizen complaints.

3.8.2 Regulatory Framework. Apply San Diego County Traffic and Circulations Guidelines. There shall be no vehicle ingress or egress onto Plato Place from this project. Exception: SDG&E existing 16ft. recorded easement access via Plato Place and the use by emergency vehicle(s)..

3.8.3 Analysis of Project Effects and Determination as to Significance. Should 149 ***Piraeus Point Townhomes*** be constructed to allow additional vehicle traffic onto Piraeus Street, causing extreme congestion along Piraeus Street? The ECC states no.

3.8.3.1 The 980 +/- daily vehicle trips (see below) will dramatically increase the "cut-through" traffic to the detriment of the existing residential community, specifically Normandy Road. As noted, it is again requested that Lennar Homes (who coincidently constructed approximately 30 single family homes on Normandy Road 8-years ago) can provide expertise and knowledge towards this (Caltrans-City of Encinitas) important Leucadia Blvd., reopening issue.

3.8.4 Cumulative Impact Analysis. Additionally, the number of daily vehicles trip from the ***Piraeus Point Townhomes*** project will be 300 vehicles multiplied by a factor of six (6) equals 1,800 vehicle daily trips.

- An allowance factor for service vehicles will also increase and exacerbate the traffic volume issue on Piraeus Street by a factor of 1.1 +/- for an estimated total of 1,980 daily vehicle trips. This increase in vehicle traffic from ***Piraeus Point Townhomes*** will seriously impact the intersections of Piraeus Street and La Costa Avenue resulting in a Level of Service (LOS) of a F-Rating. The intersections of Plato Place, Olympus Road, Sparta Road and Normandy Road will also be impacted.

- Traffic interference will occur from ***Piraeus Point Townhomes*** vehicles entering Piraeus Street to travel south along Piraeus Street. Those vehicles traveling south to Normandy

Road will interfere with northbound vehicles from Leucadia Blvd. Normandy Road is the only easterly route for vehicles to access Leucadia Blvd, which provides access to I-5 south. As noted, access to Leucadia Blvd., is blocked from Piraeus Street.

- Traffic interference will occur from ***Piraeus Point Townhomes*** vehicles entering Piraeus Street to travel north to La Costa Avenue. This vehicle traffic increase will seriously impact the intersection of Piraeus Street and La Costa Avenue and create congestion. Synchronizing the three (3) way signals serving both eastbound and westbound traffic on La Costa Avenue will also cause and create delays at the three (3) locations. Currently the traffic on Piraeus has a lower signal (Green) duration time permitting 7 vehicles to enter the intersection. With an increase of hundreds of vehicles north bound to access I-5 north and south the delays will be horrendous, frustrating and potentially dangerous. Traffic entering Piraeus Street from Sky Loft Road to either travel south or north will be impacted severely by the huge line of vehicles waiting in line to get through the Piraeus Street and La Costa Avenue intersection. The impact of vehicle congestion will also increase the emission pollutants, of benzene, carbon monoxide, particulate matter at this intersection. The prevailing wind is from the SW to the NE. The recipient of these air borne pollutants is Batiquitos Lagoon, contiguous with La Costa Avenue, where significant reportable toxic pollutants of Poly Aromatic Hydrocarbons (PAH) are present in the water and benthic layer as per the December 9, 2021, water sampling analysis.

- ***The ECC believes the Lennar Draft Scoping EIR does not address The Public Services and Facilities concerns as identified herein and therefor the responses are deemed inadequate. The Safe Route to School is a significant issue and shall be addressed.***

3.9 UTILITIES and SERVICE SYSTEMS

Existing Conditions. This section discusses the proposed project relative to utilities and service systems, comprising wastewater, water, stormwater,

3.9.1 Wastewater. The ECC concern is the current and future capacity of the existing 70-year old 8-inch VCP gravity sewer line owned and operated by Leucadia Water District (LWD). The Piraeus Street wastewater/sewer line serves the community.

- The Piraeus Street 8-inch diameter VCP gravity wastewater/sewer line flows from Leucadia Blvd., (south point of beginning) to La Costa Avenue (north) and connects to an existing 12-inch gravity flow sewer line. The Piraeus Street 8-inch gravity sewer line enters a manhole north of Sky Loft Road. This manhole known as the Sky Loft manhole also receives waste water flows from an existing 12-inch gravity sewer line located vicinity of Sheridan Road on La Costa Avenue west of I-5, which flows east to I-5 then flows south parallel to I-5 then flows easterly under I-5 to the Sky Loft manhole. A 12-inch VCP gravity sewer line flows north from the Sky Loft Manhole to La Costa Avenue and flows east to a pump station.

- Per the 1968 LWD Civil Plans, a 12-inch forced main flows from the pump station(s) east to west along La Costa Avenue to Piraeus Street and follows the route of the 12-inch gravity sewer line, as noted. The 12-inch forced main is routed around the perimeter of Batiquitos Lagoon crosses over the La Costa Avenue NCTD railroad bridge then flows north and parallel to the North Coast Hwy. 101 Batiquitos Pump Booster Station, then flows north to the Encina Wastewater Authority's (EWA) Water Pollution Control Facility in Carlsbad. Verification is required.

3.9.2 Analysis of Project Effects and Determination as to significance. The existing 8-inch Piraeus Street VCP gravity sewer line receives all wastewater flows from residences in the area known as "Crest Acres" east of Piraeus Street, including Capri Road, Capri Elementary School (740 students) Caudor Road, Gascony Road, Burgundy Road, Skyloft Clusters PUD, Monte Mira PUD, Olympus Road, Normandy Road, etc., and south to Leucadia Blvd.

- The proposed ***Piraeus Point Townhomes*** 149 Equivalent Dwelling Units (EDU's) - with a potential population of 455 or more, persons - new connections having the potential to disrupt wastewater flow. The ECC is very much concerned with the present capacity let alone discharging an additional approximately (455 persons x 75 gallons/day) equates 34,125 gallons per day into a 70 year +/- 8-inch gravity flow sewer line.

3.9.3 Cumulative Impact Analysis. Can the existing Piraeus Street 8-inch diameter VCP wastewater/sewer line receive the proposed 149 Equivalent Dwelling Units (EDU's) - with a potential population of 455 persons with - new connections without having the potential to disrupt wastewater flow?

3.9.3.1 Residents in the LWD area strongly oppose subsidizing the costs of any new sewer lines infrastructure through an increase in LWD fees due to the construction of the ***Piraeus Point Townhomes.*** These costs, if any, shall be reimbursed by the applicant to LWD either through connection fees or direct reimbursable capital improvement (CIP) costs.

3.9.3.2 Water.

Existing **Conditions:** The San Dieguito Water District (District) is one of two water districts that serve the City of Encinitas (City), which includes the communities of Old Encinitas, New Encinitas, Leucadia, Cardiff, and Olivenhain. The District provides potable water and recycled water to approximately 38,000 customers within its service area, while Olivenhain Municipal Water District (OWMD) serves the rest of the City. The Districts water supply portfolio includes local surface water from Lake Hodges, purchased treated and raw water from the San Diego County Water Authority (SDCWA), and recycled water produced by surrounding wastewater agencies with tertiary treatment.

Projected water demand for the SDWD for all water use sectors except for agriculture were adjusted to

increase proportionally with population growth. Table 3.9.3.2 shows the projected population served by the SDWD from 2020 to 2045.

TABLE 3.9.3.2 CURRENT AND PROJECTED POPULATION (Calendar Year Data)

	2020	2025	2030	2035	2040	2045
Population Served	37,856	39,208	39,653	39,800	40,240	41,246

Source: SDWD 2020

The Urban Water Management Planning Act requires every urban water supplier to assess the reliability of its water supply for normal, single dry, and multiple dry years. Single-dry and multiple-dry year conditionswere based on the SDWD's historical water use records. Table 3.9.3.3 shows the SDWD's estimated watersupply projections from 2020 to the year 2045.

TABLE 3.9.3.3 TOTAL WATER DEMAND IN ACRE-FEET PER YEAR

	2020	2025	2030	2035	2040	2045
Potable and Raw Water	5,463	5,796	6,156	6,243	6,404	6,611
Recycled Water Demand	642	700	700	700	700	700
Total Water Demand	6,105	6,496	6,856	6,943	7,104	7,311

Source: SDWD 2020

3.9.3.4 Analysis of Project Effects and Determination as to significance. ***The Piraeus Point Townhomes*** will use an average of 75 gallons per person per day. (per the current Water Agencies Standards, Section) including the irrigation water for drought tolerant plantings and trees. Based on this capita per day usage the overall volume of water that will be consumed by this project equates to approximately 38 acre feet. This project will impact significantly the City's water resources currently three (3) years in a State wide Level 1 drought.

- **Drought Issues.** Currently a Level 2 advisory water reduction is in effect for all SDWD customers until June 10, 2023. Level 2 means each customer shall voluntarily reduce their water consumption by 10% and limit landscaping irrigation to functional use only. It appears incongruous that major residential projects that will consume more than **38 acre feet** are being considered or worse approved, while existing customers are reducing their usage due to a drought condition. At the very least a moratorium should be enacted on all construction projects during the 3rd year of a State wide drought condition.

3.9.3.5 Cumulative Impact Analysis. This project will have a significant negative impact cumulatively, to the City's water resources, i.e., SDWD and the wastewater system, i.e., LWD.

- ***The ECC believes the Lennar Draft Scoping EIR does not address the Utilities and Services Facilities concerns as identified herein and therefor the responses are deemed inadequate***

3.9.3.6 STORMWATER

Existing Conditions. The project site is undeveloped vacant land and therefore any and all rainfall is absorbed by the soil to the point of saturation whereby surface water would flow on to Plato Place at the south, to Piraeus Street at the west and into the natural ravine at the north property line. Contiguous properties to the east property line surface waters may possibly flow onto the project site depending upon the grade elevations, which are variable.

The location of the project is within the Vulcan Watershed which drains to Batiquitos Lagoon via an 18-inch diameter outfall north of La Costa Avenue 200 feet east of Vulcan Rd.

3.9.3.7 Analysis of Project Effects and Determination as to significance. The ECC requests that the surface water discharges from ***Piraeus Point Townhomes*** subjected to a 2, 5, 10, 25, 50 and 100 year storm events be calculated per Civil Engineering Guidelines for coastal San Diego County and in accordance with but not limited to, California Title 24 and the City of Encinitas Municipal Code.

The ***Piraeus Point Townhomes*** stormwater shall be pretreated prior to being discharged to the stormwater piping system. Stormwater overflows shall be conveyed off site to an approved Best Available Control Technology (BACT) hydromodification pretreatment/retention location, possibly to the contiguous mitigation target property Parcel B.

- Currently impervious surface water runoffs flowing from Caudor Street and roads north of Capri Road flow east to west then north to south and south to north respectively, flowing onto Plato Place. The Plato Place stormwater flow is conveyed via open earth ditches, concrete channels and culverts, discharging downgradient in a westerly direction to a point of convergence. This convergence point is located south of Plato Place and east of Piraeus Street. A culvert under Piraeus Street drains the converging flows in a westerly direction and then flows north within the boundaries of the Interstate-5 Freeway through a series of RCP pipes, culverts and catch basins, to the 18-inch diameter Vulcan Outfall at Batiquitos Lagoon, as noted.

- The ECC respectfully, requests the engaged Civil Engineering Consultant determine how the noted stormwater discharge will be enhanced and conveyed including the stormwater overflow

from ***Piraeus Point Townhomes.*** Such enhancements or modifications shall not create a condition detrimental to the existing stormwater discharges of the ECC, area, e.g., flooding.

- The ECC is aware of the use and installation of hydromodification basins, bioretention basins, stormwater storage cisterns, drywell(s) and the like. The concern is back-to-back high intensity inundation storm events that will create flooding due to the saturated soils inability to absorb additional stormwater over time, as noted. A case in point is just south of the intersection of Piraeus Street and La Costa Avenue the existing drainage area (west of Piraeus Street) presently floods during high intensity storm events. An issue that the City has failed to resolve.

3.9.4 Cumulative Impact Analysis. A peer review of the stormwater modeling/scenarios will be conducted by the ECC to verify the effectiveness of the stormwater design.

- ***The ECC believes the Lennar Draft Scoping EIR addresses the Stormwater concerns as identified herein and therefor the response is deemed adequate***

4.0 PARKING ISSUES

a. There shall be no spillover or project owner or visitor parking allowed on Plato Place or Piraeus Street, as both are currently non-conforming rural roads. All cars whether residents or visitors or service delivery vehicles shall be parked on ***Piraeus Point Townhomes*** property only.

b. In the absence of sidewalks, - where curbs if installed can normally be painted red (to alert drivers of a no parking location) - e.g., Piraeus Street, Plato Place, Caudor Street and Capri Road all shall have new "**NO PARKING**" signs installed by the City per the CVC.
c. The ***Piraeus Point Townhomes*** project has the potential for one (1) vehicle per bedroom, i.e., 306, however with 149 Condominiums and where each Condominium has a 2-car garage this equates to 298 residential vehicles. Confirmation by the developer/applicant of the actual total residential parking calculated for the condominiums, is requested.

d Additionally, and more importantly, please identify where the Visitor Parking will be located, including service vehicles, delivery vehicles, trash collection trucks, furniture moving vans, U.S. Post Office Delivery Vans, etc.

- ***The ECC believes the Lennar Draft Scoping EIR does not address the Parking concerns as identified herein and therefor the responses are deemed inadequate***

5.0. LIGHTING

a. **Lighting.** Street Lamp Poles are required per the City of Encinitas SAC Meeting Report, on Piraeus Street only for the west property line parallel to Piraeus Street. However, the ECC is requesting that there shall be no pole lamps or roof-deck lighting or lights that project light into the night sky or the surrounding community. LEUCADIA is a DARK SKIES Community because of the sensitivity and close proximity to Batiquitos Lagoon. Therefore, external lighting shall be reduced or eliminated. The ECC discussed with Mr. Brian Grover that light bollards providing pathway lighting would most likely be acceptable.

b. **Rooftop Decks.** If constructed, these would add to Light and Noise pollution – please eliminate and do not include this intrusive addition. Further, barbecues on rooftops, if allowed, are a potential fire hazard, notwithstanding the nuisance cooking odors, an Air Quality issue.

- ***The ECC believes the Lennar Draft Scoping EIR addresses the Lighting and the Rooftop Decks concerns as identified herein and therefor the response is deemed adequate***

6.0 TREES and PLANTINGS

a. The ECC believes that with the following setbacks: 1) A 60-foot set back along Piraeus 2) A 15-foot set back at Plato Place 3) A 16-foot east property line setback to accommodate the existing SDG&E high voltage overhead, wooden power poles 4) A 50-foot setback - per CEQA - from the ravine at the north property line will limit the available area for the planting of the required 30 native trees per acre. The total number of required trees is 180 +/- as per the City of Encinitas Municipal Code. Compliance may not be possible. All plantings shall be native drought tolerant and non-invasive.

b. Depending on the selected species of native trees and their size at maturity, they could possibly serve as an ambient noise buffer for the residents of ***Piraeus Point Townhomes***, as well as providing shading.

c. The selection of indigenous coastal trees will enhance the project for the benefit of the community. It is to be noted in the City of Encinitas General Plan, the I-5 Interstate Corridor was established to be a "green corridor" on both sides. It is fitting towards keeping with the environmental objectives when the City of Encinitas became incorporated in 1986. Planting trees will be an enhancement for the City, the ***Piraeus Point Townhomes*** residents, and the community at large.

- ***The ECC believes the Lennar Draft Scoping EIR addresses the Trees and Planting concerns as identified herein and therefor the response is deemed adequate***

7.0 Application Project Review. The ECC conducted a review of the Applicants package as follows:

a. The Preliminary Hydrology Study prepared January 19, 2022, is in error per **Section 1.2 Existing Conditions**. The subject property does not have greenhouses nor a single-family dwelling.
b. Section 1.3 Proposed Project. There is no connection to Sidonia Street from the local stormwater conveyance system.

c. Planned Application Supplement City of Encinitas Development Services Department Form S. A review of **Form S**, indicates that Parcel B is a strip of land that runs parallel to the east of a concrete drainage culvert contiguous with Piraeus Street north of Parcel A to south of Sky Loft Road thence from the north side of Sky Loft Road to La Costa Avenue. Parcel A area is 6.876 acres and Parcel B area is 4.93 acres. The parcels have been added to provide a gross acreage of 11.8 acres in order to meet the Encinitas Code Requirements *for* **Lot Coverage of 65% Maximum**. This procedure of adding the two (2) parcels is invalid per Appendix C- 2013-2021 of the City Housing Element. Only APN 254-144-01-00, i.e., Parcel A area 6.93 acres is shown on page C-8 as Cannon Property (Piraeus) Site Number 02. The **"gross/net"** acreage for development is 6.93 acres. Therefore, **Form S, Lot Coverage** calculations need to be revised and resubmitted to the City for review. See Appendices E.

d. Further, Parcel B area 4.93 acres, is totally unbuildable and is located within the City of Encinitas Subarea Plan of the MHCP Coastal Sage Scrub (CSS) and Southern Maritime Chapparal and California Gnatcatchers. Additionally, an SDG&E power pole with overhead 12.6 kV distribution power lines crosses the south portion of Parcel B between Sky Loft Road and Plato Place, as per a recorded easement and so noted within the Cannon Property Title Report.

The DRAFT Scoping EIR and Public Notices infer that Parcel A and Parcel B are enjoined and that the townhomes will be constructed on both parcels, which is totally false. The ECC requests that Lennar and the City refrain from using this false narrative. Further. the request to the Public Agencies requesting their input on the proposed Townhome project alluded to this false fact thereby seeking a favorable agency response. The ECC requests that the City resend their request to the Public Agencies indicating their error as described in paragraph D and thereby seek a new Public Agency response.

Additionally, The City Housing Element Inclusionary Economic Analysis specifically for Townhomes - see pages 88-90/420 – indicate the allowable density of Townhomes is R-15, i.e., maximum of 15 townhomes per acre. Therefore, with approximately 4 acres of buildable acreage a quantity of 60 Townhomes is most likely the maximum quantity allowed for Parcel A.

8.0 CONCLUSION.

Please be advised that this project is not welcomed by the surrounding community. It is ill-conceived, and if constructed, will be a permanent and irreparable detriment to the existing community.

Piraeus Point Townhomes development will have **significant environmental impacts** within the Visual Scenic Corridor resulting from the destruction of this existing valuable wildlife habitat inland bluff. This project can not be perceived as a community benefit and shall be denied.

The ECC, as a Community Stakeholder, requests that they be kept informed in every stage of this pending development.

The ECC respectfully requests that Mr. Brian Grover and Mr. David Shepherd of Lennar Inc. exercise a thorough due diligence process including the evaluation of the multitude of critical issues that the ECC Draft Scoping EIR Review clearly identifies and describes. Each of these significant issues have to be addressed and resolved by Lennar Homes and the City to the satisfaction of the ECC. The ECC firmly believes that with careful and respectful evaluation, Lennar Homes will conclude that Piraeus Point Townhomes housing development project is neither an economical financial risk nor is it environmentally justifiable, that a major U.S. public corporation would be proud of. Further, when weighing each of the described CEQA categories, their sub-sets, the quantifiable data, Lennar Homes will be guided to choose not to exercise their "option to purchase" the Cannon Property and thereby avoiding to construct this "negative quality of life" constrained property

END OF THE ECC SCOPING DRAFT ENVIRONMENTAL IMPACT REPORT REVIEW

Appendices A

La Costa Fault Map

Appendices B

Ambient Traffic Noise Measurement/Location Map

Appendices C

Aerial Photos of Agricultural Activity

Appendices D

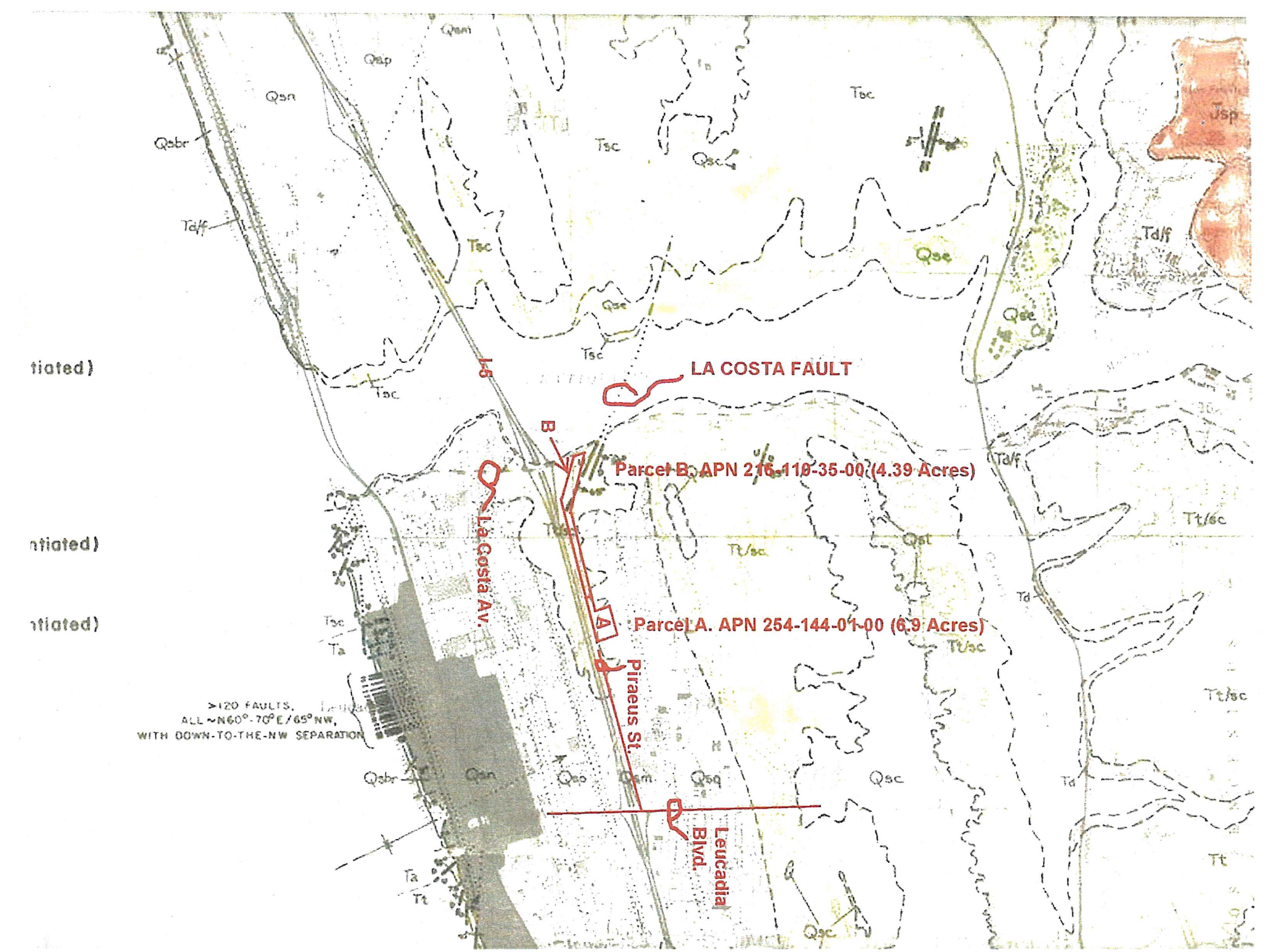
North Coast Corridor Public Works Plan/Transportation and Resource Enhancement Program Mitigation Site Assessment for the La Costa Preservation Parcel. Prepared by Dudek for Caltrans, and SANDAG August 2012

Appendices E

1) City of Encinitas Housing Element, Appendix C Adequate Sites Analysis- 2013 - 2021, 9 pages, and 2) Inclusionary Housing Economic Analysis, Townhomes R-15. Spreadsheet Pages 88-90 of 420 Page Report. Date prepared 12-02-2019. 3) Map of Housing Element City Council Approved sites, 06-20-2019

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Appendices A


LA COSTA FAULT
I-5
La Costa Av.
B
A
Parcel B. APN 216-110-35-00 (4.39 Acres)
Parcel A. APN 254-144-01-00 (6.9 Acres)
Piraeus St.
Leucadia Blvd.
>120 FAULTS,
ALL ~N60°-70°E/65°NW,
WITH DOWN-TO-THE-NW SEPARATION
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Appendices B



SOUND PRESSURE LEVEL (SPL) MEASUREMENT
69.9 dBA SUNDAY JANUARY 10TH, 2022. TIME: 3:00 PM.

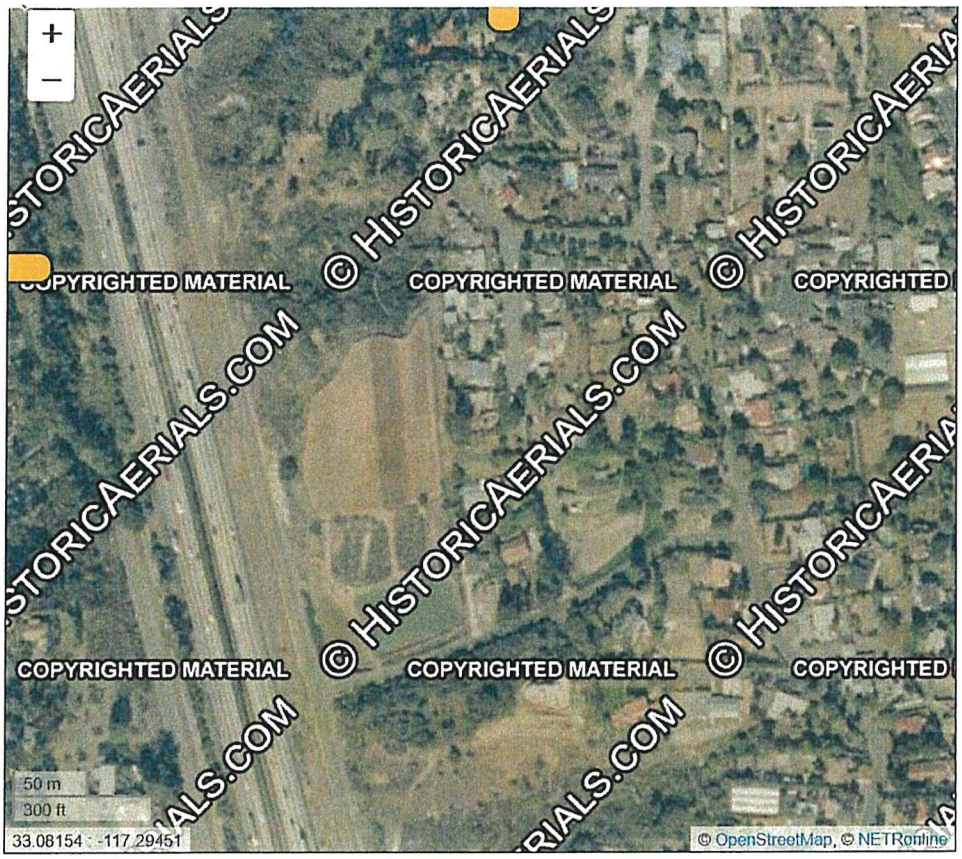
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PEAK SPL 81.7 dBA

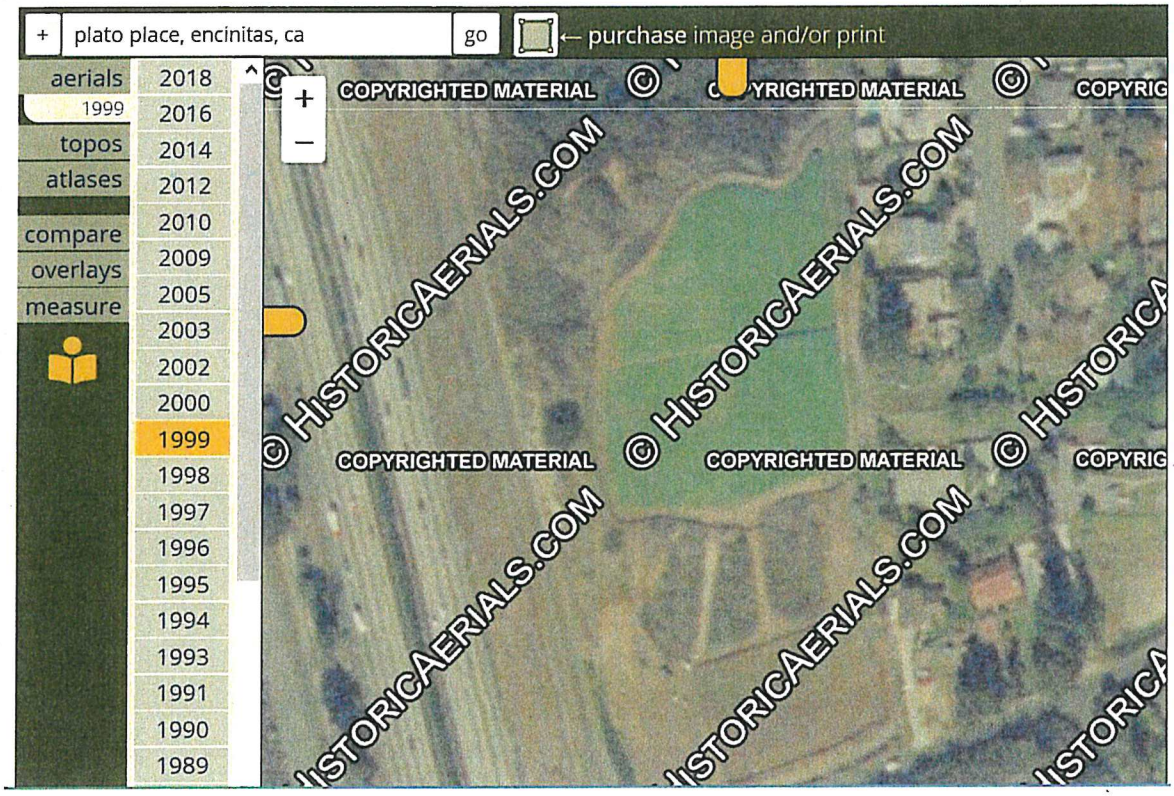
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Appendices C

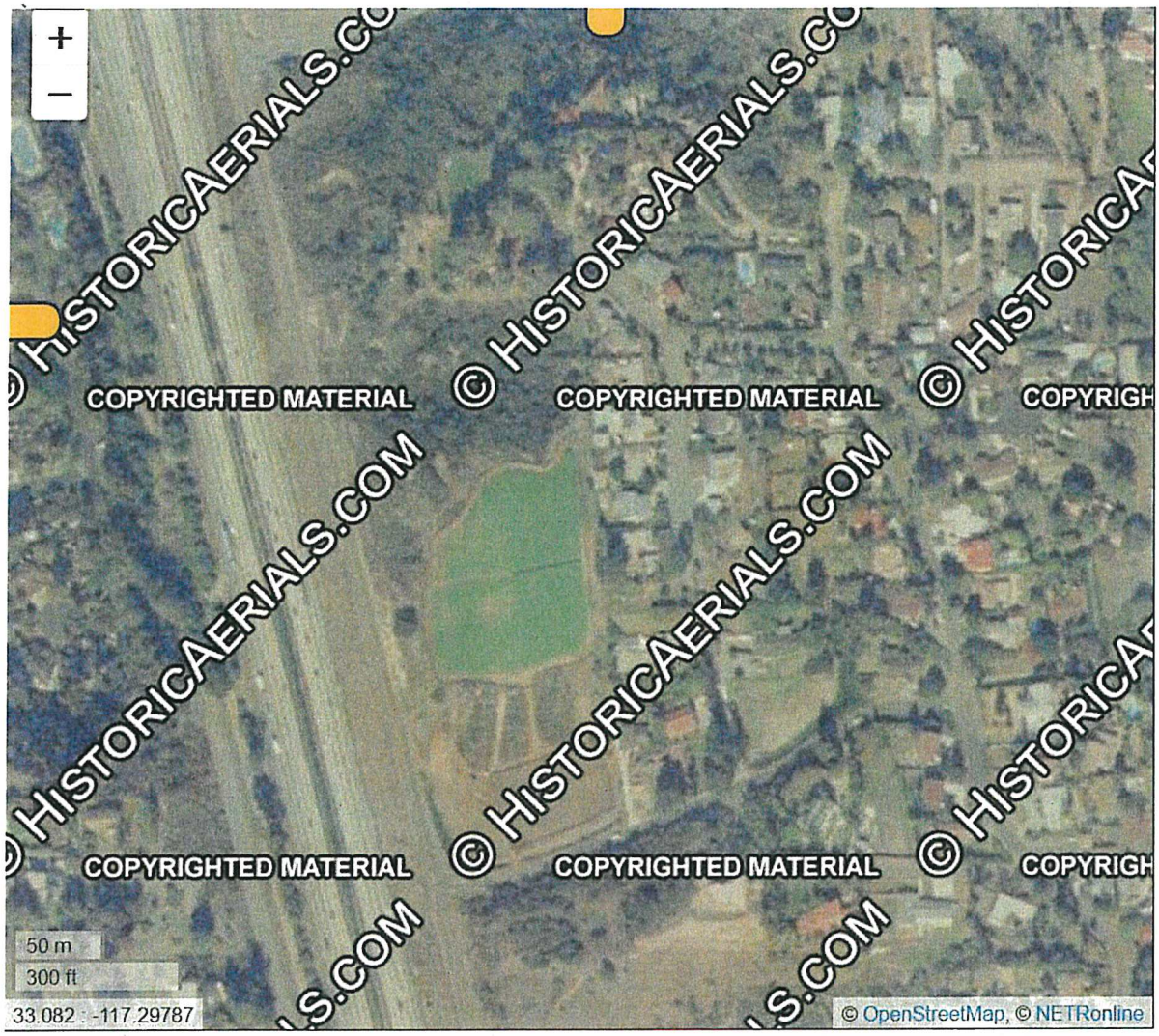
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© OpenStreetMap, © NETRonline

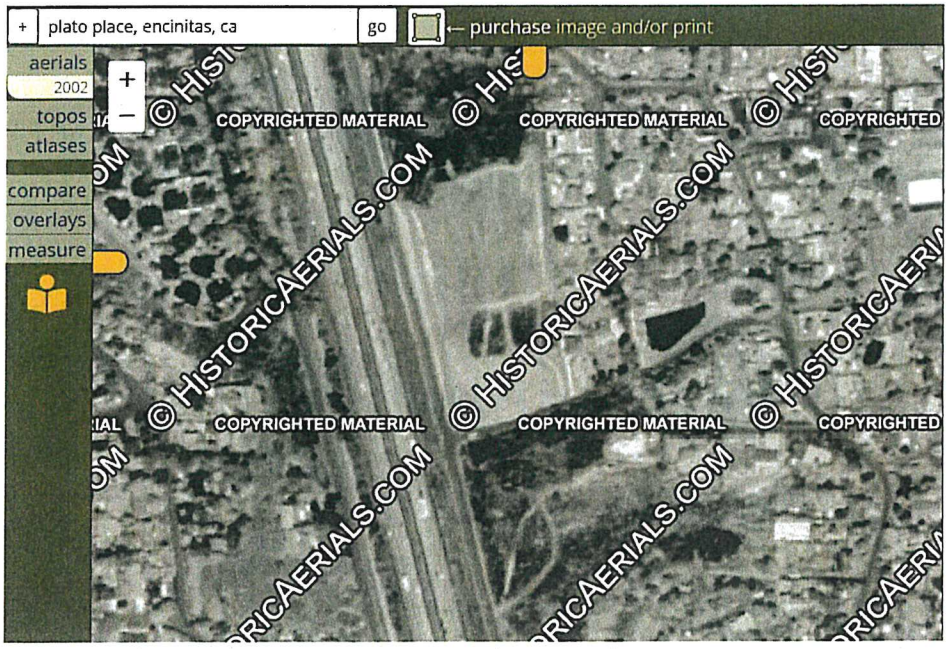
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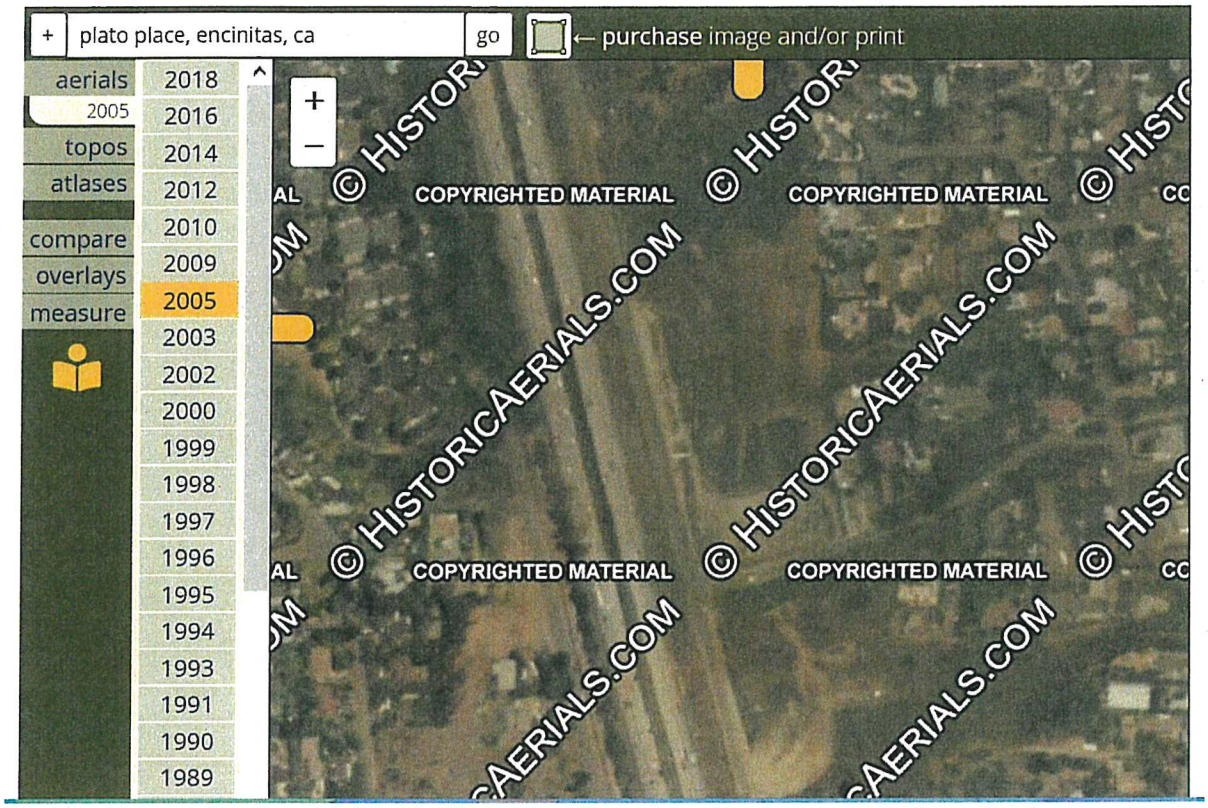
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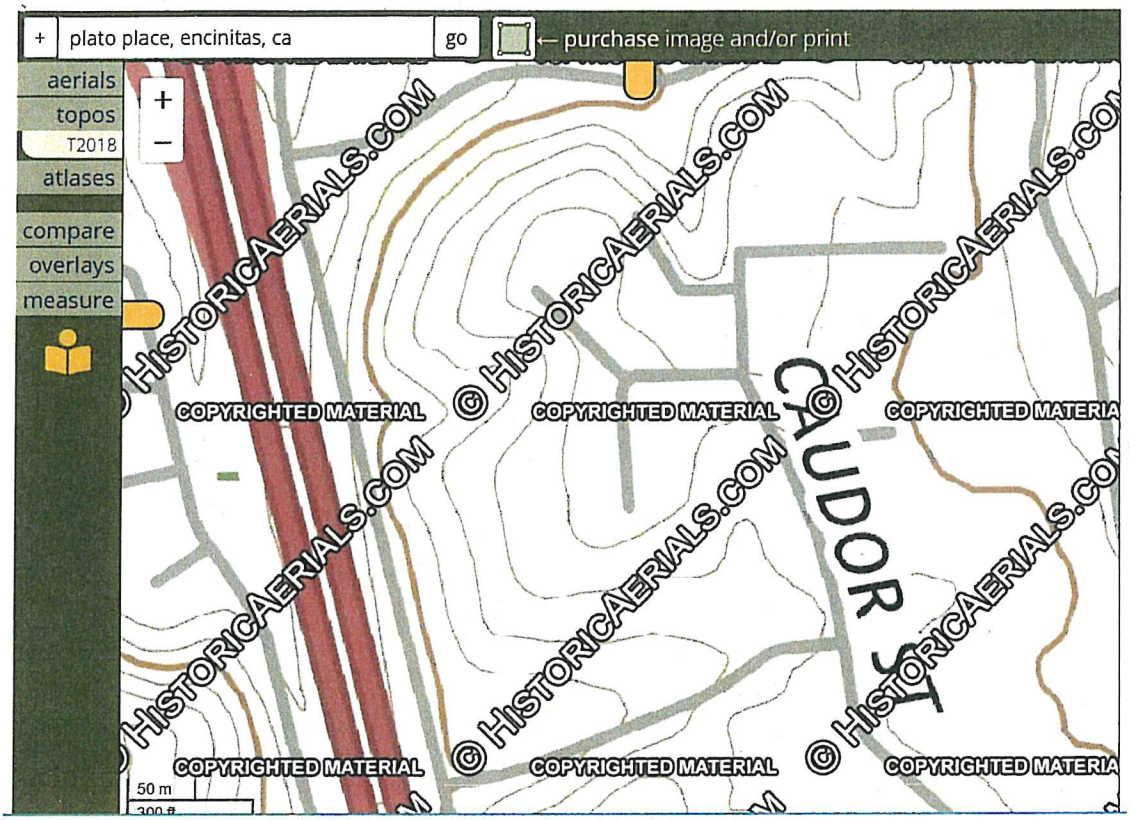
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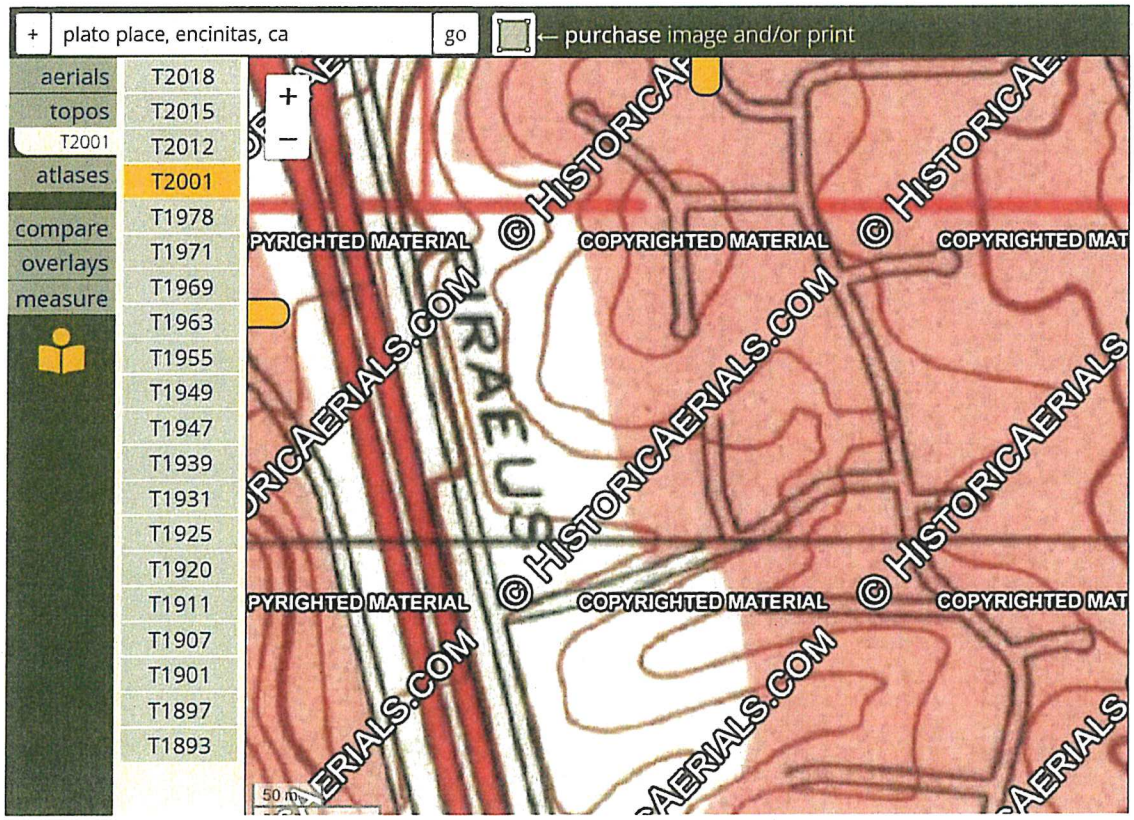
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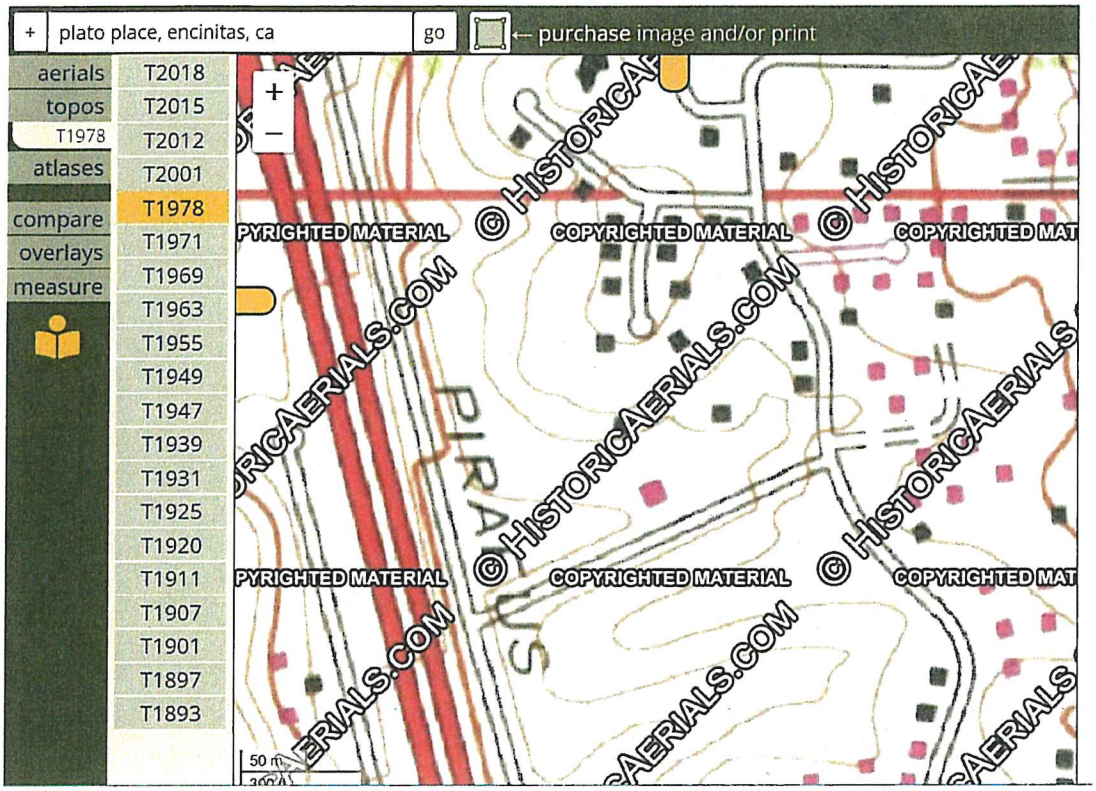
TOPO Map 2018



TOPO Map 2001



TOPO Map 1978



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Appendices D

DRAFT

North Coast Corridor Public Works Plan/Transportation and Resource Enhancement Program Mitigation Site Assessment for the La Costa Preservation Parcel

Prepared by:

DUDEK

Prepared for:

Caltrans

SANDAG

AUGUST 2012

Printed on 30% post-consumer recycled material.

Site Location: The La Costa preservation parcel is located east of Interstate 5 (I-5), south of La Costa Avenue and east of Piraeus Street (see Figure 1). The parcel is situated across La Costa Avenue from Batiquitos Lagoon.

Latitude/Longitude: 33.0878/-117.2896

APN: 216-110-31 (19.75 acres)

Ownership: Caltrans has purchased this parcel

Correspondence with Resource Agencies: June 2008, Resource agencies receive request from Caltrans and SANDAG to approve site for acquisition; Letters acknowledging consideration of site for mitigation received from CCC March 2009, CDFG July 2008, USFWS August 2008, and NMFS July 2008.

MITIGATION GOAL

The San Diego Association of Governments (SANDAG) and California Department of Transportation (Caltrans) propose to mitigate impacts to sensitive upland habitats associated with the North Coast Corridor Public Works Plan/Transportation and Resource Enhancement Program (PWP/TREP) of multi modal transportation projects by preserving and managing existing high quality uplands habitat on the La Costa preservation parcel located along the south shore of Batiquitos Lagoon (see Figure 2). The goal of the preservation acquisition and mitigation program is to remove development potential of the parcel, enhance disturbed Coastal Sage Scrub (CSS) areas through rehabilitation efforts, preserve existing high quality upland habitat through site protection (easements and fence), and manage the parcel in perpetuity.

The proposed preservation and management of the native uplands vegetation communities will preserve:

- Occupied California gnatcatcher habitat by removing extant habitat from the threat of development;
- Chaparral and coastal sage scrub habitat and ecosystem continuity through connectivity between coastal wetlands and native uplands;
- Sensitive plants and cultural resources onsite;
- Wildlife connectivity with Batiquitos Lagoon and surrounding native open space that connects to Encinitas Creek and other drainages into the lagoon and out to the Pacific coastline; and,
- Natural topography adjacent to Batiquitos Lagoon that is highly visible from the I-5 corridor and significantly contributes to scenic quality and landscape character.

The proposed rehabilitation of the disturbed CSS communities will involve:

- The removal of nonnative species from areas mapped as disturbed CSS
- Replanting and/or hydroseeding disturbed areas with appropriate native species.

EXISTING CONDITIONS

Ecological Context

The parcel was identified as consisting of high to very high habitat values in the Multiple Habitat Conservation Plan (MHCP) for coastal northern San Diego County, and is located within a Biological Core Linkage area. The preservation area abuts the Carlsbad HCP core area #8 that comprises Batiquitos Lagoon. The lagoon is owned and managed by the California Department of Fish and Game. California Natural Diversity Database (CNDDB) mapped resources for these adjacent uplands to Batiquitos Lagoon includes a variety of nearby data points (Figure 3). Special status plant species identified onsite include California adolphia (*Adolphia californica*) and wart stemmed ceanothus (*Ceanothus verrucosus)*, while sea dahlia (*Coreopsis maritima*) and Del Mar sand aster (*Lessingia filaginifolia var. linifolia*) have been identified nearby (Figure 4). Numerous special status wildlife species are also identified within and adjacent to Batiquitos Lagoon (Figure 5), and critical habitat for the California gnatcatcher is designated on the entirety of the parcel. Adjacent upland areas, including the subject parcels, are utilized by California gnatcatcher.

Other open space lands are present south and east of the preservation parcel. These open space areas are located on slopes and canyons that topographically form the southern boundary of Batiquitos Lagoon. These slopes provide linkages to inland areas associated with Encinitas Creek and other drainages that flow into the lagoon and ultimately connect to the Pacific.

Soils

The acquired parcel consists of steep north and northwest facing slopes. Three soil types are present on the parcel including Carlsbad gravelly loamy sand at the base of the slope, Gaviota fine sandy loam on the steepest slopes, and Corralitos loamy sand on the mesa top (NRCS, Web Soil Survey).

Vegetation

Diegan coastal sage scrub, chaparral (both southern maritime chaparral and chamise chaparral), and disturbed habitat communities were identified on the parcel. The parcel has good habitat with excellent habitat found on the top of the mesa. It provides habitat for sensitive plants as well as the threatened California gnatcatcher and supports rare plants and communities. There is little

weed invasion in most places, and minimal effort would be needed to fence these parcel to control access and preserve the habitat in place.

A general description of each community and a description of its occurrence within the parcel are provided below.

Diegan Coastal Sage Scrub. This vegetation type was once widespread in coastal southern California, and now it occurs in patches from Los Angeles into Baja California. This plant community on the parcel totals about 11.75 acres and is composed of a variety of low, soft aromatic shrubs dominated by drought-deciduous species such as California sagebrush (*Artemisia californica*), flat-topped buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*), white sage (*Salvia apiana*), and black sage (*Salvia mellifera*). Coastal sage scrub (CSS) on site is dominated by California sagebrush and buckwheat with prickly pear (*Opuntia littoralis*), laurel sumac (*Malosma laurina*), lemonade berry (*Rhus integrifolia*), black sage, desert elderberry (*Sambucus mexicana*), California sunflower (*Encelia californica*), and golden yarrow (*Eriophyllum confertifolium* var. *confertifolium*) (Figure 2). California adolphia (*Adolphia californica*), a sensitive plant, occurs in this community on site. The top of the mesa is relatively densely vegetated except along walking trails. The top of the slope on the northern end of the mesa has patches that are more disturbed with nonnative grasses and weedy annuals including ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis* var. *rubens*), mustard (*Brassica* sp.), and ice plant (*Carpobrotus edulis*).

The base of the canyon on the northeastern end of the parcel consists of approximately 3.65 acres of disturbed coastal sage scrub dominated by coyote bush (*Baccharis pilularis*), California sunflower, and black sage with large patches of fennel (*Foeniculum vulgare*).

Chaparral. Two types of chaparral are found on site including chamise chaparral and southern maritime chaparral. There is approximately 3.38 acres of chaparral on site. Chamise chaparral is dominated by chamise (*Adenostoma fasciculatum*) in dense almost monotypic stands. This is a fire-adapted community that is found primarily on east-facing slopes. Chamise chaparral on site occurs in small patches on north-facing slopes of the parcel.

Southern maritime chaparral occurs on the upper north-facing slopes at the western end of the parcel and on the north facing slopes of the canyon. This community is dominated by wart-stemmed ceanothus (*Ceanothus verrucosus)* with chamise, toyon (*Heteromeles arbutifolia*), laurel sumac, fuchsia-flowered gooseberry (*Ribes speciosum*), mission manzanita (*Xylococcus bicolor*), and Mohave yucca (*Yucca schidigera*). Elements of Diegan coastal sage scrub are interspersed within this community.

A summary of existing habitat types and acreage on the La Costa parcel is provided in Table 1, below.

Table 1
Preservation Acreage by Habitat Type

Preserved Habitat Type	Mitigation Acreage
Coastal Sage Scrub	11.75 ac.
Disturbed Coastal Sage Scrub	3.65 ac.
Chaparral	3.38 ac.
Disturbed Habitat (Coastal Sage Scrub Enhancement)	0.97 ac.
Total	19.75 ac.

Wildlife

One pair of threatened coastal California gnatcatcher (*Poliptila californica californica*) was observed at the top of the parcel (see Figures 2 and 5). Other bird species that were observed on site include California towhee (*Pipilo crissalis*), song sparrow (*Melospiza melodia*), Anna's hummingbird (*Calypte anna*), bushtit (*Psaltriparus minimus*), and California thrasher (*Toxostoma redivivum*). Other wildlife species observed on site include coyote (*Canis latrans*), western fence lizard (*Sceloporus occidentalis*), desert cottontail (*Sylvilagus audubonii*), and California ground squirrel (*Spermophilus beecheyi*).

Prior and Current Land Use

The parcel is adjacent to La Costa Avenue on the north. Piraeus Street is located to the west and Sky Loft Road to the south. La Costa Avenue is a four-lane road with high traffic speeds and no roadside parking. Access from La Costa Avenue is extremely limited and roadside parking is dangerous. Limited parking is available on the shoulder of Piraeus Street adjacent to the south at the intersection with La Costa Avenue. Roadside parking along Sky Loft Road is limited by an asphalt curb that runs the length of this road up to the existing residential development.

Some informal hiking trails are present on the parcel. These trails appear to be used to access high points that provide vistas of Batiquitos Lagoon and the Pacific Ocean. Due to the lack of parking, these trails are likely used only by local residents.

Existing Utilities/Infrastructure/Easements

There are no known utilities, infrastructure, or easements located on the parcel that could affect implementation of the proposed mitigation/preservation opportunity (see Figure 6).

MITIGATION PROGRAM

The proposed mitigation for the entirety of the site will be for protected open space, habitat preservation and management. The goal of the preservation acquisition is to remove development potential of the parcel, preserve existing upland habitat through site protection (easements and fence), and ensure management in perpetuity.

Rehabilitation

Areas that are mapped as disturbed CSS will be rehabilitated through the removal of nonnative species and the replanting and/or seeding with an appropriate native CSS plant palette.

Target Plant Communities

The design and plant palette used to rehabilitate the disturbed CSS areas will include native species found in adjacent native areas. To provide appropriate native species diversity that is comparable to adjacent high quality habitat, additional field surveys of the La Costa Parcel, detailing annual and perennial species will need to occur and the recorded species added to the plant palette in the NOID submittal, as appropriate.

SITE PROTECTION

Caltrans will deed the preservation parcel to a local land management agency that is acceptable to the resource agencies. A management endowment account will be established once the property acquisition is complete. The endowment funds will be used by the management entity to monitor and maintain site access restrictions and habitat quality.

Site restrictions might be required to fully protect existing biological resources. However, some controlled access opportunity for local residents to access vistas should be considered to minimize vandalism on the preserved land. Any fence installed will be maintained as part of the preserved land management.

LONG TERM MANAGEMENT

A Habitat Management Plan (HMP) will be prepared to define the long term management responsibilities to maintain the functions and services of the preserved biological resources. A resource agency-approved management entity will assume long term management responsibilities. Funds for long term management will be provided by SANDAG/Caltrans and placed into a non-wasting endowment. Endowment funds will be established using a Property Assessment Report that is based on the approved HMP.

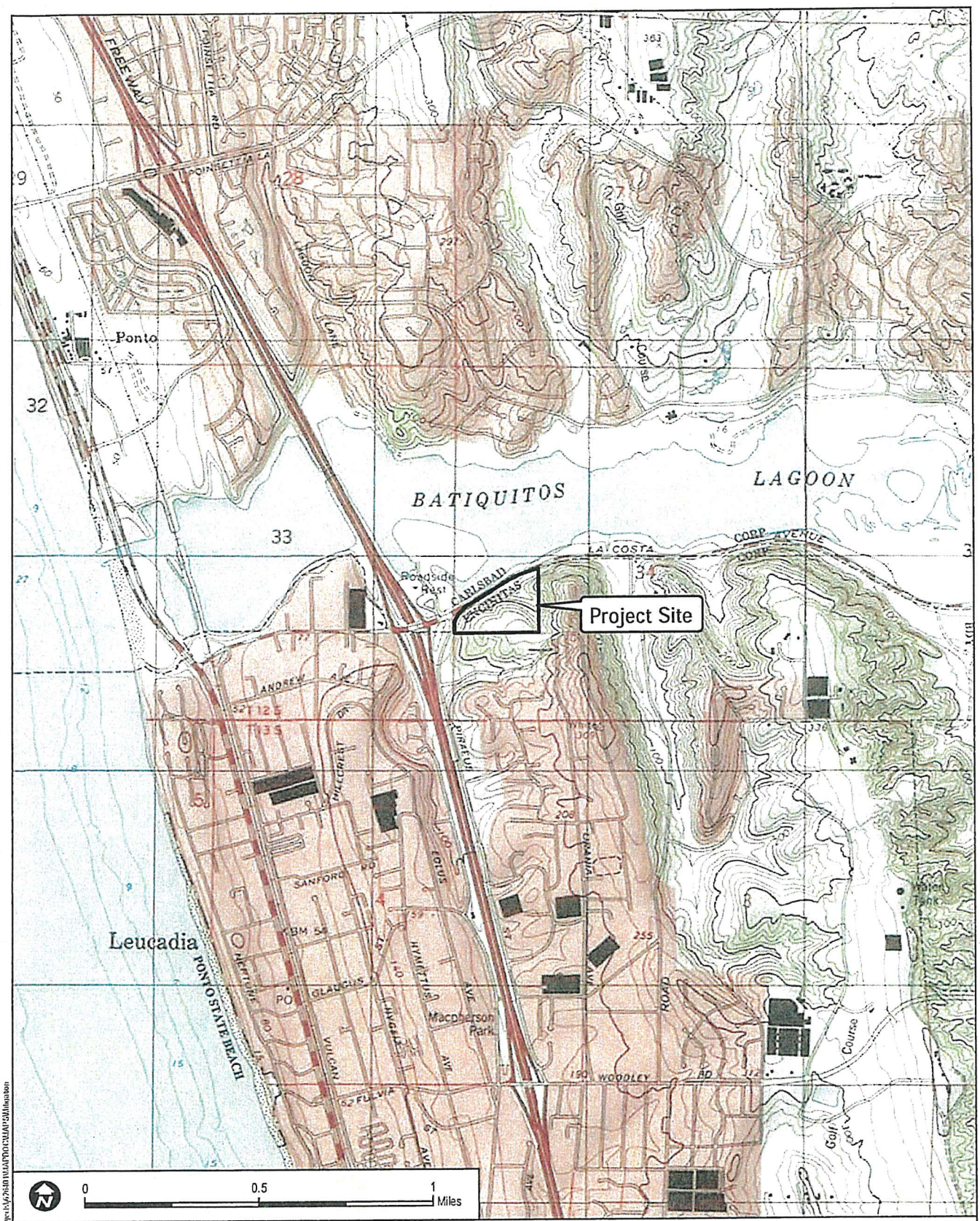
Anticipated potential management issues related to this parcel include site access control, weed control, trash accumulation control.

ADDITIONAL STUDIES

Rehabilitation of disturbed CSS areas may occur as a portion of the proposed mitigation program for the La Costa Parcel. Additional field surveys of the La Costa Parcel will need to occur to determine appropriate plant palettes to be used in the rehabilitation efforts onsite.

REQUIRED PERMITS

No permits are anticipated to be required to implement site protection and management actions.



DUDEK

6264-06

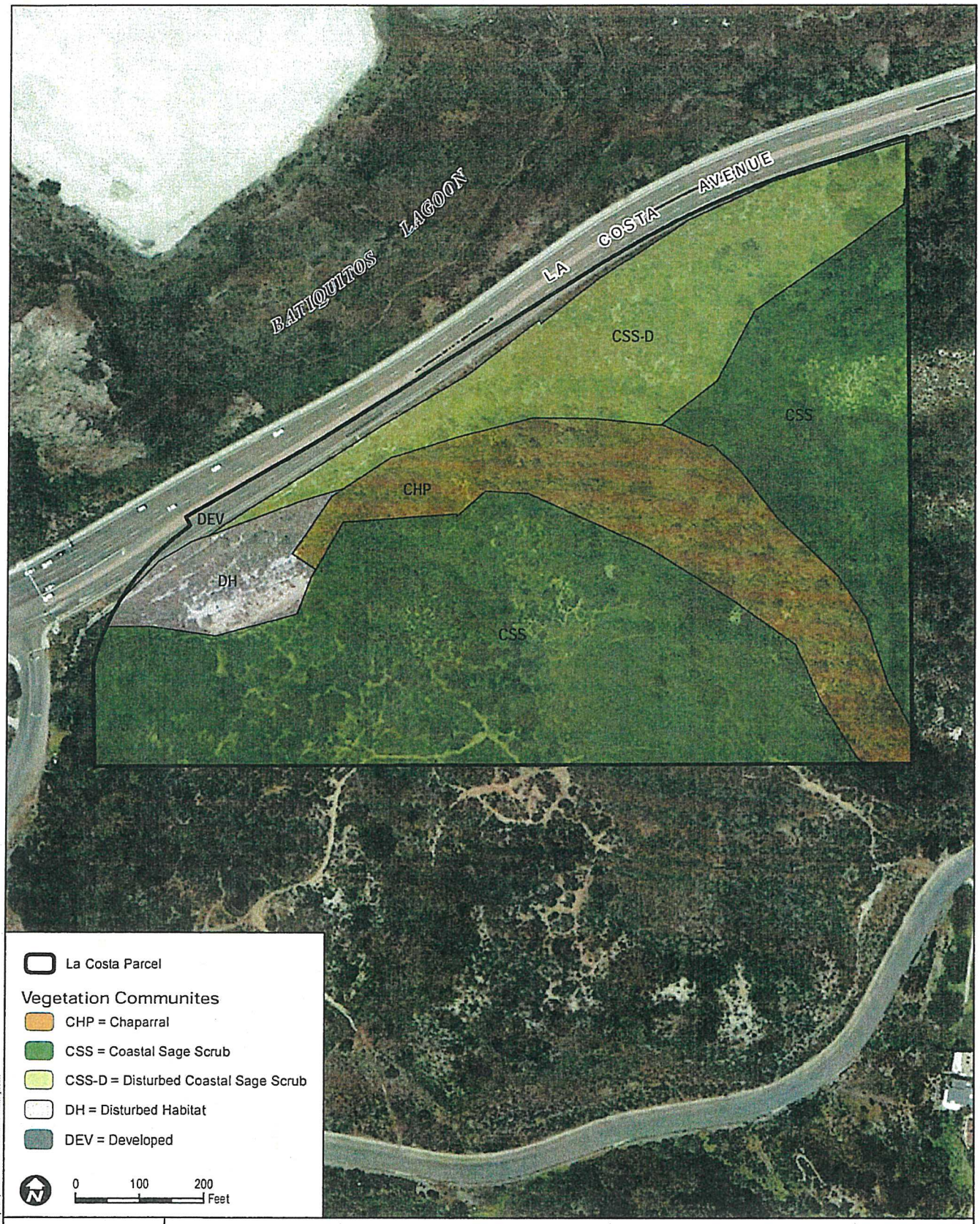
NOVEMBER 2011

SOURCE: USGS Topo 7.5 Minute Series - Encinitas Quadrangle

FIGURE 1

Project Vicinity

La Costa Preservation Parcel



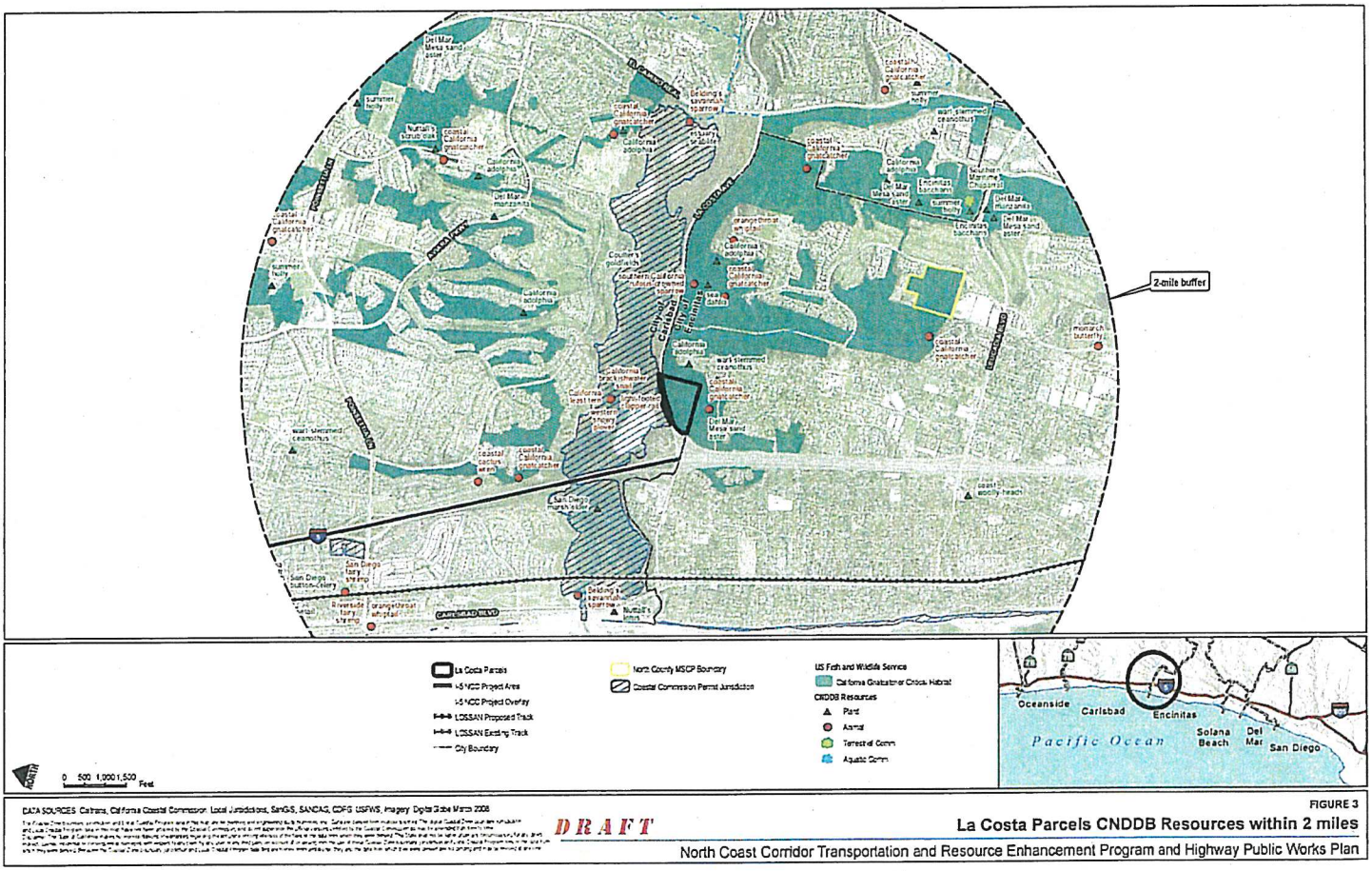
DUDEK

6264-06
NOVEMBER 2011

VEGETATION SOURCE: Caltrans 2011
AERIAL SOURCE: DigitalGlobe 2008

FIGURE 2
Existing Vegetation

La Costa Preservation Parcel



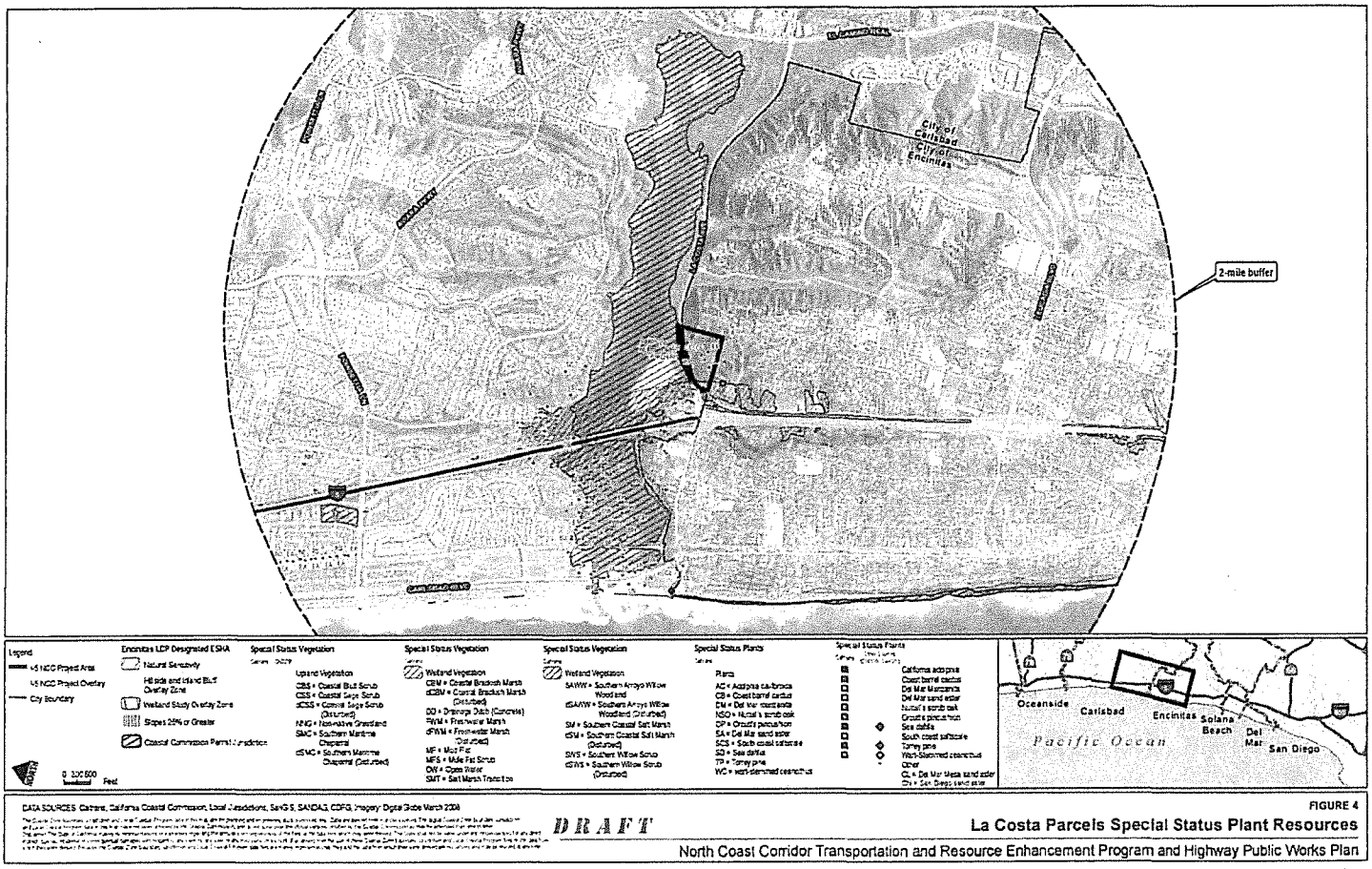
DATA SOURCES: Caltrans, California Coastal Commission, Local Jurisdictions, SanGIS, SANDAG, CDFG, USFWS, Imagery: Digital Globe March 2008

DRAFT

FIGURE 3

La Costa Parcels CNDDB Resources within 2 miles

North Coast Corridor Transportation and Resource Enhancement Program and Highway Public Works Plan



DATA SOURCES: Caltrans, California Coastal Commission, Local Jurisdictions, SanGIS, SANDAG, CDFG, Imagery: Digital Globe March 2008

DRAFT

FIGURE 4

La Costa Parcels Special Status Plant Resources

North Coast Corridor Transportation and Resource Enhancement Program and Highway Public Works Plan

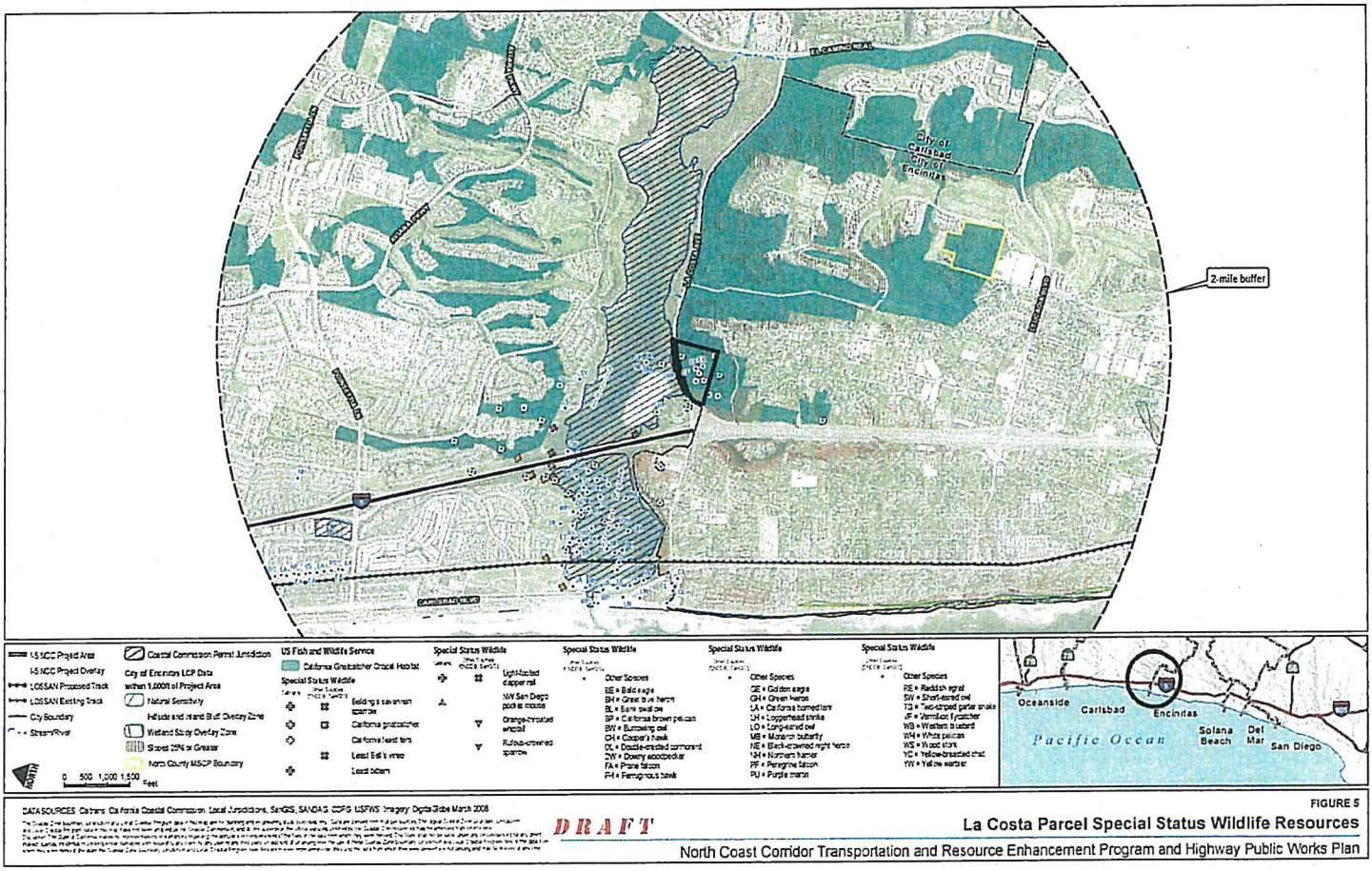
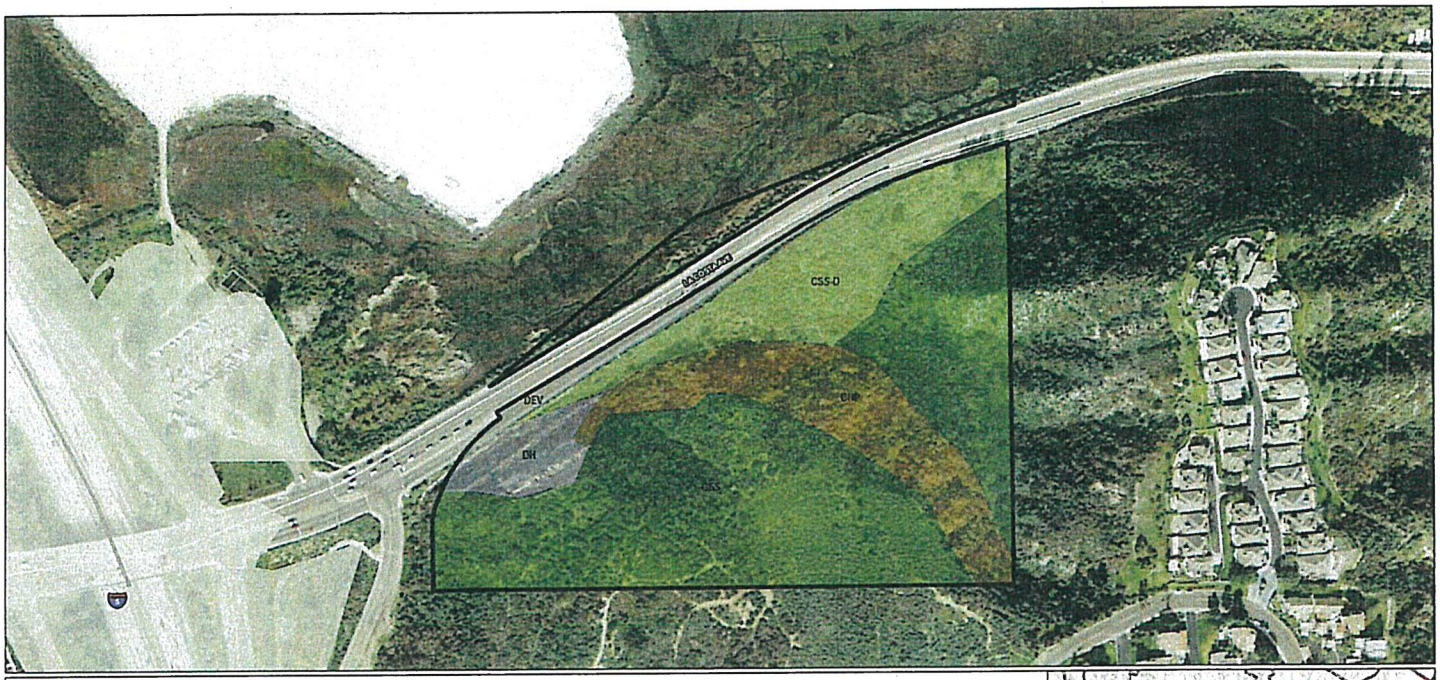


FIGURE 5

La Costa Parcel Special Status Wildlife Resources

North Coast Corridor Transportation and Resource Enhancement Program and Highway Public Works Plan

DRAFT



DATA SOURCES: Caltrans, California Coastal Commission, Local Jurisdictions, SanGIS, SANDAG, CDFG, USFWS, Imagery: Digital Globe March 2006

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FIGURE 6

La Costa Parcels Constraints Map

North Coast Corridor Transportation and Resource Enhancement Program and Highway Public Works Plan

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Appendices E-1

Appendix C: Adequate Sites Analysis

Appendix C contains the site inventory and analysis for the sites proposed to meet the City of Encinitas' Regional Housing Needs Assessment (RHNA) allocation for the 2013-2021 planning period. The sites are organized to show how the City can meet the need for the four RHNA income categories (Very Low, Low, Moderate, and Above Moderate). That information is summarized in **Table C-1** below.

Table C-1: Adequacy of Sites Inventory

	Extremely Low/Very Low Income	Low Income	Moderate Income	Above Moderate Income	Total
RHNA (2013-2021)	587	446	413	907	2,353
RHNA Carryover (2003-2013)	253		–	–	253
Units Built/Approved	33	33	4	892	962
Accessory Unit Production	79		54	–	133
Remaining RHNA	1,141		355	15	1,511
Candidate Site Unit Yield	1,504		523	177	2,204
Total Capacity Over RHNA Need	**363**		**168**	**162**	**693**

All sites were reviewed in order to ensure compliance with state law. The sites chosen meet that criteria and show the highest potential to redevelop for residential use within the planning period.

1.1 Availability of Water, Sewer, and Dry Utilities

The City of Encinitas has evaluated the availability of infrastructure from a Citywide and site-specific standpoint. In determining the feasibility of sites to accommodate the City's RHNA needs, infrastructure provision was a determining factor. As described in Appendix B under 'Environmental Constraints and Infrastructure,' the City has adequate water and sewer capacity to accommodate the planned increase in housing development. The City has reviewed the sites designated for development and has determined that each of the sites designated within each income category is adjacent to a public street that contains distribution facilities for water, sewer, and dry utilities (including cable and telephone). The availability and location of water, sewer and dry utilities and their distribution facilities do not pose a constraint to development.

C.1 Very Low and Low-Income Candidate Sites Inventory

SITES INVENTORY LIST

Very Low/Low Income RHNA Candidate Sites

Vacant

SITE 02: CANNON PROPERTY (PIRAEUS)
SITE 05: ENCINITAS BLVD & QUAIL GARDENS SITES
SITE 06a: ARMSTRONG PARCELS
SITE 08a: RANCHO SANTA FE PARCELS (GAFFNEY/GOODSEN)
SITE AD1: SAGE CANYON
SITE AD2a: BALDWIN & SONS PROPERTIES
SITE AD2B: BALDWIN & SONS PROPERTIES

Non-vacant

SITE 01: GREEK CHURCH PARCEL
SITE 06b: ARMSTRONG PARCELS
SITE 07: JACKEL PROPERTIES
SITE 08b: RANCHO SANTA FE PARCELS (GAFFNEY/GOODSEN)
SITE 09: ECHTER PROPERTY
SITE 12: SUNSHINE GARDENS PARCELS
SITE AD2c: BALDWIN & SONS PROPERTIES
SITE AD8: VULCAN & LA COSTA
SITE AD9: SEACOAST CHURCH
SITE AD11: MANCHESTER AVENUE WEST SITES
SITE AD14: HARRISON SITES
SITE AD31: MEYER PROPOSAL

Table C-2: Net Acreage and Unit Yield Per Site				
Site Number	**Site Name**	**Gross Acreage**	**Net Acreage**	**Unit Yield (DU)**
***Vacant*[1]**				
02	Cannon Property (Piraeus)	6.93	6.93	173
05	Encinitas Blvd & Quail Gardens Sites	4.91	4.78	119
06a	Armstrong Parcels	1.92	1.06	26
08a	Rancho Santa Fe Parcels (Gaffney/Goodsen)	1.75	1.45	36
AD1	Sage Canyon	5.23	2.40	60
AD2a	Baldwin & Sons Properties	3.14	2.98	74
AD2b	Baldwin & Sons Properties	6.66	4.86	121
Subtotal		**30.54**	**24.46**	**609**
Non-vacant				
01	Greek Church Parcel	2.50	2.00	50
06b	Armstrong Parcels	1.32	1.16	29
07	Jackel Properties	2.97	2.97	33[2]
08b	Rancho Santa Fe Parcels (Gaffney/Goodsen)	4.88	4.57	113
09	Echter Property	21.49	9.85	246
12	Sunshine Gardens Parcels	3.39	3.39	84
AD2c	Baldwin & Sons Properties	1.79	1.21	30
AD8	Vulcan & La Costa	2.00	2.00	50
AD9	Seacoast Church	4.45	1.41	35
AD11	Manchester Avenue West Sites	1.67	1.67	41
AD14	Harrison Sites	1.91	1.91	21[2]
AD31	Meyer Proposal	6.62	6.52	163
Subtotal		54.99	38.66	895
Total		**85.53**	**63.12**	**1,504**

Notes:

1. HCD has stated to the City that vacant parcels must be entirely unimproved and separately subdivided parcels, and Table 2-6 reflects this direction. However, the City believes that the following sites should also be considered to be vacant: Site 01 (50 units) consists entirely of unimproved land, but has not been subdivided from the improved part of the site. Site 07 (33 units) consists of unimproved land and an abandoned, vacant structure. Site AD2c (30 units) has utility lines on a portion of the site which have been deducted from net acreage, but the parcel is otherwise entirely unimproved, and the utility lines would not prevent an owner from developing the site for residential units. In the City's view, these sites should be considered vacant, adding 118 additional units to the Unit Yield on vacant property, for a sub-total of 727 units on vacant sites, far above 50% of the unmet RHNA need for the planning period.
2. Unit Yield anticipates that this site will be developed for mixed-use.

Table C-3: Percentage of VL/L Sites by Site Type		
Site Type	**# of Units**	**% of Remaining Lower Income RHNA Allocation (1,141)**
Vacant	609	53%
Non-vacant	895	78%
Total	1,504	132%
RHNA Allocation (including carryover) for VL/L Income Categories: 1,286 Units Constructed and Estimated ADUs: 145 **Remaining RHNA Allocation for VL/L Income Categories: 1,141**		

Table C-4: Net Acreage and Unit Yield on Residentially Zoned Sites				
Site Number	**Site Name**	**Zoning Designation**	**Net Acreage**	**Unit Yield (DU)**
Vacant				
02	Cannon Property (Piraeus)	RR2	6.93	173
08a	Rancho Santa Fe Sites (Gaffney/Goodsen)	RR2	1.45	36
AD1	Sage Canyon	R3	2.40	60
AD2a	Baldwin & Sons Properties	R3	2.98	74
AD2b	Baldwin & Sons Properties	R5	4.86	121
Subtotal			**18.62**	**464**
Non-vacant				
01	Greek Church Parcel	RR1	2.00	50
08b	Rancho Santa Fe Parcels (Gaffney/Goodsen)	RR2	4.57	113
AD2c	Baldwin & Sons Properties	R5	1.21	30
AD8	Vulcan & La Costa	R3 (N101SP)	2.00	50
AD9	Seacoast Church	R11	1.41	35
AD11	Manchester Avenue West Sites	R11	1.67	41
AD31	Meyer Proposal	R3/R5	6.52	163
Subtotal			**19.38**	**482**
Total			**38.00**	**946**

Notes:

1. Unit Yield anticipates that this site will be developed for mixed-use.

NET ACREAGE CALCULATIONS

Very Low/Low Income RHNA Candidate Sites

CALCULATION METHOD

The net acreage for each candidate site was calculated based on the gross acreage (for all parcels included in the site) minus the acreage deemed partially or completely undevelopable based on existing steep slopes and known environmental constraints. Environmental constraints were determined based on known site information for the parcels where that information was available and other sources, such as the City's Local Coastal Program and site observations. **The site capacity was determined by applying a 25 du/ac standard to the net acreage for each candidate site.**

The following calculation methods apply to slope constraints (per the City of Encinitas Municipal Code for purposes of calculating density):

- All land in 0-25% slope of natural grade is allowed to use 100% of acreage.
- All land in 25-40% slope of natural grade is allowed to use 50% of acreage.
- All land in 40% + slope of natural grade is allowed to use 0% of acreage.

All acreages shown on the following sheets include any applicable acreage deductions from the gross acreage. The informational sheets include a note either stating that there were no known topographic or environmental constraints or detailing the acreage removed from the gross acreage and the reasoning.

WATER AND SEWER AVAILABILITY

As discussed in Appendix B, each site has been evaluated to ensure there is adequate access to water and sewer connections. Each site is situated adjacent to a public street that has the appropriate water and sewer mains and other infrastructure to service the candidate site.

DEFINITIONS

Vacant Parcel: HCD has stated to the City that vacant parcels must be unimproved. Sites containing abandoned, non-habitable, or vacant structures or powerlines are considered to be non-vacant by HCD unless the owner has applied for, and been issued, a demolition permit. Similarly, vacant portions of parcels designated for housing development are considered by HCD to be non-vacant unless the vacant portions of the site have been subdivided from the non-vacant portions. The designations of vacant and non-vacant parcels in this Appendix C conform to the direction provided to the City by HCD.[1]

Non-Vacant Parcel: Non-vacant parcels are underutilized or developed parcels and contain existing development or established uses. These may include temporary structures associated with an active use (i.e., agricultural greenhouses) or other uses currently operating on the site.

Mixed-use Site Capacity: For mixed-use sites within the Encinitas North 101 and Downtown Specific Plan areas, capacity was calculated per Section 3.1.2.D of theSpecific Plan, which states a maximum lot utilization of 90% and that residential uses shall not exceed 50 percent of the gross building floor area for the development site. The capacity of other mixed-use sites was determined based on the area available for housing development, largely determined by the owner.

Site Capacity: All parcels shown with fewer than 16 units are in common ownership with one or more adjacent parcels or are likely to be consolidated with one or more adjacent parcels based on owner representations. In these cases, the parcels are considered one site that can accommodate at least 16 units.

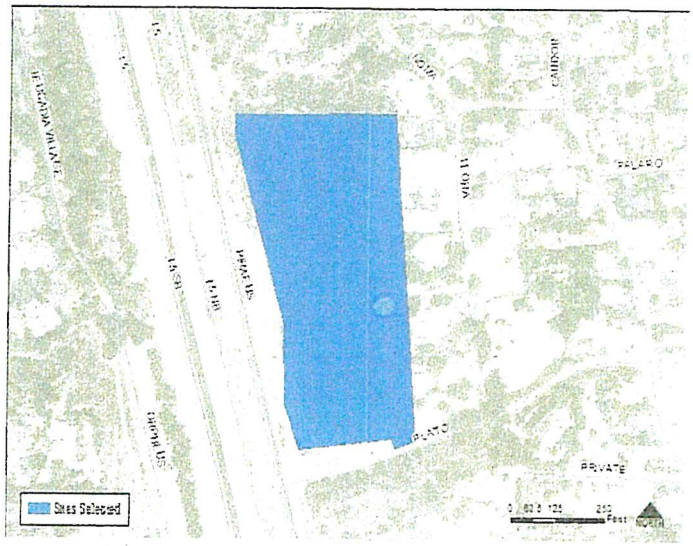
Owner-Interest: Sites with "owner interest" listed in the description indicate that the City has been directly contacted by the property owner and received an acknowledgement of their interest in writing, either by email or by a formal letter.

NOTES:

[1] The City believes that vacant portions of parcels designated for housing development and sites containing only abandoned, non-habitable, or vacant structures or powerlines should also be considered to be 'vacant' because they contain no existing use that prevents an owner from developing the site.

CANNON PROPERTY (PIRAEUS)

SITE NUMBER 02



SITE DESCRIPTION

This site is a vacant property at the corner of Piraeus Street and Plato Place, both of which are 2-lane local streets. The southern portion of the site is flat due to previous grading, with the majority of the rest of the site sloping up towards a flat pad on the northeast corner. The owner has expressed interest in developing this site for residential uses.

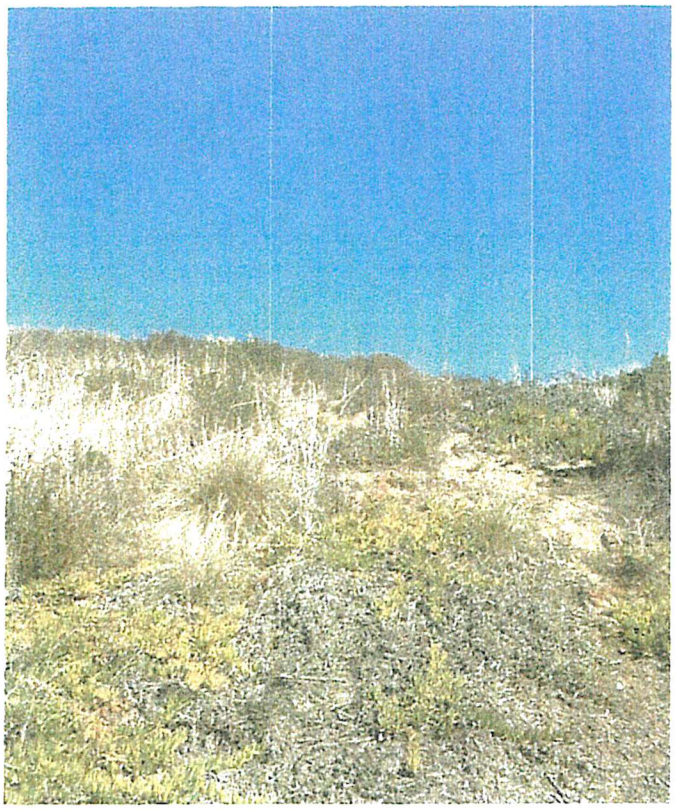
SITE FEATURES

- Vacant, natural landscape
- Partially graded
- Some mature trees/vegetation on the northen portion of the site
- Slight topography change

PARCEL SIZE CALCULATION

There are no known physical constraints to development due to steep slopes or environmentally sensitive areas. Therefore, the parcel's net acreage equals the full gross acreage.

APN(S) (Ownership)	2541440100 (CANNON MARIA T)	**PARCEL SIZE (AC) (GROSS/NET)**	6.93/6.93
SITE STATUS	Vacant	**MAXIMUM DENSITY**	30 DU/AC
ADDRESS(ES)	Piraeus Street	**MINIMUM DENSITY**	25 DU/AC
NEIGHBORHOOD	Leucadia	**UNIT CAPACITY**	173
GENERAL PLAN LAND USE	Rural Residential 1.01-2.00 (RR2)	**CONSTRAINTS**	• Slight Topography (less than 25% slope, so no deductions)
ZONING	RR2		







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Appendices E-2

From: Alan Deremo
To: Nick Koutoufidis
Cc: encinitascommunitycollective@gmail.com
Subject: Piraeus Point
Date: Tuesday, June 28, 2022 12:08:30 PM

[NOTICE: Caution: External Email]

Mr. Koutoufidis,
I am a resident of the neighborhood adjacent to the proposed Piraeus Point development, specifically on Caudor St. just south of Plato Pl.

I attended the recent community meeting presented by the reps from Lennar, and it raised some concerns for me about the viability of this project as proposed, mainly in the following areas:

Parking:
I don't see how the proposed number of parking spaces within the development is anywhere close to being adequate. As there is almost no legal street parking nearby I do not see where any overflow would go. A solution might be to widen Piraeus and create street parking, but it seems like that would be costly - and potentially dangerous given the typical speed of vehicles that street.

Traffic flow:
I thought the traffic study presented at the meeting was laughable - there was clearly no consideration of the increased traffic that occurs twice daily when school is in session at Capri Elementary, even though the reps insisted there was. With increased population in the area I can't imagine the intersections at Piraeus/La Costa Ave., Saxony/Leucadia Blvd. and Urania/Leucadia Blvd. not being exponentially more burdened, especially at 8am. The Lennar reps suggested that drivers would use La Costa to exit the area - that would seem logical, but you can't exactly force people to use that route, particularly if they are headed toward inland Encinitas or other destinations where Leucadia Blvd. is a much more direct route.

One solution might be to reopen an I-5 south on ramp at Piraeus just N of Leucadia Blvd. I understand that wouldn't be an action the city could take, but it would definitely help.

My greater concern is egress in case of a fire or other emergency. With the above mentioned intersections being the only exits from the neighborhood, the increased population from the proposed development would create an additional burden on those exits, making a mass exodus all but impossible.

Pedestrian safety:
At present Plato Pl. is not very safe for pedestrians, being narrow with a somewhat blind turn and lacking sidewalks. If any kids from the proposed development walked to Capri. Elementary via Plato they would be greatly at risk.

Overall concept:
I understand the parcel in question is already rezoned for high density housing, but it is obvious that a development of this type is utterly out of place amid the semi-rural character of the neighborhood, not to mention the practical considerations that have to be addressed. Several attendees at the meeting made comments along those lines, and the Lennar reps responded with something like "Well, if you don't accept our plan someone else will come along and build a development that is more dense and not nearly as nice or compatible with the neighborhood as ours." That seemed to me an insensitive and cynical response when the purpose of the meeting was community outreach.

Thank you for your time,
Alan Deremo

From: Bill Wickett
To: Nick Koutoufidis
Cc: Encinitascommunitycollective@gmail.com
Subject: Piraeus Point
Date: Saturday, June 25, 2022 9:44:44 AM

[**NOTICE:** Caution: External Email]

Bill and Maryann Wickett
1584 Caudor Street
Encinitas, CA 92024

To:
Mr. Nick Koutoufidis
Senior Planner
City of Encinitas

Increasing the housing density to maximize profits for the Piraeus Point project is a terrible idea, and inconsistent with previous planning by the City of Encinitas.

In the 1970, the decision was made to develop this part of Leucadia for a maximum of two houses per acre. That course of action set the criteria for the local infrastructure. Electrical load and other utilities were designed around this population density. Narrow streets were all that were needed to carry the traffic of a low density area. Early on, sidewalks were unnecessary as car trips were low, and school busses carried children to Capri Elementary School. For about fifty years, the planning department made their calculations and plans based on this lower density. Almost all lots have now been developed into houses, and these previous plans have worked out well. We have enough water delivery, the electric delivery system is adequate, and despite the traffic congestion around Capri, the streets can handle the needs of the neighborhood.

However, we are close to the maximum sustainable housing level. A good indication of that is the traffic congestion that plagues Caudor and Capri streets during the morning drop-off and afternoon pick-up for the elementary school. Further problems were created when the south end of Piraeus was blocked by the Leucadia Boulevard freeway onramp.

But now, the city is choosing to disregard years of planning and development, to allow high density housing. You can't just approve this project without upgrading existing infrastructure. Water, electrical and sewer must all be expanded. That's a costly undertaking, guaranteed to cause an unpopular disruption to those of us who live in the neighborhood.

But the biggest problem you face will clearly be traffic congestion, and if this high density windfall is approved, no good options exist. Long term, streets will need to be widened from Piraeus to Leucadia. That includes the area around Capri Elementary School, where these families will attend classes. Can the city afford a project of this size? How about the inconvenience to all who live along those streets? That's a lot of people who will be disappointed at the lack of foresight by the city and the Planning Department. Plan B might be to just do nothing, but the gridlock will be VERY

unpopular.

What's the point? Is this high density housing worth the expenses it will produce? The city gets nothing from the switch to high density. Instead, the costs will be huge. I urge you to return to two units per acre and save us all a lot of grief.

Sincerely,
Bill Wickett

From: Brian
To: Nick Koutoufidis
Cc: Encinitas community collective
Subject: Piraeus Point Proposed Project
Date: Friday, June 24, 2022 3:07:25 PM

[**NOTICE:** Caution: External Email]

Hello Nick. As a resident of Leucadia, I have several concerns regarding the proposed project at Piraeus Point. I am thankful for the oversight of you and or your committee and hopeful that when time permits these concerns could be acknowledged and addressed.

Thank you in advance for reading my message and for your thoughtful consideration.

Fire

- Has the city studied or requested a study of the traffic pattern likely to occur in the event of a fire?
- Has this study taken into consideration traffic needing to go from Piraeus Point to Capri to pick up school children?
- With the increase of residents, is the city confident that existing residents will be afforded safe evacuation in the event of a fire?

School

- Capri is near capacity. Where is the city proposing residents of Piraeus Point send their kids to middle school?
- Has the city considered or proposed a new school to be built?
- If a proposed school is to be built what is the expected timing for new students and where would residents of Piraeus Point go in the meantime?
- Has the city proposed a solution that would provide schooling for the new residents of the several new projects including Piraeus Point, Fox Point, and others?

Safety for kids walk to school

- Does the city plan to install or require the builder to install sidewalks on Plato between Piraeus and Caudor?
- Is there a plan to address walk to school safely? Kids walking from Piraeus Point on Plato with no sidewalk would present a safety issue for both kids and cars.

Parking

- Has the city proposed a solution for visitors to Piraeus Point for parking? The builder indicates very few spots for visitors. With no parking on Piraeus, Plato or Sky Loft where is the city proposing people park?

Water

- Does the city have a proposal to address water shortage for the current residents already under restriction with the addition of 149 homes?
- Adding 149 homes would present a significant need for water impacting current residents. Has the city proposed a solution so current residents are not negatively impacted?

Utilities

- How does the city propose to handle needed improvements to utilities?
- Sewer?
- Drainage?
- Electrical?

Street lighting

- With the increased traffic flow is the city proposing a streetlight at the intersection of Plato

and Piraeus?
- How is the city addressing the increase in traffic at Piraeus and Plato to ensure safety for new residents and existing residents?

Traffic flow

- Has a study been done or requested studying the impact of increased traffic flow through the neighborhood streets as a result of there being no 5-south exit by way of going south on Piraeus?
- Has the city done or requested a study to see how many people access 5 south via La Costa? It appears that very few residents today go north on Piraeus to access 5 south via La Costa. At the June meeting the builder indicated that they expect residents of Piraeus Point to go this route to 5 south. This seems unlikely given that very few current residents go this route.
- Does the city have plans to open the 5 south going southbound on Piraeus?

Thank you, Nick.

Brian Howarth

From: Candice Shine
To: Nick Koutoufidis
Subject: Piraeus Point comments
Date: Friday, June 17, 2022 6:10:01 PM
Attachments: CPP.pdf

[**NOTICE:** Caution: External Email]

Per your signed letter dated May 20, 2022 - attached please find mine and my husband's comments as it relates to the Piraeus Point project.

Sincerely,

Candice Shine and Randy Venier

COMMENTS

Case Nos. MULTI-005100-2022; CDP-005101; DR-005102-2022; ER-005103-2022

Piraeus Point

1. **Do the documents and presentation clearly identify the scope of the project? (Yes or No)**

The additional 300 cars will severely impact all streets and intersections around the Piraeus Point Development (PPD) – Skyloft, Plato, Olympus, Normandy Rd and Piraeus. With no plans for stop signs or stop lights or improvements to Piraeus St., these additional vehicles will be at risk of safety for themselves and other commuters when entering and leaving the PPD. Piraeus St., also has a designated bicycle lane going both north and south and a portion of the street is designated sharrow putting the bicyclist at a greater risk for their safety.

2. **Do you have any other issues or concerns requiring further review? (Yes or No; If Yes, please explain)**

When there is an accident (weekly) on Interstate 5 north prior to La Costa off ramp, interstate drivers use Piraeus to get around the accident. The cars are lined up on Piraeus to the La Costa Ave traffic light to get back on 5 north. Most times the cars are blocking the intersections for residents to enter or leave their community.
Residents near and around the proposed PPD already deal with (not happily) the additional cars in the morning and afternoon for the Capri school drop off and pickup.

The streets in and around this proposed project can NOT handle the additional vehicles it will bring.

NAME (please print): CANDICE SHINE

ADDRESS: 952 MONTE MIRA DR

COMMENTS

Case Nos. MULTI-005158-2022; CDP-005161; DR-005160-2022; SUB-005159-2022
Pinesue Point

1. **Do the documents and presentation clearly identify the scope of the project? (Yes or (No))**

NO! The increased traffic and impacts are almost completely ignored!

2. **Do you have any other issues or concerns requiring further review? (Yes or No; if Yes, please explain)**

The environmental impacts to this endangered coastal scrub habitat are irreversable and unconscionable!

NAME (please print): Randy Venier

ADDRESS: 952 Monte Mira Dr.
Director, Environmental, Health & Safety
Bachem Americas

SAN DIEGO CA 920

21 JUN 2022 PM 5 L



RECEIVED
JUN 23 2022
CITY OF ENCINITAS

City of Encinitas ATTN: MR. KOUTOUFIDIS
Development Services Department
505 S. Vulcan Ave.
Encinitas, CA 92024

92024-369999



Ms. Charlene Buckalew
1720 Barbara Ln
Encinitas, CA 92024

City of Encinitas
Development Services Department
505 S. Vulcan Ave.
Encinitas, CA 92024

Re: Project Title	Pireaus Point
Project Applicant	Lennar Homes of California, LLC
Project Location	NE Corner of Pireaus St. and Plato Pl., Encinitas, CA 92024 County Assessor Parcel Nos. 254-144-01 and 216-110-35-00
Project Case Numbers	MULTI-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022; and SUB-5005391-2022

Dear Mr. Koutoufidis,

The proposed project does not fit in with the current community rural/residential character of the neighborhood. I expect this would change the entire life style for this neighborhood. The quality of life and livelihood.

The traffic issue is a major concern, I currently go north on Pireaus St. to go to work. I would need to add minimum 15 minutes per day each direction just to get to the freeway. There is no doubt adding a minimum of 300 cars to one small community and street will make getting to the light at La Costa Ave. a serious congestion issue each day. Then consider when there is an accident on the freeway and the highway patrol diverts everyone onto Pireaus St. to get around the accident.

The project does not have enough parking for even 300 vehicles and there is no parking on Pireaus St. or Plato Pl. So imagine how much the neighborhood will like having cars parked all over the streets. The situation that already happened when the city built a park on Olympus without parking. They ruined the neighborhood.

The neighborhood school from my understanding is already almost at capacity. How will they accommodate the new residents, potentially adding 150 kids just on a low number? Another issue is the children will walk to school up Plato Pl. No sidewalks to safely walk to school. So is the solution let's put those 150 cars on the road to take the children to school? Already congested side streets that cannot accommodate another 150 cars.

There is no thought to how those 300 plus cars will enter and exit through one entrance on Pireaus and still allow the current residents in the neighborhood to get onto Pireaus.

The project is to be built on 4.5 acres when they are saying this is an 11.8 acre site. The truth is, only the 4.5 acres have the potential for building. The entire acreage is not open to build.

This project is in a high fire zone, so we are added another potential 300 people that have only one way out of the area. The traffic with everyone potentially trying evacuate would be awful. No way for fire trucks to get in with everyone trying to get out. Think about the people who have lived here for years and how it will impact their homes and lives.

Sincerely,

Encinitas Residents
Charlene Buckalew

From: Daniel Baxter
To: Nick Koutoufidis
Subject: RE: Please add me to the Piraeus Point Townhome CPP mailing list
Date: Monday, June 6, 2022 11:17:24 AM
Attachments: image001.jpg

[**NOTICE:** Caution: External Email]

Hello Nick,
Thanks for adding me to the list.
Can you also provide me with a link to (or invitation to view) the sharepoint that has the Lennar side development plan. I'd like to see the plan view, as well as some of the elevations to get a better sense of the proposal. The link I had seems to no longer be active.
Regards,
Dan Baxter

From: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Sent: Tuesday, April 12, 2022 5:31 PM
To: Daniel Baxter <danbaxter@cox.net>
Subject: RE: Please add me to the Piraeus Point Townhome CPP mailing list

Hi Daniel,

I will add you to the list for this project.

Thanks for letting me know.

Best,

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

From: Daniel Baxter <danbaxter@cox.net>
Sent: Monday, April 11, 2022 6:28 PM
To: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Subject: Please add me to the Piraeus Point Townhome CPP mailing list

[**NOTICE:** Caution: External Email]

Hello Nick,
I understand that you are the person to contact to get added to the CPP notification (and

participation) list regarding the proposed Piraeus Point Townhome development (at Piraeus and Caudor Streets, Encinitas).
I would like to be on the list for any other general notifications regarding this property as well. If you are not the correct contact person, please let me know who is.

I prefer email to paper, but contact information for both is below.
Thanks in advance.

Daniel Baxter
1627 Caudor St.
Encinitas, CA 92024-1219
danbaxter@cox.net

From:	Daniel Baxter
To:	Nick Koutoufidis
Subject:	EIR Comments from interested parties - Piraeus Point Case Nos. MULTI-005158-2022; CDP-005161; DR-005160-2022; SUB-005159-2022
Date:	Thursday, June 23, 2022 6:01:22 PM
Attachments:	Dan Baxter, Piraeus Point EIR Concerns Letter to Nick Koutoufidis 20220623.docx

[**NOTICE:** Caution: External Email]

Dear Mr. Koutoufidis,

Attached please find my EIR comments related to the proposed Piraeus Point development by Lennar Homes of California LLC.
If you have any questions, or any difficulties opening the attached Word document, please let me know.

Thanks for your consideration.
Dan Baxter

From: Daniel E. Baxter
1627 Caudor St.
Encinitas, CA 92024
danbaxter@cox.net

To: Nick Koutoufidis, Senior Planner,
Encinitas Development Services Department,
505 S. Vulcan Avenue, Encinitas, CA 92024,
nkoutoufidis@encinitasca.gov

June 23, 2022

RE: EIR Comments from interested parties – Piraeus Point
Case Nos. MULTI-005158-2022; CDP-005161; DR-005160-2022; SUB-005159-2022

Dear Mr. Koutoufidis, Planning Dept. Reviewers, and other interested parties;

I am aware of the proposed 149 unit development at Piraeus Point by Lennar Homes of California, LLC. I have spoken to many neighbors, and have attended the CPP meeting. I strongly share the predominant sentiment of nearby residents that this density of development is inappropriate for and not in keeping with the rural residential character of the neighborhood. I remain hopeful that city council will change course, respecting the will of their constituents, and remove this site from the housing element. But in case they do not, I have several site-specific concerns that I believe are relevant to the planning review and EIR process for Piraeus Point. I've included some mitigation suggestions, some of which may be feasible. In my order of priorities, the key issues are Inadequacy of Planned Parking, Traffic Control, Pedestrian Safety, and Noise Management.

Lennar has control over, and should be held accountable to mitigate some of the plan deficiencies. Others issues require City action. To the extent possible, I urge the planning department (and City) to transfer or at least share the cost of mitigations with the developer. Only in this manner will the full costs of development accrue to those who benefit from it.

1. PARKING: Off street parking within the project is substantially below what is historically required for development of this scale, and is much less than is foreseeably needed, especially visitor parking.
   1.1. The total number of planned parking spaces (256) is 42% below the minimum number required by Encinitas Code 30.54.030, a deficit of 109 spaces.
   1.2. The total number of planned spaces is 91 to 96 fewer than required if Ordinance 2021-12 if applied to the inclusionary units (depending on the number of bedrooms in the inclusionary units).
   1.3. The planned 10 guest spaces, in total, amounts to less than 1/3 of the number reasonably needed, based on City of Encinitas Codes, as well as codes in nearby cities, and common sense.

   I believe THE CURRENT PARKING PLAN IS INADEQUATE TO MEET BASIC HEALTH, SAFETY, AND HABITIBILITY NEEDS of the residents. The excess of vehicles that can be reasonably expected in the development will have to park somewhere, and the likely places are on the narrow and already congested local streets (exacerbating traffic problems and creating new safety issues), or on nearby private property.

   Failure to plan for and provide adequate parking as part of this development reasonably and foreseeably jeopardizes the safety of pedestrians and vehicles on nearby streets. It also negatively impacts the quality

of life for all neighborhood residents. In my opinion, this is the single most important deficiency in the current development plan.

Several mitigation strategies are available, and might include one or more of the following:

1.4. Reduce the number of units and/or number of bedrooms to reduce the parking demand.

1.5. Increase the available on-street parking on nearby streets.

1.5.1. The closest, probably cheapest, and therefore most obvious candidate is parking on Piraeus. Though this right of way is a city responsibility, developer funding for necessary changes should be sought if this option is pursued.

1.6. Add more parking spaces within the development through any combination of approaches, possibly including:

1.6.1. Build a parking structure, as is common in higher density projects elsewhere. If the typical steel and concrete design does not meet aesthetic standards, it could be "disguised" in a number of ways. (Costs associated with the parking structure might be recoverable through resident use fees (e.g. permit access), or HOA fees, as is common practice in "high rise".)

1.6.2. Build below grade parking, possibly below the planned structures facing Piraeus. This implementation of the suggestion above does require additional excavation and structure, but it may offer lower impact on the overall aesthetics. If the entrance is from Piraeus, which seems like the obvious choice, it might actually reduce the traffic within the development – a double benefit to residents.

1.6.3. If the power lines at the eastern border of the property were buried underground (at least for some or all of the south to north length of the development area), the massive retaining wall could be "pushed back" to the property line. Then perhaps some of the existing utility easement could be used for parking. (Obviously, this depends on SDG&E requirements allowing more limited access over underground lines versus access below overhead lines. Preliminary questioning suggest that regular access is only needed for transformers and pull points, but this would have to be verified by an authoritative source.) Unrestricted ongoing SDG&E service access to the remaining overhead power lines to the north might be achieved by connecting the existing easement north of the development with the driveway at the north east corner of the development, possibly with a ramp, or possibly along the easement where the power lines feed Leora Ln. The planned fire lanes within the development should already provide adequate unrestricted access within the development area. (Note too that the normally high cost of underground utilities may be reduced because the required excavation and backfill operations could be incorporated into the excavation for the retaining wall (i.e. bury the power lines behind the retaining wall before backfilling). Perhaps some of the additional cost of undergrounding might be shared by the SDG&E underground utilities fund. In addition to the parking benefit, this potential approach improves the general aesthetics for the residents of the new development, and the views for those in the houses above (to the east), and to a limited extent reduces the fire danger associated with overhead power lines.

1.6.4. Create a row of parking at the northern border of the development. If there is a 10 foot setback available, this space could accommodate parallel parking with no additional driveway requirements. If a few feet of additional space can be "found" it would allow "nose in" parking, roughly doubling the number of additional spaces (versus parallel parking). This might be achievable by slightly shifting the entire development south to gain a few feet of the flatter space, or by taking a few feet of the "preserve" space at the northern border (and possibly building a larger retaining wall). Parking in this location would not be as visible as some of the suggestions above.

1.6.5. Sacrifice some of the planned landscaping to add parking spaces. The inside ends of the units appear to have planters. These could inexpensively be replaced by additional parking spaces.

(Admittedly this is not the prettiest approach, and therefore not the first choice of anyone who has to live in or see the development, but safety has to come first.)

1.6.6. Setbacks at the outside edges of the development might provide the opportunity for more code complaint spaces at relatively low cost, especially near the ends of the planned driveways. (Though not as attractive as trees, this scheme would distribute additional spaces in a way that is probably most favorable to residents and visitors).

1.7. Consider if a few motorcycle spaces can be squeezed in to help ameliorate the parking shortage.

2. TRAFFIC: Regardless of which traffic model is used (i.e., the assumed number of car trips per day and where they will go), there will certainly be an increase in demand on roadway infrastructure, and given the large number of units being added to the neighborhood it will probably be a significant increment of increased demand, particularly if the cumulative impacts of the multiple Leucadia development sites are considered. There are three existing traffic bottlenecks that this new development will exacerbate most, at least two of which can be easily improved.

2.1. Probably the worst problem is the backup that occurs twice daily around Capri Elementary School. Traffic backs up down Caudor street, so that southbound traffic gets gridlocked. While the existing problem is probably not within Lennar's scope of influence, there is a simple method to reduce the increase in this problem that is within Lennar's scope. As has been previously suggested to Lennar representatives, making the Piraeus Point south exit onto Plato a "For Emergency Use Only" exit should be done to divert ALL regular traffic from the new development onto Piraeus. Hopefully, all northbound traffic, and most of the southbound traffic, will opt for the La Costa onramp to I-5, but even if they drive directly south, this approach discourages drivers from going directly up Plato. This minimizes the impact on the narrow neighborhood streets south and east of Piraeus Point. (Lennar should incorporate this into their plans.)

Note: this was agreed to in the CPP presentation – but is not yet reflected in the plans. A specific Emergency access control mechanism has not yet been defined, but it should not simply be signage.

2.2. Currently, Northbound traffic on Piraeus sometimes gets "gridlocked" at the La Costa Ave. light, and this can only get worse if a significant portion of the traffic from Piraeus Point goes that way (as is implied by the current traffic model). The backup is caused by two separate contributors that are closely related, and both can be significantly and probably inexpensively improved. (This intersection may be within the City of Carlsbad jurisdiction. Perhaps Lennar can influence the cities to remedy this.)

2.2.1. The first problem, has a cheap fix. The left turn lane to go from northbound Piraeus to westbound La Costa Ave can only accommodate about 4 cars. Once there are 4 or 5 cars waiting at this long light, both right turn traffic and left turn traffic back up. (The right turners can't get around the left turners who block the single northbound lane on Piraeus). In some cases drivers, especially those in high clearance vehicles, drive on the dirt shoulder on the east side of Piraeus to get into the right turn lane (to go east on La Costa Ave.) This pattern is evidenced by the tire tracks and reduced plant growth along the eastern shoulder of Piraeus approaching the La Cost Ave light. This situation can be easily and relatively inexpensively reduced in severity by slightly increasing the width of the blacktop on Piraeus for approximately 150 feet along the approach to La Costa Ave, enabling the left turn lane (and right turn lane) to be lengthened correspondingly. See attached conceptual drawings (page 7 below). This approach would reduce the backup at the light by allowing more right turn vehicles to get out of the queue.

2.2.2. The second contributing factor is the limited amount of space available for the cars that are able to make the left turn from Piraeus onto La Costa Ave (westbound) before they are stopped at the "Park and Ride" stoplight. Approximately 4 cars can fit in the right lane of westbound La Cost Ave (to get onto the northbound I-5 onramp), before the left turners behind them get backed up into the Piraeus / La Costa intersection. As a result, sometimes drivers attempting to turn left from Piraeus northbound to La Costa westbound have to wait for more than one (long) cycle of the light before they can make their turn, or they turn left into a different lane, and try to quickly move to

the right when the light changes. This both exacerbates the problem listed in (i) above, and the risk to cyclists in the westbound bike lane on La Costa Ave. The simple remedy for this problem is to adjust the timing of the westbound La Costa Ave light at the Park and Ride so that it stays green longer, while the Piraeus northbound traffic is turning left. (In conjunction with 2.2.1 above, this would approximately double the number of cars that could turn left from Piraeus to La Costa Ave in a single cycle of the light.)

2.3. A third local bottleneck exists at the corner of Urania and Leucadia Blvd. Since Piraeus southbound no longer goes through to Leucadia Blvd, most of the southbound Piraeus traffic is diverted up Normandy (or other small streets) to Urania southbound. From southbound Urania, drivers seeking to get to the I-5 freeway southbound must make a right turn onto Leucadia westbound, and quickly get into the left lane. At peak times they often can't do so, at least not without waiting for more than one cycle of the light. (This is due to the backup of cars on Westbound Leucadia Blvd attempting to go south on I-5.) As in the case above (2.2.1), the turn lanes on Urania are short, so all the traffic queues up. (The situation was recently made even worse by the repainting of the southbound right shoulder line to create parking spaces where right turners previously queued up. Change it back!. Urania is already developed along this stretch, so other road changes analogous to those above (2.2.1) are probably impractical. However, it may be worthwhile to study the signal timing to see if better flow can be achieved to relieve this backup. Shouldn't the City of Encinitas address this? I hope Lennar has the influence to make this happen. Please!

3. Pedestrian Safety
   3.1. It is reasonable to anticipate that 149 new housing units targeted as "starter homes" will attract some families with elementary school age children. Planning for a safe walking path to school seems prudent, if only to limit City liability. Lennar's current plan shows pedestrian pathways on the east side of Piraeus, and the north side of Plato. While this is good, it is not sufficient. To provide safe transit to Capri Elementary, a walking path should runt up Plato, from Piraeus to Caudor Street. Depending on which side of Plato the walkway is added, a crosswalk and possibly additional stop signs on Caudor at Plato may be necessary to complete the safe passageway. A little leadership in this planning may help to avoid some easily foreseeable bad outcomes. Note: In the CPP meeting, Lennar representatives suggested that they may be willing to "support" this walkway extension.
4. Noise
   4.1. To the extent possible, if rooftop decks must be retained in the project design, moving the decks away from the eastern roof edge, and perhaps moving any rooftop protuberances or aesthetic barriers closer to the east edge may help to mitigate (reflect and absorb) sound that will otherwise travel "line of sight" to the eastern neighbors. The roof deck layout has many constraints, so this may not be feasible everywhere, but anywhere where it can be done may offer an increment of improvement.
   4.2. Selection of sound absorbent deck and barrier materials may also provide some noise relief.

Piraeus Point Parking Deficiency - Key Take-Aways:

1) The total number of planned parking spaces is 109 fewer than would be required by Encinitas Code 30.54.030.

2) There are 96 fewer planned spaces than would be required by applying Ordinance 2021-12 to the inclusionary units.

3) The planned number of resident spaces matches the number required under State Density Bonus Law 65915.

4) The planned 10 additional guest spaces exceeds the total absence of a requirement in the California Density Bonus Law (as I understand it), but is less than 1/3 of the anticipated need, based on prior City of Encinitas Codes.

CONCLUSION: While the number of planned parking spaces appears to meet or exceed the number required under California State Density Bonus Law 65915, based on prior codes, ordinances, and planning guidelines, the planned on-site parking is not sufficient to meet the needs of tenants and visitors, and an overflow of on-street parking to the adjacent neighborhood streets is easily foreseeable. This overflow and consequent public hazards should be included in impact analysis and planning for the project.

Sources/ References:

https://library.qcode.us/lib/encinitas_ca/pub/municipal_code/item/title_30-chapter_30_54-30_54_030
30.54.030 Schedule of Required Off-Street
Parking. (qcode.us)

https://content.qcode.us/lib/encinitas_ca/alerts/documents/ordinance_20
21_12.pdf
ordinance_2021_12.pdf (qcode.us)

Piraeus Point Notice of Preparation of a Draft EIR dated
5/25/2022
https://ceqanet.opr.ca.gov/202205
0516

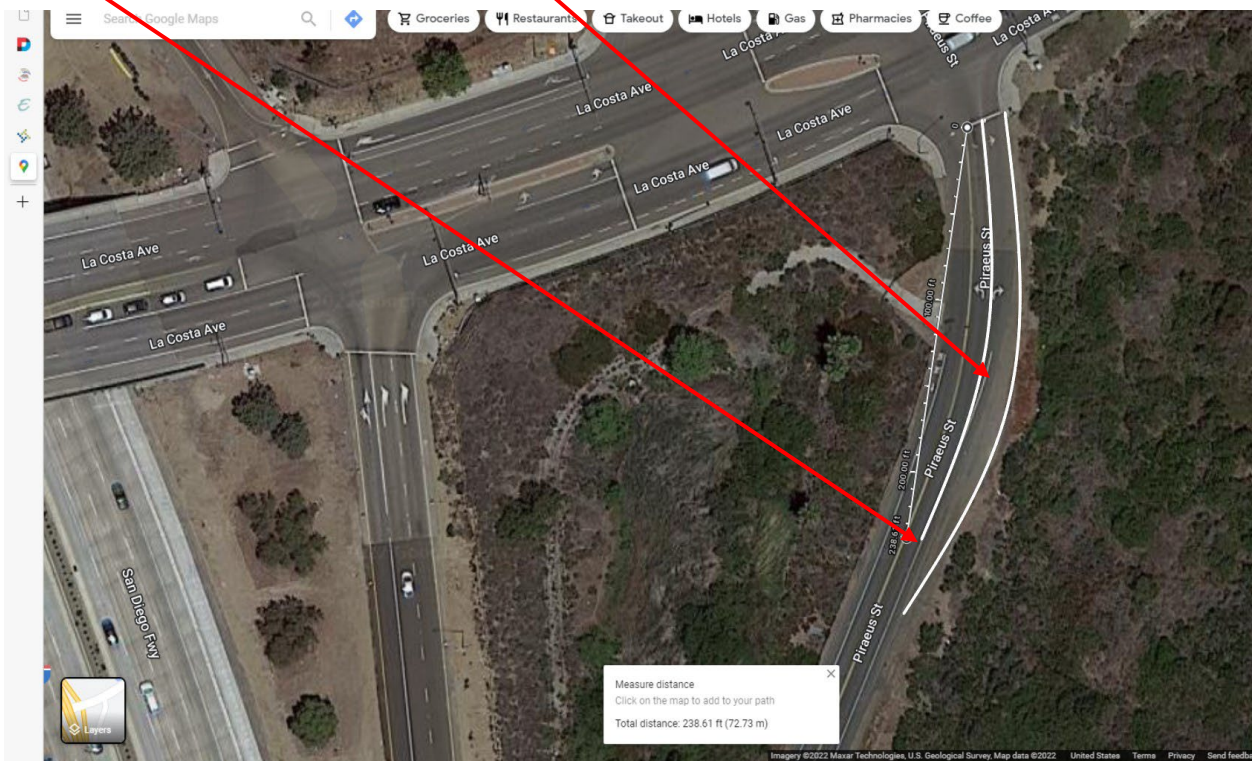
California State Density Bonus Law, Government
Code 65915
https://www.novato.org/home/showpublisheddocument/31315/637322464237470000

TRAFFIC MITIGATION: Piraeus northbound at La Costa Ave.

Google Maps view of Piraeus St intersection with La Costa Ave. Overlaid measuring scale shows the EXISTING approximately 100-foot-long turn lanes on Piraeus, which cause a backup queue once 4 or 5 cars are in the left turn lane.



Google Maps view of Piraeus St intersection with La Costa Ave. Overlaid measuring scale and white lines shows SUGGESTED FUTURE paving of the shoulder to allow extension of the turn lanes to approximately 250 feet in length to reduce the queue that forms at peak traffic times.



From: Debbie
To: Nick Koutoufidis
Cc: encinitascommunitycollective@gmail.com
Subject: Piraeus Point
Date: Thursday, June 23, 2022 6:01:54 PM

[NOTICE: Caution: External Email]

> Hello Nick,

> I'm writing to express my concerns of the proposed Pireaus Point project. The safety issues are number one. Traffic will be out of control and plus there is just 10 allotted parking spaces for the whole 149 units other than their own garages. It's silly to think that this is nothing but ridiculous. The walk the kids will need to take to get to Capri elementary school will be dangerous (no sidewalks) let alone the over crowding that the school will no doubt incur. Plus the kids will need to walk past a known "drug house" on Plato.
>
> With just one bottleneck entrance to and from the community this will become a a major issue if there is a fire, which is very real in this time of drought and the dryness of the land.
>
> I would like my voice to be heard that this community does not work on Pireaus.
>
> Thank you,
> Debbie Howarth
>

From: Debbie
To: Nick Koutoufidis
Cc: encinitascommunitycollective@gmail.com
Subject: Piraeus Point
Date: Friday, June 24, 2022 3:32:53 PM

[**NOTICE:** Caution: External Email]

Hello Nick,

I'm writing to express my concerns of the proposed Pireaus Point project. The safety issues are number one. Traffic will be out of control and plus there is just 10 allotted parking spaces for the whole 149 units other than their own garages. It's silly to think that this is nothing but ridiculous. The walk the kids will need to take to get to Capri elementary school will be dangerous (no sidewalks) let alone the over crowding that the school will no doubt incur. Plus the kids will need to walk past a known "drug house" on Plato.

With just one entrance to and from the community this will become a a major issue if there is a fire or emergency, which is very real in this time of drought and the dryness of the land.

I would like my voice to be heard that this community does not work on Pireaus.

Thank you,

Debbie Howarth

Sent from my iPhone

From: Debra Long
To: Nick Koutoufidis
Subject: Piraeus Point Townhome Project
Date: Wednesday, June 29, 2022 9:38:00 AM

[**NOTICE:** Caution: External Email]

To Whom It May Concern,

My father Wallce Amling and I live at 1650 Leora Lane, my father has lived here close to 50 yrs. Three generations of our family have lived in this wonderful, serene home, He is now 99 yrs old and has great health, which I am extremely grateful for. He has always valued his home for the peaceful neighborhood and views of the ocean. He has shown great pride of ownership over the years and about 35 yrs ago had his home remodeled by the now famous architect,Wallace Cunningham, who built "The Crescent House " in Encinitas that just listed for $23.5 million. Will having these condos built right behind his home affect his property value?

We are concerned with the congestion of too many people living in an area that has not been designed to accommodate properly. If the parents want to take their children to school in the morning, all the traffic going up Plato to Caudor street will be dangerous. Those are small streets and children walking to school will be at risk. When I'm driving on Caudor I must drive pretty much down the middle of the road cautiously looking for oncoming traffic because the street is so narrow. Does the city plan to widen these roads and / or install sidewalks because of this project?

We are also concerned about the parking for this project, where are all the guests and extended family members that come to visit going to park? My understanding is they will have 10 guest parking spaces for 149 townhomes. That's ridiculous, we all know that won't be enough, so Plauto and Piraeus streets will be full of parked cars, Thats also dangerous on Piraeus because now people have found out that this street eases the congestion on the fwy and use it as alternate route to La Costa Ave. They are driving very fast, and it's scary if you have to turn left up to Plauto, you have to judge the speed of the upcoming car before you make the turn.

I'm also concerned about the noise this project will make and the toxic fumes from the soil, and dust it will generate, My father spends his days in his beautiful living room, with the sliders open to enjoy the cool breezes. Once the project starts this will no longer be able to happen.

Please don't do this, please reconsider this project, it's not the right space.

Thank you;
Debra Long
1650 Leora Lane
Encinitas CA 92024

From: Dennis Kaden
To: Nick Koutoufidis
Subject: RE: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)
Date: Friday, May 27, 2022 9:13:05 AM
Attachments: image001.jpg

[**NOTICE:** Caution: External Email]

Nick,
Thanks much for the NOP.
Happy Friday!
DK

From: Nick Koutoufidis [mailto:nkoutoufidis@encinitasca.gov]
Sent: Thursday, May 26, 2022 7:06 PM
Subject: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)

Hello,

Please see the attached Notice of Preparation (NOP) for the Draft Environmental Impact Report (DEIR) for the Piraeus Point Residential Subdivision project.

COMMENT PERIOD: Please send your comments to Nick Koutoufidis, Senior Planner, Encinitas Planning Division, 505 S. Vulcan Avenue, Encinitas, CA 92024, or via email to nkoutoufidis@encinitasca.gov. All comments must be received by no later than **5:00 p.m**. on **June 29, 2022**. This Notice of Preparation can also be reviewed at the Encinitas Library at 540 Cornish Drive, Encinitas, CA 92024 and the Cardiff-by-the-Sea Library at 2081 Newcastle Avenue, Cardiff-by-the-Sea, CA 92007.

Thank you.

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

From: Dennis Kaden
To: Nick Koutoufidis
Subject: FW: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)
Date: Monday, June 6, 2022 3:14:31 PM
Attachments: image001.jpg

[**NOTICE:** Caution: External Email]

Hello Nick,
Can my wife and I please visit with you tomorrow or Wednesday?
We have some questions regarding Piraeus Point Townhomes and would very much appreciate your clarification and advice.
Regards
Dennis
760-802-4556

From: Dennis Kaden [mailto:denniskaden101@gmail.com]
Sent: Monday, June 6, 2022 12:01 PM
To: 'Nick Koutoufidis' <nkoutoufidis@encinitasca.gov>
Subject: RE: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)

Hello Nick,
Thanks again the NOP.
Can you please forward me the second application documents in a form other than the SharePoint format?
Thank you.
Dennis
760-802-4556

From: Nick Koutoufidis [mailto:nkoutoufidis@encinitasca.gov]
Sent: Thursday, May 26, 2022 7:06 PM
Subject: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)

Hello,

Please see the attached Notice of Preparation (NOP) for the Draft Environmental Impact Report (DEIR) for the Piraeus Point Residential Subdivision project.

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Thank you.

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

From: Dennis Kaden
To: Nick Koutoufidis
Subject: RE: Piraeus Discussion
Date: Tuesday, June 7, 2022 7:49:51 PM
Attachments: image001.jpg

[**NOTICE:** Caution: External Email]

Yes please.
Good idea Nick.
Thank you.
FYI, there will be a few more to come.
Best
DK

From: Nick Koutoufidis [mailto:nkoutoufidis@encinitasca.gov]
Sent: Tuesday, June 7, 2022 7:02 PM
To: Dennis Kaden <denniskaden101@gmail.com>
Subject: RE: Piraeus Discussion

Hi Dennis,

I am still in the initial stages of the project and nothing has been recommended and/or determined. Would you like your comment to be included in the Notice of Preparation comments?

Best,

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

From: Dennis Kaden <denniskaden101@gmail.com>
Sent: Tuesday, June 7, 2022 5:56 PM
To: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Subject: RE: Piraeus Discussion

[**NOTICE:** Caution: External Email]

Nick,
Hate to disappoint, but I gotta reschedule our meeting for a day next week.

However, I have a pressing question. Prop A limits the building heights.

How is it Piraeus Point Townhomes get to go three stories and above 35 feet?

Thank you Nick.
Regards
Dennis
760-802-4556

From: Nick Koutoufidis [mailto:nkoutoufidis@encinitasca.gov]
Sent: Tuesday, June 7, 2022 1:57 PM
To: denniskaden101 <denniskaden101@gmail.com>
Subject: RE: Piraeus Discussion

No worries, got you in the books.

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

From: denniskaden101 <denniskaden101@gmail.com>
Sent: Tuesday, June 7, 2022 1:46 PM
To: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Subject: RE: Piraeus Discussion

[**NOTICE:** Caution: External Email]

Nick,
Im having email issues today.
I do accept the meeting

Sent from my Verizon, Samsung Galaxy smartphone

-------- Original message --------
From: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Date: 6/6/22 6:13 PM (GMT-08:00)
To: Dennis Kaden <denniskaden101@gmail.com>
Subject: Piraeus Discussion

Microsoft Teams meeting

Join on your computer or mobile app
Click here to join the meeting

Learn More | Meeting options

From: Dennis Kaden
To: Nick Koutoufidis
Subject: Request PP draft EIR
Date: Wednesday, June 15, 2022 7:00:32 PM

[**NOTICE:** Caution: External Email]

Nick,
Can you please email me the Piraeus Point draft Environmental Impact Report of May 2022?

Thank you
Dennis

From: Dennis Kaden
To: Nick Koutoufidis
Subject: Piraeus Point Landscape Question
Date: Tuesday, June 28, 2022 3:53:10 PM

[**NOTICE:** Caution: External Email]

Hi Nick,
Hope all is well with you today; and hope this is a quick & easy question.

Re: MUL Tl-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022
Piraeus Point is submitted as 11+ acres, with both parcel A and parcel B combined.
Is the number of trees required 30 per acre?
If so, then are they to plant 330 trees? If only required to plant on the 4.1 buildable acres, then why are they allowed to claim the 11+ acres?

Thanks Nick and please call if quicker/easier for you.
Dennis 760-802-4556

From: Dennis Kaden
To: Nick Koutoufidis
Subject: Piraeus Point NOP EIR Comments
Date: Wednesday, June 29, 2022 3:41:58 PM
Attachments: D.Kaden"s Piraeus Point EIR Comments to Nick v2.pdf

---

[**NOTICE:** Caution: External Email]

Hello Nick,
Please find my comments for the NOP EIR regarding Piraeus Point.
Thank you for the opportunity as a resident of the community affected to make comments. Please read and respond. Can you kindly confirm receipts of this email?
Also, please feel free to contact me if you should need or want any additional information or assistance of any kind.

Regards
Dennis Kaden
1611 Caudor St.
760-802-4556

Dennis Kaden
1611 Caudor St.

Preparation of a Draft Environmental Impact Report
Piraeus Point
MUL Tl-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022; and SUB-005391-2022

Nick,
Thank you for the opportunity to respond and make suggestions to the EIR regarding Piraeus Point per your Notice of Preparation.

Here are my EIR comments.

Aesthetics / Visual / Colors:
Project is in Scenic I-5 Corridor, therefore does not compliment the look of the community. Building's exterior designs do not fit in with neighborhood. Would prefer earth tone colors as greys and beige/browns. Use all stucco exterior to prevent exterior surface from long term weather and sun damage. Reduce or eliminate the box looking trim around windows. Though on private property, bury the utility power lines underground. (Ref: Circ. Element Policy 4.12 & Coastal Act/30251)

POLICY 4.12: Encourage undergrounding of utilities within street rights-of-way and transportation corridors. (Coastal Act/30251)

Air Quality:
Existing adjacent neighbors will be breathing dust from excavation and grading of pesticide contaminated soils during construction. Wind blows east virtually all the time. How do you protect them? Have developer pay for temporary relocation costs so residents are not affected. PP residents breathing I-5 fumes forever. How do you protect them? Can they ever open their windows? Here is a new study to consider: https://www.emissionsanalytics.com/news/gaining-traction-losing-tread
Electric vehicles are producing far more pollution into the air. With PP's close proximity to I-5, the pollution generated via EV tire wear is much greater than tail pipe pollution. Please have this issue addressed in the EIR.

Biological Resources:
Gnatcatchers habitat. How to assure Gnatcatchers will be protected from this project into perpetuity.

Energy:
If No Natural Gas allowed, then bury the Utilities to protect resident's only electric supply. Reference Circ. Element Policy 4.12

POLICY 4.12: Encourage undergrounding of utilities within street rights-of-way and transportation corridors. (Coastal Act/30251)

Environmental / Settings:
Building design, height, and bulk do not fit into existing neighborhood. Project is non-complimentary to neighborhood nor Scenic I-5 Corridor. How can Lennar lower heights, build less units, and overall lower density so projects compliments existing rural bluffs and neighborhood?

Geological / Soils:
Unstable Slope has fallen several times since the 2000's onto Piraeus St. Senior Archeologist, ECORE project manager John O'Connor admitted, they were unaware of the soil collapse and repositioning of soils, therefore, was ECORE's investigation sufficiently performed? Did they dig deep enough? Please consider this and that the property owner has stated the 'soil is unstable'.
Pesticides were used on site. How to remedy its safe removal?

Hazards & Hazardous Materials:
How to protect adjacent neighboring homeowners from pesticide/dust during the excavation and grading process. Require developer to pay for temporary living expenses, and cleaning. Additional hazard of no having a sidewalk or 'Safe Walk to Schools' on Plato. Build the sidewalk first. (Reference Circ. Element Policy 3.3 & 3.8 in Safety topic)

Hydrology / Water Quality:
We're in Stage 2 water restrictions. Why build high density and increase water usages only to then tell us to reduce water usage? Investigate this project's impact of 32 acre feet of annual water usage (along with Fox Point Farms, Sunshine Garden's, and all other R-30 projects in Encinitas) vs. existing community's water needs.

Land Use and Planning:
Poor site selection by City Council.

Slope restricts development. Doesn't fit in neighborhood. Out of character w/ community. City Council should consider removal of the R-30 designation and lower to 5 or 6 units per acre. Please ask our local builders who could purchase the property and build 50-100% low income units for an adequate profit. (Reference LAND USE POLICY 3.11 & 3.12; as only 4.1 acres are buildable) 3.12: a) Exception for Decrease in Intensity:

POLICY 3.12: A public vote shall be required on all City Council approved General Plan updates that are comprehensive in nature, and shall become effective only when a majority of those voters who cast ballots vote for the change. A comprehensive General Plan update shall be a City-sponsored work program titled as such that substantially changes and/or re-adopts the text and maps of the existing elements.

GOAL 4: The City of Encinitas will ensure that the rate of residential growth: (a) does not create a demand which exceeds the capability of available services and facilities; (b) does not destroy the quality of life and small town character of the individual communities; (c) does not exceed a rate which excludes the public from meaningful participation in all aspects of land use decision making regarding proposed projects; and (d) provides the City with the ability to plan ahead for the location, timing and financing of required services and facilities.

This project's density, height, and traffic are in violation with Goal 4. How can it be reduced in size?

This project is in violation of Goal 6 of the Land Use Element and the vote of the electorate via the defeat of Proposition U in 2018. Please explain what efforts will be made to maintain the existing community character?

Compatibility Between Existing and Future Development

Land use conflicts often arise when newer projects are insensitive to the use, character, or scale of existing development. These conflicts can over time lead to both deterioration and blight of both the older and newer homes or businesses. There are a number of ways potential conflicts can be resolved through proper planning in the early stages of project design. In addition, code enforcement is an important tool in ensuring that property is maintained. The following policies include measures to ensure that the existing character of development is maintained and that future development is compatible with existing land uses.

GOAL 6: Every effort shall be made to ensure that the existing desirable character of the communities is maintained.

Require Lennar to construct hand rails on all on-site sidewalks/pathways to aid pedestrian's walking up & down steep sloping walkways.

Though compliant with a newly adopted R-30 parking ordinance, Planning should recommend additional on-site parking for its resident's to benefit from a better quality project, or revert back to the former parking ordinance requirements. What can be done?

Consider SANDAG's use of its Mitigation Fund to purchase the property for wildlife and sensitive habitat preservation.

Safety:
Hazard with no existing side walk or 'Safe Walk to Schools' on Plato. Build the sidewalk first. (Reference Circ. Element Policy 3.3 & 3.8

POLICY 3.3: Create a safe and convenient circulation system for pedestrians. (Coastal Act/30252)

POLICY 3.8: A program shall be developed to install sidewalks or paths, where appropriate, around schools, churches, active parks, commercial and other areas of pedestrian activity where public safety or welfare is at issue (Coastal Act/30252)

Lights:
Restrict/Deny Patio String Lights, Big Screen TVs on Patio Rooftops. Maintain our "Dark Skies" community.

Low Income:
There are not enough low/very low income units proposed to address the city's need (though code compliant). How do Low/VL income owners afford to pay for HOA fees? What mechanism allows for fair selection of who gets to purchase/own here within the very low/low income buyers? Are they restricted from renting? Restricted as to how many non-blood related individuals can live within each unit? How do you ensure the low income buyers actually benefit from this project best?

Noise:
(Roof Top Patios) Limit 'After Hours' Parties; Create Deed Restrictions on Speakers/Boom boxes; I-5 noise levels hinder PP resident's quality of life. Adjacent neighbors hearing party noises late at night is bad.

Parking:
10 guest parking spaces are inadequate (though compliant to code, are still inadequate). Assure more parking spaces are created on-site. Make sure garage's square footage is enough for large SUV vehicles and garage storage space is adequate for multiple bikes, and other traditionally anticipated family stored items. Garages need to be much larger than proposed. If you allow only the 10 additional parking spaces, then create a policy (ordinance) to require larger garage square footage to allow for adequate storage). The Newton Laws are not going away just for this project.

Prohibit On-Street Parking:
There is no on-street parking on Piraeus & Plato. This creates a rare and unusual dilemma for the neighborhood. Though compliant to code, what can applicant do to add more on-site parking than currently proposed? There is not enough parking on-site. The recently modified parking ordinance was written (in my opinion) anticipating an assumed alternative for on-street parking nearby. Caudor St is too narrow and unsuited for PP's parking need overflow. Again,
Newton's Laws are not going away just for this project.

Population and Housing:
Overpopulates the existing community. Project increases population of existing neighborhood by 30%. Capri School gets to capacity before PP even gets build, due to Fox Point, Clark, and other R-30 projects. Interiors appear cramped and units are too close together. How to improve PP residents 'quality of life' here? They have little space to live inside nor outside. What mechanism allows for fair selection of who gets to purchase/own here within the very low/low income buyers? Are they restricted from renting? Restricted as to how many non-blood related individuals can live within each unit? Studies demonstrate crime increase after high density project come into a neighborhood.

Growth Management

In a community that has experienced rapid development such as that which has occurred in Encinitas, it is important to establish measures to properly manage new growth. Premature development can strain a city's ability to provide essential services and infrastructure as well as adversely impacting the natural environment. The following goal and supporting policies underscore the City's resolve in ensuring that new development does not occur at the expense of the natural environment, existing development, or before adequate infrastructure and services are in place to accommodate any new development.

GOAL 2: The City should manage slow, orderly growth in accordance with a long-term plan which protects and enhances community values.

Policy 2.1 Amended 3/13/19

POLICY 2.1: Prepare, maintain, and periodically update public facility master plans that are based on adopted growth projections through coordination of appropriate city departments and agencies to anticipate the demand for services.

Public Services:
Project should be 'on hold' until a new elementary school get built to accommodate residents from all the R-30 projects in Leucadia? How can Planning allow such overdevelopment without providing adequate Public Services and resources? Where is the water coming from to service Piraeus Point, Goodson, Fox Point Farms, Sunshine Gardens, Vulcan, and the other R-30 projects as Colorado River water supply is currently being restricted? (Reference Land Use Policy 2.10 below.

POLICY 2.10: Development shall not be allowed prematurely, in that access, utilities, and services shall be available prior to allowing the development. (Coastal Act/30252)

This should apply to schools as well. Capri Elementary will be over-capacity based on Fox Point, Clark, Sunshine Gardens, and other Leucadia R-30 projects.
Recreation:
Other than a swimming pool, there are no places for children to play on-site. No dog play area. Piraeus Point will be … "...the only place in town with roof top yards."
Require Lennar to create open space green belts for child's play on site, families and seniors to sit on a bench with some open space. Is not Encinitas' all about "Quality of Life"! What can be done to require the project fit Encinitas's community character, not the other way around?

Safety:

Hazard with no existing side walk or 'Safe Walk to Schools' on Plato. Build the sidewalk first. (Reference Circ. Element Policy 3.3 & 3.8) As emergency shelters in the city are deemed as Public Schools (page 19 of Public Safety element) Capri Elementary was designed for a certain number of neighbors to serve. As Piraeus Point increases the neighboring population by approx. 20-30% that would use Capri as a shelter, how is the city/school district to provide an adequate safety shelter for the neighborhood? What of Fox Point's resident adding to the same need prior to PP?

Traffic and Transportation:

Project will negatively impact local streets and neighborhood. (Reference General Plan; Circulation Element Policy 2.2 & 2.3:

POLICY 2.3: Design the circulation system serving new development in such a way to minimize through traffic in all residential neighborhoods.

POLICY 2.4: When considering circulation patterns and standards, primary consideration will be given to the reservation of character and safety of existing residential neighborhoods. Where conflicts arise between convenience of motorists and neighborhood safety/community character preservation, the latter will have first priority.

Please Note in Policy 2.4, "Where conflicts arise between convenience of motorists and neighborhood safety/community character preservation, **the latter will have first priority**."

Increased Project's traffic severely impacts local streets, especially during Capri School drop off & pick up times. Tasha Horvath stated in 2018 that "Capri School was going to 'fix' its congestion difficulty". The 'fix' has not happened yet, so what will be done to correct Capri School traffic issue prior to PP approvals? Council admitted there was a serious traffic difficulty. Regarding Capri School traffic, please see Policy 2.6 as Capri traffic is an ongoing, untenable bottleneck on-street parking lot for years.

POLICY 2.6: Periodically evaluate traffic circulation patterns of all roads in Encinitas.
When was Capri Elementary traffic evaluated and what specific resolutions have been enacted since then?

Please have traffic study done for Gascony, Urania, both ends of Caudor, and Capri to include times specific to Capri Elementary drop off and pick up times, along with other times during peak traffic periods.

Site is not near any mass transit, therefore its trips generated impact neighborhood streets as automobiles are the primary vehicle of use. I do not feel most of PP's daily trips will go north on Piraeus.
Have Applicant influence City Council & CAL-TRANS to open Piraeus southbound for Leucadia Blvd. access? This was promised by city council in the past and was part of its decision making process for the R-30 designation.

Water Resources:

We're in Stage 2 water restrictions. Why build high density projects and increase water usages only to then tell us to reduce our water usage? Investigate this project's impact of 32 acre feet of annual water usage (along with Fox Point Farms, Sunshine Garden's, and all other R-30 projects in Encinitas) vs. existing community's water needs. Reference: City News: Encinitas Residents Asked to Conserve Water

- 06/21/2022

As California enters its third consecutive dry year and following the driest first three months of a year in the state's recorded history, Governor Gavin Newsom and the State Water Resources Control Board took steps to drive water conservation at the local level, calling on local water suppliers to take locally appropriate actions that will conserve water across all sectors. In response, the Olivenhain Municipal Water District and San Dieguito Water District are asking Encinitas residents to step-up and assist Californians across the state in dealing with the drought. The water districts strongly encourage their customers to follow the conservation actions listed below.

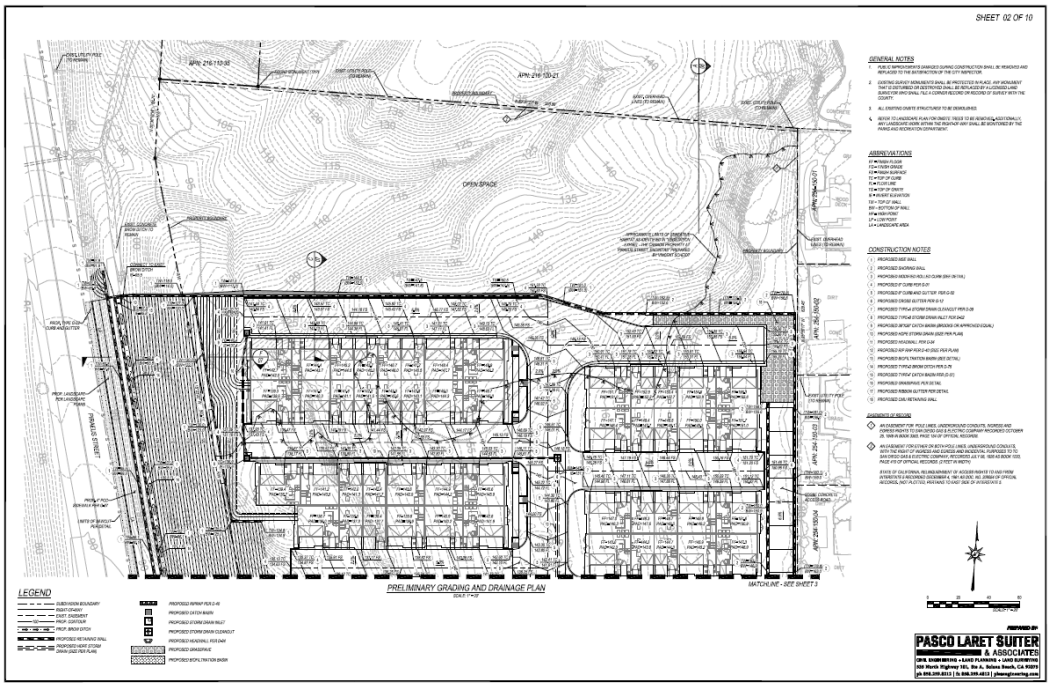
Please arrange to delay or reduce the size of this development for water conservation purposes.

Wildfire / Fire Safety:
Project is in High Fire Zone. This project will creates extra hazardous traffic during Fire Evacuation for existing neighbors on Caudor, Capri, Leora, Noma, Burgundy roads needing to use Plato Place. Ask Lennar to create two ingress/egress driveways off Piraeus and eliminate access to Plato. Plato would get overloaded with existing residents evacuating down Plato and could be hindered via PP residents also exiting onto Plato. What of panicked parents going

east up Plato to Capri Elementary to evacuate their children during a fire Evacuation? Please restrict access to Plato from Piraeus Point and have two access points via Piraeus.

Shouldn't the entrance and all driveway widths of this project be wider than the 20-24' proposed? (Ref: Fire Ordinance **Section 321.3 Road Dimensions:** Fire apparatus access roads serving buildings, portions of buildings, or facilities that exceed 30 feet in height above the lowest level of fire department vehicle access, shall have an unobstructed width of not less than 26 feet.)

Wildfire / Fire Safety (continued)



This image is one submitted in the initial application showing a wider entrance and no Plato access. I believe Brian Grover showed us a similar image with two Piraeus entrances, so it should be considered.

Nick,
Thank you for the opportunity to comment.
Please feel free to contact me if you should need or want any additional information or clarification of any kind.
Regards
Dennis Kaden
June 27, 2022
760-802-4556

From: Dennis Kaden
To: Nick Koutoufidis
Subject: Please confirm receipt FW: Piraeus Point NOP EIR Comments
Date: Wednesday, June 29, 2022 4:01:14 PM
Attachments: D.Kaden"s Piraeus Point EIR Comments to Nick v2.pdf
Karen Kaden- Piraeus Point EIR Comments to Nick..pdf
Karen Kaden. EIR Comments SECOND LETTER to Nick..pdf

[**NOTICE:** Caution: External Email]

Nick,
Can you please confirm receipt of our email here to you.
Hope this is easier for you.
We sent three separate emails to you earlier; I sent one a few minutes ago and Karen earlier today and one last night via Encinitas Community Collective.
Thanks so much.
Dennis

From: Dennis Kaden [mailto:denniskaden101@gmail.com]
Sent: Wednesday, June 29, 2022 3:41 PM
To: MBA Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Subject: Piraeus Point NOP EIR Comments

Hello Nick,
Please find my comments for the NOP EIR regarding Piraeus Point.
Thank you for the opportunity as a resident of the community affected to make comments. Please read and respond. Can you kindly confirm receipts of this email?
Also, please feel free to contact me if you should need or want any additional information or assistance of any kind.

Regards
Dennis Kaden
1611 Caudor St.
760-802-4556

Dennis Kaden
1611 Caudor St.

Preparation of a Draft Environmental Impact Report
Piraeus Point
MUL Tl-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022; and SUB-005391-2022

Nick,
Thank you for the opportunity to respond and make suggestions to the EIR regarding Piraeus Point per your Notice of Preparation.

Here are my EIR comments.

Aesthetics / Visual / Colors:
Project is in Scenic I-5 Corridor, therefore does not compliment the look of the community. Building's exterior designs do not fit in with neighborhood. Would prefer earth tone colors as greys and beige/browns. Use all stucco exterior to prevent exterior surface from long term weather and sun damage. Reduce or eliminate the box looking trim around windows. Though on private property, bury the utility power lines underground. (Ref: Circ. Element Policy 4.12 & Coastal Act/30251)

POLICY 4.12: Encourage undergrounding of utilities within street rights-of-way and transportation corridors. (Coastal Act/30251)

Air Quality:
Existing adjacent neighbors will be breathing dust from excavation and grading of pesticide contaminated soils during construction. Wind blows east virtually all the time. How do you protect them? Have developer pay for temporary relocation costs so residents are not affected. PP residents breathing I-5 fumes forever. How do you protect them? Can they ever open their windows? Here is a new study to consider: https://www.emissionsanalytics.com/news/gaining-traction-losing-tread
Electric vehicles are producing far more pollution into the air. With PP's close proximity to I-5, the pollution generated via EV tire wear is much greater than tail pipe pollution. Please have this issue addressed in the EIR.

Biological Resources:
Gnatcatchers habitat. How to assure Gnatcatchers will be protected from this project into perpetuity.

Energy:
If No Natural Gas allowed, then bury the Utilities to protect resident's only electric supply. Reference Circ. Element Policy 4.12

POLICY 4.12: Encourage undergrounding of utilities within street rights-of-way and transportation corridors. (Coastal Act/30251)

Environmental / Settings:
Building design, height, and bulk do not fit into existing neighborhood. Project is non-complimentary to neighborhood nor Scenic I-5 Corridor. How can Lennar lower heights, build less units, and overall lower density so projects compliments existing rural bluffs and neighborhood?

Geological / Soils:
Unstable Slope has fallen several times since the 2000's onto Piraeus St. Senior Archeologist, ECORE project manager John O'Connor admitted, they were unaware of the soil collapse and repositioning of soils, therefore, was ECORE's investigation sufficiently performed? Did they dig deep enough? Please consider this and that the property owner has stated the 'soil is unstable'.
Pesticides were used on site. How to remedy its safe removal?

Hazards & Hazardous Materials:
How to protect adjacent neighboring homeowners from pesticide/dust during the excavation and grading process. Require developer to pay for temporary living expenses, and cleaning. Additional hazard of no having a sidewalk or 'Safe Walk to Schools' on Plato. Build the sidewalk first. (Reference Circ. Element Policy 3.3 & 3.8 in Safety topic)

Hydrology / Water Quality:
We're in Stage 2 water restrictions. Why build high density and increase water usages only to then tell us to reduce water usage? Investigate this project's impact of 32 acre feet of annual water usage (along with Fox Point Farms, Sunshine Garden's, and all other R-30 projects in Encinitas) vs. existing community's water needs.

Land Use and Planning:
Poor site selection by City Council.

Slope restricts development. Doesn't fit in neighborhood. Out of character w/ community. City Council should consider removal of the R-30 designation and lower to 5 or 6 units per acre. Please ask our local builders who could purchase the property and build 50-100% low income units for an adequate profit. (Reference LAND USE POLICY 3.11 & 3.12; as only 4.1 acres are buildable) 3.12: a) Exception for Decrease in Intensity:

POLICY 3.12: A public vote shall be required on all City Council approved General Plan updates that are comprehensive in nature, and shall become effective only when a majority of those voters who cast ballots vote for the change. A comprehensive General Plan update shall be a City-sponsored work program titled as such that substantially changes and/or re-adopts the text and maps of the existing elements.

GOAL 4: The City of Encinitas will ensure that the rate of residential growth: (a) does not create a demand which exceeds the capability of available services and facilities; (b) does not destroy the quality of life and small town character of the individual communities; (c) does not exceed a rate which excludes the public from meaningful participation in all aspects of land use decision making regarding proposed projects; and (d) provides the City with the ability to plan ahead for the location, timing and financing of required services and facilities.

This project's density, height, and traffic are in violation with Goal 4. How can it be reduced in size?

This project is in violation of Goal 6 of the Land Use Element and the vote of the electorate via the defeat of Proposition U in 2018. Please explain what efforts will be made to maintain the existing community character?

Compatibility Between Existing and Future Development

Land use conflicts often arise when newer projects are insensitive to the use, character, or scale of existing development. These conflicts can over time lead to both deterioration and blight of both the older and newer homes or businesses. There are a number of ways potential conflicts can be resolved through proper planning in the early stages of project design. In addition, code enforcement is an important tool in ensuring that property is maintained. The following policies include measures to ensure that the existing character of development is maintained and that future development is compatible with existing land uses.

GOAL 6: Every effort shall be made to ensure that the existing desirable character of the communities is maintained.

Require Lennar to construct hand rails on all on-site sidewalks/pathways to aid pedestrian's walking up & down steep sloping walkways.

Though compliant with a newly adopted R-30 parking ordinance, Planning should recommend additional on-site parking for its resident's to benefit from a better quality project, or revert back to the former parking ordinance requirements. What can be done?

Consider SANDAG's use of its Mitigation Fund to purchase the property for wildlife and sensitive habitat preservation.

Safety:
Hazard with no existing side walk or 'Safe Walk to Schools' on Plato. Build the sidewalk first. (Reference Circ. Element Policy 3.3 & 3.8

POLICY 3.3: Create a safe and convenient circulation system for pedestrians. (Coastal Act/30252)

POLICY 3.8: A program shall be developed to install sidewalks or paths, where appropriate, around schools, churches, active parks, commercial and other areas of pedestrian activity where public safety or welfare is at issue (Coastal Act/30252)

Lights:
Restrict/Deny Patio String Lights, Big Screen TVs on Patio Rooftops. Maintain our "Dark Skies" community.

Low Income:
There are not enough low/very low income units proposed to address the city's need (though code compliant). How do Low/VL income owners afford to pay for HOA fees? What mechanism allows for fair selection of who gets to purchase/own here within the very low/low income buyers? Are they restricted from renting? Restricted as to how many non-blood related individuals can live within each unit? How do you ensure the low income buyers actually benefit from this project best?

Noise:
(Roof Top Patios) Limit 'After Hours' Parties; Create Deed Restrictions on Speakers/Boom boxes; I-5 noise levels hinder PP resident's quality of life. Adjacent neighbors hearing party noises late at night is bad.

Parking:
10 guest parking spaces are inadequate (though compliant to code, are still inadequate). Assure more parking spaces are created on-site. Make sure garage's square footage is enough for large SUV vehicles and garage storage space is adequate for multiple bikes, and other traditionally anticipated family stored items. Garages need to be much larger than proposed. If you allow only the 10 additional parking spaces, then create a policy (ordinance) to require larger garage square footage to allow for adequate storage). The Newton Laws are not going away just for this project.

Prohibit On-Street Parking:
There is no on-street parking on Piraeus & Plato. This creates a rare and unusual dilemma for the neighborhood. Though compliant to code, what can applicant do to add more on-site parking than currently proposed? There is not enough parking on-site. The recently modified parking ordinance was written (in my opinion) anticipating an assumed alternative for on-street parking nearby. Caudor St is too narrow and unsuited for PP's parking need overflow. Again,
Newton's Laws are not going away just for this project.

Population and Housing:
Overpopulates the existing community. Project increases population of existing neighborhood by 30%. Capri School gets to capacity before PP even gets build, due to Fox Point, Clark, and other R-30 projects. Interiors appear cramped and units are too close together. How to improve PP residents 'quality of life' here? They have little space to live inside nor outside. What mechanism allows for fair selection of who gets to purchase/own here within the very low/low income buyers? Are they restricted from renting? Restricted as to how many non-blood related individuals can live within each unit? Studies demonstrate crime increase after high density project come into a neighborhood.

Growth Management

In a community that has experienced rapid development such as that which has occurred in Encinitas, it is important to establish measures to properly manage new growth. Premature development can strain a city's ability to provide essential services and infrastructure as well as adversely impacting the natural environment. The following goal and supporting policies underscore the City's resolve in ensuring that new development does not occur at the expense of the natural environment, existing development, or before adequate infrastructure and services are in place to accommodate any new development.

GOAL 2: The City should manage slow, orderly growth in accordance with a long-term plan which protects and enhances community values.

Policy 2.1 Amended 3/13/19

POLICY 2.1: Prepare, maintain, and periodically update public facility master plans that are based on adopted growth projections through coordination of appropriate city departments and agencies to anticipate the demand for services.

Public Services:
Project should be 'on hold' until a new elementary school get built to accommodate residents from all the R-30 projects in Leucadia? How can Planning allow such overdevelopment without providing adequate Public Services and resources? Where is the water coming from to service Piraeus Point, Goodson, Fox Point Farms, Sunshine Gardens, Vulcan, and the other R-30 projects as Colorado River water supply is currently being restricted? (Reference Land Use Policy 2.10 below.

POLICY 2.10: Development shall not be allowed prematurely, in that access, utilities, and services shall be available prior to allowing the development. (Coastal Act/30252)

This should apply to schools as well. Capri Elementary will be over-capacity based on Fox Point, Clark, Sunshine Gardens, and other Leucadia R-30 projects.
Recreation:
Other than a swimming pool, there are no places for children to play on-site. No dog play area. Piraeus Point will be … "...the only place in town with roof top yards."
Require Lennar to create open space green belts for child's play on site, families and seniors to sit on a bench with some open space. Is not Encinitas' all about "Quality of Life"! What can be done to require the project fit Encinitas's community character, not the other way around?

Safety:

Hazard with no existing side walk or 'Safe Walk to Schools' on Plato. Build the sidewalk first. (Reference Circ. Element Policy 3.3 & 3.8) As emergency shelters in the city are deemed as Public Schools (page 19 of Public Safety element) Capri Elementary was designed for a certain number of neighbors to serve. As Piraeus Point increases the neighboring population by approx. 20-30% that would use Capri as a shelter, how is the city/school district to provide an adequate safety shelter for the neighborhood? What of Fox Point's resident adding to the same need prior to PP?

Traffic and Transportation:

Project will negatively impact local streets and neighborhood. (Reference General Plan; Circulation Element Policy 2.2 & 2.3:

POLICY 2.3: Design the circulation system serving new development in such a way to minimize through traffic in all residential neighborhoods.

POLICY 2.4: When considering circulation patterns and standards, primary consideration will be given to the reservation of character and safety of existing residential neighborhoods. Where conflicts arise between convenience of motorists and neighborhood safety/community character preservation, the latter will have first priority.

Please Note in Policy 2.4, "Where conflicts arise between convenience of motorists and neighborhood safety/community character preservation, **the latter will have first priority**."

Increased Project's traffic severely impacts local streets, especially during Capri School drop off & pick up times. Tasha Horvath stated in 2018 that "Capri School was going to 'fix' its congestion difficulty". The 'fix' has not happened yet, so what will be done to correct Capri School traffic issue prior to PP approvals? Council admitted there was a serious traffic difficulty. Regarding Capri School traffic, please see Policy 2.6 as Capri traffic is an ongoing, untenable bottleneck on-street parking lot for years.

POLICY 2.6: Periodically evaluate traffic circulation patterns of all roads in Encinitas.
When was Capri Elementary traffic evaluated and what specific resolutions have been enacted since then?

Please have traffic study done for Gascony, Urania, both ends of Caudor, and Capri to include times specific to Capri Elementary drop off and pick up times, along with other times during peak traffic periods.

Site is not near any mass transit, therefore its trips generated impact neighborhood streets as automobiles are the primary vehicle of use. I do not feel most of PP's daily trips will go north on Piraeus.
Have Applicant influence City Council & CAL-TRANS to open Piraeus southbound for Leucadia Blvd. access? This was promised by city council in the past and was part of its decision making process for the R-30 designation.

Water Resources:

We're in Stage 2 water restrictions. Why build high density projects and increase water usages only to then tell us to reduce our water usage? Investigate this project's impact of 32 acre feet of annual water usage (along with Fox Point Farms, Sunshine Garden's, and all other R-30 projects in Encinitas) vs. existing community's water needs. Reference: City News: Encinitas Residents Asked to Conserve Water

- 06/21/2022

As California enters its third consecutive dry year and following the driest first three months of a year in the state's recorded history, Governor Gavin Newsom and the State Water Resources Control Board took steps to drive water conservation at the local level, calling on local water suppliers to take locally appropriate actions that will conserve water across all sectors. In response, the Olivenhain Municipal Water District and San Dieguito Water District are asking Encinitas residents to step-up and assist Californians across the state in dealing with the drought. The water districts strongly encourage their customers to follow the conservation actions listed below.

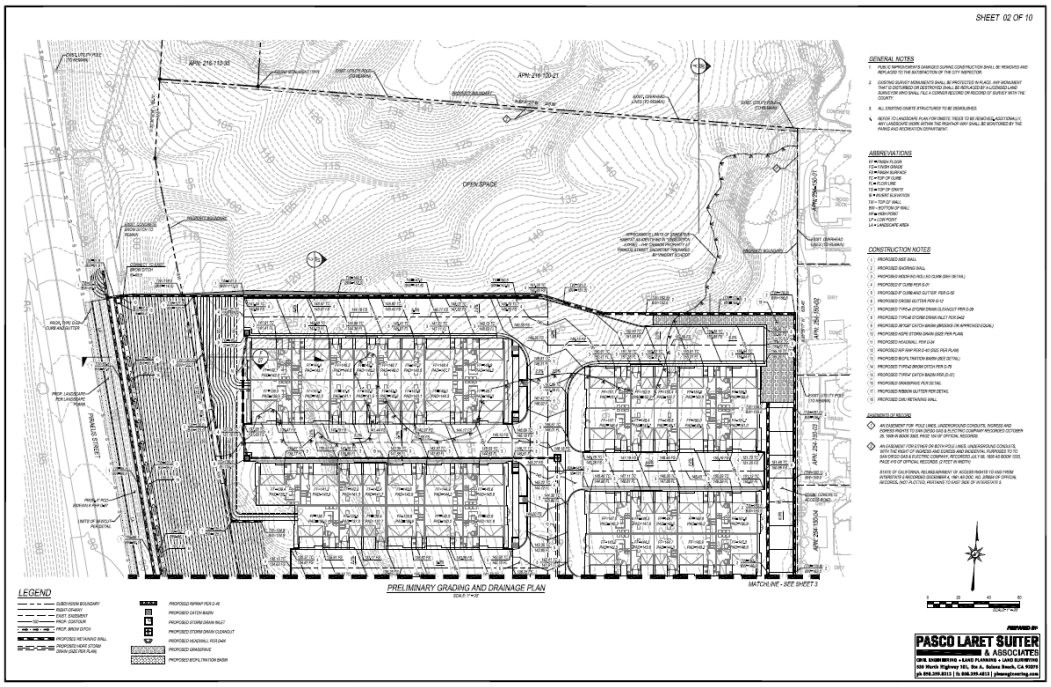
Please arrange to delay or reduce the size of this development for water conservation purposes.

Wildfire / Fire Safety:
Project is in High Fire Zone. This project will creates extra hazardous traffic during Fire Evacuation for existing neighbors on Caudor, Capri, Leora, Noma, Burgundy roads needing to use Plato Place. Ask Lennar to create two ingress/egress driveways off Piraeus and eliminate access to Plato. Plato would get overloaded with existing residents evacuating down Plato and could be hindered via PP residents also exiting onto Plato. What of panicked parents going

east up Plato to Capri Elementary to evacuate their children during a fire Evacuation? Please restrict access to Plato from Piraeus Point and have two access points via Piraeus.

Shouldn't the entrance and all driveway widths of this project be wider than the 20-24' proposed? (Ref: Fire Ordinance **Section 321.3 Road Dimensions:** Fire apparatus access roads serving buildings, portions of buildings, or facilities that exceed 30 feet in height above the lowest level of fire department vehicle access, shall have an unobstructed width of not less than 26 feet.)

Wildfire / Fire Safety (continued)



This image is one submitted in the initial application showing a wider entrance and no Plato access. I believe Brian Grover showed us a similar image with two Piraeus entrances, so it should be considered.

Nick,
Thank you for the opportunity to comment.
Please feel free to contact me if you should need or want any additional information or clarification of any kind.
Regards
Dennis Kaden
June 27, 2022
760-802-4556

June 28, 2020

Karen Kaden, ECC concerned resident.

Attention:

Nick Koutoufidis, Senior Planner, City of Encinitas

Nick, Thank you this opportunity to write my concerns regarding the Housing Element Piraeus Point.

Biological/ Geological/ Soils/Land Use History

During the Housing Element process the community opposed the Cannon property Site 2.

Cannon site 2 is recorded on the Housing Element Map as 6.92 acres, and City Council did not consider the constraints on the property.

It is documented in October 1998, Cannon property 6.92 acres received a Minor Use Permit for Seaside Farms. The Minor Use Permit received from the City, (File #98-209CDP; Decision # DCD98-117) allowed the growing of sunflowers on only 4 acres because of slope and sensitive vegetation constraints. The studies showed the constraints on 2.9 acres.

Reference: Attached two pages of the 1998 application for the Minor Use Permit.

My purpose is to bring clarification that this property has consistently had only four acres to build upon. I am requesting to build less units in order to be sensitive and compatible to the existing community.

Slope and Land Failure

The city has official documents regarding the Cannon property lawsuit with the findings and fact that Cannon 2 is unstable.

Recording historic landslides 06/13/2001, 08/02/2001, 12/20/2002, and 10/22/2003. One or two landslides fell onto and blocked Piraeus, causing a public safety issue. Piraeus from Plato to Sky Loft was closed up to two weeks.

Property was RR-2 and Cannon site 2 is proposing 149 units on this sensitive inland bluff.

The approved Housing Element Map for Cannon site 2 is 6.92 acres, not 11 plus acres. Cannon has two parcels alongside Piraeus. It seems to be misleading to the public, that the proposed Application is adding more acreage to the formula in order to build more units. The second parcel B is not on the Housing Element Map. It was not accepted in the HE process and not buildable. Why are they allowed to do this?

Parking/Traffic/ and Safety:

All were not addressed to the community's satisfaction at CPP.

Create enough parking on project site. They can!

No parking on neighborhood streets to ensure public safety.

Traffic will bottleneck at Piraeus and La Costa. Widen Piraeus at delta.

Traffic will be sent through our narrow residential streets to Leucadia Boulevard.

Should open southbound Piraeus to Leucadia Boulevard, needed for safe evacuation plan.

Safe Walk to School should be on Plato Place for children's safety. Ask applicant to voluntary provide the necessary resources.

I am checking the Land Use & Planning box in the NOP letter. It is the most important element in the General Plan for future planning. The Housing Element will have a lasting effect on safety issues, noise, air quality, traffic, and environment. Infrastructure should come before high density projects.

The city was to encourage scenic/visual corridors. The I-5 Scenic Corridor should be protected as a resource for the public views along the highway.
Therefore, Piraeus Point is in the view shed, and disrupts, distracts, and takes away the scenic corridor's beauty. (Ref: Housing Element: Policy 9.1: Encourage and preserve low density residential zoning within I-5 Corridor while preserving the best natural features and avoiding the creation of a totally urbanized landscape and maintain I-5 Interchange areas to conform to the specifications of this overall goal.) (Coastal Act/30240/30251)

Recreation:
Piraeus Point project needs a playground area for families.
Roof tops should have no fire pits or BBQs.
Roof top patios create noise and effect our quiet neighborhood.
Leucadia is a Dark Skies community, so please ensure all low lighting.
This project overall, is not compatible to the existing community.

Thank you for your time and allowing me to express my concerns.

Karen Kaden
1611 Caudor
Kkaden1611@gmail.com

Karen Kaden

June 29, 2022

Piraeus Point EIR

Second Letter of Concern/Issues

Attention: Nick Koutoufidis, Senior Planner

Toxic Soils and Pesticides

Please do not ignore hazardous/toxic waste used on the property more than a decade ago. Cannon claimed the land was farmed prior to I-5 being constructed.

The Minor Use Permit did not specify the use of chemicals. The farm grew more than sunflowers.

The pesticide sprayers in their white coats and masks sprayed when the sun went down. Smells could be detected for more than 500 to 1500 feet into our neighborhood air at night time.

We are also concerned for neighborhood protection and safety issues when excavation and construction occurs.

We do not want Plato and Piraeus to be blocked during construction when we have time clocks to punch.

Utilities:

The Housing Element requires utilities go underground. Please do not waive this.

Thank you for your consideration.

Karen Kaden

1611 Caudor St.

Kkaden1611@gmail.com

From: Dennis Kaden
To: Nick Koutoufidis
Subject: RE: Please confirm receipt FW: Piraeus Point NOP EIR Comments
Date: Wednesday, June 29, 2022 5:36:50 PM
Attachments: image001.jpg

[**NOTICE:** Caution: External Email]

Nick,
They are good to go. Thank you.
I edited a bit and probably changed the document name, but all's good.
DK

From: Nick Koutoufidis [mailto:nkoutoufidis@encinitasca.gov]
Sent: Wednesday, June 29, 2022 4:54 PM
To: Dennis Kaden <denniskaden101@gmail.com>
Subject: RE: Please confirm receipt FW: Piraeus Point NOP EIR Comments

Hi Dennis,

These documents are labeled a little different than the ones I got. Are these different?

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

From: Dennis Kaden <denniskaden101@gmail.com>
Sent: Wednesday, June 29, 2022 4:00 PM
To: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Subject: Please confirm receipt FW: Piraeus Point NOP EIR Comments

[**NOTICE:** Caution: External Email]

Nick,
Can you please confirm receipt of our email here to you.
Hope this is easier for you.
We sent three separate emails to you earlier; I sent one a few minutes ago and Karen earlier today and one last night via Encinitas Community Collective.
Thanks so much.
Dennis

From: Dennis Kaden [mailto:denniskaden101@gmail.com]
Sent: Wednesday, June 29, 2022 3:41 PM
To: MBA Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Subject: Piraeus Point NOP EIR Comments

Hello Nick,
Please find my comments for the NOP EIR regarding Piraeus Point.
Thank you for the opportunity as a resident of the community affected to make comments. Please read and respond. Can you kindly confirm receipts of this email?
Also, please feel free to contact me if you should need or want any additional information or assistance of any kind.

Regards
Dennis Kaden
1611 Caudor St.
760-802-4556

From: Dolores Welty
To: Nick Koutoufidis
Subject: Fw: PIRAEUS POINT SCOPING MEETING
Date: Saturday, June 18, 2022 7:45:10 PM

[NOTICE: Caution: External Email]

-----Forwarded Message-----
From: Dolores Welty
Sent: Jun 18, 2022 7:34 PM
To: Nick Koutoufidis
Subject: Fw: PIRAEUS POINT SCOPING MEETING

-----Forwarded Message-----
From: Dolores Welty
Sent: Jun 18, 2022 7:32 PM
To:
Subject: PIRAEUS POINT SCOPING MEETING

Dear Nick Koutoufidis:
Thank you for this opportunity to add my comments to the scoping of this project. I was unable to attend the meeting, and have not received any summary of the items included in the scoping meeting that day. I am sure there was much feedback. Please forward my comments to the persons at Lennar.

First, I remind us all that I-5 is a scenic corridor and the Gateway to our City. The density and excessive height do not blend with the area and make it a very noticeable structure. I am afraid it will be an eyesore, attracting attention like the high rise apartment/condo building at Oceanside Harbor. That high rise grabs the eye and doesn't let go. .No one notices the other amenities. Even the Harbor escapes your focus.. The Piraeus Point Development will do the same. It should not be built. If it is, every method of making it disappear into the landscape should be used. The city erred greatly when it re-zoned this piece.

Along with that, It is my understanding that this project is to be built on a four acre plot but that more acreage has been added, unbuildable, but adjacent, just to allow a greater density on the four acres. Could this be true? Please explain. This is not justified.

If you look at the many developments along La Costa Boulevard to the West, you see that none of them are allowed to deviate from height requirements. This development should also follow the rules.

Piraeus Point is also being placed on property adjacent to protected natural habitat. It should never be built there. Batiquitos Lagoon and the surrounding bluffs are home to disappearing and endangered species. A proper use of the property would be to purchase it as endangered habitat and set it aside for the preservation of native species. It will definitely need a detailed and accurate EIR.

Should this project go forward, noise, lighting, and traffic studies must be made. The impact on neighbors shall be minimal.

Where is the bus stop for public transportation for the residents? A stop and bus line needs to be added to this project, as to any project containing low or low, low income dwellings. Where will the stop be placed - either along Piraeus or La Costa?

Playground space for children needs to be planned within the project. Rooftop areas do not suffice.

Where will children attend school, and how will they get there?

Fire protection and evacuation details should be worked out.

Piraeus is just a frontage road. It was not made to be a collector and already has quite a bit of traffic. Access to the freeway for people in this part of Leucadia is at the I-5/La Costa crossing, bringing a majority of existing residents out to pass in front of this project. People who come out to Piraeus from Plato need to be protected. There should be no exit from the project to Plato and sufficient space should be allowed between the project entrance and exit and Plato to avoid vision problems and accidents.

These are some of the difficuties I see with this density bonus project.

Very truly yours
Dolores Welty
2076 Sheridan Road
Leucadia/Encinitas 92024
760-942-9897

From: Kathy Hollywood
To: Anna Colamussi; Nick Koutoufidis
Subject: FW: PIRAEUS POINT SCOPING MEETING
Date: Monday, June 20, 2022 8:09:02 AM

See public comments below.

Kathy Hollywood
City Clerk, City of Encinitas
505 S. Vulcan Avenue, Encinitas, CA 92024
760.633.2601
khollywood@encinitasca.gov
www.encinitasca.gov

Correspondents should be aware that all communications to and from this address are subject to public disclosure and may be reviewed by third parties.

-----Original Message-----
From: Dolores Welty <dwelty2076@earthlink.net>
Sent: Saturday, June 18, 2022 9:04 PM
To: Kathy Hollywood <khollywood@encinitasca.gov>
Subject: Fw: PIRAEUS POINT SCOPING MEETING

[NOTICE: Caution: External Email]

Dear Kathy,
Well, hello in this time of masks on and masks off. I think I have just come out of a mild session of Covid. If I hadn't been so weak and tired I would have called it a badly congested cold. No fever or aches, just sore throat, runny nose and head congestion plus fatigue.
I bet this is too much information. What I really want to say is I hope you have been well and enjoying your life.

I have finally written some comments about the Piraeus Point Project, which you can see I wish would go away, but I know the EIR is out for comment and I am asking you to send the following comments as part of the record to be included in the EIR.
Because I am working from my laptop, I am having trouble pulling up the big EIR to read. I know it came out a month ago, but I would still like to add these comments if I am not too late.

Thank you very much.
Dolores Welty

FROM: Dolores Welty
2076 Sheridan Road
Leucadia/Encinitas, CA 92024

RE: PIRAEUS POINT DEVELOPMENT PROJECT

To Whom it May Concern:

:Thank you for this opportunity to comment.

First, I remind us all that I-5 is a scenic corridor and the Gateway to our City. The density and excessive height of

this project do not blend with the area and make it a very noticeable structure. I am afraid it will be an eyesore, attracting attention like the high rise apartment/condo building at Oceanside Harbor. That high rise grabs the eye and doesn't let go. .No one notices the other amenities. Even the Harbor escapes your focus.. The Piraeus Point Development will do the same. It should not be built.

If it is, every method of making it disappear into the landscape should be used. The city erred greatly when it re-zoned this piece.

Along with that, It is my understanding that this project is to be built on a four acre plot but that more acreage has been added, unbuildable, but adjacent, just to allow a greater density on the four acres. Could this be true? Please explain. This is not justified. What is the justification?

If you look at the many developments along La Costa Boulevard to the West, you see that none of them are allowed to deviate from height requirements. This development should also conform to height rules and not be allowed this deviation. What other arrangement can be made?

Piraeus Point is also being placed on property adjacent to protected natural habitat. It should never be built there. Batiquitos Lagoon and the surrounding bluffs are home to disappearing and endangered species. A proper use of the property would be to purchase it as endangered habitat and set it aside for the preservation of native species. What is the buffer between this development and the set-aside and protected open space natural bluff area?

What protection is being required to keep residents of this new development from trespassing into the natural area?

Will pets be allowed in this development? Both dogs and cats re deadly to native species. What homeowner rules and oversight will assure that pets are kept under control? Will this be a pet free development?

Should this project go forward, noise, lighting, and traffic studies must be made. The impact on neighbors shall be minimal. Encinitas is a dark sky community. How will the exterior lighting fulfill dark sky requirements?

Where is the bus stop for public transportation for the residents? The traffic section does not add any. stop and a bus line needs to be added to this project, as to any project containing low or low, low income dwellings. Where will the stop be placed - either along Piraeus or La Costa?

Playground space for children needs to be planned within the project. Rooftop areas do not suffice. What accommodations have been made for children's access to nature especially considering the proximity of the project to protected natural areas.?

Where will children attend school, and how will they get there?

What are the fire protections and evacuation details for this project?

Will wood fire barbecues be allowed on the rooftop patios? What is the potential for escaping embers if wood fire barbecues are allowed?

Who will police this possibility in the future?

What are the noise decibles allowed to reach this project considering the proximity of I-5 which already provides a noisome hum to everyone in Leucadia?

What noise attenuation will be provided to both new and established residents from the existing and increased traffic?
Piraeus is just a frontage road. It was not made to be a collector and already has quite a bit of traffic.

Access to the freeway for people in this part of Leucadia is at the I-5/La Costa crossing, bringing a majority of existing residents out to pass in front of this project. People who come out to Piraeus from Plato need to be protected. There should be no exit from the project to Plato and sufficient space should be allowed between the project entrance and exit and Plato to avoid vision problems and accidents. What revision can be made to the traffic

patterns of the project in case the planned access proves accident prone?

Encinitas is a dark sky community. What provisions have been made to the outdoor lighting arrangements of this project to conform to dark sky restrictions in Encinitas? Has the developer asked for changes to these provisions?

These are some of the difficulties I see with this density bonus project. Thank you to your attention to my concerns.

Very truly yours
Dolores Welty2076
Sheridan Road
Leucadia/Encinitas 92024
760-942-9897

From: Eliot Miller
To: Nick Koutoufidis; Encinitas community collective; Eliot Miller
Subject: Piraeus Point Townhouse
Date: Friday, June 17, 2022 8:29:42 AM

[**NOTICE:** Caution: External Email]

Nick:

This letter is in regards to the proposed Piraeus Point Townhouse project. As a concerned citizen of the community of Leucadia I would like to inform you of my major concerns:

- Water: it makes no logical sense to be building more units and encouraging people to move to the Western United States when we do not have the water infrastructure to support them. Sacramento is saying build more units but cut down on water consumption. Due to the drought in the Western states, we all need to make adjustments, however to increase the demand by overbuilding our cities makes no sense at all.
- Schools: how is the local elementary school going to accommodate the influx of new students from this project when it is already very close to capacity. I emailed Tony Krantz about this and his response was to speak to the Encinitas School Board. My response to that is the City should be communicating with the school board before approval of any large project to make sure that the local schools are not overwhelmed. If the local schools cannot accommodate the influx, then there should be a contingency plan between the city and the school board. My suggestion is that Lennar should provide bus transportation to the elementary schools other than Capri for all of these new students. In addition, children in the community outside of this project should be given priority for Capri Elementary School over the Piraeus Point students.
- Plato Place:Lennar has plans to place sidewalks on their property. The question arises: what do people walk on afterwards going in the eastern direction? Plato Place is a very narrow, winding street with nowhere to walk after the Piraeus Point project. With a significant number of children walking to Capri school daily an upgrade needs to take place or the City of Encinitas may be legally responsible for negligence in case of a major accident. My suggestion: from the eastern end of the Piraeus Point project up to Caudor put in a 5 foot wide pathway of DG. This should be paid for by Lennar since it is their project that is requiring this upgrade.
- Parking: I realize that Sacramento has "allowed" these projects to reduce the number of parking spaces, however let's be realistic. It is one thing to minimize on site parking when there is off site parking available such as Vulcan. However there is absolutely no off site parking available on Piraeus nor on Plato. In addition, neither street has the capacity to allow on street parking. Let's look at the numbers. The City of Encinitas has acquiesced to Sacramento to allow one parking space for the one bedroom units and one and one half parking spaces for the two and three bedroom units leading to a total of 198 on site parking space for 149 units. Using these calculations, Lennar states that they are being very generous as they are providing 256 spaces, rather than the minimal amount of 198. Now let's talk about reality: there is absolutely no mass transit within walking distance, all adults need their own car to get to work and two and three bedroom units may have teenagers in residence, who often need a car to get to school. There are 52 projected one bedroom units, many having two adult residents. If you use a conservative 1.5 cars per unit, that would require 78 parking spaces. The two bedroom units will

mostly have two adults necessitating two cars.There are projected 37 two bedroom units, requiring 74 parking spaces. The three bedroom units may not only have two adults, but in addition teenagers who will have to travel a long distance to get to high school. As anyone in the community knows, once teenagers reach driving age a car is almost a necessity. A conservative number of 2.2 cars per three bedroom unit would require 132 spaces. If you then total these numbers up a conservative 284 spaces are needed, and that does not include spaces for guests. Bottom line: this project needs at least 300 spaces if not more, yet Lennar is only inserting 256 spaces. Again, where will these extra 50 cars park? As representatives of the City of Encinitas, we need a good answer, not just because Sacramento allows it. If the latter is the answer, then the City of Encinitas should invite our representative in Sacramento(Mike Levin) to visit the site and give us a good answer before approval of this project.

- Brian Grover: although he lives in the community and was once an employee of the City of Encinitas, he is now employed by Lennar and represents the financial outcome of this project and not the "Will of the People"

Nick, there are many other issues regarding this project which I personally do not agree with, however I will leave those issues up to others. Thank you for considering the above issues.

Eliot Miller
ekmiller22@gmail.com
1711 Caudor St., Encinitas,92024

From: Gabriella Baccaglini
To: Nick Koutoufidis
Cc: encinitascommunitycollective@gmail.com
Subject: Piraeus Point
Date: Friday, June 24, 2022 8:19:15 PM

[NOTICE: Caution: External Email]

Hello Mr. Koutoufidis,

I am writing as a concerned resident of Leucadia. I live on Capri Road, right next to Capri Elementary. My family and I are strongly opposed to the proposed project named Piraeus Point.

I would like to know what your plans are for the following:

School- Capri is near capacity and there are other developments in the area also planning to attend Capri. How is the city planning to address the needs of schooling for this development plus the others that are approved? Are they going to build a new school? If so, where?

Kids to school- Capri is close enough for us to walk but there is no sidewalk from the proposed complex to Caudor up Plato. How does the city plan to address child safety for walk to school?

Parking- Where will the residents visitors park? There is no parking on Piraeus, Plato or Sky Loft. How does the city plan to address parking with only a small number of spots available in the complex?

Water- our area is already under water restriction. Adding another 149 homes will further restrict water usage for current residents. How does the city plan to address so current residents are not adversely impacted?

We have lived in our neighborhood for many years. I strongly believe a project like this would make it very difficult for everyone to live happily in our neighborhood and for our kids to thrive.

Thank you,

Gabriella and Robert Minera

SAN DIEGO CA 920

21 JUN 2022 PM 5 L



CITY OF ENCINITAS ATTN: MR. KOUTOUFIDIS
DEVELOPMENT SERVICES DEPARTMENT
505 S. VULCAN AVE.
ENCINITAS, CA 92024

RECEIVED
JUN 23 2022
CITY OF ENCINITAS

92024-369999

America the Beautiful

Mr Gregory Spires
1720 Barbara Ln
Encinitas, CA 92024

City of Encinitas
Development Services Department
505 S. Vulcan Ave.
Encinitas, CA 92024

Re: Project Title	Pireaus Point
Project Applicant	Lennar Homes of California, LLC
Project Location	NE Corner of Pireaus St. and Plato Pl., Encinitas, CA 92024 County Assessor Parcel Nos. 254-144-01 and 216-110-35-00
Project Case Numbers	MULTI-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022; and SUB-5005391-2022

Dear Mr. Koutoufidis,

The proposed project does not fit in with the current community rural/residential character of the neighborhood. I expect this would change the entire life style for this neighborhood. The quality of life and livelihood.

The traffic issue is a major concern, I currently go north on Pireaus St. to go to work. I would need to add minimum 15 minutes per day each direction just to get to the freeway. There is no doubt adding a minimum of 300 cars to one small community and street will make getting to the light at La Costa Ave. a serious congestion issue each day. Then consider when there is an accident on the freeway and the highway patrol diverts everyone onto Pireaus St. to get around the accident.

The project does not have enough parking for even 300 vehicles and there is no parking on Pireaus St. or Plato Pl. So imagine how much the neighborhood will like having cars parked all over the streets. The situation that already happened when the city built a park on Olympus without parking. They ruined the neighborhood.

The neighborhood school from my understanding is already almost at capacity. How will they accommodate the new residents, potentially adding 150 kids just on a low number? Another issue is the children will walk to school up Plato Pl. No sidewalks to safely walk to school. So is the solution let's put those 150 cars on the road to take the children to school? Already congested side streets that cannot accommodate another 150 cars.

There is no thought to how those 300 plus cars will enter and exit through one entrance on Pireaus and still allow the current residents in the neighborhood to get onto Pireaus.

The project is to be built on 4.5 acres when they are saying this is an 11.8 acre site. The truth is, only the 4.5 acres have the potential for building. The entire acreage is not open to build.

This project is in a high fire zone, so we are added another potential 300 people that have only one way out of the area. The traffic with everyone potentially trying evacuate would be awful. No way for fire trucks to get in with everyone trying to get out. Think about the people who have lived here for years and how it will impact their homes and lives.

Sincerely,

Gregory W Spires

Encinitas Residents
Gregory Spires

From: janestutoring@aol.com
To: Nick Koutoufidis
Subject: PIREAUS POINT
Date: Tuesday, June 28, 2022 5:49:02 PM

[**NOTICE:** Caution: External Email]

Nick,
This email is in regards to the Pireaus Point building project.
As a long time home owner in the area, i am especially concerned about the following issues:
1) Visitor parking-10 spaces?? That makes no sense, especially with no parking allowed on the nearby streets.
2) Traffic and safety issues with 149 homes being built
3) School concerns-are there plans for a new school? Capri will probably be at capacity... plus there is no safe way for the kids to walk to Capri since there are no sidewalks on Plato.
4) Other concerns are noise(roof top patios), height of buildings, lighting, fire hazards
I am hopeful that the city will address these concerns and others that the residents of this community have.

Sincerely,
Jane Welch
1671 Leora Ln
Encinitas,CA 92024

From: John Low
To: Nick Koutoufidis
Subject: Pireaus Point
Date: Friday, June 24, 2022 8:14:34 PM

[**NOTICE:** Caution: External Email]

Attn:
Nick Koutoutfidis,
I am a property owner (1748 Noma Lane) whose western property boundary will abut the proposed Pireaus Point project. I have been living in my house for 50 years and have had the pleasure of watching my community grow and prosper. The area I live in has developed since 1955 into a single family semi rural atmosphere thanks to some property covenants, ½ acre lot restrictions and a reasonable respect for the community. I am strongly opposed to this development.
Notwithstanding the basic pollution of the number of units (people) and the almost complete lack of infrastructure for high density, the most glaring, impossible to mitigate problem will be the traffic. There is no East/West traffic flow. The neighborhood is a series of narrow, winding roads, poorly lit, with limited sidewalk capacity and ends in various cul de sacs with one way in and one way out. We have always had speeding problems with people who become lost and frustrated. Add to that the pickup times by parents for the elementary school and there is already an overcrowded, unsafe condition. Even the small overdeveloped Olympus Park has been a disaster for the neighborhood. This project is simply to large and intrusive for the surrounding neighborhood.
In a class for city planning 1a, this project would be used as an horrible example of what not to do.

John Low
1748 Noma Lane
Encinitas 92024

From:	Encinitas community collective
To:	Nick Koutoufidis
Subject:	Piraeus Point EIR from Karen Kaden
Date:	Tuesday, June 28, 2022 11:59:02 PM
Attachments:	Karen Kaden- Piraeus Point EIR Comments to Nick..docx K.Kaden EIR comment Supporting Docs -Piraeus Point.pdf

[**NOTICE:** Caution: External Email]

Karen Kaden, concerned resident. June 28, 2022

Attention:

Nick Koutoufidis, Senior Planner, City of Encinitas

Nick, Thank you this opportunity to write my concerns regarding the Housing Element Piraeus Point.

Biological/ Geological/ Soils/Land Use History

During the Housing Element process the community opposed the Cannon property Site 2.

Cannon site 2 is recorded on the Housing Element Map as 6.92 acres, and City Council did not consider the constraints on the property.

It is documented in October 1998, Cannon property 6.92 acres received a Minor Use Permit for Seaside Farms. The Minor Use Permit received from the City, (File #98-209CDP; Decision # DCD98-117) allowed the growing of sunflowers on only 4 acres because of slope and sensitive vegetation constraints. The studies showed the constraints on 2.9 acres.

Reference: Attached two pages of the 1998 application for the Minor Use Permit.

My purpose is to bring clarification that this property has consistently had only four acres to build upon. I am requesting to build less units in order to be sensitive and compatible to the existing community.

Slope and Land Failure

The city has official documents regarding the Cannon property lawsuit with the findings and fact that Cannon 2 is unstable.

Recording historic landslides 06/13/2001, 08/02/2001, 12/20/2002, and 10/22/2003. One or two landslides fell onto and blocked Piraeus, causing a public safety issue. Piraeus from Plato to Sky Loft was closed up to two weeks.

Property was RR-2 and Cannon site 2 is proposing 149 units on this sensitive inland bluff.

The approved Housing Element Map for Cannon site 2 is 6.92 acres, not 11 plus acres. Cannon has two parcels alongside Piraeus. It seems to be misleading to the public, that the proposed Application is adding more acreage to the formula in order to build more units. The second parcel B is not on the Housing Element Map. It was not accepted in the HE process and not buildable. Why are they allowed to do this?

Parking/Traffic/ and Safety:

All were not addressed to the community's satisfaction at CPP.

Create enough parking on project site. They can!

No parking on neighborhood streets to ensure public safety.

Traffic will bottleneck at Piraeus and La Costa. Widen Piraeus at delta.

Traffic will be sent through our narrow residential streets to Leucadia Boulevard.

Should open southbound Piraeus to Leucadia Boulevard, needed for safe evacuation plan.

Safe Walk to School should be on Plato Place for children's safety. Ask applicant to voluntary provide the necessary resources.

I am checking the Land Use & Planning box in the NOP letter. It is the most important element in the General Plan for future planning. The Housing Element will have a lasting effect on safety issues, noise, air quality, traffic, and environment. Infrastructure should come before high density projects.

The city was to encourage scenic/visual corridors. The I-5 Scenic Corridor should be protected as a resource for the public views along the highway.
Therefore, Piraeus Point is in the view shed, and disrupts, distracts, and takes away the scenic corridor's beauty. (Ref: Housing Element: Policy 9.1: Encourage and preserve low density residential zoning within I-5 Corridor while preserving the best natural features and avoiding the creation of a totally urbanized landscape and maintain I-5 Interchange areas to conform to the specifications of this overall goal.) (Coastal Act/30240/30251)

Recreation:
Piraeus Point project needs a playground area for families.
Roof tops should have no fire pits or BBQs.
Roof top patios create noise and effect our quiet neighborhood.
Leucadia is a Dark Skies community, so please ensure all low lighting.
This project overall, is not compatible to the existing community.

Thank you for your time and allowing me to express my concerns.

Karen Kaden
1611 Caudor
Kkaden1611@gmail.com

X CANNON PROPERTY - PIRAEUS / PLATO

CITY OF ENCINITAS
APPLICATION FOR ENVIRONMENTAL INITIAL STUDY
AEIS

Date Filed 7/31/96 (to be completed by City)

Case Number 96-209 MUP/COP Fee Paid $ ACC CC

GENERAL INFORMATION

1. Name of project PIGID

2. Name of applicant Tom Turner
   Address 1549 Summer Cove
   Zip Code 92024
   Phone Number 634-3575

3. Person to be contacted concerning this project:
   Name Andrea Hulsey
   Address 1549 Summer
   City, State, Zip Code Encinitas CA 92024
   Phone 634-3575

4. Address of the project Corner of Piraeus & Plato

5. List all approvals and permits required for the project, including those required by city, regional, state and federal agencies.
   City minor use permit, grading, coastal permit

PROJECT SITE

6. Existing land use(s) Ø

7. Are there any structures on the property? YES If answer is yes, what type of structures are they?
   dumpster & port a potty
   Will they be demolished? no

8. Existing zoning rural

9. Land use designation rural

10. Number of acres 6.92 or number of square feet _____

11. Percent of site previously graded or cleared 60%

12. Does the project site contain any of the following features:

Rock Outcroppings	____	Creeks/Creekbeds	____
Oak Trees	____	Torrey Pines	____
Any Slopes between 25-40%	✓	Scrub Growth	✓
		Other Significant Trees	____
		Any Slopes over 40%	____

x CANNON PROPERTY - PIRAEUS/PLATO

9. Surrounding Land Uses and Setting:

The partially disturbed, vacant project site lies on west facing rolling hillsides. Steep slopes occur in the southern third of the property and along the north boundary. Surface drainage is sheetflow down slope to the north, south, and west. A concrete browditch along the western perimeter collects and conveys most of the runoff to a culvert under Piraeus Street at the southwest corner of the site. The balance of runoff enters a canyon to the north and flows through another culvert under Piraeus. All flows then enter the I-5 storm drain system.

Approximately four acres of the site has historically been used for open field floriculture and now lies fallow. The remaining 2.9 acres support fragmented chaparral and coastal sage scrub. There is an existing unimproved driveway at Plato Place and dirt roads crisscrossing the property.

There are detached single family dwellings on adjacent land to the east and on the other side of an open canyon to the north. Property across Plato Place to the south lies vacant. I-5 is adjacent to Piraeus Street on the west. Lands to the north, south, and east are designated Residential 1.01-2.00 Units/Acre on the General Plan Land Use Policy Map and classified Rural Residential 2 (RR-2) on the Zoning Map. I-5 is designated and classified Transportation Corridor.

10. Other agencies whose approval is required and permits needed:

No agencies other than the City of Encinitas are involved in approvals or permitting for the project. The project site is not within the appeal zone of the California Coastal Commission.

Environmental Factors Potentially Affected

The environmental factors listed below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

Land Use and Planning	Water	Geologic Problems	Biological Resources

Evaluation of Environmental Impacts

A brief explanation is provided for all checklist answers supported by information sources cited in the parentheses following each question. References are listed following the checklist. All answers take account of the whole action involved including onsite

CANNON PROPERTY (PIRAEUS)

SITE NUMBER 02



SITE DESCRIPTION

This site is a vacant property at the corner of Piraeus Street and Plato Place, both of which are 2-lane local streets. The southern portion of the site is flat due to previous grading, with the majority of the rest of the site sloping up towards a flat pad on the northeast corner. The owner has expressed interest in developing this site for residential uses.

SITE FEATURES

- Vacant, natural landscape
- Partially graded
- Some mature trees/vegetation on the northen portion of the site
- Slight topography change

PARCEL SIZE CALCULATION

There are no known physical constraints to development due to steep slopes or environmentally sensitive areas. Therefore, the parcel's net acreage equals the full gross acreage.

OF 6.92 OR 6.93

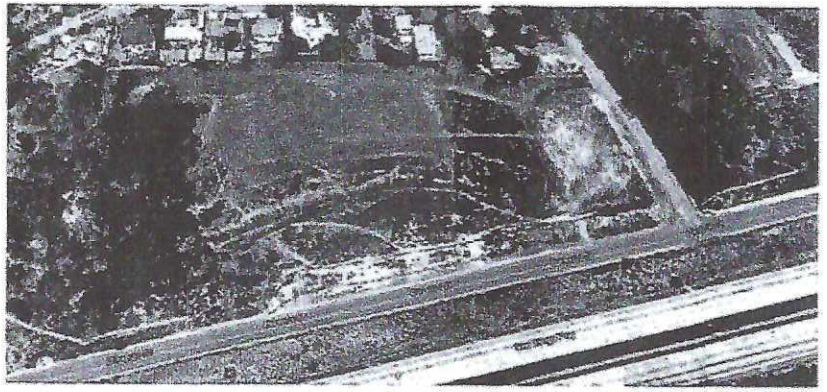
NOTE: 2.9 ACRES ARE SENSITIVE AND SLOPE

APN(S) (Ownership)	2541440100 (CANNON MARIA T)	**PARCEL SIZE (AC) (GROSS/NET)**	6.93/6.93
SITE STATUS	Vacant	**MAXIMUM DENSITY**	30 DU/AC
ADDRESS(ES)	Piraeus Street	**MINIMUM DENSITY**	25 DU/AC
NEIGHBORHOOD	Leucadia	**UNIT CAPACITY**	173
GENERAL PLAN LAND USE	Rural Residential 1.01-2.00 (RR2)	**CONSTRAINTS**	• Slight Topography (less than 25% slope, so no deductions)
ZONING	RR2		

2017-12-16 Special Meeting Item 01 145 of 149

Leucadia - Vacant

- **Address:** Piraeus St
- **APN:** 2541440100
- **Zoning:** Rural Residential 2
- **Size:** 6.93 AC
- **Unit Yield:** ~~207~~ DU
- **Notes:**
  - Steep Topography





From: Encinitas community collective
To: Nick Koutoufidis
Cc: Encinitas Community Collective
Subject: Piraeus Point EIR Comments
Date: Wednesday, June 29, 2022 1:54:05 PM
Attachments: Karen Kaden. EIR Comments SECOND LETTER to Nick..docx

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[**NOTICE:** Caution: External Email]

Nick,
Please find attached additional comments for the Piraeus Point EIR.
Thank you and can you please confirm receiving my email last night, along with this one?

Regards
Karen Kaden
Kkaden1611@gmail.com
1611 Caudor St.

Karen Kaden

June 29, 2022

Piraeus Point EIR

Second Letter of Concern/Issues

Attention: Nick Koutoufidis, Senior Planner

Toxic Soils and Pesticides

Please do not ignore hazardous/toxic waste used on the property more than a decade ago. Cannon claimed the land was farmed prior to I-5 being constructed.

The Minor Use Permit did not specify the use of chemicals. The farm grew more than sunflowers.

The pesticide sprayers in their white coats and masks sprayed when the sun went down. Smells could be detected for more than 500 to 1500 feet into our neighborhood air at night time.

We are also concerned for neighborhood protection and safety issues when excavation and construction occurs.

We do not want Plato and Piraeus to be blocked during construction when we have time clocks to punch.

Utilities:

The Housing Element requires utilities go underground. Please do not waive this.

Thank you for your consideration.

Karen Kaden

1611 Caudor St.

Kkaden1611@gmail.com

From: Encinitas community collective
To: Nick Koutoufidis
Subject: RE: Piraeus Point EIR Comments
Date: Thursday, June 30, 2022 9:51:01 AM
Attachments: image001.jpg

[**NOTICE:** Caution: External Email]

Nick,
Thank you for asking.
These are from Karen Kaden, 1611 Caudor.
I used the ECC email, but am representing myself due to my personal email site was down.
Feel free to ask if you need anything more.
Regards and hope you have a good day Nick.
Karen Kaden
kkaden1611@gmail.com

From: Nick Koutoufidis [mailto:nkoutoufidis@encinitasca.gov]
Sent: Wednesday, June 29, 2022 4:51 PM
To: Encinitas community collective <encinitascommunitycollective@gmail.com>
Subject: RE: Piraeus Point EIR Comments

Hi Karen,

I am confirming receipt of both comments. Please confirm if this one is from you or the Encinitas Collective.

Best,

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

From: Encinitas community collective <encinitascommunitycollective@gmail.com>
Sent: Wednesday, June 29, 2022 1:54 PM
To: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Cc: Encinitas Community Collective <EncinitasCommunityCollective@gmail.com>
Subject: Piraeus Point EIR Comments

[**NOTICE:** Caution: External Email]

Nick,
Please find attached additional comments for the Piraeus Point EIR.
Thank you and can you please confirm receiving my email last night, along with this one?

Regards
Karen Kaden
Kkaden1611@gmail.com
1611 Caudor St.

From:	kathleen lindemann
To:	Nick Koutoufidis
Cc:	Kathleen Lindemann; City Manager
Subject:	Piraeus Point
Date:	Wednesday, June 29, 2022 1:09:49 PM

[**NOTICE:** Caution: External Email]

June 29, 2022

Nick Koutoufidis, Senior Planner
City of Encinitas, Development Services Department
505 S. Vulcan /Ave.
Encinitas, CA 92024

RE: Project: Piraeus Point
Project Case Number: Multi-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022 ; and SUB-005391-2022

Dear Mr. Koutoufidis,In response to the City's Notice of Preparation(NOP) of a draft Environmental Impact Report(EIR), dated May 20, 2022, I am writing on behalf of myself and the residents of Leucadia Village to provide input regarding the scope and content of the EIR. We anticipate that our input will help to ensure the City's EIR addresses those issues of greatest concern to Leucadia Village.

#1. Light pollution generated by the Piraeus Point project. We would like: Landscaping with trees and native plants able to support existing wildlife.
We would like the use of street lighting recommended by the International Dark Sky Association

#2.The impact of heat islands created by replacing undeveloped land with native plants with buildings and pavement. We want to see in the EIR an analysis of the impact of elimination of open space and increase in hardscape on the environment, birds and wildlife. An alternative would be to reduce the number of units to leave more open space to plant trees.

#3. Effects of the proposed project on native plants, which attract a variety of birds, butterflies, support pollination and provide a vital source of food and shelter for these species. We would like a comprehensive list of all plants on the site property, native and otherwise and the examination of the mutually beneficial relationship of native plants with wildlife, endangered species and raptors.

#4. Noise impacts from construction on surrounding neighbors and surrounding wildlife. Noise impacts from increasing the density of housing in the area. Ongoing disturbances from the patios, balconies and rooftop decks facing west across the freeway to Leucadia Village.

#5. A Project of this size and density would result in the removal of open space and wildlife habitat. Open spaces and tree canopies help to mitigate the effects of global warming. We want to see the analysis of the impact of loss of open space and wildlife habitat on the surrounding community and on the wildlife and bird species observed on the property. An alternative is fewer structures to accommodate more open space, trees and native plants for the benefit of the residents of the project and open space with trees facing west on Piraeus and Leucadia Village.

#6. Effects of removing coastal sage scrub habitat and replacing them with urban development. We want to see an analysis of the impacts of removing native habitat and replacing with urban development.

#7. Substantial increases in hardscape, which contributes to higher daytime temperatures, reduced

nighttime cooling and higher air-pollution levels ("heat islands"); dust from construction; and effects of vegetation removal on CO2 sequestration. We want to see quantitative analysis of the effects of habitat removal and increased hardscape on air temperatures, air pollution and CO2 sequestration. We want limitations on days and hours of construction, grading and building. An alternative would be a reduction in hardscape.

#8. Energy efficiencies in the project design. We would like the incorporation of energy efficient and renewable energy elements in the project designs to include charging stations, rooftop solar and rainproof harvesting systems.

Sincerely,
Kathleen Lindemann
On behalf of myself and the residents of Leucadia Village

From: Kathryn Murtfeldt
To: Nick Koutoufidis
Cc: encinitascommunitycollective@gmail.com
Subject: Piraeus Point Project
Date: Thursday, June 23, 2022 4:50:42 PM

[NOTICE: Caution: External Email]

Dear Nick,

As an Encinitas resident at 1593 Caudor Street, I am concerned about this new proposed project in my neighborhood.

This project will impact our community without providing the necessary infrastructure to accommodate the 149 new townhouses. Piraeus and Plato are hilly, narrow two lane streets that have no sidewalks. Piraeus also does not allow cars to go south onto Leucadia Blvd and will force more congestion into residential neighborhoods.

We also have aging sewer, electrical power and drainage systems. Encinitas clean out trucks are daily fixing sewer backups on Caudor Street. How will this new project provide upgrades to the current services that were established for our RR1 - RR2 single family home neighborhood?

The neighborhood Capri Elementary school is at near capacity. Families moving into Encinitas will be challenged to be able to send their kids to the local school. Does the project have a plan for where these new children will be able to enroll?

New residential developments in Encinitas need to provide funding to support additional infrastructure for schools, traffic, police, fire, widening roads, sidewalks, sewer and electrical services.

The Piraeus Project seems to only be satisfying additional housing units, with only 10% of these meeting low income/affordability standards established in the State mandate. As a community we need more support from developers to address how this project meets these other important issues.

Regards,
Kathy Murtfeldt
Kmurtfeldt@icloud.com

Sent from my iPhone

From: Nick Koutoufidis
To: Kristen Smith
Cc: Rick Smith
Subject: RE: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)
Date: Wednesday, June 1, 2022 11:08:00 AM
Attachments: image001.jpg
NOP_Signed_Final.pdf

Hi Kristen,

The attached NOP is the only document at this time. The NOP is only indicating the beginning of the preparation for the Draft EIR.

When the draft EIR is released for public review, you will be noticed again.

Hope that helps!

Best,

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

From: Kristen Smith <kristen-jordan@cox.net>
Sent: Thursday, May 26, 2022 7:36 PM
To: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Cc: Rick Smith <smith38@cox.net>
Subject: Re: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)

[**NOTICE:** Caution: External Email]

Hello Nick,
Is there a link to access the Draft EIR for the above project?
Thank you very much.
Kristen Smith
Normandy Road
Leucadia

Kristen Smith
760-468-4800
Sent from my iPhone. Please excuse the brevity and any spelling or grammatical errors. Thank you.

On May 26, 2022, at 7:06 PM, Nick Koutoufidis <nkoutoufidis@encinitasca.gov> wrote:

Hello,

Please see the attached Notice of Preparation (NOP) for the Draft Environmental Impact Report (DEIR) for the Piraeus Point Residential Subdivision project.

COMMENT PERIOD: Please send your comments to Nick Koutoufidis, Senior Planner, Encinitas Planning Division, 505 S. Vulcan Avenue, Encinitas, CA 92024, or via email to nkoutoufidis@encinitasca.gov. All comments must be received by no later than **5:00 p.m**. on **June 29, 2022**. This Notice of Preparation can also be reviewed at the Encinitas Library at 540 Cornish Drive, Encinitas, CA 92024 and the Cardiff-by-the-Sea Library at 2081 Newcastle Avenue, Cardiff-by-the-Sea, CA 92007.

Thank you.

<image001.jpg>

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

<NOP_Signed_Final.pdf>

From: Kristen Smith
To: Nick Koutoufidis
Subject: Piraeus Point - Issues and Concerns - Traffic and Safety
Date: Friday, June 24, 2022 4:33:18 PM

[**NOTICE:** Caution: External Email]

Mr. Koutoufidis,
I attended the community presentation by Lennar Corporation which introduced the proposed development known as Piraeus Point and have also reviewed segments of the EIR for this property. The following concerns and questions are important to me and my neighborhood on Normandy Road, between Piraeus and Urania, as to traffic and infrastructure and the impact on our area:

1. Piraeus is a two lane road and the only major means of passage during emergency situations, e.g. fires
2. Piraeus, near La Costa, will flood after heavy storms and storm runoff – drainage is poor and traffic is impacted. What improvements are planned for the drainage in this area?
3. Piraeus really needs traffic safety improvements – for pedestrians, bicycle traffic and vehicles
    a. A three-way stop sign is needed at Piraeus and Olympus (community park site)
    b. A three-way stop sign is needed at Piraeus and Normandy. Piraeus is the main access road to get to the I-5 North at Leucadia Blvd. from the subject neighborhood. Normandy is also a connecting road to the I-5 South at Leucadia Blvd. At the present, vehicles are making reckless, high speed turns from Piraeus onto Normandy and it has become very dangerous for vehicles exiting the Weidners Gardens parking lot and vehicles pulling out of residential driveways on Normandy.
    c. Piraeus is too narrow and unsafe for vehicle, bicycle and pedestrian traffic. Olympus Park is now open and traffic and parking are concerns. There should be sidewalks on Piraeus for pedestrians.
    d. NO parking should be allowed on Piraeus from La Costa to Leucadia Blvd.
4. What are the plans to improve the access onto La Costa from Piraeus with the increased traffic (e.g. left and right turn lanes on Piraeus)?

Other concerns include:

1. Will the units be strictly owner-occupied? How will investor purchases be monitored. Will investors be permitted to purchase the condos to operate as rental units?
2. What protections will be in place or added to mitigate the risk of wild fires in the brush areas? Utility lines should be underground.
3. While the plans for this project are stated as “For Sale” condominiums, will there be restrictions to prevent the property to be converted to multi-family rental apartment

units?

4. What restrictions will be in place to insure that the affordable/low income housing restrictions remain in place in perpetuity.

In my opinion, the City of Encinitas has failed to recognize and plan for the infrastructure improvements that were needed to support our current level of explosive growth. It would be irresponsible for the City to approve new projects, such as this one, without providing the additional improvements that are necessary. Several months ago, Councilmember Kranz remarked that while the City's budget for road and traffic improvements is limited, the City always looks to new developments and developer fees to assist with those outlays. Hopefully this developer will finance a portion of the needed infrastructure improvements and the City is prepared to supplement the work needed to bring the infrastructure up to safe standards.

Thank you for your time and consideration.

Kristen L. Smith
Normandy Road

From: LESLYE STRINGFELLOW
To: Nick Koutoufidis
Cc: encinitascommunitycollective@gmail.com
Subject: Piraeus point
Date: Saturday, July 2, 2022 10:16:51 AM

[NOTICE: Caution: External Email]

Dear Nick,
I don't think Leucadia is ready yet for that big development! I own 11 acres in Oceanside and they have kept me from selling it for development for the last 22 years! They just say No! It makes me sad but I don't live there. I live in Leucadia. Where do we get the extra water, electricity, sidewalks, parking, street lights for all these people? How can they add to our Capri school which is already full? This neighborhood has a special character which I feel would be ruined by that development. Please, do like Oceanside and just say No!
Leslye Stringfellow
856 Capri Road

Sent from my iPhone

From: Kamele Shaffer
To: Nick Koutoufidis
Subject: Piraeus Point Project Letter
Date: Sunday, June 26, 2022 6:35:59 PM
Attachments: City of Encinitas Letter.docx

[**NOTICE:** Caution: External Email]

Hi Nick,

Please find the attached letter regarding our concerns with the potential build of the Piraeus Point Project. We are residents that live directly behind the proposed project.
Thank you for your consideration,

Luke and Kamele Shaffer

To Whom It May Concern,

We are the Shaffer Family and we live at 1670 Leora Ln in Encinitas, also known as the house directly behind the northeast corner of the proposed Piraeus Point Townhouse Project. We appreciate the point of view of the City of Encinitas and the developer Lennar Homes attempting to help "low income families" and to ultimately turn a profit. That being said, we do have a lot of concerns.

We share almost all the same concerns as our neighbors i.e. congestion, pedestrian safety, traffic, population and lack of public services, parking, air quality, hydrology and water quality impacts, and geological issues to name a few. In addition to these there are high levels of concern regarding the cost of living and comfort of living for those moving in as well as for the quality of life for the citizens already living in the area (most for decades). We are a small community here and this building adds 30% more people into our already congested neighborhood. The large building does not fit our quaint neighborhood and de-values our homes and quality of life. If this were truly for low income residents and state requirements then this building would be located in an area of town where the people we are trying to help have access to the things they need within walking distance (ex. Encinitas Blvd).

On a more personal note, we (the adjoining neighbors of Leora and ourselves) are majorly affected and feel significant impact by this project, as it will be towering over our current home, leading to invasion of privacy, noise impacts, ocean view obstruction, towering electrical poles, the effect of our personal on site low income unit and renter, as well as significant health concerns for our small children as the project is being built.

Congestion/Traffic: All the buildings in this area are single family homes with some low income units on property. By adding this large 149 unit building the City is authorizing an additional 400-700 people into our neighborhood without the infrastructure in place to maintain it. That is 1/3 more people than whom live here currently. By adding these additional people to the already narrow streets, we will be severely impacted especially during Capri school hours. This causes severe commuting delays as well as safety concerns. In addition there is no public transportation nearby for low income families and many people will be walking in this neighborhood (which we will get to the safety issue of that later). Lennar claims that all traffic will go north to La Costa Ave when they want to go somewhere, which is simply untrue as it is untrue now for current residents. The southbound lane on Piraeus does not go through to Leucadia Blvd so all traffic has to be routed through the neighborhoods unless the city changes the south bound connector to Leucadia freeing up some of the traffic issues. If this does not occur than any traffic exiting onto Piraeus from the Piraeus Point townhomes should be mandated to go North with a blockade just outside their point of entry onto Piraeus.

Pedestrian Safety: In order to leave safely from the new proposed Piraeus Point project you would have to get in a car. There are currently no sidewalks or proposed sidewalks that would connect to anything of value that would allow the residents to get to school in the neighborhood, Olympus park or any necessary stores etc. These residents would be forced to walk the narrow street of Plato and risk getting hit by cars or walking the even more dangerous road of Piraeus where people travel at freeway speeds. A pedestrian was recently hit and killed on Piraeus and

we do not want to see more accidents and death due to a lack in vision for safety. If this project goes forward there needs to be safe ways to access the neighborhood with the appropriate sidewalks.

Population/Lack of Public Services: The current school of Capri is near capacity and by adding 30% more people to the neighborhood the school would become over populated. Many people will be affected by this addition in population and potentially a reorganization of the current district/school lines. This project should be placed on hold until there is a solution for the kids schooling to ensure all residents of this community get the education they deserve and pay for. A new elementary school needs to be built to accommodate all the new projects being added to this small community. We simply do not have the infrastructure for all these people we are bringing to this small town. We are already overpopulated and continually in constant traffic. Our nice beach community is becoming hard to live in due to the ever growing population. We cannot afford to add 149 more units into this area.

Parking: The proposed project has only 10 guest parking spots and some units only have 1 parking space in their garage. We all know that most people do not park in their garages, especially when you live in a small space (even more so in the Covid environment). Due to the fact that there are clearly not enough parking spaces for residents let alone guests, contractors, service techs etc. all these cars will be forced to find parking outside the residence. They will then be parking on Piraeus creating major safety concern for those entering onto Piraeus from Plato as well as all the e-bike kids and other people flying down the street of Piraeus. There needs to be more parking on-site at Piraeus Point in order for there to be safe practices. In additional all garages should be able to park full sized SUVs and have enough storage for bikes, and family stored items.

Hydrology/Water Quality: We are in stage 2 water restrictions and the current residents are being asked to reduce water usage. If this is so dyer then why are we adding additional people who will consume more water and make a large environmental impact on our water supply?

Geological/Soil Issues: The slope for the proposed project has fallen 4 times since 2000 and gone onto Piraeus. The owner states the soil is unstable and not a site for building. This is a concern for the current homes that line the property as well as the quality of the sloped area that has been chosen to put 149 units on. It seems as if the soil should be removed completely down to street level or the project be moved completely.

All the above issues are of deep concern for not only us and all those currently living around us, but for the quality of life for the potential future resident of this area. On a personal note we are a second generation family that has worked extremely hard to try and afford the community we love and know for our growing children. We bought our home with the intent to stay in it long term and watch our kids flourish. But with the ever growing list of concerns with this project we are not sure we can stay in our home or community. The Piraeus Point Project will be covering 70% of our existing ocean view and open space we have in our yard, significantly de-valuing our home and everything we have worked so hard to achieve. I am a disabled vet and have fought hard to get my family to where we are today. Lennar is a large company with deep pockets that is

taking a large portion of our family value. The dollars they gain is not equal to the dollars we lose in this moment.

Invasion of Privacy: Our entire backyard, primary living areas, master bathroom, and our low income rental, are all now subject to 24 hour surveillance. The westbound portion of our property is floor to ceiling windows and the new large scale building towers over us and we now have zero privacy. We ask that the buildings be brought down to a street level if they are to remain at three story and roof tops are approved. If that is not possible we ask that there be no windows facing the properties to the east of Piraeus Point. This makes our property uncomfortable for living.

Noise: Adding 149 units is going to increase the noise in the area tremendously and it will travel to not only our residence but a far distance. Having roof top patios is just an added lack of care for the surrounding neighbors. Not only does it add height to the building but also creates a large amount of outdoor noise in the evening hours. We have young children and the loud noises of speakers, parties etc. will be a terrible addition to the neighborhood. We ask the rooftops be eliminated. Create more ground level outdoor space and parking. There is a way to make this building fit into the neighborhood without interrupting all aspects of our current life.

Ocean View Impact: 2/3rds of our ocean view and open space feel will now be lost with an overdeveloped property. The height of the building is outrageous and the fact that they don't need to take the building down to street level is an outrage. This is now going to look like a large scale apartment building and destroy the character of our community. Why not preserve the views of the residents who worked hard to afford those views, rather than giving them to a large corporation for profit. How about making the building fit in rather than making the residents give at every turn?

Electrical Poles: Lennar told us they were asking for a concession to leave the existing electrical poles. Please make them responsible for burying the current electrical poles, one for looks, but also for safety, access availability with the new retaining wall/ground scape as well as to show good faith for trying to do something positive for the neighborhood. At this point Lennar is trying to add negatively to the community and skirt the basic responsibility to improve our area. Bury the electrical.

Health/Building Concerns: The Piraeus Point residents will be breathing in I-5 fumes if the city approves the building next to the fwy. In addition as construction commences we will be breathing in toxic pesticides from the contaminated soil as they excavate the dust. This is harmful to us and our small children.

Most people that have worked hard enough and are lucky enough to live in this community know why people want to move to Encinitas and why more people need to be allowed to live here. We know that we will not be able to achieve our ultimate goal which is to stop this project. If there is a way to move it we ask that it is considered for the life, safety, and health of all in the community. That said if we can't stop this then we ask that the city seriously look at this project and reconsider the buildout and all of our above concerns. We hope that Lennar and the City of Encinitas will truly try and fit this build into our community with respect and understanding for

our fellow residents and youth. This is a life changing event for us and many that surround us. We ask you take this to heart and alter/delay/move this project for the betterment of us, our kids, and our community. Thank you for your time and genuine consideration.

Respectfully,

Luke and Kamele Shaffer
1670 Leora Ln.
Encinitas, CA 92024
760-580-1610

From: Kamele Shaffer
To: Nick Koutoufidis
Subject: Piraeus Point Project Letter
Date: Sunday, June 26, 2022 6:37:44 PM
Attachments: City of Encinitas Letter.docx

[**NOTICE:** Caution: External Email]

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Respectfully,

Luke and Kamele Shaffer
1670 Leora Ln.
Encinitas, CA 92024
760-580-1610

From: mawickett
To: Nick Koutoufidis
Subject: Piraeus Point
Date: Friday, June 24, 2022 3:29:07 PM
Attachments: Piraeus Point (Encinitas Senior Planner).docx

[**NOTICE:** Caution: External Email]

1584 Caudor Street
Encinitas, CA 92024
June 23, 2022

Nick Koutoufidis, Senior Planner
City of Encinitas

Dear Sir:

CHILDREN. The proposal for Piraeus Point fails our children. Here's how:

- No safe passage to or from school (Capri Elementary). Plato Place is a busy street during drop off and pick up times at Capri Elementary. The road is narrow and somewhat curvy. There are no sidewalks along Plato now and apparently none in the proposal.
- No sidewalks on Plato, or even enough of a shoulder to walk on, makes Plato Place a treacherous death path for children. It is essential that this problem be addressed and resolved to protect children or there will be injuries, possibly even death. I speak from experience as I frequently pick up trash on Plato Place and experience the traffic, lack of sidewalks, and challenges from drivers.
- To get to Capri School walking or riding a bike, children must cross from the north side of Plato to the south side. There is a stop sign at the top of Plato where it intersects with Caudor Street, but few drivers actually stop. There is a curve just before the stop sign making visibility difficult. You should come by and observe at 7:40 AM when parents are dropping off their kids at Capri.
- Of Piraeus illegally along Piraeus, Plato, and/or Caudor creating traffic blockages and additional danger for children walkjng to and from school as well as drivers whose visibility may be adversely affected. It's unlikely the police will patrol it in such a way as to prevent the illegal parking. There is really no safe place to park along Piraeus, Plato, or Caudor. More parking must be provided on the site.
- Play areas are limited. There may be some area on top of the buildings, but that is loud due to Interstate 5 and not particularly safe if balls and other toys sail over the edge of the building. The freeway noise is intense. We hear It from our home on Caudor Street. Air quality is questionable and is known to have adverse effects on children. My understanding is that of the 12-acre parcel, only six acres will be used, leaving the other six natural. Not a particularly safe play environment either. There is Olympus Park, a lovely city park about a half mile away. Again, the issue is safety. There are no sidewalks and often no space to walk along Piraeus between Piraeus Point and Olympus Park. Traffic moves along this stretch at speeds in excess of 45 miles per hour. The obvious solution is to build a sidewalk. There appears to be no plan to do this. There also needs to be a safe way to cross Plato at the intersection of Plato and Piraeus as cars tend to turn quickly from Piraeus onto Plato to enter our neighborhood at that point.
- Capri Elementary-The children from this development will attend Capri Elementary creating overcrowding. As an elementary teacher for 37 years, overcrowded schools are

not in the best interest of children. Encinitas Union School District seems to have no plan to address this problem. In the late 90s I opened Carrillo Elementary School in Carlsbad (San Marcos Unified School District). To mitigate overcrowding, Continental Homes, the builder, helped to finance the school in cooperation with the school district. The developers of Piraeus Point should perhaps do something similar so the children living in Piraeus Point will have a quality, uncrowded school to attend.

I have many other concerns about this project including the stability of the land (there has been a landslide on the property), pesticides used when it was agricultural, drainage, water needs, sewage, emergency access for the entire neighborhood in the event of fire or other natural disaster (entrances and exits to this neighborhood are limited), lack of access to food, drug stores, public bus transportation, policing (our neighborhood has a few sketchy characters) to name a few concerns. How will the developer be held accountable for making sure that intended low-income housing goes to those who need it and remains low income housing.

The safety and well-being of children must be seriously considered and addressed with their well-being front and center as this project moves forward.

Maryann Wickett
mawickett@aol.com

From: Megan Incorvaia
To: Nick Koutoufidis
Subject: Piraeus Point Concerns
Date: Tuesday, June 28, 2022 8:23:04 PM

[**NOTICE:** Caution: External Email]

Hi Mr Koutoufidis,

I am a resident of the Capri neighborhood where the proposed Piraeus Point Project is currently under consideration. Our home is very close to his project (ie we can see the Cannon lot from our backyard). After reviewing the information provided by Lennar in the plans for the Piraeus Point development project I am very concerned about a number of issues:

Parking -
First - that the amount of resident and guest parking spaces is not enough to account for the number of cars likely to be present for residents and their guests in the 149 units. There is not street parking on Piraeus or Plato, meaning that all of these cars would be coming up into the neighborhood to park - where there also is not street parking, but there is lower traffic (for now!). I feel this will lead to not only illegal street parking but more congestion on the streets throughout the neighborhood.

Traffic & Safety -
Additionally increasing the traffic throughout the neighborhood is dangerous as there are not sidewalks on the route between this development and Capri elementary - add to that cars illegally parked on the side of the street & you'll be forcing children to walk to school in the middle of the street.

I think the developer should be responsible for ensuring that there is adequate parking & that the daily overflow parking from their unit does not clog the streets of Capri neighborhood.

Further, could this development be dependent upon opening up the south bound piraeus exit directly to Leucadia boulevard, rather than the currently required detour through the neighborhood?

Fire Risk -
Fire season is now year round and it is a top if mind risk for me, especially after the fire in Carlsbad this past weekend. I worry that adding even more traffic to our small neighborhood streets in the event of an emergency will make evacuation unsafe for my family and our neighbors.

Capri elementary school -
Capri elementary school is also reaching capacity. Add to that the fact that this Pireaus Point development as well as 2 others currently planned will be sending their children to Capri elementary & the school will be maxed out. What are the plans to address local school capacity?

Thank you for your consideration on these issues.

Best,
Megan Incorvaia

--
Megan Incorvaia
c: (203) 536-7164

From: Mike George
To: Nick Koutoufidis
Cc: encinitascommunitycollective@gmail.com
Subject: Question and objections to Piraeus Point Proposed Project
Date: Friday, June 17, 2022 12:22:02 PM
Attachments: CPP Piraeus Point.doc

[NOTICE: Caution: External Email]

Attached please find my letter in opposition to this project. Please respond to my questions and concerns as stated in the letter. I look forward to your responses.

Thank you in advance, Michael A. George, Treasurer of Skyloft HOA

June 13, 2022

Michael A. George
1703 Gascony Road
Encinitas, CA. 92024-1226
(760) 822-9294

Nickolas Koutoufidis, Senior Planner
City of Encinitas, Developmental Services Department

Mr. Koutoufidis:

I am writing to you about Project Title: Piraeus Point, Project Applicant: Lennar Homes of California, LLC, Project Location: NE corner of Piraeus Street and Plato Place, Encinitas, CA 92024: County Assessor Parcel Nos: 254-144-01-00 and 216-110-35-00.
Project Case Numbers: Multi TI-005158-2022; CDP-005161-2022; DR-005-160-2022; Sub005-005159-2022; and Sub-005391-2022.

These are my concerns about this project:

1. The project is located on an environmental sensitive bluff with many natural character and endangered species and flora. There is coastal sage scrub and southern maritime chapparal here which should be preserved. The endangered Gnatcatchers nests on this parcel. It is my understanding a portion of the parcel will be set aside as preserve. My question is who will teach the Gnatcatchers to leave their natural nesting area and relocate to the preserve?
2. The project is out of character for the community in which it is proposed. It is in an area of single-family homes, a rural residential community. From south Piraeus going north to La Costa east to Leucadia west to the corner of Leucadia and Piraeus is occupied by predominately single-family homes. How does this monolithic three-story, densely compacted project fit in with the established community?
3. This project will add the deterioration of air quality in an area already sited as “threaten the public health and welfare of current and future generations”. How will the added development which includes more than 300—455 people and as many as 300 vehicles help reduce the air-quality concerns already stated? Why has the commission allowed density bonus for parking for this project?
4. Since this site has had a slide, resulting in many feet soil being dropped on top of natural surface, how deep are the diggings to find archaeological artifacts? When asked this question of a company digging for such items the response was two feet. This is total inadequate in light of the slide in this area.
5. This site is close to the State Recorded La Costa Avenue Fault. Will prospective buyers be notified of this information? Will it be disclosed to the public?

6. Some of the property in which the townhouses are proposed to be built on was once a Commercial Agricultural growing business which used pesticides on this property. How will this be mitigated? How will the site be safely established for humans?
7. The level of noise which comes from the I-5 interstate is already in excess of the recommended level without this project. This project will add to that level. What is proposed by the applicant to mitigate this unsafe level?
8. If this proposal goes through, students walking to Capri School down Plato Place will only have side-walks from Piraeus east to the end of the project. There is no plan to extend the side-walks through the remaining Plato Place. How will walking students be given a safe way to get to Capri School?
9. With a projected 300 daily trips, by the occupants of this project, per day times a factor of 6 equals 1,800 vehicle trips per day. Add to that total service vehicles, and it becomes an even greater number. It will put a great deal of pressure on Plato Place, Olympus Road (where we already have an unsafe condition due to the park there) and Normandy Road. It will create even more backup on Piraeus north bound and La Costa during the evening commute. It already backs up on Piraeus so far that cars attempting to make a right on La Costa east, cannot get to the corner to do so when safe to make a right-hand turn. How will this traffic hazard be addressed by the applicant?
10. The occupants of this project will place pressure on the wastewater system which is 70 years old. The increase in wastewater will necessitate considerable improvements in the system receiving the wastewater from these occupants. What provision will be made to upgrade the system as it functioning now?
11. This project puts more pressure on the water system. We are already facing a drought limitation on usage. This project will just add to a dire situation. Why are we building during a drought period? The city should consider placing a moratorium on new construction during this drought period. Prior to discharge of stormwater into the stormwater system it must be treated. How will the stormwaters be treated?
12. This project has no recreational areas, except a pool, for residents to use. The developer is suggesting that the roofs be used as recreational areas. But the roofs need to be used to accommodate solar panels. Where will things like BBQs and furniture be located. If there is room for them, what about the high winds experienced in this area. Loose furniture can be a hazardous to the residents and neighbors. In addition, I thought the height limit in the City of Encinitas was 28 feet, but with these roofs the structure are going to be 35 feet. Two questions here are: 1) How will the safety of residents and neighbors be assured with the possibility of high winds and loose furniture? 2) What happened to the height limit of 28 feet in the City of Encinitas?
13. It is my understanding the project has obtained a Density Bonus Project status for parking spaces. Why was this given to them?
14. Leucadia is a dark skies community because of the Batiquitos Lagoon. Street lamp poles are required on the west side of Piraeus Street. How will this contradiction be resolved?
15. Is there enough room for the proposed trees to be planted in light of the City of Encinitas setbacks? How will this impact the SDG&E setback because of the high voltage overhead lines on wooden poles?

16. If the developers want to impact low-income housing they should be setting aside 15% of the project for this rather than the 10% which they proposed. Will you recommend a higher percentage? Isn't this the time for negations?
17. Your office needs to do a complete review of this application as to zoning for townhouses subject to R-15. In light of the useable acreage, its constrictions as to developable acres, and the number of townhouses which could be built on this application. It should be far less than 149 units. Will your office be pursuing this review? Will your office reduce the number of units if this review shows it is needed?

Thank you for your attention to this letter. I look forward to your responses. I for one do not think this proposal is suitable for the present proposed location. The design of these is more appropriate for the Route 101 corridor of Encinitas. It would fit in there.

Michael A. George, Treasurer of Skyloft HOA

Cc: encinitascommunitycollective@gmail.com

From: Michael A. George
To: Nick Koutoufidis
Subject: Re: Question and objections to Piraeus Point Proposed Project
Date: Sunday, June 19, 2022 12:29:25 PM

[NOTICE: Caution: External Email]

They are my personal comments. Thanks Michael A.George

Sent from my iPhone

> On Jun 17, 2022, at 1:47 PM, Nick Koutoufidis <nkoutoufidis@encinitasca.gov> wrote:
>
> Hi Mike,
>
> Thank you all of your comments. These will be considered in the preparation of the Draft Environmental Impact Report (EIR).
>
> Just for clarification, are these comments from you individually or are you representing the Skyloft HOA?
>
> I will also add you to the list of people that will get notified when the Draft EIR is released for public review.
>
> Best,
>
> Nick Koutoufidis, MBA
> Development Services Department
> 505 South Vulcan Ave, Encinitas, CA
> P: 760.633.2692
>
>
> -----Original Message-----
> From: Mike George <eaglebythesea@cox.net>
> Sent: Friday, June 17, 2022 12:22 PM
> To: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
> Cc: encinitascommunitycollective@gmail.com
> Subject: Question and objections to Piraeus Point Proposed Project
>
> [NOTICE: Caution: External Email]
>
> Attached please find my letter in opposition to this project. Please respond to my questions and concerns as stated in the letter. I look forward to your responses.
>
> Thank you in advance, Michael A. George, Treasurer of Skyloft HOA
>

June 28, 2022

Michael A. George
1703 Gascony Road
Encinitas, CA. 92024-1226
(760) 822-9294

Nickolas Koutoufidis, Senior Planner
City of Encinitas, Developmental Services Department

Mr. Koutoufidis:

I am writing to you about Project Title: Piraeus Point, Project Applicant: Lennar Homes of California, LLC, Project Location: NE corner of Piraeus Street and Plato Place, Encinitas, CA 92024: County Assessor Parcel Nos: 254-144-01-00 and 216-110-35-00.
Project Case Numbers: Multi TI-005158-2022; CDP-005161-2022; DR-005-160-2022; Sub005-005159-2022; and Sub-005391-2022.

This is to confirm additional information regarding this project. I am hand delivering this to you (or your office) the following pages:

1. Picture of "Station White Historic Viewshed Protection extends over Piraeus Point Project. June 11, 2006. Mayor Houlihan (red hair) dedicates Station White Viewshed."
2. Copy of California Coastal Commission memo dated August 22, 2012, W27A, per Station White viewshed policy.

Thank you in advance,

Michael A. George, Treasurer Skyloft Homeowners Association

STATION WHITE Historic Viewshed Protection
extends over Piraeus Point Project

June 11, 2006

Mayor Houlihan (red hair) dedicates STATION WHITE Viewshed



STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY
EDMUND G. BROWN, JR., Governor

CALIFORNIA COASTAL COMMISSION
SAN DIEGO AREA
7575 METROPOLITAN DRIVE, SUITE 103
SAN DIEGO, CA 92108-4421
(619) 767-2370

August 22, 2012

W27a

TO: COMMISSIONERS AND INTERESTED PERSONS

FROM: SHERILYN SARB, DEPUTY DIRECTOR, SAN DIEGO COAST DISTRICT
DEBORAH LEE, DISTRICT MANAGER, SAN DIEGO COAST DISTRICT

SUBJECT: STAFF RECOMMENDATION ON CITY OF ENCINITAS MAJOR LCP AMENDMENT #1-11A (Historic Viewsheds) and B (DESP On-street Parking) for Commission Meeting of September 12-14, 2012

SYNOPSIS

The subject LCP amendment was submitted and filed as complete on August 3, 2011; the submittal includes two unrelated amendments. The first component (LCPA #1-11A) involves revisions to both the City's certified land use plan (LUP) and implementation plan (IP) to establish provisions for the protection of historic viewsheds and then identifies the first such viewshed. The second component (LCPA #1-11B) involves revisions to the City's certified Downtown Encinitas Specific Plan (DESP) which was adopted as part of the City's implementation program at the time of the initial LCP certification. This report will address both components. A one year time extension was granted in September 2011. As such, the last date for Commission action on this item is this hearing.

SUMMARY OF AMENDMENT REQUEST

Part A of the amendment request involves revisions first to the Resource Management Element of the certified land use plan to add a new Policy 4.9 regarding historic viewsheds, re-number subsequent policies and amend the adopted Visual Resource Sensitivity Map to recognize the "Station White" Viewshed. In addition, the amendment then proposes a corollary change to the Municipal Code/IP by adding a new sub-section to Section 30.34.080, Scenic/Visual Corridor Overlay Zone, regarding Historic Viewsheds. These revisions are proposed to allow for the designation of historic viewsheds that are of cultural or historic significance to the community.

Part B of the amendment request involves revisions to the City's certified Downtown Encinitas Specific Plan (DESP), adopted as part of its implementation program. The proposed changes reflect the City's intent to maximize the availability of on-street parking along First and Second Streets by completing a restriping program for diagonal parking and providing an incentive for businesses to close driveways along these streets. The proposed revisions also include greater details regarding Streetscape Concepts and

From: Michael Callies
To: Nick Koutoufidis
Subject: Traffic and Parking issues
Date: Wednesday, June 29, 2022 4:59:40 PM

[**NOTICE:** Caution: External Email]

As the City Council continues to try and pack our neighborhoods with high density housing instead of fighting Sacramento's rules which will destroy our beautiful city traffic and off street parking are a major concern. Much of our City is older with narrow streets and often no sidewalks. Adding 100's of additional vehicle trips thru these neighborhoods while increasing the number of cars parked on the streets is dangerous and unfair to the existing residents.

Michael Callies

From:	Mike McGovern
To:	Nick Koutoufidis
Cc:	Virginia McGovern
Subject:	Piraeus Point - Feedback
Date:	Sunday, June 5, 2022 1:44:10 PM
Attachments:	2022-06-05 13-29.pdf

[**NOTICE:** Caution: External Email]

Hi Nick,

I will make this short and sweet. Please don't do this project. Encinitas is already way too crowded. Traffic lights are back up almost all day, everyday, and there are way too many homeless and mentally ill people walking the streets already.

The developers won't be happy until Encinitas is just another pig sty like Los Angeles.

We need some open lands. Encinitas is way over built already. There is plenty of land in east county for high density housing.

Look what the developers did to Del Mar Heights Rd….absolutely disgusting.

Please stop building and clean up the darn streets.

Thank you,
--
Michael T. McGovern
1710 Burgundy Rd.
Encinitas, CA 92024
Cell: 760-822-7106

Thanks,
Mike
Cell: 760-822-7106

Sent from my iPhone.

From: Monique Onbirbak
To: Nick Koutoufidis; Encinitas Community Collective
Subject: Piraeus point development
Date: Tuesday, June 28, 2022 4:26:45 PM

[**NOTICE:** Caution: External Email]

As a homeowner in the Monte Mira community, I am very concerned about the impact of this development in our community.

My biggest concerns are the high number of cars which will cause additional traffic and pollution. The impact on Water, as it is we are dealing with water shortage, and it gets worse every year.
Three story townhome does not fit in with the exciting look of the neighborhood!

Sent from Yahoo Mail for iPhone

From: NB Viv
To: Nick Koutoufidis
Subject: Piraeus Point traffic
Date: Thursday, June 23, 2022 7:47:21 AM

[**NOTICE:** Caution: External Email]

I am a local resident living on Capri rd and when school is in session Caudor and Capri become completely congested. One day I needed to retrieve something from my house and quickly drove home only to find that I couldn't get anywhere near my house so I had to park and walk a few blocks. The idea that these small roads will be able to handle another 300 (at least) vehicles is poorly conceived.
The other real problem is that Leucadia Blvd (and the freeway) can't be accessed from Piraeus going south. All of that traffic will have to wind through Capri and Caudor to Urania (and some will go through Normandy) There are numerous speed bumps (good) but that will further slow things down.
I understand the need for subsidized housing. Why doesn't the city use that land to put trailer type houses on and provide 25 low income houses. That is 10 more than we will get with the buildout of a dense downtown style condo project
Yours truly
Nicholas Levy

P. Rodgers
1533 Claudon St.
Encinitas CA 92024

SAN DIEGO CA 920
23 JUN 2022 PM 2 L



Nick Koutoufidis, Senior Planner
City of Encinitas, Development Services Department
505 Vulcan Avenue
Encinitas
CA. 92024

RECEIVED
JUN 27 2022
CITY OF ENCINITAS

92024-369999

RE: Moreau Point Project

FROM: Patricia Rodgers
1533 Caudor St.
Encinitas, CA 92024

TO: Nicholas Koutoufidis, Senior Planner
City of Encinitas
Development Services Dept.

ATTENTION: Nick Koutoufidis
RE: Pirzeus Point

6/23/2022

Dear Nick,

As a longtime resident of the beautiful Southern California beach town of Encinitas, I am extremely concerned about the proposed construction and location of the Lennar Pirzeus Point Townhomes project in my immediate community.

There are numerous issues of concern to most of us living in this neighborhood. Some of these involve quite technical terms and environmental research data to which I do not have direct access. However there are several very crucial areas that I - as a dedicated and concerned citizen - would like to address and bring to your attention. I do this with the hope that you will seriously consider them as reasons to halt this project proposal; or at the very least - to evaluate the possibility of relocating the project to a different site.

1. SAFETY

First and foremost, with the daily congestion of traffic back and forth to Capri School, this will only escalate to an unacceptable and

dangerous level with the addition of 149 more families. With the school currently at near full capacity - it is impossible to travel on Capri, Candor and Plato during school start and finish hours. How can we possibly accommodate 149 more families - each with multiple children who will attend already overcrowded classrooms? And what an emergency were to occur at or near the school (ie fire, earthquake, gun violence) every parent would be rushing to the campus in order to find and rescue their children. How would emergency vehicles, first responders and law enforcement ever be able to approach the scene and perform their respective roles in handling safely the situation?

Vehicular traffic flow southbound Travis St. to Lincoln Blvd. with entry to I-5 is currently not possible. This lack of access to a necessary major artery is a huge disruption to the flow of traffic and consequently - in an emergency - could be disastrous, causing precious time delays bringing loss of property and possibly life itself!

2. PARKING

We cannot allow on-street parking on Travis, Plato, Candor and other residential streets. We already have a huge problem

with families searching for a parking space when visiting with their children at the fields at Olympus Park.

The new project does not appear to have adequate parking spaces for 149 families who will each — not only need multiple spaces per family — but will each require room for guest parking, service and repair trucks, daily delivery and emergency vehicles.

3. WATER / DROUGHT

We are currently being mandated to reduce our water consumption by approx 10%. It appears incongruous that major residential projects which will consume more than 38 acre feet of water are being considered (or worse — approved) while existing customers are reducing their usage to a drought condition.

Personally I have a backyard garden which gives me great joy each and every day. I exercise to conserve my own daily use of water so that I can with clear conscience provide life-maintaining water to my flowers, vegetables and bird bath.

4. AESTHETICS

The proposed development is incompatible with the rural character of the existing

community. The building design, height and sheer bulk chosen to accommodate the high density objective simply does not fit our neighborhood and will degrade the quality of life for the existing residents, wildlife, endangered species, flora and chaparral. Additionally, such a high density structure will inevitably have a negative effect on surrounding property values.

With sincerity and respect, I request that you consider the concerns and objections outlined above.

Thank you for your attention to this most important issue for Encinitas — and for all you do and hope done in the past for our community.

Sincerely,

Patricia Godges
1533 Cantor St.
Encinitas, CA 92024
760-634-1234
360pattia@gmail.com

From:	peter mcbride
To:	Nick Koutoufidis
Cc:	Jennifer McBride
Subject:	Pireaus Point EIR
Date:	Wednesday, June 29, 2022 5:01:46 PM
Attachments:	CityofEncinitas.pdf

[**NOTICE:** Caution: External Email]

Dear Nick Koutoufidis,

Please see attached letter from Peter & Jennifer McBride at 1680 Leora Ln, Encinitas, CA 92024.

Thank you.
Peter McBride

Peter & Jennifer McBride

1680 Leora Lane, Encinitas CA 92024 |
760-473-9690 / 760-613-6688
mcbride@artichoking.com / jennysmcbride@gmail.com

06/29/22

Nick Koutoufidis

Sr. Planner

City of Encinitas

Dear Nick Koutoufidis:

Since meeting with the developer (Lennar Homes) on June 13, and meeting with most of our neighbors and the ECC concerning the development of Pireaus Point, we have highlighted below the most concerning topics related to our property. We also share the same concerns our neighbors have voiced relating to parking, traffic, sidewalks and general uncomfortableness with the high-density units forced into a small acreage. We do however, have other concerns directly related to our property which backs up to the Northeast corner of the proposed plans. I have been in this house since 1984 and have known a lot of the same neighbors for that amount of time.

1. SOUND: The box-like design and materials of the buildings as well as the positioning of them in relation to Interstate 5 is likely going to create more noise as sound can reflect off the buildings and create multiple canyons that echo between the buildings and off the proposed large retaining walls. With this comes the additional sound of a large community of people, dogs, cars, doors opening and closing at all hours.
2. EXCAVATION: The amount of dust and dirt that will be moved for the project is shocking, and with the wind most always blowing onshore, will most certainly affect our house, children, and health. Our concern also lies with whatever was left in the soil when farming sunflowers previously. A larger concern will be the fragility of the land, as there has been multiple slides on records past. If there is a 15 foot plus retaining wall directly behind our house, during the digging, we are very concerned about the safety of our property.
3. VIEW: Although the buildings cap at 35 feet, there is rooftop entertainment which often will lie in direct view, if not above, our fence lines. When people are entertaining, having dogs on the roof, making noise there will be lights, sound and little privacy.

Sincerely,

Peter & Jennifer McBride

From: ray gutoski
To: Nick Koutoufidis
Subject: Re: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)
Date: Monday, June 27, 2022 2:05:51 PM
Attachments: image001.jpg

[**NOTICE:** Caution: External Email]

Good afternoon Nick.

Please accept this email as a response to the notice regarding the Piraeus Point Project currently being proposed by the city of Encinitas and Lennar Homes.

First, the meeting and presentation held by Lennar at The La Costa Resort, I found to be disingenuous and deceitful. The presentation itself lacked valuable information needed to provide the local residents any idea of the price range of the proposed homes, how these homes would affect the current market rate of existing homes in the area or any housing comps that could be used for our research. There was simply not enough data and the data, such as the traffic consultants report, was an obvious manipulation to prove a point. That kind of reporting is unappreciated. The presenters of this program spoke with a tone of superiority and lacked any empathy for the current residents. When challenged, the answers provided by the presenters were opinion and lacking insight and fact. The heavy reliance on Green Areas and a Pool came across as a classic mis-direction play because Lennar knows this is a poor choice of design and a poor location. During the introduction, the Lennar representative claimed to be available as long as needed and that they scheduled this meeting for the current local residents. That quickly became a false declaration as the Lennar reps answered reactively and then told the audience that this meeting was out of control and was about to end. On that statement, 50% of the attendees got up and left as they were disrespected and felt no need to listen to anymore of this one sided presentation. I myself was told that Lennar was doing us a favor with this design and that it could be a lot worse. When I challenged the Lennar staff for a compromise, I was told that the residents provided Lennar no alternatives or options during this conversation. In response, I simply asked this Lennar representative if offering a compromise based on these issues was my job or Lennar's job. Some of the staff on hand had not even visited the site yet. That kind of attitude does not promote trust and actually creates an air of deceit.

As for the major issues with this proposal, many of the issues are so blatantly obvious, that you will see the redundancy from the residents comments and insights.

1. Design-This model is so progressive in its appearance and usefulness that it will stick out in a very negative way. This layout can be reviewed in person in San Elijo's downtown area, where it actually fits in. The difference is that there are only 4 pods and not the large number for Piraeus Point. This design is a plug-in place type of model and gives the property the illusion of being normal. This normalizing of neighborhoods will be the exact opposite of what Encinitas was intended to be.

2. Construction Disruption and Destruction-If this plan were to pass, it will make Piraeus Street into a disaster area. It was bad enough when the 5 was being worked on. The addition of construction vehicular traffic along with the by-pass traffic and then the local use traffic will make Piraeus into a 2 lane nightmare, not to mention even more unsafe for

residential traffic, bicycle use and children traveling back and forth from the new park on Olympus. There was also a problem with debris such as screws and nails puncturing tires, when Lennar built on Piraeus and Normandy. This construction traffic will create a debris situation like no other and leave a mark on this area that will never be able to be repaired.

Traffic-The current city project list has way too many units that all filter into the same main arteries leading to the 5 and El Camino Real. In doing this, drivers will seek alternate routes and Piraeus will become a very heavily used option and Piraeus is not engineered to handle that kind of volume. This street was intended to be a frontage road and not a main thoroughfare. Piraeus too will become so tedious for travel that drivers will start to cut through the neighboring areas in search of relief. The lennar Traffic Report and the time of travel data from this report was also unrealistic and without merit. Piraeus Point along with the Clark Project are set up to ruin the local environment ecologically and in terms of function. There are no ancillary or alternative options here as the corner is locked into a plan that is only accessible on Piraeus itself and will not allow traffic west onto Plato, nor should it redirect traffic up into a much quieter neighborhood. Who will enforce these traffic rules and how will they be enforced to protect our community?

Parking-There is no possible way the parking plan for this project will be acceptable if put into place. This parking design, along with the code changes to allow such a design, do nothing more than provide a pathway for development, at the risk of the current land owners in the area and future land owners within this planned development. The data used to project these available spaces is unrealistic and without foresight, not to mention manipulated. The plan also lacks any options for overflow, guests or anything out of the ordinary like flooding or fire.

Lack of Infrastructure and Stress on Existing Infrastructure-Street uses versus street use design and intent, lack of available pedestrian traffic options, travel paths to schools and existing arteries are all due to be severely impacted by the addition of these units and the people who live in them. Lack of lighting versus adding lighting and ruining the existing neighborhoods also focuses on what the intent of the city plan was originally for this area. Residents purchased homes in this area for its quality of life and character and this is not considered in this move forward. The area in its current state simply was never designed to handle an addition such as this proposed development and the neighborhood is reflective of that by its lack of space for sidewalks, additional parking or common areas for people to gather. This is also going to stress the sewage, garbage management and additional traffic noise, already problematic to this area from the 5.

Safety-All of the above topics have the same underlying issue and that is safety. With 1 recent fatality on Piraeus from a pedestrian being hit by a car, on Mother's Day, which is not a high traffic time of use, the forecast for potential future accidents is high. The street itself is narrow and made more so with the additional bike lanes as there is no "bail out" area on either side of this street. Piraeus is also not level and has many blind spots as part of its change in elevation. The added pedestrian(children and pets included), bicycle and vehicular traffic will statistically increase the opportunities for accidents to occur. Vehicle on vehicle accidents are bad but vehicle on human accidents are catastrophic. There is also a great potential to have a massive evacuation issue in the case of fire and the chances of fire go up dramatically with the addition of this many units being connected to each other and being so closely built together. How the fire department could successfully operate under these conditions is not being considered let alone being addressed. Additionally, drought conditions, high winds through these very open spaces and an already known SDGE wire issue all contribute to increasing the

possibility of disaster.

Ownership-Lennar stated that the 15% of low income buyers would be vetted out properly and no one in this community has issue with that. We were also told that there would be no home sales to LLC, Hedge Funds are other institutional/retail buyers, only personal investors. How can anyone stop these personal investors from becoming landlords and not immediately renting these properties? How can anyone stop future home sales to institutional/retail buyers who are currently creating a housing market crisis that this country has never experienced? This in essence would make this development into a renters haven and limit any control of the residency there, thus downgrading the existing neighborhood. Who will protect the current property owners that created this mature and established neighborhood with their life long investments of both money and personal equity? There are not many answers and it has the appearance of this is because the development of new housing is created regardless of the current space and ownership situation.

Power-The current power grid situation here in this neighborhood is dangerous. SDGE has now adopted a practice of turning off residents power on chosen evenings as a "Maintenance Period" in effort to repair/upgrade grid issues, thus leaving homes with no means of safety for these extended periods. Now a new Encinitas building code requires that you can only build with electrical power in a Green Energy initiative. These newly built properties will increase the stress on an already problematic electrical grid and be a major safety concern for all in this city. I asked the Lennar representative about this increased electrical stress and he acknowledge this as a major issue, even saying that he has spoke with SDGE many times and there is currently no solution. The provider SDGE knows of this, the builder knows of this and I can't imagine the city of Encinitas isn't aware of this, so why do all parties agree to move forward with housing projects that are of high statistical probability to create more failures? This additional drain on the system will also raise demand in a state that outsources 35% of its current electricity thus raising rates in an area with the highest electrical rates in the country? Why would anyone agree to such a short sighted decision? What would happen in the case of electrical loss for an extended period of time? What would happen if power was lost and a fire occurred? This entire neighborhood would be at major risk of disaster. Is there a contingency plan?

Water-The same arguments can be made for water supply as for power. Water availability in California is in a drought state and has been for more time than not in the 18 years I have lived here. Cost is also rising at unreasonable rates. I asked the Lennar representatives about water supply and they confidently said that they had plenty of water. How can that be true if the entire state is in a drought stage and we are being asked to ration water? This once again puts the current residency in a worsening condition all for the reason of development.

In closing, I'm sure you will see a similar trend in most of these comments and observations due to their obvious nature. I can see this plan having so many problems that addendums will need to be created and those additional items will make this development a disaster for the neighborhood. The infrastructure, safety, ownership, power and water issues I would like to see have a contingency plan presented. This property is simply in the wrong place for a housing development. Why doesn't the city use their state collateral and put a public green space in there? Then the entire 11 acres can be utilized and the community isn't being manipulated to thinking they are getting a great deal when there's only 4 acres that can be built on. Put another nice park or dog park in. That would be more representative of the land intent for use and a better fit for the neighborhood and Encinitas.

Regards.

Ray Gutoski

On Thu, May 26, 2022 at 7:06 PM Nick Koutoufidis <nkoutoufidis@encinitasca.gov> wrote:

> Hello,
>
> Please see the attached Notice of Preparation (NOP) for the Draft Environmental Impact Report (DEIR) for the Piraeus Point Residential Subdivision project.
>
> **COMMENT PERIOD:** Please send your comments to Nick Koutoufidis, Senior Planner, Encinitas Planning Division, 505 S. Vulcan Avenue, Encinitas, CA 92024, or via email to nkoutoufidis@encinitasca.gov. All comments must be received by no later than **5:00 p.m.** on **June 29, 2022**. This Notice of Preparation can also be reviewed at the Encinitas Library at 540 Cornish Drive, Encinitas, CA 92024 and the Cardiff-by-the-Sea Library at 2081 Newcastle Avenue, Cardiff-by-the-Sea, CA 92007.
>
> Thank you.
>
> **Nick Koutoufidis, MBA**
>
> Development Services Department
>
> 505 South Vulcan Ave, Encinitas, CA
>
> P: 760.633.2692

From: Rich Horowitz
To: Nick Koutoufidis
Cc: Encinitas community collective
Subject: Piraeus Point
Date: Thursday, June 23, 2022 8:36:55 PM

[**NOTICE:** Caution: External Email]

Dear Mr. Koutoufidis,

As a long time resident and concerned citizen, I'm writing to you in regards to Piraeus Point. With Capri School at near capacity and no plans to expand, how will the city address the needs of the additional children in light of this development? Also, with no sidewalks for the children on Plato, how will the city handle child safety.

Thank you for your time in answering these very important concerns.

Regards,

Richard Horowitz
1643 Caudor Street
Encinitas, CA 92024

760-519-3823

From: Robert Murtfeldt
To: Nick Koutoufidis
Cc: Kathryn Murtfeldt
Subject: Comments - Piraeus Point Project
Date: Monday, June 20, 2022 11:48:27 AM
Attachments: Piraeus Townhomes Project Planning Comments.docx

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[**NOTICE:** Caution: External Email]

Dear Nick,

See attached my comments regarding the proposed Piraeus Point townhomes project and preparation of a draft EIR for this project. Please feel free to contact me with any questions you may have.

Thanks and best regards,

Robert Murtfeldt
1593 Caudor Street
Cell: (408) 348-6239

June 20, 2022

Nick Koutoufidis
Senior Planner
Development Services Department
City of Encinitas

Re: Project Title: Piraeus Point
Project Applicant: Lennar Homes of California, LLC
Project Location: NE corner of Piraeus Street and Plato Place, Encinitas, CA 92024; County Assessor Parcels: 254-144-01-00 and 216-110-35-00
Project Case Nos: MULTI-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022 and SUB-005391-2022

Mr. Koutoufidis:

I'm a resident of Encinitas, residing at 1593 Caudor Street approximately ¼ mi from the proposed Piraeus Point townhome project. I attended Lennar's Citizen's Participation Program ("CPP") meeting on June 13th to learn more about the proposed project. This project was designed to satisfy the City of Encinitas' requirement to provide more affordable / low-income housing under a California State mandate.

While I support the State and City's efforts to provide more affordable/ low-income housing in our community, I have concerns regarding the current design of the Piraeus Point townhome project plan:

Project Density:
In 2021, the City applied a residential 30 overlay to the Piraeus Point townhomes site, increasing the allowable home density from RR1 and RR2 (0.5-2.0 du/ac) up to as high as 30 du/ac, a 1,500% increase! This project proposes to build 149 townhomes on APN 2541440100, a 6.9 acre parcel of land. **This density is not compatible with the character and services available in the surrounding community.** The developer seeks to convince the City and our community that the project encompasses 11.8 acres by adding APN 2161103500 – this is misleading since this second parcel is unbuildable due to the steep grade of the bluff and proximity to the Batiquitos Lagoon.

Affordable/Low-Cost Housing Mandate:
This project would provide only 10% of the homes (15 total) as affordable/low-cost housing. **If the City truly wants to comply with the State mandate, this percentage should be significantly higher.**

Traffic Congestion:
During the CPP meeting, Lennar conducted their own traffic study, concluding the project would have no impact on local community traffic congestion. The results from this study are misleading, since currently there are periods of high traffic congestion on Piraeus, Plato, Caudor and Capri when parents are dropping-off and picking-up their children at Capri School. Plato Place is one of only a very few access routes into/out of the Leucadia Hills community. Plato and other neighborhood streets are classified as non-complying country roads: they are narrow, curvy and hilly with frequent blind corners and turns – no street parking is allowed. The addition of an estimated 300 additional vehicles from this project would have a major negative impact on Leucadia Hills neighbors' abilities to leave their driveways and navigate to either La Costa Ave. or Leucadia Blvd. **At a minimum, a traffic study should be conducted by an independent firm during peak traffic congestion periods to understand the current and potential traffic congestions problems and how to alleviate them**. An aspect of this study should also assess how many of the vehicles from this project would likely be parking illegally on Piraeus, Plato and Caudor due to the very limited parking spaces available in the project community. We already experience driving hazards from illegal parking on these streets. The City will need to determine how best to mitigate this.

I'm also very concerned about police and fire safety. Police and fire vehicles must have free access to our community during medical, crime and wildfire emergency events. **There should be independent studies conducted on behalf of the Encinitas City and San Diego County Police and Fire Departments to assess the dangers of limited street access during emergencies.**

School Availability and Child Safety:
Capri School is near its capacity. This project in addition to other projects in the area would add a significant number of children wanting to attend Capri School. There are not adequate school facilities nor teachers available to accommodate these additional children at Capri. **The City should develop a plan for reallocating some of these additional children into other schools in the community, and with neighborhood housing densities increasing, building additional new elementary and secondary schools.** I feel that developers in addition to City, County and State resources should bear responsibility for funding the construction of these new schools.

The project is near Capri School, and many children walk from their homes to and from the school each day. This project will be adding children who must walk to school. Unfortunately, Plato and Piraeus do not have sidewalks or crosswalks, and children will face a perilous journey walking along these routes. **The developer should be responsible for constructing sidewalks and crosswalks along Plato and Piraeus for keeping our children safe.**

Utilities
We live in an old neighborhood with aged utility services – old power lines and transformers, old telephone, cable and other digital service lines. Most of the poles carrying these lines are overloaded, with some leaning at angles in places over the streets (e.g., Caudor and Urania). We must deal with frequent power and digital service outages in our neighborhoods to repair

these services now. **There should be an independent study to determine how the existing utility infrastructure could support this new project. At a minimum, the developer should bear responsibility for upgrading and burying underground utilities in our neighborhood that would supply this project (e.g., Piraeus, Caudor).**

Sincerely,

Robert Murtfeldt
1593 Caudor Street
Cell: (408) 348-6239

From: Robbe mcG
To: Nick Koutoufidis
Subject: New development in Leucadia off Piraeus street
Date: Monday, June 27, 2022 4:44:51 PM

[NOTICE: Caution: External Email]

Dear Sir,
This development will bring in too much traffic and confusion for our neighborhood. We can't over build and over populate here. Already it's a nightmare with traffic to Capri School. tThis doesn't fit here. I'm so upset with your plan here.
Roberta Mcgregor

Sent from my iPhone

From:	Sarah Griffith
To:	Nick Koutoufidis
Cc:	randrade@tidesequities.com; stan@andradearchitects.com
Subject:	Piraeus Point Project
Date:	Wednesday, June 1, 2022 12:59:39 PM
Attachments:	image001.png MULTI-005158-2022 Scoping Meeting Notice for Public Agencies.pdf MULTI-005158-2022 Piraeus Draft EIR.pdf MULTI-005158-2022 Piraeus (notice).pdf

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[**NOTICE:** Caution: External Email]

Hello Nick,
We received the notice regarding the proposed project at Piraeus Point. Do you by chance have a site plan or proposed plan that demonstrates the scope of the project? We'd like to take a look at that if possible, as the project may affect our neighboring property.
I appreciate your assistance with this request!
Thank you,

Sarah Griffith
Andrade Architects, Inc.
2880 S. Coast Hwy
Laguna Beach, CA 92651
(949) 715-7474 ext. 101



From: Sheila
To: Christian Gutierrez; Nick Koutoufidis
Subject: FW: Affordable to very Low Income Housing
Date: Monday, June 13, 2022 1:15:57 PM

[**NOTICE:** Caution: External Email]

A couple more questions:

AFTER the very low , Low, or Affordable houses are "sold" or "rented" – how do you keep track of the levels of income of the recipients. For example a person starts out at the appropriate level for the low income dwelling unit….but in 5 years, he/she gets a new job that substantially raises their income so they will not qualify for that unit any longer because they are making too much money. WHAT does the City do? Warn them that they will have to move within a 60 day period?

Then, if bought – the very low, low or affordable house can only be sold at the then prevailing rate for that level of house? The value of the house may go up $5,000.00 – they can walk away with that $5,000.00? OR what? Seems as though, if they have taken care of the property, they can take that small profit and it gets sold to the next people at the prevailing rate.

I hope this is planned out and going to be monitored somehow??

Let me know….Sheila

Sent from Mail for Windows

From: Sheila
Sent: Monday, June 13, 2022 11:14 AM
To: Christian Gutierrez; Nick Koutoufidis
Subject: Affordable to very Low Income Housing

Good morning Christian and Nick:

I'm contacting you as the two responsible for fielding questions on Affordable to Very Low Income Housing and I need some guidance:

At Piraeus Point there are 15 very low income dwelling units proposed. The developers have assured me that per my request these housing units will be sold – not rented. Not sold to LLC's or Developers relatives; etc., the type of thing that has been going on in our City which the citizens find to be corrupt practices – hopefully in the past – as the City has at least one lawsuit because of it.

SO: Please Explain to me for clarification: What is the process for selling these homes? Does the City have a list of qualified individuals/families for very Low Housing rates? According to proven income and need? For example: There were 80 families in line that supposedly qualified for the affordable? Or Low Income home? in Olivenhain. That was snatched up by an LLC – hence the

Lawsuit!! Which left 80 applicants out in the cold! Not an intent of the statues, I'm sure.

Also, is it a blind distribution? No names involved? Random, pull out of a hat? Are these participants all qualified for very low income?
And – as the dwelling units will vary from one, two, or three bedroom – the participants would have to be categorized by need accordingly. In other words, you wouldn't want to see a family of 4 in a one bedroom unit!

I have suggested to the Developer that a COMMITTEE of CITIZENS be formed to choose the participants – particularly from the neighborhoods where these developments are taking place; with clear guidelines drawn up as to fairness and hopefully there will be diverse results. Honesty and Integrity should rule this distribution of units.

Please get back to me as soon as you can. We have our first CPP tonight, but if you get back to me after that, its o.k. Please answer all my questions though, and add any information you may have.

Best regards, and THANK YOU both – Sheila S. Cameron

Sent from Mail for Windows

From: Sheila
To: Christian Gutierrez; Nick Koutoufidis
Subject: FW: Affordable to very Low Income Housing
Date: Wednesday, June 15, 2022 3:42:45 PM

[**NOTICE:** Caution: External Email]

Hi Christian and Nick,

I'm not sure if you saw my second set of questions below that I sent to you. I really am trying to figure out how the sold and/or rented houses are going to be tracked. Please consider my last inquiry and let me know how this process is actually going to work. If you don't yet have this in place, please consider getting together with a few citizens to try to map this out! Me included. Sheila

Sent from Mail for Windows

From: Sheila
Sent: Monday, June 13, 2022 1:15 PM
To: Christian Gutierrez; Nick Koutoufidis
Subject: FW: Affordable to very Low Income Housing

A couple more questions:

AFTER the very low , Low, or Affordable houses are "sold" or "rented" – how do you keep track of the levels of income of the recipients. For example a person starts out at the appropriate level for the low income dwelling unit….but in 5 years, he/she gets a new job that substantially raises their income so they will not qualify for that unit any longer because they are making too much money. WHAT does the City do? Warn them that they will have to move within a 60 day period?

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To: Christian Gutierrez; Nick Koutoufidis
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Please get back to me as soon as you can. We have our first CPP tonight, but if you get back to me after that, its o.k. Please answer all my questions though, and add any information you may have.

Best regards, and THANK YOU both – Sheila S. Cameron

Sent from Mail for Windows

From: Sheila Locko
To: Nick Koutoufidis
Subject: RE: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)
Date: Friday, May 27, 2022 8:24:10 AM
Attachments: image001.jpg

[**NOTICE:** Caution: External Email]

Hi Nick,

Thank you for the Notice of Preparation for the Draft EIR for the Piraeus Point Project.

Enjoy a wonderful Memorial Day weekend!

Sheila Locko

This communication and any accompanying documents are confidential and privileged, and intended for the sole use of the named recipient(s) only. Any redistribution of this email, content or its attachments in whole or in part to a 3rd party by email or any other means is prohibited under state and federal cyber crime statutes, regulations and laws. If you received this in error, you are to: delete the email and any all contents and any attachments and 2.) confirm this action by return email. Receipt by all recipients is tracked and monitored by 3rd party software.

From: Nick Koutoufidis <nkoutoufidis@encinitasca.gov>
Sent: Thursday, May 26, 2022 7:06 PM
Subject: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)

Hello,

Please see the attached Notice of Preparation (NOP) for the Draft Environmental Impact Report (DEIR) for the Piraeus Point Residential Subdivision project.

COMMENT PERIOD: Please send your comments to Nick Koutoufidis, Senior Planner, Encinitas Planning Division, 505 S. Vulcan Avenue, Encinitas, CA 92024, or via email to nkoutoufidis@encinitasca.gov. All comments must be received by no later than **5:00 p.m**. on **June 29, 2022**. This Notice of Preparation can also be reviewed at the Encinitas Library at 540 Cornish Drive, Encinitas, CA 92024 and the Cardiff-by-the-Sea Library at 2081 Newcastle Avenue, Cardiff-by-the-Sea, CA 92007.

Thank you.

Nick Koutoufidis, MBA
Development Services Department
505 South Vulcan Ave, Encinitas, CA
P: 760.633.2692

From: Sheila Locko
To: Nick Koutoufidis
Subject: Pireaus Point NOP
Date: Wednesday, June 29, 2022 4:57:29 PM

[**NOTICE:** Caution: External Email]

Dear Nick,

Thank you for the opportunity to comment on the environmental issues you clearly identified as the basis for determining that an EIR is required for the proposed Piraeus Point project. This development *as applied for will definitely have a significant and negative effect on the environment.*

Detrimental Impact to the Gateway to Encinitas and the Batiquitos Lagoon

Piraeus Point application parcels APN # 254-144-01-00 and APN # 216-110-35-00 are adjacent to and border (respectively) the environmentally irreplaceable and sensitive north coastal bluff corridor properties APN #216-110-12-00, and the Caltrans open space preservation parcel APN#216-110-31-00.

This bluff has been known and valued for decades as "The Gateway to Encinitas". It maintains wildlife connectivity with the Batiquitos Lagoon Ecological Reserve (BLER) and surrounding native space which connects to Encinitas Creek, into the lagoon and out to the Pacific Coastline. The bluff's natural topography and prominent landscape character is highly visible from the I-5 corridor and the and the Batiquitos Lagoon.

This project will significantly and adversely affect this critical wildlife coastal corridor, and result in watershed, runoff, light and noise impacting the lagoon's wildlife and habitat.

Aesthetically, it approved, the dramatically oversized Piraeus Point will be a blight on this scenic I-5 corridor as it will disproportionally dominate the natural landscape and view as vistors and residents travel to and from Encinitas.

Wildlife and Habitat

These coastal bluff properties are valued for their high habitat values in the North County Municipal Habitat Program. Many of the wildlife species are listed by federal, state and county agencies as protected, threatened or endangered. These coastal bluffs are home to coastal sage scrub occupied by the California Gnatcatcher, and are essential for the preservation of this species, as well as supporting rare and intact southern maritime chaparral, coastal flora, native California plants and wildlife proving connectivity to the lagoon.

The damage to the environment from the construction and resulting congestion once built of this proposed 149 townhome project will have untold destructive effects on the ecosystem of this critical wildlife coastal corridor.

Other Agencies and Organization input for EIR

Batiquitos Lagoon Foundation: As the City is contemplating further agency and public input as you continue the environmental review process, we strongly suggest that the Batiquitos Lagoon Foundation is involved in this process, as this project will have a negative effect on the lagoon on many levels. The BLF is a stakeholder and the steward of several preservation properties surrounding the lagoon. Their input with regard to negative effects on the lagoon, as well as guidance regarding mitigation via permanent preservation should be included in the EIR process.

California Coastal Commission: As the properties are within the Coastal Zone under the purview of the California Coastal Commission, it is important to note that they are the entity for an appeal if the project is ultimately approved. Note that the BLF successfully won a CCC appeal for a pending development bordering the lagoon. Citizens will be aware of this process.

Caltrans: Since Caltrans owns the preserve bordering one of the subject parcels and actively maintains that property, they should have a stakeholder interest in how this proposed project will negatively affect the integrity of the wildlife and habitat of the preserve.

Cumulative Environmental Effects for proposed surrounding developments

The EIR needs to address the multiple other projects – both proposed and in development- in the immediate Leucadia area. The environmental impacts of Piraeus Point need to be viewed from that perspective, and in depth.

The overriding issues of traffic, lack of adequate infrastructure, greenhouse gas emissions, fire and safety access issues, parking, past slope failures, pesticide history on the site, an evacuation plan, the clear insufficiency of Piraeus to support this huge influx of residents and ADT's, air quality, and the burden this would impose on public services, as well as the schools – all these issues are absolutely critical and need to be addressed in the EIR.

We trust that the EIR process period will ensure that all of these issues, and so much more will be thoroughly analyzed.

Thank you,

Sheila Locko

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From:	Teresa Ornelas
To:	Nick Koutoufidis
Cc:	Teresa Ornelas
Subject:	Pireaus Point Project Multi-005158-2022; CDP-005161-2022; DR-005160-2022; Sub 05159-2022 and Sub-005391-2022.
Date:	Wednesday, June 29, 2022 11:00:01 AM
Attachments:	EIRComments.pdf

[**NOTICE:** Caution: External Email]

June 29, 2022

Nick Koutoufidis
Senior Planner, City of Encinitas
Development Services Department
505 S Vulcan Ave
Encinitas CA 92024

RE: Piraeus Point
Project Multi-005158-2022; CDP-005161-2022; DR-005160-2022; Sub 05159-2022 and Sub-005391-2022.

Thank you for the opportunity to respond to the Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the above. Concerns include the following:

1. **Please read, review and act on the Environmental Review and Letter prepared by Encinitas Community Collective (ECC) June 29, 2022 and submitted with specific responses to the EIR Draft**.
2. **Hazardous Materials.** The 2 acre area of Parcel A was used as agricultural growing business from 1998 to 2010. We requested that soil samples be analyzed by a State Certified Laboratory. We believe Geocon did not address these concerns. These contaminated soils need to be removed from the site and not buried or moved around on the site. **See ECC Environmental Report page 19**. Very important.
3. **Traffic** – The community is in midst of many new projects and each new project intertwines to form a complicated tangled web. There is already much high volume traffic driving through small nonconforming rural roads. There is no direct access to Leucadia Blvd from Pireaus. Cal Trans stated in 1989 when closing the south bound Pireaus Street traffic to Leucadia Blvd, it would only be reopened if supporting data were provided. The time has come. Neighborhoods have been voicing their concerns and yet no one listens.
4. **Children/Safety Issues** – It remains dangerous and hazardous for children living in the existing residential community to walk to Capri Elementary School. There are no sidewalks, crosswalks, street lighting and stop signs. Capri is close to being at its maximum numbers and with the addition of Pireaus Point conditions will only get

worse.

5. **Fire Evacuation Plan** – The risk this Project poses to public safety, particularly during a wildfire event as extensively documented by public testimony and multiple expert assessments is very real. It is not clear per the City website that a plan exists. A careful well thought out plan needs to be developed by the City. Is there one? We live in a high risk fire area per the risk maps depicted on the City's website. Insurance companies have been known to drop residents from insurance and refer to a high risk fire area. Individuals in my area are at higher elevation and evacuation would be very difficult given the proximity of Capri Elementary School. Traffic would gridlock within minutes.

6. **Geology/Soil.** The amount of soil that will need to be removed is more than 60,000 cubic yards. The grade slope is to be less than 15%. This slope will need to be strictly enforced. The complexity of removing so much soil requires special attention so that landslides will not reoccur in the future. I am afraid that if the contractor is not knowledgeable in the construction of retaining walls, landslides or subsidence may happen. Very dangerous. There are two nearby earth quake faults known as the Rose Canyon and the La Costa Fault. The inland bluffs are historically unstable.

7. **Environmental setting. Gateway to Encinitas.** This project does not fit with the "Gateway to Encinitas", the scenic doorway, the natural preserve. This is the image the City has been depicted on their website. The Piraeus Point 149 townhomes stacked/shared walls project is out of character with the surrounding rural area. Much discussion has been held on preserving this area as mitigation habitat property. Pireaus is the "Gateway to Encinitas".

8. **Utilities/Infrastructure. Power Lines**. Need to be buried. Time to improve the community. Perhaps these power lines could be buried at the same time the soil is being moved.

9. **Water.** Drought exists. (Stage 2, third year). Yet we are still building. A moratorium needs to be initiated. Present neighbors will be impacted and asked to reduce their use in order to make up the difference.

10. **Strict Code Enforcement. City Inspections** to determine and insure the quality of workmanship and material quality. Because of the priority given to more new developments, I am concerned codes will not be enforced because of the City's qualified manpower shortages.

11. Increase the number of **low income homes**. Too low to make much difference. It will take forever to get to the numbers the State wants to see.

12. **The State Legislature** has called for construction of 3.5 million homes by 2025(?) but is highly questioned by the Embarcadero Institute for its accuracy. The number is closer to 1.4 million housing units? We may be much closer to this number. Legislators are driving the 3.5 million number and results in doing more harm than good.

13. The consequences of the Density Bonus Law has resulted in public officials going thru the motions but in reality have stopped looking after the city's needs. It is obvious the same size fits all approach is followed and no local control. Not good. Presently we hear 17 new housing projects are in the planning stage. When you take into account the present Encinitas population, 17 new projects are huge.

14. **Affordability of low income homes** – The community has great concern regarding the tax subsidies given to "low income" borrowers who at 50% median income level will not be able to afford an all electric townhome. Approximately 40% of their utility bill will be for their "hot water" usage. Other concerns: a minimal solar power system operating AC 24/7. Residents will not open their windows, because of the high noise level (80 dBA) and pollutants from traffic from the adjacent I-5 freeway. There is also the high cost of real estate taxes, home insurance and townhome association dues. **Is affordable really affordable for low income borrowers**?

15. The **character of Encinitas** is being chipped away and lost with each new project. We are on our way to be like a city like Los Angeles or San Francisco. It is not too late but it is getting very close. Yet no one wants this when asked. Do you?

16. **Density Bonus Law** should be clear and separate from **community planning**. We see too many times it is easier for the City Council to stress DBL instead of proper well thought out community planning. We need to take care of our community. Given the number of projected new developments and pressures put upon city officials, it is difficult for this process to take place. Developers are favorably received and contribute to the City Council Election campaigns. This creates stress and anxiety-- not a healthy future for the City and 500 people living at Pireaus Point Townhomes. We can see this in City Hall hearings. Rebuttals are not allowed. It is shameful.

17. The project is not wanted. Please deny it.

Teresa Ornelas
1760 Burgundy Rd
Encinitas CA 92024

June 29, 2022

Nick Koutoufidis
Senior Planner, City of Encinitas
Development Services Department
505 S Vulcan Ave
Encinitas CA 92024

RE: Piraeus Point
Project Multi-005158-2022; CDP-005161-2022; DR-005160-2022; Sub 05159-2022 and Sub-005391-2022.

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11. Increase the number of **low income homes**. Too low to make much difference. It will take forever to get to the numbers the State wants to see.
12. **The State Legislature** has called for construction of 3.5 million homes by 2025(?) but is highly questioned by the Embarcadero Institute for its accuracy. The number is closer to 1.4 million housing units? We may be much closer to this number. Legislators are driving the 3.5 million number and results in doing more harm than good.
13. The consequences of the Density Bonus Law has resulted in public officials going thru the motions but in reality have stopped looking after the city's needs. It is obvious the same size fits all approach is followed and no local control. Not good. Presently we hear 17 new housing projects are in the planning stage. When you take into account the present Encinitas population, 17 new projects are huge.
14. **Affordability of low income homes** – The community has great concern regarding the tax subsidies given to "low income" borrowers who at 50% median income level will not be able to afford an all electric townhome. Approximately 40% of their utility bill will be for their "hot water" usage. Other concerns: a minimal solar power system operating AC 24/7. Residents will not open their windows, because of the high noise level (80 dBA) and pollutants from traffic from the adjacent I-5 freeway. There is also the high cost of real estate taxes, home insurance and townhome association dues. **Is affordable really affordable for low income borrowers**?
15. The **character of Encinitas** is being chipped away and lost with each new project. We are on our way to be like a city like Los Angeles or San Francisco. It is not too late but it is getting very close. Yet no one wants this when asked. Do you?
16. **Density Bonus Law** should be clear and separate from **community planning**. We see too many times it is easier for the City Council to stress DBL instead of proper well thought out community planning. We need to take care of our community. Given the number of projected new developments and pressures put upon city officials, it is difficult for this process to take place. Developers are favorably received and contribute to the City Council Election campaigns. This creates stress and anxiety-- not a healthy future for the City and 500 people living at Pireaus Point Townhomes. We can see this in City Hall hearings. Rebuttals are not allowed. It is shameful.
17. The project is not wanted. Please deny it.

Teresa Ornelas
1760 Burgundy Rd
Encinitas CA 92024

From: Terri Richer
To: Nick Koutoufidis
Cc: encinitascommunitycollective@gmail.com
Subject: Piraeus Point
Date: Sunday, June 26, 2022 9:47:18 PM

[NOTICE: Caution: External Email]

I'm writing this email because my father lives on Plato and we are very concerned with the possible increase in traffic going up Plato to Capri. Many mornings he has counted over 50 cars in the hour before school and this new project will increase those numbers. This has always been a rural area of Leucadia. The roads are narrow and have no parking. It is difficult at times for two cars to pass. Plato has no sidewalks and cars comedown pretty fast. I'm not sure what the city has planned for Plato. The new park that was put in has caused a lot of parking and traffic problems and is a perfect example of what will happen when you put in such a high density project in a neighborhood that the roads aren't ready to accommodate. It's already difficult to turn west onto Leucadia blvd from Urania. The traffic backs up not allowing cars from Urania to pull out. Imagine what it will be like when the Dramm and Echter project is finished. I hope you will take these points into consideration. Thank you Terri Richer

Sent from my iPhone

From:	Tim Escher
To:	Nick Koutoufidis
Cc:	encinitascommunitycollective@gmail.com
Subject:	Piraeus Point
Date:	Friday, June 24, 2022 11:18:16 AM

[**NOTICE:** Caution: External Email]

Hi Mr. Koutoufidis,

I live nearby the proposed project referred to as, Pireaus Point. One of the items that I am very concerned about is if there is a fire or other circumstances that require an emergency evacuation, how are all the vehicles that will be connected with Pireaus Point and all the other resident's vehicles going to leave the area safely? Currently there is only one way to access I-5 quickly, and that is at Pireaus and La Costa Drive. Another concern is where will the school age children for the age level that Capri would handle go? Capri does not have the capacity to take on more students.

Thank you for receiving these thoughts.

Sincerely,

Tim Escher

ttescher@yahoo.com

RECEIVED
JUN 27 2022
CITY OF ENCINITAS

SAN DIEGO CA 920
25 JUN 2022 PM 1



City of Encinitas,
Development Services
505 S. Vulcan Avenue
Encinitas, California 92024

92024-353305

CITY OF ENCINITAS

Notice of Preparation of a Draft Environmental Impact Report

FROM: City of Encinitas,
Development Services
505 S. Vulcan Avenue
Encinitas, California 92024

TO: State Clearinghouse, Responsible Agencies, Trustee Agencies, and Interested Persons

PROJECT TITLE: Piraeus Point

PROJECT APPLICANT: Lennar Homes of California, LLC.

PROJECT LOCATION: NE corner of Piraeus Street and Plato Place, Encinitas, CA 92024; County Assessor Parcel Nos. 254-144-01-00 and 216-110-35-00

PROJECT CASE NUMBERS: MULTI-005158-2022; CDP-005161-2022; DR-005160-2022; SUB-005159-2022; and SUB-005391-2022

Pursuant to the California Environmental Quality Act (CEQA), the City of Encinitas (City) is issuing this Notice of Preparation (NOP) of an Environmental Impact Report (EIR) for the proposed project. Implementation of the project may require approvals from public agencies. As such, the City seeks input as to the scope and content of the EIR based on your agency's purview of the project (if any). In addition, comments are being solicited from other interested persons. Comments received in response to this NOP will be reviewed and considered by the City in determining the scope of the EIR.

PROJECT DESCRIPTION AND LIKELY ENVIRONMENTAL EFFECTS:

Lennar Homes of California, LLC. (applicant) proposes the development of a 149-home residential townhome community on an approximately 11.8-acre site in the City of Encinitas. A portion of the project site is identified as one of 16 sites included in the City of Encinitas Housing Element Update, which the City adopted on March 13, 2019. The community would consist of 52 one-bedroom homes, 37 two-bedroom homes, and 60 three-bedroom homes for a total of 149 residential homes, which would be built within 16 separate three-story residential buildings. A total of 256 parking spaces are planned, including private garage spaces and outdoor shared parking. Proposed amenities include a pool, spa, pool house, and lounge seating. Of the 149 residential homes, 134 would be market-rate homes and 15 would be "very low" (50 percent of area median income) affordable residential homes. More than 50 percent of the project site would be permanently preserved and managed as biological open space. A Road Vacation on a 0.25 acre area of Plato Place is also proposed adjacent to the site.

The Project site is designated as R30 OL (Residential 30 Overlay), RR1 [Rural Residential; 0.51-1.0 dwelling units per acre (du/ac)] and RR2 (Rural Residential; 1.01-2.0 du/ac) by the City's General Plan and zoned as R30 OL (Residential 30 Overlay); RR1 (Rural Residential 1); and RR2 (Rural Residential 2). These land use and zoning designations are intended to support residential uses. The Project site is located within the Coastal Zone. City approval of a Density Bonus Tentative Map, Design Review Permit, Coastal Development Permit, and a Vacation (MULTI-005158-2022; SUB-005159-2022; CDP-005161-2022; DR-005160-2022; and SUB-005391-2022) will be required.

Additional information regarding the project, including project plans, may be reviewed on the City's website at: https://encinitasca.gov/I-Want-To/Public-Notices/Development-Services-Public-Notices under "Environmental Notices." It is anticipated that the EIR will focus on the following environmental issue areas: aesthetics, air quality, biological resources, cultural resources, energy, greenhouse gas emissions, geology and soils, hazards and hazardous materials, hydrology/water quality, mineral resources, noise, public services and recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire.

COMMENT PERIOD:

Please send your comments to Nick Koutoufidis, Senior Planner, Encinitas Development Services Department, 505 S. Vulcan Avenue, Encinitas, CA 92024, or via email to nkoutoufidis@encinitasca.gov. **All comments must be received by no later than 5:00 p.m. on June 29, 2022.**

This Notice of Preparation can also be reviewed at the Encinitas Library at 540 Cornish Drive, Encinitas, CA 92024 and the Cardiff-by-the-Sea Library at 2081 Newcastle Avenue, Cardiff-by-the-Sea, CA 92007.

Nicholas Koutoufidis

Nick Koutoufidis, Senior Planner
City of Encinitas, Development Services Department

May 27, 2022
Date

STATE OF CALIFORNIA – THE NATURAL RESOURCES AGENCY
EDMUND G. BROWN, JR., Governor

CALIFORNIA COASTAL COMMISSION
SAN DIEGO AREA
7575 METROPOLITAN DRIVE, SUITE 103
SAN DIEGO, CA 92108-4421
(619) 767-2370

August 22, 2012

W27a

TO: COMMISSIONERS AND INTERESTED PERSONS

FROM: SHERILYN SARB, DEPUTY DIRECTOR, SAN DIEGO COAST DISTRICT
DEBORAH LEE, DISTRICT MANAGER, SAN DIEGO COAST DISTRICT

SUBJECT: STAFF RECOMMENDATION ON CITY OF ENCINITAS MAJOR LCP AMENDMENT #1-11A (Historic Viewsheds) and B (DESP On-street Parking) for Commission Meeting of September 12-14, 2012

SYNOPSIS

The subject LCP amendment was submitted and filed as complete on August 3, 2011; the submittal includes two unrelated amendments. The first component (LCPA #1-11A) involves revisions to both the City's certified land use plan (LUP) and implementation plan (IP) to establish provisions for the protection of historic viewsheds and then identifies the first such viewshed. The second component (LCPA #1-11B) involves revisions to the City's certified Downtown Encinitas Specific Plan (DESP) which was adopted as part of the City's implementation program at the time of the initial LCP certification. This report will address both components. A one year time extension was granted in September 2011. As such, the last date for Commission action on this item is this hearing.

SUMMARY OF AMENDMENT REQUEST

Part A of the amendment request involves revisions first to the Resource Management Element of the certified land use plan to add a new Policy 4.9 regarding historic viewsheds, re-number subsequent policies and amend the adopted Visual Resource Sensitivity Map to recognize the "Station White" Viewshed. In addition, the amendment then proposes a corollary change to the Municipal Code/IP by adding a new sub-section to Section 30.34.080, Scenic/Visual Corridor Overlay Zone, regarding Historic Viewsheds. These revisions are proposed to allow for the designation of historic viewsheds that are of cultural or historic significance to the community.

Part B of the amendment request involves revisions to the City's certified Downtown Encinitas Specific Plan (DESP), adopted as part of its implementation program. The proposed changes reflect the City's intent to maximize the availability of on-street parking along First and Second Streets by completing a restriping program for diagonal parking and providing an incentive for businesses to close driveways along these streets. The proposed revisions also include greater details regarding Streetscape Concepts and

From: Victoria Williamson
To: Nick Koutoufidis
Subject: Pireaus Point Townhomes concerns
Date: Wednesday, June 29, 2022 4:45:15 PM

[**NOTICE:** Caution: External Email]

Dear Mr. Koutoufidis,
I am writing to express my concerns about the proposed development at Piraeus and Plato in Leucadia. My family has lived at 748 Plato Place since January 1999 and raised three children in this neighborhood. One of the main things that attracted us to our property is the rural feel of the neighborhood with the big lots, no streetlights, and few sidewalks. After attending Lennar's CPP meeting on June 13 and seeing the proposed plans, I'm alarmed that the appealing qualities of our dark and quiet neighborhood will be ruined with 149 three-story, modern buildings on the corner. I realize the property has been re-zoned and it's inevitable that something is going to be built there, but feel strongly that the tall, contemporary plan that Lennar is proposing doesn't fit the neighborhood aesthetic, and that the rooftop living areas will create a much noisier environment traveling up Plato Place, which is a small valley.

An additional concern I have after seeing the plans is the lack of parking for the residents and guests of the proposed development. Since there's no room for parking on Plato and Piraeus, where will people go with their additional vehicles? Based on the plans I saw, there's definitely not enough planned parking areas nor garage space.

I was happy to see a sidewalk on the renderings (both on Piraeus and Plato), since walking in this neighborhood has its safety issues, but it looks like the sidewalk to nowhere, since it ends at our neighbors' property (the Belmonte Family). Can the city influence Lennar to pay for a sidewalk or even a wider shoulder to walk up Plato Place? Surely there will be families with children attending Capri School in the proposed development. Over a 13-year period I walked my children to Capri School and found it very unsafe, but was told by the city that our street wasn't "intended for pedestrians" so there would never be a sidewalk built, but have always thought there should be something done to make it safer since people and bicyclists use it a lot.

Thank you for your consideration of my concerns.
Victoria Williamson
748 Plato Place
Encinitas
760-518-9946
VLSWill@yahoo.com

From: Yale Jallos
To: Nick Koutoufidis
Subject: Re: Notice of Preparation for the Draft EIR for the Piraeus Point Project (MULTI-005158-2022)
Date: Monday, June 20, 2022 12:31:41 PM
Attachments: image001.jpg

[**NOTICE:** Caution: External Email]

Nick Koutoufidis as project planner for Piraeus Point Project,

I live in this neighborhood, and I know that the proposed project would have significant negative environmental impact on the neighborhood. The traffic on my street would be drastically increased creating noise and danger for my small children. My children's school will become overcrowded and their education will suffer. The ocean will be negatively affected by runoff from 149 concentrated homes.The local Park will be even more overcrowded and parking for its use will spread further into surrounding neighborhoods. The types of negative impact on my neighborhood and my family can be categorized as Biological Resource, Hydrology, Noise, Recreation, Transportation, and Public Resources and are described below.

1. Biological Resource - 149 new homes in a concentrated lot size vs traditional planning standards will destroy a massive piece of undeveloped land with a footprint that is far larger than RR1 OR RR-3 zoning. Countless animals and plants will be killed and displaced by the development on this natural hillside. In addition, Typically hillsides and sloped lots like this are not useable toward FAR limits in development calculations due to slopes over 10% and over 25% in places. I think that city standards for limiting development on sloped lots would be against this proposed project. These limits are set in place to maintain the structural integrity of sloped land that is supporting homes up higher on the hill and to protect natural drainage canyons and swales.

2. Hydrology --149 new homes in a concentrated lot size vs traditional planning standards will result in much more fertilizer, automotive brake dust and oil, soaps and detergents as well as many other hazardous materials draining into the ocean via storm drains. I am aware that Bio Basins are being engineered to retain runoff up to certain limits. But i have seen that certain rain storms do overflow the standard basins and especially the streets and "permeable" paving driveways. The ocean we swim in will be hurt by this project due to its location and density.

3. Noise. I live on Urania ave, and the street is bumper to bumper already at school drop off and pick up times. People head south to Leaucadia Blvd via Urania ave. With 149 new homes and likely 2 cars at least per home....there will be hundreds more cars passing right in front of my house and my neighbors houses. This noise increase will be awful to say the least. I purchased my home in 2015 wheen zoning was all 1 to 3 homes per acre in the neighborhood. Thats what i bought into and expected to live in. I am strongly opposed to allowing these new cars to use urania ave to access Leucadia ave. when traveling southbound. Piraeus St does not currently allow traffic to go south all the way to Leucadia. It should. I propose that city NOT approve this project or route southbound traffic on Piraeus not Urania and Normandy. The increase in traffic will be drastic and will destroy the safety for children to walk near these streets.

4. Recreation - Olympus Park is at its maximum parking capacity and use capacity on a daily basis. Adding 149 homes nearby will cause severe overcrowding at this park and drastic noise increase as well. Planning and Traffic departments at the city have recieved hundreds of complaints about parking in the nearby neighborhoods since this park was built. Signage and firelanes, red curbs, and countless parking tickets have all been used to attempt to deal with the current overload on the park. How can we add 149 new families to this? Planning previously allowed for 11 acres x 1-3 units per acre and an increase of 11-33 homes. 149 is was out of line.

5. TRANSPORTAION - This is the big one for me. Urania ave will receive a massive increase in traffic heading south to Leucadia. Currenty Urania os bumper to bumper at school drop off and pick up all the way from leucadia to Sparta. Currently there are countless cars parked on Urania without white lines delineating the driving lane. Often these cars are blocking traffic lanes and left for days. The recent increase in accessory dwelling units a has caused even more street parked cars. My kids would bike or walk to school, currently, and these changes would make Urania no longer safe for kids to bike and walk. A huge increase in car traffic combined with current parking issues means LOW VISIBILITY for children popping out between cars and at driveways! this needs to be address by planning. At my previous home in clairemont, several children were killed by traffic on Idylwild street due to higher traffic and dense parking right next to residential yards. This could have been avoided with better planning. I've seen candles lining the streets in memory of these children while i lived there. I have a 1 year old and 3 year old and the traffic increase is of paramount importance to me. We cannot allow an increase on Urania and Normandy and Sparta. Mainly, the issue is accessing Leucadia, Beacons beach, and the 5 Freeway southbound. In Addition, people will access grocery stores and shopping this way as well. Hundreds and thousands of cars will use Urania to reach these destinations. The traffic needs to be routed south on Piraeus to Leucadia and 5 south. Im sure traffic engineers can find a way to make this possible even if it means a second light on Piraeus. or an additional lane at the south end.
Until this issue is resolved this project should not be approved. Further, Urania is part or a bike trail / street network that the city is developing....it would seem important to avoid drastic traffic increases on this route.

6. PUBLIC RESOURCES - The school at Capri will be my children's school for elementary. The project proposes to add a massive amount of children to this school without an increase in the number of teachers or classrooms. This will be a major negative impact on education quality for all children in this neighborhood. A development of this size should be required to pay for additional teacher salaries and classrooms to handle 2 children per unit. The project developer should be required to permit and construct the additional classrooms and or additional school for the city before breaking ground on the housing development. Current school fee checks disappear into the school district and do not get sent to the elementary school which will be hit so hard by this project. Worse yet, is that there may be more projects like this proposed in nearby agricultural lots....at some point the overcrowding of Capri needs to be dealt with. I think this is the point where we stop it. And stop this development until real solutions are paid for by developers so that there are not negative environmental impacts.

In summary, this project will negatively affect my environment and my neighborhood. It will bring more traffic noise inside my home. It will endanger children walking and biking near the street. It will overcrowd the local elementary school and overwork teachers. It will overcrowd the park and cause parking issues. I will likely have to wait in a line of cars everytime i leave my driveway.

Potential solution: The city planning office should designate only 2 acres of the lot as RR-30 or new high density per state law. This will allow the developer to propose a project of 2x25 = 50 units as the law requires developers to propose at least 25 units per acre on designated acres. The rest of the lot should remain RR-1 OR RR-3. This would reduce the scale to a more manageable size. It would allow for the necessary low income housing and create a wider variety of housing types. I understand that this would cause a delay and re-planning for the developer, but it is a huge project that is not good for the local community as currently proposed.
Further, modifying the traffic plan so that southbound traffic can use Piraeus to access Leucadia Blvd and the Freeway would help dramatically.

I have hope that these things can be done, and some sort of compromise can happen that protects all aspects of our environment.

Best Regards,
Yale Jallos
1018 Uranai Ave.

On Thu, May 26, 2022 at 7:06 PM Nick Koutoufidis <nkoutoufidis@encinitasca.gov> wrote:

> Hello,
>
> Please see the attached Notice of Preparation (NOP) for the Draft Environmental Impact Report (DEIR) for the Piraeus Point Residential Subdivision project.
>
> **COMMENT PERIOD:** Please send your comments to Nick Koutoufidis, Senior Planner, Encinitas Planning Division, 505 S. Vulcan Avenue, Encinitas, CA 92024, or via email to nkoutoufidis@encinitasca.gov. All comments must be received by no later than **5:00 p.m.** on **June 29, 2022**. This Notice of Preparation can also be reviewed at the Encinitas Library at 540 Cornish Drive, Encinitas, CA 92024 and the Cardiff-by-the-Sea Library at 2081 Newcastle Avenue, Cardiff-by-the-Sea, CA 92007.
>
> Thank you.
>
> **Nick Koutoufidis, MBA**
> Development Services Department
> 505 South Vulcan Ave, Encinitas, CA
> P: 760.633.2692

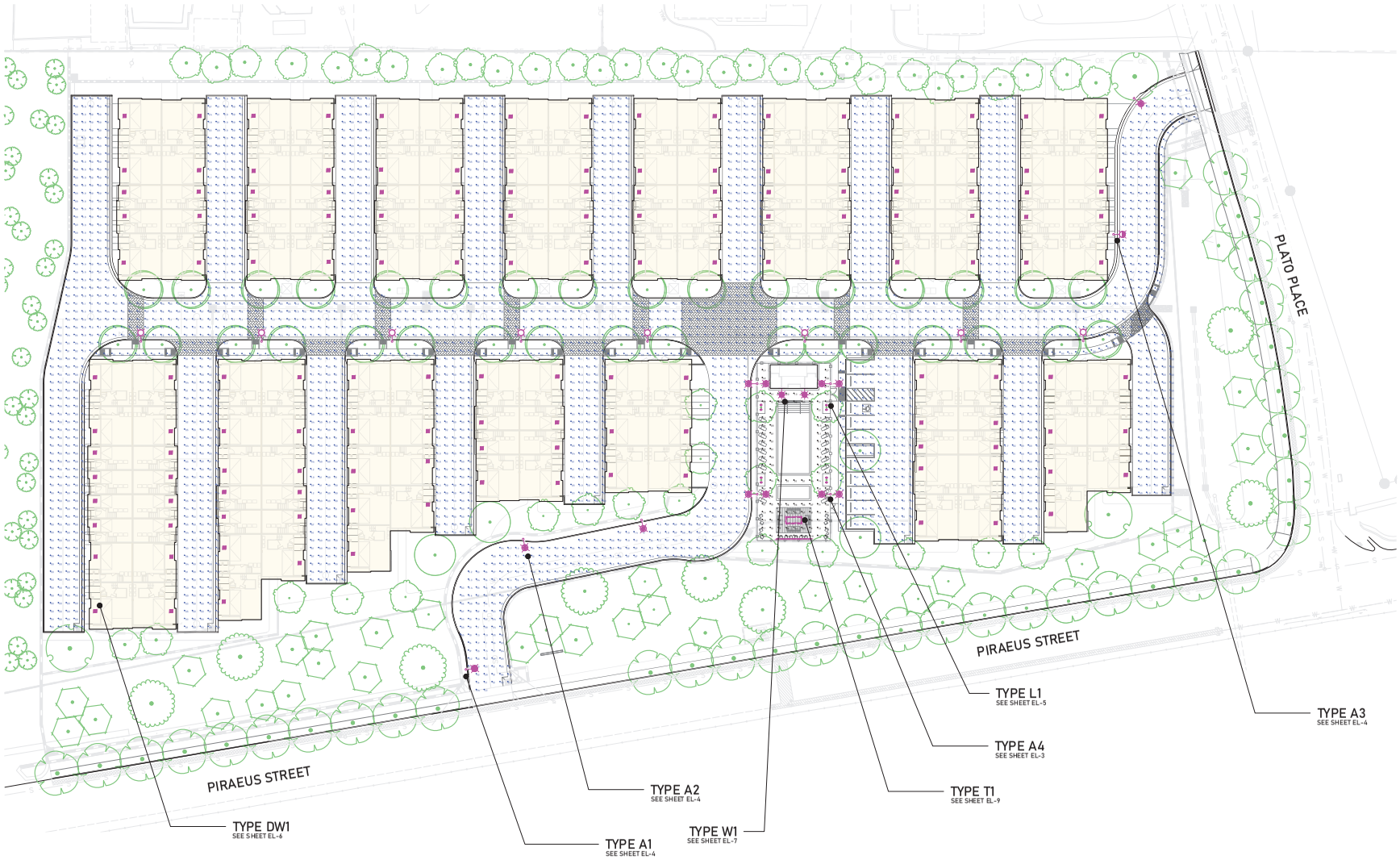
--
YALE JALLOS DESIGN
C: 619.623.2901
yalejallosdesign.com

APPENDIX B.
LIGHTING PLAN

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NOTE:

ANY CHANGE OR DEVIATION FROM THE LIGHTING SPECIFICATIONS ON PLAN SHALL INVALIDATE THIS PHOTOMETRIC ANALYSIS.



ktgy

Architecture + Planning
17911 Von Karman Ave,
Suite 200
Irvine, CA 92614
949.851.2133
ktgy.com

LENNAR HOMES
16465 Via Esprillo, Suite 150
San Diego, CA 92127

PIRAEUS POINT
ENCINITAS, CA # 2021-0513

CONCEPT DESIGN
APRIL 14, 2022

VISUAL CONCEPTS LIGHTING INC
DD: 858-278-4583
4858 MERCURY ST. STE. 210
SAN DIEGO, CA 92111
WWW.VISUALCONCEPTSINC.COM

0' 15' 30' 60'
SCALE: 1"=30'-0"

LIGHTING PLAN
EL-2

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APPENDIX C-1.
AIR QUALITY ASSESSMENT

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AIR QUALITY ASSESSMENT

Piraeus Point
City of Encinitas, CA

Project Proponent:

Lennar Homes
16465 Via Esprillo, Suite 150
San Diego, CA 92127

Prepared by:

Ldn Consulting, Inc.
42428 Chisolm Trail
Murrieta, CA 92562

November 15, 2022

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LIST OF COMMON ACRONYMS

Air Quality Impact Assessments (AQIA)

Assembly Bill 32 (AB32)

Reactive Organic Gas (ROG)

Cubic Yards (CY)

Carbon Dioxide (CO_2)

Methane (CH_4)

Nitrous Oxide (N_2O)

Hydrogen Sulfide (H_2S)

Diesel Particulate Matter (DPM)

Level of Service (LOS)

San Diego Air Basin (SDAB)

Specific Plan Area (SPA)

Hazardous Air Pollutants (HAPs)

Toxic Air Contaminants (TACs)

Environmental Protection Agency (EPA)

California Air Resource Board (CARB)

San Diego Air Pollution Control District (SDAPCD)

Vehicle Miles Traveled (VMT)

National ambient air quality standards (NAAQS)

California Ambient Air Quality Standards (CAAQS)

Regional Air Quality Strategy (RAQS)

State Implementation Plan (SIP)

1.0 INTRODUCTION

1.1 Purpose of this Study

The purpose of this Air Quality Assessment is to determine potential air quality impacts (if any) that may be created by either construction or operational emissions (short term or long term) from the proposed Project. Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to reduce impacts to the extent feasible.

1.2 Project Location

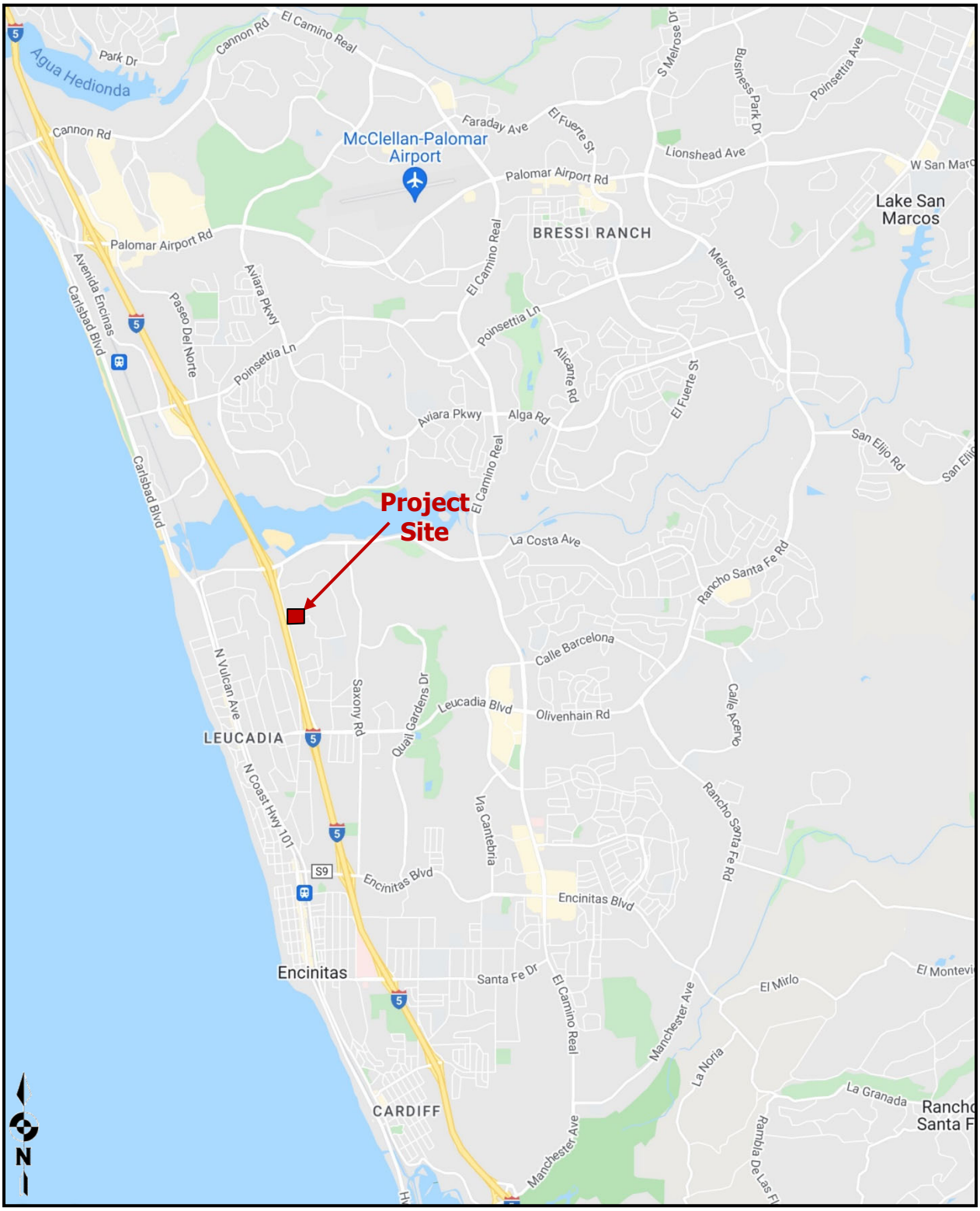
The proposed Piraeus Point project is located on a 6.88-acre project site on the northeast corner of Piraeus Street and Plato Place in the Leucadia community of the City of Encinitas, California. The project is located east of Interstate 5 (I-5) between La Costa Avenue and Leucadia Boulevard. The project site is bordered by Piraeus Street to the west, Plato Place to the south, and existing single-family homes to the east and undeveloped land to the north. A general project vicinity map is shown in Figure 1-A.

1.3 Project Description

The community would be situated on a 6.88-acre site and would consist of 149 residential homes including 134 market-rate homes and 15 would be "very low" income affordable residential homes. The Project would provide 246 garage spaces and 26 open outdoor guest spaces. The proposed project site configuration is shown in Figure 1-B. During the grading phase of the project, the plan calls for approximately 83,000 cubic yards (CY) of cut and 25,400 CY of fill and expects a net export of 57,600 (CY). The Project will include a number of Project Design Features (PDFs) to include:

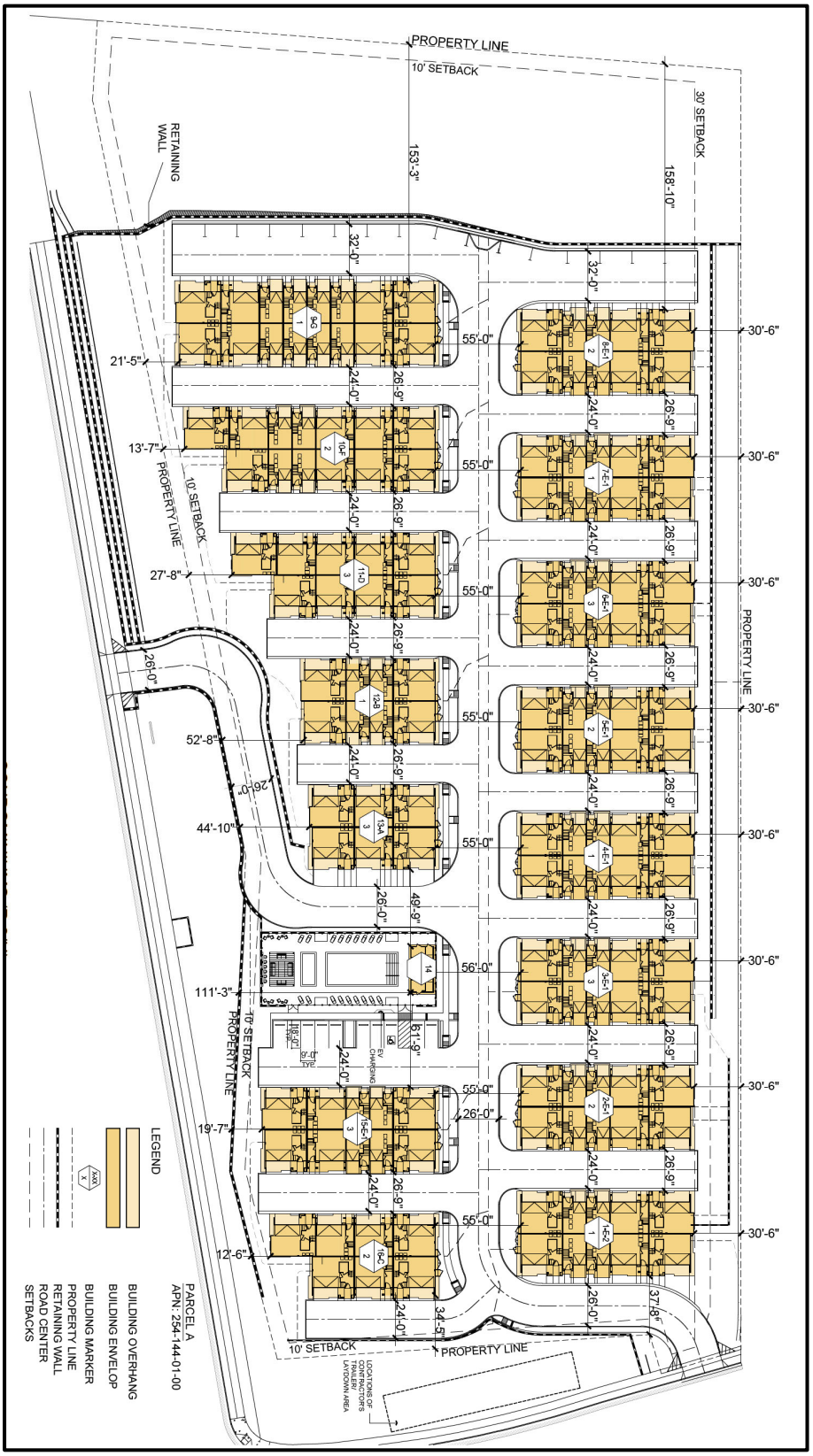
1. *The project would install Low Flow water fixtures in all the units.*
2. *All lights will be designed use LED technology and would be for both indoor and outdoor areas.*
3. *The Project would provide separate waste containers to allow for simpler material separations or the Project would pay for a waste collection service that recycles the materials in accordance with AB 341 to achieve a 75% waste diversion. All green waste will be diverted from landfills and recycled as mulch.*
4. *The project would not install hearth options.*
5. *The Project will be 100 percent electric.*
6. *The project would be required to utilize Tier 4 construction Equipment with Diesel Particulate Filters (DPF).*
7. *The Project would install 149 kilowatt (KW) of solar*
8. *The Project would install 4 Electric Vehicle (EV) Charging Stations*
9. *The Project would include construction BMPs which would include wetting soil during construction and installing a dust barrier between existing residences.*

Figure 1-A: Project Vicinity Map



Source: (Google, 2022)

Figure 1-B: Proposed Project Site Plan



Source: (Schmidt Design Group, 2022)

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Existing Setting

The Project site lies in the western portion of San Diego County, in the City of Encinitas. The project site is bordered by Piraeus Street to the west, Plato Place to the south, and existing single-family homes to the east and undeveloped land to the north. The site is zoned RR-1 and RR-2 with a R-30 overlay covering a portion of the project site as part of the City's Housing Element and allows for the construction of up to 149 homes (City of Encinitas, 2019). Site topography onsite generally slopes with elevations ranging from approximately 110 to 175 feet above mean sea level (AMSL).

2.2 Climate (Encinitas)

Climate within the San Diego Air Basin (SDAB) area varies dramatically over short geographical distances due to size and topography. Most of southern California is dominated by high-pressure systems for much of the year, which keeps the high desert mostly sunny and warm. Typically, during the winter months, the high pressure system drops to the south and brings cooler, moister weather from the north. Prevailing winds are generally westerly flowing towards the east for most of the year; however, during the autumn and winter, it is common for strong warm dry winds originating in the desert having a more easterly flow characteristic.

Meteorological trends within the City of Encinitas are typically cooler given the close vicinity to the ocean. Median temperatures range from approximately 55ºF in the winter to approximately 72ºF in the summer (City-Data, 2020).

2.3 Regulatory Standards

2.3.1 Federal Standards and Definitions

The Federal Air Quality Standards were developed per the requirements of The Federal Clean Air Act, which is a federal law that was passed in 1970 and further amended in 1990. This law provides the basis for the national air pollution control effort. An important element of the act included the development of national ambient air quality standards (NAAQS) for major air pollutants.

The Clean Air Act established two types of air quality standards otherwise known as primary and secondary standards. ***Primary Standards*** set limits for the intention of protecting public health, which includes sensitive populations such as asthmatics, children and elderly.

Secondary Standards set limits to protect public welfare to include the protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set NAAQS for principal pollutants, which are called "criteria" pollutants. These pollutants are defined below:

1. ***Carbon Monoxide (CO):*** *is a colorless, odorless, and tasteless gas and is produced from the partial combustion of carbon-containing compounds, notably in internal-combustion engines. Carbon monoxide usually forms when there is a reduced availability of oxygen present during the combustion process. Exposure to CO near the levels of the ambient air quality standards can lead to fatigue, headaches, confusion, and dizziness. CO interferes with the blood's ability to carry oxygen.*
2. ***Lead (Pb):*** *is a potent neurotoxin that accumulates in soft tissues and bone over time. The major sources of lead emissions have historically been motor vehicles (such as cars and trucks) and industrial sources. Because lead is only slowly excreted, exposures to small amounts of lead from a variety of sources can accumulate to harmful levels. Effects from inhalation of lead near the level of the ambient air quality standard include impaired blood formation and nerve conduction. Lead can adversely affect the nervous, reproductive, digestive, immune, and blood-forming systems. Symptoms can include fatigue, anxiety, short-term memory loss, depression, weakness in the extremities, and learning disabilities in children.*
3. ***Nitrogen Dioxide (NO_2):*** *is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract and is one of the nitrogen oxides emitted from high-temperature combustion, such as those occurring in trucks, cars, power plants, home heaters, and gas stoves. In the presence of other air contaminants, NO_2 is usually visible as a reddish-brown air layer over urban areas. NO_2 along with other traffic-related pollutants is associated with respiratory symptoms, respiratory illness and respiratory impairment. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the level of the current state air quality standard. Clinical studies of human subjects suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children.*
4. ***Particulate Matter (PM_{10} or $PM_{2.5}$):*** *is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can be made up of multiple materials such as metal, soot, soil, and dust. PM_{10} particles are 10 microns (µm) or less and $PM_{2.5}$ particles are 2.5 (µm) or less. These particles can contribute significantly to regional haze and reduction of visibility in California. Exposure to PM levels exceeding current air quality standards increases the risk of allergies such as asthma and respiratory illness.*
5. ***Ozone (O_3)****: is a highly oxidative unstable gas capable of damaging the linings of the respiratory tract. This pollutant forms in the atmosphere through reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Exposure to ozone above ambient air quality standards can lead to human health effects such as lung inflammation, tissue damage and impaired lung functioning. Ozone can also damage materials such as rubber, fabrics and plastics.*
6. ***Sulfur Dioxide (SO_2)****: is a gaseous compound of sulfur and oxygen and is formed when sulfur-containing fuel is burned by mobile sources, such as locomotives, ships, and off-road diesel equipment. SO_2 is also emitted from several industrial processes, such as petroleum refining and metal processing. Effects from SO_2 exposures at levels near the one-hour standard include bronchoconstriction accompanied by symptoms, which may include wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Children, the elderly, and people with asthma, cardiovascular disease or chronic lung disease*

(such as bronchitis or emphysema) are most susceptible to these symptoms. Continued exposure at elevated levels of SO_2 results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality.

2.3.2 State Standards and Definitions

The California Air Resources Board (CARB) sets the laws and regulations for air quality on the state level. The California Ambient Air Quality Standards (CAAQS) is similar to the NAAQS and also restricts four additional contaminants. Table 2.1 on the following page identifies both the NAAQS and CAAQS. The additional contaminants as regulated by the CAAQS are defined below:

1. ***Visibility Reducing Particles**: Particles in the Air that obstruct the visibility.*
2. ***Sulfates**: are salts of Sulfuric Acid. Sulfates occur as microscopic particles (aerosols) resulting from fossil fuel and biomass combustion. They increase the acidity of the atmosphere and form acid rain.*
3. ***Hydrogen Sulfide (H_2S)**: is a colorless, toxic and flammable gas with a recognizable smell of rotten eggs or flatulence. H_2S occurs naturally in crude petroleum, natural gas, volcanic gases, and hot springs. Usually, H_2S is formed from bacterial breakdown of organic matter. Exposure to low concentrations of hydrogen sulfide may cause irritation to the eyes, nose, or throat. It may also cause difficulty in breathing for some asthmatics. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 Parts per Million (ppm)) can cause a loss of consciousness and possibly death.*
4. ***Vinyl Chloride**: also known as chloroethene and is a toxic, carcinogenic, colorless gas with a sweet odor. It is an industrial chemical mainly used to produce its polymer, polyvinyl chloride (PVC).*

Table 2.1: Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Average Time**	**California Standards[1]**		**Federal Standards[2]**		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)[8]	1 Hour	0.09 ppm (180 µg/m3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m3)		0.070 ppm (137 µg/m3)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m3	Gravimetric or Beta Attenuation	150 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m3		-		
Fine Particulate Matter (PM2.5)[9]	24 Hour	No Separate State Standard		35 µg/m3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m3	Gravimetric or Beta Attenuation	12.0 µg/m3	15 µg/m3	
Carbon Monoxide (CO)	8 hour	9.0 ppm (10mg/m3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m3)	-	Non-Dispersive Infrared Photometry
	1 hour	20 ppm (23 mg/m3)		35 ppm (40 mg/m3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m3)		-	-	-
Nitrogen Dioxide (NO_2)[10]	Annual Arithmetic Mean	0.030 ppm (57 µg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m3)[8]	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 µg/m3)		0.100 ppm[8] (188/ µg/m3)	-	
Sulfur Dioxide (SO_2)[11]	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm[10] (for Certain Areas)	-	Ultraviolet Flourescence; Spectrophotometry (Pararoosaniline Method)[9]
	24 Hour	0.04 ppm (105 µg/m3)		0.14 ppm[10] (for Certain Areas) (See Footnote 9)	-	
	3 Hour	-		-	0.5 ppm (1300 µg/m3)	
	1 Hour	0.25 ppm (655 µg/m3)		75 ppb (196 µg/m3)	-	
Lead[12,13]	30 Day Average	1.5 µg/m3	Atomic Absorption	-		-
	Calendar Quarter	-		1.5 µg/m3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	-		0.15 µg/m3		
Visibility Reducing Particles	8 Hour	See footnote 14				
Sulfates	24 Hour	25 µg/m3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m3)	Gas Chromatography			

1. California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.
3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.
4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.
8. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m3 to 12.0 µg/m3. The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 µg/m3, as was the annual secondary standard of 15 µg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 µg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
12. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.
14. In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

Source: (California Air Resources Board, 5/4/2016)

2.3.3 Regional Standards

The State of California has 35 specific air districts, which are each responsible for ensuring that the criteria pollutants are below the NAAQS and CAAQS. Air basins that exceed either the NAAQS or the CAAQS for any criteria pollutants are designated as "non-attainment areas" for that pollutant. Currently, there are 15 non-attainment areas for the federal ozone standard and two non-attainment areas for the $PM_{2.5}$ standard and many areas are in non-attainment for PM_{10} as well. California therefore created the California State Implementation Plan (SIP), which is designed to provide control measures needed to attain ambient air quality standards.

The San Diego Air Pollution Control District (SDAPCD) is the government agency which regulates sources of air pollution within the County. Therefore, the SDAPCD developed a Regional Air Quality Strategy (RAQS) to provide control measures to try to achieve attainment status for state ozone standards with control measures focused on Volatile Organic Compounds (VOCs) and oxides of nitrogen (NO_X). Currently, San Diego is in "non-attainment" status for federal and state O_3 and state PM_{10} and $PM_{2.5.}$ An attainment plan is available for O_3. The RAQS was adopted in 1992 and has been updated as recently as 2016 which was the latest update incorporating minor changes to the prior 2009 update.

The 2016 update mostly summarizes how the 2009 update has lowered NO_X and VOCs emissions which reduces ozone and clarifies and enhances emission reductions by introducing for discussion three new VOC and four new NO_X reduction measures. NO_X and VOCs are precursors to the formation of ozone in the atmosphere. The criteria pollutant standards are generally attained when each monitor within the region has had no exceedances during the previous three calendar years. A complete listing of the current attainment status for criteria pollutants with respect to both federal and state nonattainment status by pollutants for County is shown in Table 2.2 (SDAPCD, 2019).

The RAQS is largely based on population predictions by the San Diego Association of Governments (SANDAG). Projects that produce less growth than predicted by SANDAG would generally conform to the RAQS. Projects that create more growth than projected by SANDAG may create a significant impact if the project produces unmitigable air quality emissions or if the project produces cumulative impacts.

Table 2.2: San Diego Air Basin Attainment Status by Pollutant

Criteria Pollutant	Federal Designation	State Designation
Ozone (8-Hour)	Nonattainment	Nonattainment
Ozone (1-Hour)	Attainment *	Nonattainment
Carbon Monoxide	Attainment	Attainment
PM10	Unclassifiable **	Nonattainment
PM2.5	Attainment	Nonattainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility	No Federal Standard	Unclassified

** The federal 1-hour standard of 12 pphm was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.*
*** At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.*
(SDAPCD, 2019)

2.4 SDAPCD Rule 20.2 – Air Quality Impact Assessment Screening Thresholds

The SDAPCD has established threshold in Rule 20.2 for the preparation of Air Quality Impact Assessments (AQIA). These screening criteria can be used to demonstrate that a Project's total emissions would not result in a significant impact. Since SDAPCD does not have AQIA threshold for emissions of Volatile Organic Compounds (VOCs), the use of the threshold for VOCs is from the South Coast Air Quality Management District for the Coachella Valley. Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the Project's total air quality impacts are below the state and federal ambient air quality standards. These screening thresholds for construction and daily operations are shown in Table 2.3 (SDAPCD, 2020).

Non Criteria pollutants such as Hazardous Air Pollutants (HAPs) or Toxic Air Contaminants (TACs) are also regulated by the SDAPCD. Rule 1200 (Toxic Air Contaminants - New Source Review) adopted on June 12, 1996, requires evaluation of potential health risks for any new, relocated, or modified emission unit which may increase emissions of one or more toxic air contaminants. The rule requires that projects that propose to increase cancer risk between 1 and 10 in one million need to implement toxics best available control technology (T-BACT) or impose the most effective emission limitation, emission control device or control technique to reduce the cancer risk. At no time shall the project increase the cancer risk to over 10 in one million. Projects creating cancer risks less than one in one million are not required to implement T-BACT technology. This report assumes that Volatile Organic Compounds (VOC)

and Reactive Organic Gases (ROG) are essentially the same due to the fact that emissions generated from the Project represent non-methane organic compounds.

Table 2.3: Screening Threshold for Criteria Pollutants

Pollutant	Total Emissions (Pounds per Day)	Total Emissions (Tons per Year)
Construction Emissions		
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	100 and 55	15
Nitrogen Oxide (NO_x)	250	40
Sulfur Oxide (SO_x)	250	40
Carbon Monoxide (CO)	550	100
Volatile Organic Compounds (VOCs)	75	40
Reactive Organic Gases (ROG) SCAQMD	75	40
Operational Emissions		
Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)	100 and 55	15
Nitrogen Oxide (NO_x)	250	40
Sulfur Oxide (SO_x)	250	40
Carbon Monoxide (CO)	550	100
Lead and Lead Compounds	3.2	0.6
Volatile Organic Compounds (VOCs)	75	40
Reactive Organic Gases (ROG) SCAQMD	75	40
Source: (SDAPCD, 2020)		

2.5 Local Air Quality

Criteria pollutants are measured continuously throughout the San Diego Air Basin. This data is used to track ambient air quality patterns throughout the County. As mentioned earlier, this data is also used to determine attainment status when compared to the NAAQS and CAAQS. The SDAPCD is responsible for monitoring and reporting monitoring data. The District operates 10 monitoring sites, which collect data on criteria pollutants. The proposed development project is closest to the Camp Pendleton and Carmel Mountain Ranch monitoring stations which are located roughly 11 and 13 miles from the Project site respectively. Table 2.4 identifies the criteria pollutants monitored at the aforementioned station. SDAPCD published the five-year air quality summary for all of the monitoring stations (SDAPCD, 2021).

Table 2.4: Two-Year Ambient Air Quality Summary near the Project Site

Pollutant	Closest Recorded Ambient Monitoring Site	Averaging Time	CAAQS	NAAQS	2019	2020	Days Exceeded over 2 years
O_3 (ppm)	Camp Pendleton or Carmel Mountain Ranch	1 Hour	0.09 ppm	No Standard	0.08	0.09	0
		8 Hour	0.070 ppm	0.070 ppm	0.06	0.07	3
PM_{10} (µg/m3)		24 Hour	50 µg/m3	150 µg/m3	PM10 Data Not Available for Monitoring Sites near Project Site		
		Annual Arithmetic Mean	20 µg/m3	No Standard			
* $PM_{2.5}$ (µg/m^3)		24 Hour	No standard -	35 µg/m3	18.9	40.2	N/A
		Annual Arithmetic Mean	12 µg/m3	15 µg/m3	8.2	9.3	N/A
NO_2 (ppm)		Annual Arithmetic Mean	0.030 ppm	0.053 ppm	0.014	0.013	N/A
		1 Hour	0.18 ppm	0.100 ppm	0.086	0.056	N/A
* CO (ppm)		1 Hour	20 ppm	35 ppm	4.1	3.3	N/A
		8 Hour	9 ppm	9 ppm	2.5	1.7	N/A

Notes:
1. - Yearly maximums marked with "-" indicated data was not available for either monitoring station.
2. * Data was selected from the Carmel Mountain Ranch station which began in 2019. All other data presented was collected at the Camp Pendleton Monitoring Station.
3. SO_2 is only monitored at the El Cajon Monitoring Station. Within the entire County of San Diego, SO_2 emissions within the County are essentially Zero for all metrics including the Average, Maximum 24 hour and 1- hour standards. The Highest 1-hr measurement identified is 0.004 ppm and the most restrictive standard (CAAQS for SO_2) is 0.25 ppm.

3.0 METHODOLOGY

3.1 Construction Emissions Calculations

Criteria Air Pollutants

Air Quality impacts related to construction and daily operations were calculated using the latest CalEEMod 2020.4.0 air quality model, which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD) in 2017. The construction module in CalEEMod is used to calculate the emissions associated with the construction of the proposed Project and uses methodologies presented in the US EPA AP-42 document with emphasis on Chapter 11.9. The CalEEMod input/output model is shown in ***Attachment A*** to this report.

Onsite Generate Construction Health Risk

The AERSCREEN dispersion model was used to determine the concentration for air pollutants at any location near the pollutant generator. Additionally, the model predicts the maximum exposure distance and concentrations. The AERSCREEN input/output file for the proposed project is shown in ***Attachment B*** at the end of this report. The worst-case exhaust emissions generated from the proposed Project from construction equipment was utilized and calculated within the CalEEMod model. Once the dispersed concentrations of diesel particulates are estimated in the surrounding air, they are used to evaluate estimated exposure to people. Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst-case cancer risk dose calculation is defined in Equation 1 below (OEHHA, 2015).

Equation 1 $Dose_{air} = C_{air} * (BR/BW) * A * EF * (1x10^{-6})$

$Dose_{air}$	=	Dose through inhalation (mg/kg/d)
C_{air}	=	Concentration in air (µg/m^3) Annual average Diesel Particulate Matter (DPM) concentration in µg/m^3 -AERSCREEN predicts a 1-hr concentration and is corrected to an annual average by multiplying the 1-hr average by 0.08 (US EPA, 1992)
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
$1x10^{-6}$	=	Milligrams to micrograms conversion (10^{-3} mg/ µg), cubic meters to liters conversion (10^{-3} m^3/l)

Cancer Risk

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. Specific factors as modeled are shown within the project models which is provided as ***Attachment C*** to this report. The worst-case cancer risk calculation is defined in Equation 2 below (OEHHA, 2015).

Equation 2

$$RISK_{inh\text{-}res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$$

$RISK_{inh\text{-}res}$	=	Residential inhalation cancer risk
$DOSE_{air}$	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor ($mg/kg\text{-}day^{-1}$)
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

Office of Environmental Health Hazard Assessment OEHHA recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). OEHHA also recommends that the 30-year exposure duration be used as the basis for public notification and risk reduction audits and plans.

Exposure durations of 9-years and 70-years are also recommended to be evaluated for the MEIR to show the range of cancer risk based on residency periods. If a facility is notifying the public regarding cancer risk, the 9-and 70-year cancer risk estimates are useful for people who have resided in their current residence for periods shorter and longer than 30 years.

Non-Cancer Risk

Non-Cancer risks or risks defined as chronic or acute are also known with respect to Diesel Particulate Matter (DPM) and are determined by the hazard index. To calculate hazard index, DPM concentration is divided by its chronic Reference Exposure Levels (REL). Where the total equals or exceeds one, a health hazard is presumed to exist. RELs are published by the Office of Environmental Health Hazard Assessment (OEHHA, February 2015). Diesel Exhaust has a REL of 5 $\mu g/m^3$ and targets the respiratory system.

Offsite Sourced Cancer Risks

Cancer Risks from DPM originating from Interstate-5 (I-5) would be expected and are analyzed separately for the project. Based on findings from that analysis, the project building facades would be exposed to sources which would exceed 10 per one million exposed. Based on the findings of that report, mechanical ventilation systems would need a Minimum Efficiency Reporting Value (MERV) filtration rating of 16 (LDN Consulting, 2022).

3.2 Construction Assumptions

The Project construction dates were estimated based on a construction start date in 2023 and an expected completion date in 2025. CalEEMod was utilized for all construction calculations and has been manually updated to reflect SDAPCD Rule 67 VOC paint standards and to include Tier 4 construction equipment with DPF per the Project description. Table 3.1 shows the modeled worst-case timeframes for the construction of all Project infrastructure, facilities, and improvements at the site, as well as the expected number of pieces of equipment which have been verified by the applicant's Project Engineer. Also, it should be noted that the below would be conservative in the event construction began/ended at a later date.

Table 3.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Site Preparation	11/01/2023	11/14/2023	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Grading	11/15/2023	06/30/2024	
Excavators			1
Graders			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Building Construction	07/01/2024	05/16/2025	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Architectural Coating	4/5/2025	5/16/2025	
Air Compressors			1
Paving	05/17/2025	06/13/2025	
Pavers			2
Paving Equipment			2
Rollers			2
This equipment list is based upon equipment inventory within CalEEMod. The quantity and types are based upon assumptions provided by the project applicant.			

It should be noted that building construction assumes all homes are built in progression within a 230 workday progression though intensity may decrease pending market conditions pushing individual home construction through 2027. The shorter duration would yield higher daily emissions and is therefore worst case.

3.3 Operational Emissions

Once construction is completed, the proposed project would generate emissions from daily operations which would include sources such as Area, Energy, Mobile, Waste and Water uses, which are also calculated within CalEEMod. Area Sources include consumer products, landscaping, and architectural coatings as part of regular maintenance. Energy sources would be from electrical only as the project will not install Natural Gas. Air quality emission would not be expected from energy usage. Finally, mobile or transportation related emissions would be expected and are also calculated in CalEEMod. The Operational model is also shown in ***Attachment A*** at the end of this report.

The Traffic inputs for CalEEMod were adjusted to be consistent with the proposed project traffic study. Based on that study, the proposed project would generate 894 net average daily trips (IM Intersecting Metrics, 2022). These traffic numbers were utilized within the CalEEMod analysis. The model also estimates emission predictions for ROG, NOx, CO, SO_2, PM_{10} and $PM_{2.5}$ for area source assumptions. Additionally, it was assumed that an average of 10% of the structural surface area will be re-painted each year. Finally, since the project would not be installing hearth options, CalEEMod default hearth settings were modified to represent no hearth options.

Consumer product emissions are generated by a wide range of product categories, including air fresheners, automotive products, household cleaners, and personal care products. Emissions associated with these products primarily depend on the increased population associated with residential development. Default emission factors were utilized within the CalEEMod.

3.4 Micro Scale Operational Emissions

Air pollutant emissions related to project traffic have the potential to create new, or worsen existing localized air quality with respect to carbon monoxide (CO). These increased carbon monoxide "Hot Spots" are determined through the utilization of the Institute of Transportation Studies (ITS) Transportation Project-Level Carbon Monoxide Protocol (California Department of Transportation, 1997) as well as the County.

In the event the proposed project traffic adds vehicular trips to either an intersection that operates at LOS E or F or any intersection where the project trips re-classifies the intersection level of service to LOS E or F and when peak-hour trips exceed 3,000, the Project must quantify CO levels (County of San Diego, 2007). The ITS Transportation Project-Level Carbon Monoxide Protocol recommends running the EMFAC model to determine emission rates for the Project year as well as conduct dispersion modeling utilizing CALINE to determine worst-case emission concentrations.

The Project traffic study reported that the proposed project would not generate any traffic impacts and would not be required to implement mitigation measures. Given this, the project would generate less than significant CO Hot Spot impacts.

3.5 Odor Impacts (Onsite)

Potential onsite odor generators would include short-term construction odors from activities such as paving and possibly painting. Since the activities are "short-term" construction odors are not typically considered a significant impact. Long-term odor impacts would not be expected because uses proposed under the proposed project would not generate offensive odors.

4.0 FINDINGS

4.1 Consistency with RAQS and SIP

As mentioned in Section 2.3.3 of this analysis, the RAQS is based on population predictions from SANDAG. Projects that produce growth in accordance with SANDAG's projections would generally conform to the RAQS. Since the proposed project is compatible with the general plan land use designation, the construction emissions would not conflict with the RAQS.

The RAQS is updated regularly with the last update being completed in 2016. The City has recently updated the Housing Element to the General Plan and has updated SANDAG with new employment and residential growth projections which have been adopted by the City. Given this, the project has been designed to conform to the updated Housing Element and re with the RAQS. As such, the project would create a less than significant impact to the RAQS.

4.2 Construction Findings

Construction emissions in pounds per day from the construction activities and equipment identified in Section 3.2 above is shown in Table 4.1 below. Based on these numbers, the proposed Project would not exceed City standards, and would not require mitigation. It should be noted that, as a design feature, the proposed Project construction team will utilize Tier 4 diesel construction equipment with DPF, and architectural coatings would conform to SDAPCD Rule 67 as indicated by the applicant.

Table 4.1: Expected Construction Emissions Summary (lb/day)

Year	ROG	NO_x	CO	SO_2	PM_{10} (Total)	$PM_{2.5}$ (Total)
2023	0.51	7.38	21.30	0.06	19.82	10.15
2024	0.64	7.32	20.25	0.06	8.09	3.73
2025	62.95	3.31	22.39	0.04	1.24	0.34
Significance Threshold (lb/day)	**75**	**250**	**550**	**250**	**100**	**55**
SDAPCD Impact?	**No**	**No**	**No**	**No**	**No**	**No**

Given these findings, project emissions would not exceed SDAPCD air quality standards during construction. No mitigation measures will be necessary. Given the proposed project has no direct impacts and the proposed project is compatible with the general plan land use designation, there would not be any impacts to any RAQS.

4.3 Health Risk

Based upon the air quality modeling and assuming Tier 4 equipment with DPF as a design feature to the proposed project, worst-case onsite PM_{10} from onsite construction exhaust would cumulatively produce 0.00141 tons over the construction duration (423-working days) or an average of 0.000105 grams/second.

Utilizing the AERSCREEN dispersion model, we find that the peak maximum 1-hr concentration is 0.123 $\mu g/m^3$ during the worst-case construction period. Converting the peak 1-hr concentration to an annual concentration by multiplying it by 0.08 (US EPA, 1992) yields an annual concentration of 0.00986 $\mu g/m^3$. Therefore, utilizing the risk equation identified above in Section 3.1, the inhalation cancer risk is 2.02 per million exposed at the point of maximum exposure 100 meters away. It should be again noted that a project design feature would be to utilize Tier 4 diesel equipment with DPF and would be a condition to the proposed project and is considered T-BACT. Given this, the construction scenario analyzed would be considered less than significant and would be in compliance with the City's thresholds.

It should be noted that an elementary school is proposed to the northeast of the project site. The site is within the 100 meter point of maximum exposure and would also be exposed to a cancer risk of 2.02 per million exposed. This would be a less than significant impact

There are known acute and chronic health risks associated with diesel exhaust which are considered non-cancer risks. These risks are calculated based on methods identified in Section 3.1 of this report. From this we find that the hourly concentration of 0.123 $\mu g/m^3$ divided by the REL of 5 $\mu g/m^3$ yields a Health Hazard Index of 0.025, which is less than one. Therefore, no non-cancer risks are expected and all health risks are considered less than significant.

Furthermore, based on discussions with the project applicant, large cumulative projects closest to the project site are in excess of 500 meters away. Since the project health risk screening model predicted that diesel exhaust during construction would produce the highest concentrations roughly 100 meters from the project centroid and would generate a cancer risk of 2.02 per one million exposed, cumulative contributions from these cumulative projects would not be large enough or have a construction intensity to cause this risk to exceed 10 per one million exposed. Also, since construction emissions identified in Table 4.1 above are low relative to standards, simultaneous construction of all three projects would cause a less than significant cumulative air quality impact.

4.4 Operational Findings

The proposed project will generate 894 new daily trips once the proposed project is fully operational in the year 2025 (IM Intersecting Metrics, 2022). This assumption has been incorporated into the CalEEMod file. Also, as noted above, design features would be included and have been assumed within this analysis. Therefore, because the following analysis relies upon implementation of those design features, they would be a requirement of the proposed project.

The expected daily pollutant generation can be calculated utilizing the product of the average daily miles within the City and the expected emissions inventory. The daily pollutant emissions as calculated within CalEEMod are shown in Table 4.2 below. Based on this analysis, the proposed project would generate a less than significant direct operational impact. Since the Project would not exceed significance thresholds and because the proposed project has been designed to conform with the City's Housing Element to the General Plan, a less than significant cumulative operational impact would also be expected and the proposed project would not conflict with SDAPCDs RAQS.

Table 4.2: Expected Daily Pollutant Generation

	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
Summer Scenario						
Area	4.07	0.14	12.28	0.00	0.07	0.07
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	2.48	2.47	22.23	0.05	5.41	1.47
Total (Lb/Day)	**6.55**	**2.61**	**34.51**	**0.05**	**5.48**	**1.53**
SCAQMD Thresholds	75	250	550	250	100	55
Significant?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Scenario						
Area	4.07	0.14	12.28	0.00	0.07	0.07
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	2.42	2.67	22.81	0.05	5.41	1.47
Total (Lb/Day)	**6.49**	**2.81**	**35.09**	**0.05**	**5.48**	**1.53**
SCAQMD Thresholds	75	250	550	250	100	55
Significant?	**No**	**No**	**No**	**No**	**No**	**No**

4.5 Conclusion of Findings

The air quality analysis has been prepared to include certain PDFs as identified in Section 1.3 of this report. Since all modeling assumes these PDFs have been included at a minimum, the PDFs identified would be required as Conditions of Approval by the City of Encinitas. Based upon the analysis of project construction and operation activities, neither direct construction nor direct operational impacts would be expected.

During construction of the proposed project, fugitive dust emissions will be expected during grading operations from heavy equipment usage and from construction workers commuting to and from the site. During short-term construction activities, the proposed project will generate less than significant impacts based on thresholds established by the San Diego Air Pollution Control District (SDAPCD) and will NOT require mitigation. Also, based on the project size, emissions and relative location to nearby cumulative projects, the proposed project would generate less than significant cumulative construction impacts.

Emissions from the operation of the proposed project to include project generated traffic would not exceed significance thresholds established by the SDAPCD, and therefore will generate less than significant air quality impacts. Furthermore, since the proposed project has been designed to conform to the City's General Plan, no significant cumulative operational impacts would be expected

Furthermore, a screening-level health risk assessment was conducted from onsite generated DPM from construction activities to determine the potential for the proposed project to result in a significant impact on nearby sensitive receptors during short-term construction activities. The result of the health risk assessment from these sources indicates that the proposed project would increase diesel particulates to a level which would not exceed the 10 in one million cancer risk threshold. Given this, no impacts would be expected. It should also be noted that offsite cancer risks sources which may affect the project were analyzed in a separate study by LDN Consulting (LDN Consulting, 2022).

The proposed project has been designed to conform to the City's updated Housing Element to the City's General Plan. The City has updated SANDAG with growth projections approved by the City within the Housing Element. Since the project has been designed in accordance with growth projections identified within the Housing Element, and since direct construction and operational impacts are not expected, the project would be consistent with San Diego's RAQS and would also conform to the SIP.

5.0 REFERENCES

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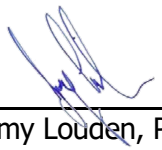
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6.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the air quality environment and impacts within and surrounding the proposed development. This report was prepared utilizing the latest emission rates and reduction methodologies.



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760-473-1253

Date November 15, 2022

ATTACHMENT A

CalEEMod 2020.4.0 Summer, Winter, Annual

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Piraeus Point 149 Unit MF

San Diego County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	26.00	Space	0.23	10,400.00	0
Condo/Townhouse	149.00	Dwelling Unit	6.65	149,000.00	426

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	431.18	**CH4 Intensity (lb/MWhr)**	0.026	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2025 46.5%

Land Use - Area is 6.88 acres

Construction Phase - schedule provided by applicant

Trips and VMT -

Grading -

Architectural Coating - Rule 67 Paint

Vehicle Trips - Updated based on Project Traffic Trip Generation

Woodstoves - No hearth

Area Coating - Rule 67 Paint

Energy Use - Project will be 100% electric

Water And Wastewater -

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Solid Waste -

Construction Off-road Equipment Mitigation - T4

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Parking	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
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tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
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tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	163.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	NT24NG	4,180.00	0.00
tblEnergyUse	T24NG	9,243.79	0.00
tblFireplaces	NumberGas	81.95	0.00
tblFireplaces	NumberNoFireplace	14.90	149.00
tblFireplaces	NumberWood	52.15	0.00
tblGrading	MaterialExported	0.00	57,600.00
tblLandUse	LotAcreage	9.31	6.65
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.026
tblProjectCharacteristics	CO2IntensityFactor	539.98	431.18
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.003

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	8.14	6.00
tblVehicleTrips	SU_TR	6.28	6.00
tblVehicleTrips	WD_TR	7.32	6.00
tblWoodstoves	NumberCatalytic	7.45	0.00
tblWoodstoves	NumberNoncatalytic	7.45	0.00

2.0 Emissions Summary

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7087	27.5547	18.6775	0.0572	19.8049	1.2668	21.0717	10.1417	1.1655	11.3071	0.0000	5,905.0987	5,905.0987	1.1961	0.4673	6,071.3224
2024	1.7991	22.7819	18.9570	0.0566	8.0281	0.7744	8.8024	3.6767	0.7142	4.3910	0.0000	5,851.2366	5,851.2366	1.0836	0.4592	6,015.1801
2025	64.1344	14.5594	20.9876	0.0426	1.2227	0.5892	1.8119	0.3271	0.5572	0.8843	0.0000	4,167.9938	4,167.9938	0.7162	0.0770	4,207.2141
Maximum	**64.1344**	**27.5547**	**20.9876**	**0.0572**	**19.8049**	**1.2668**	**21.0717**	**10.1417**	**1.1655**	**11.3071**	**0.0000**	**5,905.0987**	**5,905.0987**	**1.1961**	**0.4673**	**6,071.3224**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.5148	7.3775	21.3021	0.0572	19.8049	0.0570	19.8150	10.1417	0.0548	10.1517	0.0000	5,905.0987	5,905.0987	1.1961	0.4673	6,071.3224
2024	0.6362	7.3246	20.2504	0.0566	8.0281	0.0572	8.0853	3.6767	0.0550	3.7318	0.0000	5,851.2366	5,851.2366	1.0836	0.4592	6,015.1801
2025	62.9537	3.3077	22.3865	0.0426	1.2227	0.0168	1.2395	0.3271	0.0162	0.3433	0.0000	4,167.9938	4,167.9938	0.7162	0.0770	4,207.2141
Maximum	**62.9537**	**7.3775**	**22.3865**	**0.0572**	**19.8049**	**0.0572**	**19.8150**	**10.1417**	**0.0550**	**10.1517**	**0.0000**	**5,905.0987**	**5,905.0987**	**1.1961**	**0.4673**	**6,071.3224**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	6.61	72.25	-9.07	0.00	0.00	95.02	8.04	0.00	94.83	14.21	0.00	0.00	0.00	0.00	0.00	0.00

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0729	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682	0.0000	22.1400	22.1400	0.0212	0.0000	22.6703
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.4789	2.4676	22.2255	0.0494	5.3734	0.0370	5.4105	1.4314	0.0345	1.4659		5,157.6444	5,157.6444	0.3336	0.2108	5,228.7891
Total	**6.5518**	**2.6091**	**34.5092**	**0.0500**	**5.3734**	**0.1052**	**5.4786**	**1.4314**	**0.1027**	**1.5340**	**0.0000**	**5,179.7844**	**5,179.7844**	**0.3548**	**0.2108**	**5,251.4593**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0729	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682	0.0000	22.1400	22.1400	0.0212	0.0000	22.6703
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.4789	2.4676	22.2255	0.0494	5.3734	0.0370	5.4105	1.4314	0.0345	1.4659		5,157.6444	5,157.6444	0.3336	0.2108	5,228.7891
Total	**6.5518**	**2.6091**	**34.5092**	**0.0500**	**5.3734**	**0.1052**	**5.4786**	**1.4314**	**0.1027**	**1.5340**	**0.0000**	**5,179.7844**	**5,179.7844**	**0.3548**	**0.2108**	**5,251.4593**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2023	11/14/2023	5	10	
2	Grading	Grading	11/15/2023	6/30/2024	5	163	
3	Building Construction	Building Construction	7/1/2024	5/16/2025	5	230	
4	Architectural Coating	Architectural Coating	4/5/2025	5/16/2025	5	30	
5	Paving	Paving	5/17/2025	6/13/2025	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 163

Acres of Paving: 0.23

Residential Indoor: 301,725; Residential Outdoor: 100,575; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 624 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	7,200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	112.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0492	0.0306	0.4332	1.3100e-003	0.1479	8.0000e-004	0.1487	0.0392	7.3000e-004	0.0400		133.7136	133.7136	3.5800e-003	3.2900e-003	134.7841
Total	**0.0492**	**0.0306**	**0.4332**	**1.3100e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**133.7136**	**133.7136**	**3.5800e-003**	**3.2900e-003**	**134.7841**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0381		9.3100e-003	9.3100e-003		9.3100e-003	9.3100e-003	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**0.4656**	**2.0175**	**20.8690**	**0.0381**	**19.6570**	**9.3100e-003**	**19.6663**	**10.1025**	**9.3100e-003**	**10.1118**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0492	0.0306	0.4332	1.3100e-003	0.1479	8.0000e-004	0.1487	0.0392	7.3000e-004	0.0400		133.7136	133.7136	3.5800e-003	3.2900e-003	134.7841
Total	**0.0492**	**0.0306**	**0.4332**	**1.3100e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**133.7136**	**133.7136**	**3.5800e-003**	**3.2900e-003**	**134.7841**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1322	0.0000	7.1322	3.4323	0.0000	3.4323			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.1322**	**0.7749**	**7.9072**	**3.4323**	**0.7129**	**4.1452**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1000	5.7783	1.5873	0.0264	0.7726	0.0490	0.8216	0.2118	0.0469	0.2587		2,920.9797	2,920.9797	0.1472	0.4645	3,063.0841
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0410	0.0255	0.3610	1.0900e-003	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		111.4280	111.4280	2.9800e-003	2.7400e-003	112.3201
Total	**0.1411**	**5.8038**	**1.9483**	**0.0275**	**0.8958**	**0.0497**	**0.9455**	**0.2444**	**0.0475**	**0.2920**		**3,032.4077**	**3,032.4077**	**0.1502**	**0.4673**	**3,175.4042**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1322	0.0000	7.1322	3.4323	0.0000	3.4323			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**0.3632**	**1.5737**	**17.7527**	**0.0297**	**7.1322**	**7.2600e-003**	**7.1395**	**3.4323**	**7.2600e-003**	**3.4395**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1000	5.7783	1.5873	0.0264	0.7726	0.0490	0.8216	0.2118	0.0469	0.2587		2,920.9797	2,920.9797	0.1472	0.4645	3,063.0841
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0410	0.0255	0.3610	1.0900e-003	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		111.4280	111.4280	2.9800e-003	2.7400e-003	112.3201
Total	**0.1411**	**5.8038**	**1.9483**	**0.0275**	**0.8958**	**0.0497**	**0.9455**	**0.2444**	**0.0475**	**0.2920**		**3,032.4077**	**3,032.4077**	**0.1502**	**0.4673**	**3,175.4042**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1322	0.0000	7.1322	3.4323	0.0000	3.4323			0.0000			0.0000
Off-Road	1.6617	17.0310	14.7594	0.0297		0.7244	0.7244		0.6665	0.6665		2,873.0541	2,873.0541	0.9292		2,896.2842
Total	**1.6617**	**17.0310**	**14.7594**	**0.0297**	**7.1322**	**0.7244**	**7.8567**	**3.4323**	**0.6665**	**4.0987**		**2,873.0541**	**2,873.0541**	**0.9292**		**2,896.2842**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0989	5.7280	1.6093	0.0259	0.7726	0.0493	0.8219	0.2118	0.0472	0.2590		2,869.5589	2,869.5589	0.1517	0.4567	3,009.4405
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0385	0.0229	0.3373	1.0500e-003	0.1232	6.3000e-004	0.1239	0.0327	5.8000e-004	0.0333		108.6237	108.6237	2.7100e-003	2.5600e-003	109.4555
Total	**0.1374**	**5.7509**	**1.9466**	**0.0270**	**0.8958**	**0.0500**	**0.9458**	**0.2445**	**0.0478**	**0.2922**		**2,978.1825**	**2,978.1825**	**0.1544**	**0.4592**	**3,118.8960**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1322	0.0000	7.1322	3.4323	0.0000	3.4323			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003	0.0000	2,873.0541	2,873.0541	0.9292		2,896.2842
Total	**0.3632**	**1.5737**	**17.7527**	**0.0297**	**7.1322**	**7.2600e-003**	**7.1395**	**3.4323**	**7.2600e-003**	**3.4395**	**0.0000**	**2,873.0541**	**2,873.0541**	**0.9292**		**2,896.2842**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0989	5.7280	1.6093	0.0259	0.7726	0.0493	0.8219	0.2118	0.0472	0.2590		2,869.5589	2,869.5589	0.1517	0.4567	3,009.4405
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0385	0.0229	0.3373	1.0500e-003	0.1232	6.3000e-004	0.1239	0.0327	5.8000e-004	0.0333		108.6237	108.6237	2.7100e-003	2.5600e-003	109.4555
Total	**0.1374**	**5.7509**	**1.9466**	**0.0270**	**0.8958**	**0.0500**	**0.9458**	**0.2445**	**0.0478**	**0.2922**		**2,978.1825**	**2,978.1825**	**0.1544**	**0.4592**	**3,118.8960**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0207	0.7664	0.2716	3.6200e-003	0.1219	4.7200e-003	0.1266	0.0351	4.5200e-003	0.0396		390.9475	390.9475	0.0123	0.0566	408.1236
Worker	0.2877	0.1711	2.5186	7.8600e-003	0.9201	4.7200e-003	0.9248	0.2440	4.3400e-003	0.2484		811.0567	811.0567	0.0203	0.0191	817.2679
Total	**0.3084**	**0.9375**	**2.7902**	**0.0115**	**1.0420**	**9.4400e-003**	**1.0514**	**0.2791**	**8.8600e-003**	**0.2880**		**1,202.0042**	**1,202.0042**	**0.0326**	**0.0757**	**1,225.3915**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**6.1200e-003**	**6.1200e-003**		**6.1200e-003**	**6.1200e-003**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0207	0.7664	0.2716	3.6200e-003	0.1219	4.7200e-003	0.1266	0.0351	4.5200e-003	0.0396		390.9475	390.9475	0.0123	0.0566	408.1236
Worker	0.2877	0.1711	2.5186	7.8600e-003	0.9201	4.7200e-003	0.9248	0.2440	4.3400e-003	0.2484		811.0567	811.0567	0.0203	0.0191	817.2679
Total	**0.3084**	**0.9375**	**2.7902**	**0.0115**	**1.0420**	**9.4400e-003**	**1.0514**	**0.2791**	**8.8600e-003**	**0.2880**		**1,202.0042**	**1,202.0042**	**0.0326**	**0.0757**	**1,225.3915**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.7588	0.2670	3.5400e-003	0.1219	4.7100e-003	0.1266	0.0351	4.5100e-003	0.0396		383.4897	383.4897	0.0127	0.0555	400.3434
Worker	0.2711	0.1550	2.3627	7.5900e-003	0.9201	4.5200e-003	0.9246	0.2440	4.1600e-003	0.2482		791.1728	791.1728	0.0185	0.0180	796.9893
Total	**0.2911**	**0.9138**	**2.6297**	**0.0111**	**1.0420**	**9.2300e-003**	**1.0512**	**0.2791**	**8.6700e-003**	**0.2878**		**1,174.6625**	**1,174.6625**	**0.0311**	**0.0735**	**1,197.3327**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**6.1200e-003**	**6.1200e-003**		**6.1200e-003**	**6.1200e-003**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.7588	0.2670	3.5400e-003	0.1219	4.7100e-003	0.1266	0.0351	4.5100e-003	0.0396		383.4897	383.4897	0.0127	0.0555	400.3434
Worker	0.2711	0.1550	2.3627	7.5900e-003	0.9201	4.5200e-003	0.9246	0.2440	4.1600e-003	0.2482		791.1728	791.1728	0.0185	0.0180	796.9893
Total	**0.2911**	**0.9138**	**2.6297**	**0.0111**	**1.0420**	**9.2300e-003**	**1.0512**	**0.2791**	**8.6700e-003**	**0.2878**		**1,174.6625**	**1,174.6625**	**0.0311**	**0.0735**	**1,197.3327**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.2518					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**62.4226**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0533	0.0304	0.4641	1.4900e-003	0.1807	8.9000e-004	0.1816	0.0479	8.2000e-004	0.0488		155.4089	155.4089	3.6300e-003	3.5300e-003	156.5515
Total	**0.0533**	**0.0304**	**0.4641**	**1.4900e-003**	**0.1807**	**8.9000e-004**	**0.1816**	**0.0479**	**8.2000e-004**	**0.0488**		**155.4089**	**155.4089**	**3.6300e-003**	**3.5300e-003**	**156.5515**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.2518					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**62.2815**	**0.1288**	**1.8324**	**2.9700e-003**		**5.9000e-004**	**5.9000e-004**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0533	0.0304	0.4641	1.4900e-003	0.1807	8.9000e-004	0.1816	0.0479	8.2000e-004	0.0488		155.4089	155.4089	3.6300e-003	3.5300e-003	156.5515
Total	**0.0533**	**0.0304**	**0.4641**	**1.4900e-003**	**0.1807**	**8.9000e-004**	**0.1816**	**0.0479**	**8.2000e-004**	**0.0488**		**155.4089**	**155.4089**	**3.6300e-003**	**3.5300e-003**	**156.5515**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9453**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0363	0.0208	0.3164	1.0200e-003	0.1232	6.0000e-004	0.1238	0.0327	5.6000e-004	0.0332		105.9606	105.9606	2.4700e-003	2.4100e-003	106.7396
Total	**0.0363**	**0.0208**	**0.3164**	**1.0200e-003**	**0.1232**	**6.0000e-004**	**0.1238**	**0.0327**	**5.6000e-004**	**0.0332**		**105.9606**	**105.9606**	**2.4700e-003**	**2.4100e-003**	**106.7396**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3106**	**1.2154**	**17.2957**	**0.0228**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0363	0.0208	0.3164	1.0200e-003	0.1232	6.0000e-004	0.1238	0.0327	5.6000e-004	0.0332		105.9606	105.9606	2.4700e-003	2.4100e-003	106.7396
Total	**0.0363**	**0.0208**	**0.3164**	**1.0200e-003**	**0.1232**	**6.0000e-004**	**0.1238**	**0.0327**	**5.6000e-004**	**0.0332**		**105.9606**	**105.9606**	**2.4700e-003**	**2.4100e-003**	**106.7396**

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4789	2.4676	22.2255	0.0494	5.3734	0.0370	5.4105	1.4314	0.0345	1.4659		5,157.6444	5,157.6444	0.3336	0.2108	5,228.7891
Unmitigated	2.4789	2.4676	22.2255	0.0494	5.3734	0.0370	5.4105	1.4314	0.0345	1.4659		5,157.6444	5,157.6444	0.3336	0.2108	5,228.7891

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	894.00	894.00	894.00	2,552,641	2,552,641
Parking Lot	0.00	0.00	0.00		
Total	894.00	894.00	894.00	2,552,641	2,552,641

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Parking Lot	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0729	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682	0.0000	22.1400	22.1400	0.0212	0.0000	22.6703
Unmitigated	4.0729	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682	0.0000	22.1400	22.1400	0.0212	0.0000	22.6703

Piraeus Point 149 Unit MF - San Diego County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5117					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1923					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3690	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682		22.1400	22.1400	0.0212		22.6703
Total	**4.0729**	**0.1415**	**12.2837**	**6.5000e-004**		**0.0682**	**0.0682**		**0.0682**	**0.0682**	**0.0000**	**22.1400**	**22.1400**	**0.0212**	**0.0000**	**22.6703**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5117					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1923					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3690	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682		22.1400	22.1400	0.0212		22.6703
Total	**4.0729**	**0.1415**	**12.2837**	**6.5000e-004**		**0.0682**	**0.0682**		**0.0682**	**0.0682**	**0.0000**	**22.1400**	**22.1400**	**0.0212**	**0.0000**	**22.6703**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Piraeus Point 149 Unit MF

San Diego County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	26.00	Space	0.23	10,400.00	0
Condo/Townhouse	149.00	Dwelling Unit	6.65	149,000.00	426

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	431.18	**CH4 Intensity (lb/MWhr)**	0.026	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2025 46.5%

Land Use - Area is 6.88 acres

Construction Phase - schedule provided by applicant

Trips and VMT -

Grading -

Architectural Coating - Rule 67 Paint

Vehicle Trips - Updated based on Project Traffic Trip Generation

Woodstoves - No hearth

Area Coating - Rule 67 Paint

Energy Use - Project will be 100% electric

Water And Wastewater -

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Solid Waste -

Construction Off-road Equipment Mitigation - T4

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Parking	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	163.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	NT24NG	4,180.00	0.00
tblEnergyUse	T24NG	9,243.79	0.00
tblFireplaces	NumberGas	81.95	0.00
tblFireplaces	NumberNoFireplace	14.90	149.00
tblFireplaces	NumberWood	52.15	0.00
tblGrading	MaterialExported	0.00	57,600.00
tblLandUse	LotAcreage	9.31	6.65
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.026
tblProjectCharacteristics	CO2IntensityFactor	539.98	431.18
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.003

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	8.14	6.00
tblVehicleTrips	SU_TR	6.28	6.00
tblVehicleTrips	WD_TR	7.32	6.00
tblWoodstoves	NumberCatalytic	7.45	0.00
tblWoodstoves	NumberNoncatalytic	7.45	0.00

2.0 Emissions Summary

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.7128	27.5586	18.6559	0.0572	19.8049	1.2668	21.0717	10.1417	1.1655	11.3071	0.0000	5,901.8121	5,901.8121	1.1964	0.4680	6,068.2386
2024	1.8044	23.0163	18.8447	0.0566	8.0281	0.7745	8.8025	3.6767	0.7143	4.3911	0.0000	5,848.1177	5,848.1177	1.0834	0.4599	6,012.2589
2025	64.1628	14.6146	20.8646	0.0421	1.2227	0.5892	1.8119	0.3271	0.5573	0.8843	0.0000	4,116.7513	4,116.7513	0.7164	0.0789	4,156.5661
Maximum	**64.1628**	**27.5586**	**20.8646**	**0.0572**	**19.8049**	**1.2668**	**21.0717**	**10.1417**	**1.1655**	**11.3071**	**0.0000**	**5,901.8121**	**5,901.8121**	**1.1964**	**0.4680**	**6,068.2386**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.5189	7.6137	21.2806	0.0572	19.8049	0.0571	19.8150	10.1417	0.0549	10.1517	0.0000	5,901.8121	5,901.8121	1.1964	0.4680	6,068.2386
2024	0.6606	7.5590	20.1381	0.0566	8.0281	0.0573	8.0854	3.6767	0.0551	3.7318	0.0000	5,848.1177	5,848.1177	1.0834	0.4599	6,012.2589
2025	62.9820	3.3629	22.2635	0.0421	1.2227	0.0169	1.2395	0.3271	0.0162	0.3433	0.0000	4,116.7513	4,116.7513	0.7164	0.0789	4,156.5661
Maximum	**62.9820**	**7.6137**	**22.2635**	**0.0572**	**19.8049**	**0.0573**	**19.8150**	**10.1417**	**0.0551**	**10.1517**	**0.0000**	**5,901.8121**	**5,901.8121**	**1.1964**	**0.4680**	**6,068.2386**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	6.58	71.57	-9.11	0.00	0.00	95.01	8.04	0.00	94.82	14.21	0.00	0.00	0.00	0.00	0.00	0.00

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0729	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682	0.0000	22.1400	22.1400	0.0212	0.0000	22.6703
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.4203	2.6731	22.8051	0.0472	5.3734	0.0370	5.4105	1.4314	0.0346	1.4659		4,933.5205	4,933.5205	0.3522	0.2219	5,008.4409
Total	**6.4933**	**2.8146**	**35.0888**	**0.0479**	**5.3734**	**0.1052**	**5.4786**	**1.4314**	**0.1027**	**1.5341**	**0.0000**	**4,955.6605**	**4,955.6605**	**0.3734**	**0.2219**	**5,031.1111**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.0729	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682	0.0000	22.1400	22.1400	0.0212	0.0000	22.6703
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.4203	2.6731	22.8051	0.0472	5.3734	0.0370	5.4105	1.4314	0.0346	1.4659		4,933.5205	4,933.5205	0.3522	0.2219	5,008.4409
Total	**6.4933**	**2.8146**	**35.0888**	**0.0479**	**5.3734**	**0.1052**	**5.4786**	**1.4314**	**0.1027**	**1.5341**	**0.0000**	**4,955.6605**	**4,955.6605**	**0.3734**	**0.2219**	**5,031.1111**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2023	11/14/2023	5	10	
2	Grading	Grading	11/15/2023	6/30/2024	5	163	
3	Building Construction	Building Construction	7/1/2024	5/16/2025	5	230	
4	Architectural Coating	Architectural Coating	4/5/2025	5/16/2025	5	30	
5	Paving	Paving	5/17/2025	6/13/2025	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 163

Acres of Paving: 0.23

Residential Indoor: 301,725; Residential Outdoor: 100,575; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 624 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	7,200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	112.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	2.6595	27.5242	18.2443	0.0381		1.2660	1.2660		1.1647	1.1647		3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**2.6595**	**27.5242**	**18.2443**	**0.0381**	**19.6570**	**1.2660**	**20.9230**	**10.1025**	**1.1647**	**11.2672**		**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0534	0.0344	0.4116	1.2300e-003	0.1479	8.0000e-004	0.1487	0.0392	7.3000e-004	0.0400		126.3637	126.3637	3.8100e-003	3.5600e-003	127.5200
Total	**0.0534**	**0.0344**	**0.4116**	**1.2300e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**126.3637**	**126.3637**	**3.8100e-003**	**3.5600e-003**	**127.5200**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	0.4656	2.0175	20.8690	0.0381		9.3100e-003	9.3100e-003		9.3100e-003	9.3100e-003	0.0000	3,687.3081	3,687.3081	1.1926		3,717.1219
Total	**0.4656**	**2.0175**	**20.8690**	**0.0381**	**19.6570**	**9.3100e-003**	**19.6663**	**10.1025**	**9.3100e-003**	**10.1118**	**0.0000**	**3,687.3081**	**3,687.3081**	**1.1926**		**3,717.1219**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0534	0.0344	0.4116	1.2300e-003	0.1479	8.0000e-004	0.1487	0.0392	7.3000e-004	0.0400		126.3637	126.3637	3.8100e-003	3.5600e-003	127.5200
Total	**0.0534**	**0.0344**	**0.4116**	**1.2300e-003**	**0.1479**	**8.0000e-004**	**0.1487**	**0.0392**	**7.3000e-004**	**0.0400**		**126.3637**	**126.3637**	**3.8100e-003**	**3.5600e-003**	**127.5200**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1322	0.0000	7.1322	3.4323	0.0000	3.4323			0.0000			0.0000
Off-Road	1.7109	17.9359	14.7507	0.0297		0.7749	0.7749		0.7129	0.7129		2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**1.7109**	**17.9359**	**14.7507**	**0.0297**	**7.1322**	**0.7749**	**7.9072**	**3.4323**	**0.7129**	**4.1452**		**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0940	6.0114	1.6071	0.0265	0.7726	0.0491	0.8217	0.2118	0.0470	0.2588		2,923.8181	2,923.8181	0.1469	0.4650	3,066.0538
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0445	0.0287	0.3430	1.0300e-003	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		105.3031	105.3031	3.1800e-003	2.9700e-003	106.2666
Total	**0.1385**	**6.0400**	**1.9501**	**0.0275**	**0.8958**	**0.0498**	**0.9456**	**0.2444**	**0.0476**	**0.2921**		**3,029.1211**	**3,029.1211**	**0.1500**	**0.4680**	**3,172.3205**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1322	0.0000	7.1322	3.4323	0.0000	3.4323			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003	0.0000	2,872.6910	2,872.6910	0.9291		2,895.9182
Total	**0.3632**	**1.5737**	**17.7527**	**0.0297**	**7.1322**	**7.2600e-003**	**7.1395**	**3.4323**	**7.2600e-003**	**3.4395**	**0.0000**	**2,872.6910**	**2,872.6910**	**0.9291**		**2,895.9182**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0940	6.0114	1.6071	0.0265	0.7726	0.0491	0.8217	0.2118	0.0470	0.2588		2,923.8181	2,923.8181	0.1469	0.4650	3,066.0538
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0445	0.0287	0.3430	1.0300e-003	0.1232	6.6000e-004	0.1239	0.0327	6.1000e-004	0.0333		105.3031	105.3031	3.1800e-003	2.9700e-003	106.2666
Total	**0.1385**	**6.0400**	**1.9501**	**0.0275**	**0.8958**	**0.0498**	**0.9456**	**0.2444**	**0.0476**	**0.2921**		**3,029.1211**	**3,029.1211**	**0.1500**	**0.4680**	**3,172.3205**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1322	0.0000	7.1322	3.4323	0.0000	3.4323			0.0000			0.0000
Off-Road	1.6617	17.0310	14.7594	0.0297		0.7244	0.7244		0.6665	0.6665		2,873.0541	2,873.0541	0.9292		2,896.2842
Total	**1.6617**	**17.0310**	**14.7594**	**0.0297**	**7.1322**	**0.7244**	**7.8567**	**3.4323**	**0.6665**	**4.0987**		**2,873.0541**	**2,873.0541**	**0.9292**		**2,896.2842**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0929	5.9595	1.6291	0.0259	0.7726	0.0494	0.8220	0.2118	0.0473	0.2591		2,872.3975	2,872.3975	0.1513	0.4571	3,012.4101
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0419	0.0258	0.3212	1.0000e-003	0.1232	6.3000e-004	0.1239	0.0327	5.8000e-004	0.0333		102.6661	102.6661	2.9000e-003	2.7700e-003	103.5647
Total	**0.1348**	**5.9853**	**1.9503**	**0.0269**	**0.8958**	**0.0501**	**0.9459**	**0.2445**	**0.0479**	**0.2923**		**2,975.0636**	**2,975.0636**	**0.1542**	**0.4599**	**3,115.9748**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.1322	0.0000	7.1322	3.4323	0.0000	3.4323			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		7.2600e-003	7.2600e-003		7.2600e-003	7.2600e-003	0.0000	2,873.0541	2,873.0541	0.9292		2,896.2842
Total	**0.3632**	**1.5737**	**17.7527**	**0.0297**	**7.1322**	**7.2600e-003**	**7.1395**	**3.4323**	**7.2600e-003**	**3.4395**	**0.0000**	**2,873.0541**	**2,873.0541**	**0.9292**		**2,896.2842**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0929	5.9595	1.6291	0.0259	0.7726	0.0494	0.8220	0.2118	0.0473	0.2591		2,872.3975	2,872.3975	0.1513	0.4571	3,012.4101
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0419	0.0258	0.3212	1.0000e-003	0.1232	6.3000e-004	0.1239	0.0327	5.8000e-004	0.0333		102.6661	102.6661	2.9000e-003	2.7700e-003	103.5647
Total	**0.1348**	**5.9853**	**1.9503**	**0.0269**	**0.8958**	**0.0501**	**0.9459**	**0.2445**	**0.0479**	**0.2923**		**2,975.0636**	**2,975.0636**	**0.1542**	**0.4599**	**3,115.9748**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.4716	13.4438	16.1668	0.0270		0.6133	0.6133		0.5769	0.5769		2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**1.4716**	**13.4438**	**16.1668**	**0.0270**		**0.6133**	**0.6133**		**0.5769**	**0.5769**		**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.7987	0.2799	3.6200e-003	0.1219	4.7500e-003	0.1267	0.0351	4.5400e-003	0.0396		391.5192	391.5192	0.0123	0.0567	408.7329
Worker	0.3127	0.1924	2.3979	7.4300e-003	0.9201	4.7200e-003	0.9248	0.2440	4.3400e-003	0.2484		766.5737	766.5737	0.0216	0.0207	773.2828
Total	**0.3328**	**0.9911**	**2.6779**	**0.0111**	**1.0420**	**9.4700e-003**	**1.0514**	**0.2791**	**8.8800e-003**	**0.2880**		**1,158.0929**	**1,158.0929**	**0.0339**	**0.0774**	**1,182.0157**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,555.6989	2,555.6989	0.6044		2,570.8077
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**6.1200e-003**	**6.1200e-003**		**6.1200e-003**	**6.1200e-003**	**0.0000**	**2,555.6989**	**2,555.6989**	**0.6044**		**2,570.8077**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0201	0.7987	0.2799	3.6200e-003	0.1219	4.7500e-003	0.1267	0.0351	4.5400e-003	0.0396		391.5192	391.5192	0.0123	0.0567	408.7329
Worker	0.3127	0.1924	2.3979	7.4300e-003	0.9201	4.7200e-003	0.9248	0.2440	4.3400e-003	0.2484		766.5737	766.5737	0.0216	0.0207	773.2828
Total	**0.3328**	**0.9911**	**2.6779**	**0.0111**	**1.0420**	**9.4700e-003**	**1.0514**	**0.2791**	**8.8800e-003**	**0.2880**		**1,158.0929**	**1,158.0929**	**0.0339**	**0.0774**	**1,182.0157**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3674	12.4697	16.0847	0.0270		0.5276	0.5276		0.4963	0.4963		2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**1.3674**	**12.4697**	**16.0847**	**0.0270**		**0.5276**	**0.5276**		**0.4963**	**0.4963**		**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0194	0.7909	0.2753	3.5500e-003	0.1219	4.7300e-003	0.1266	0.0351	4.5200e-003	0.0396		384.0639	384.0639	0.0126	0.0556	400.9543
Worker	0.2953	0.1743	2.2530	7.1800e-003	0.9201	4.5200e-003	0.9246	0.2440	4.1600e-003	0.2482		747.8633	747.8633	0.0197	0.0194	754.1461
Total	**0.3147**	**0.9652**	**2.5283**	**0.0107**	**1.0420**	**9.2500e-003**	**1.0512**	**0.2791**	**8.6800e-003**	**0.2878**		**1,131.9272**	**1,131.9272**	**0.0323**	**0.0751**	**1,155.1004**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3278	2.2347	17.4603	0.0270		6.1200e-003	6.1200e-003		6.1200e-003	6.1200e-003	0.0000	2,556.4744	2,556.4744	0.6010		2,571.4981
Total	**0.3278**	**2.2347**	**17.4603**	**0.0270**		**6.1200e-003**	**6.1200e-003**		**6.1200e-003**	**6.1200e-003**	**0.0000**	**2,556.4744**	**2,556.4744**	**0.6010**		**2,571.4981**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0194	0.7909	0.2753	3.5500e-003	0.1219	4.7300e-003	0.1266	0.0351	4.5200e-003	0.0396		384.0639	384.0639	0.0126	0.0556	400.9543
Worker	0.2953	0.1743	2.2530	7.1800e-003	0.9201	4.5200e-003	0.9246	0.2440	4.1600e-003	0.2482		747.8633	747.8633	0.0197	0.0194	754.1461
Total	**0.3147**	**0.9652**	**2.5283**	**0.0107**	**1.0420**	**9.2500e-003**	**1.0512**	**0.2791**	**8.6800e-003**	**0.2878**		**1,131.9272**	**1,131.9272**	**0.0323**	**0.0751**	**1,155.1004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.2518					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**62.4226**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0342	0.4426	1.4100e-003	0.1807	8.9000e-004	0.1816	0.0479	8.2000e-004	0.0488		146.9017	146.9017	3.8800e-003	3.8200e-003	148.1358
Total	**0.0580**	**0.0342**	**0.4426**	**1.4100e-003**	**0.1807**	**8.9000e-004**	**0.1816**	**0.0479**	**8.2000e-004**	**0.0488**		**146.9017**	**146.9017**	**3.8800e-003**	**3.8200e-003**	**148.1358**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	62.2518					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		5.9000e-004	5.9000e-004		5.9000e-004	5.9000e-004	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**62.2815**	**0.1288**	**1.8324**	**2.9700e-003**		**5.9000e-004**	**5.9000e-004**		**5.9000e-004**	**5.9000e-004**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0342	0.4426	1.4100e-003	0.1807	8.9000e-004	0.1816	0.0479	8.2000e-004	0.0488		146.9017	146.9017	3.8800e-003	3.8200e-003	148.1358
Total	**0.0580**	**0.0342**	**0.4426**	**1.4100e-003**	**0.1807**	**8.9000e-004**	**0.1816**	**0.0479**	**8.2000e-004**	**0.0488**		**146.9017**	**146.9017**	**3.8800e-003**	**3.8200e-003**	**148.1358**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9152	8.5816	14.5780	0.0228		0.4185	0.4185		0.3850	0.3850		2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9453**	**8.5816**	**14.5780**	**0.0228**		**0.4185**	**0.4185**		**0.3850**	**0.3850**		**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0396	0.0233	0.3017	9.6000e-004	0.1232	6.0000e-004	0.1238	0.0327	5.6000e-004	0.0332		100.1603	100.1603	2.6400e-003	2.6000e-003	101.0017
Total	**0.0396**	**0.0233**	**0.3017**	**9.6000e-004**	**0.1232**	**6.0000e-004**	**0.1238**	**0.0327**	**5.6000e-004**	**0.0332**		**100.1603**	**100.1603**	**2.6400e-003**	**2.6000e-003**	**101.0017**

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		5.6100e-003	5.6100e-003		5.6100e-003	5.6100e-003	0.0000	2,206.7452	2,206.7452	0.7137		2,224.5878
Paving	0.0301					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3106**	**1.2154**	**17.2957**	**0.0228**		**5.6100e-003**	**5.6100e-003**		**5.6100e-003**	**5.6100e-003**	**0.0000**	**2,206.7452**	**2,206.7452**	**0.7137**		**2,224.5878**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0396	0.0233	0.3017	9.6000e-004	0.1232	6.0000e-004	0.1238	0.0327	5.6000e-004	0.0332		100.1603	100.1603	2.6400e-003	2.6000e-003	101.0017
Total	**0.0396**	**0.0233**	**0.3017**	**9.6000e-004**	**0.1232**	**6.0000e-004**	**0.1238**	**0.0327**	**5.6000e-004**	**0.0332**		**100.1603**	**100.1603**	**2.6400e-003**	**2.6000e-003**	**101.0017**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.4203	2.6731	22.8051	0.0472	5.3734	0.0370	5.4105	1.4314	0.0346	1.4659		4,933.5205	4,933.5205	0.3522	0.2219	5,008.4409
Unmitigated	2.4203	2.6731	22.8051	0.0472	5.3734	0.0370	5.4105	1.4314	0.0346	1.4659		4,933.5205	4,933.5205	0.3522	0.2219	5,008.4409

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	894.00	894.00	894.00	2,552,641	2,552,641
Parking Lot	0.00	0.00	0.00		
Total	894.00	894.00	894.00	2,552,641	2,552,641

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Parking Lot	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0729	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682	0.0000	22.1400	22.1400	0.0212	0.0000	22.6703
Unmitigated	4.0729	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682	0.0000	22.1400	22.1400	0.0212	0.0000	22.6703

Piraeus Point 149 Unit MF - San Diego County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5117					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1923					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3690	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682		22.1400	22.1400	0.0212		22.6703
Total	**4.0729**	**0.1415**	**12.2837**	**6.5000e-004**		**0.0682**	**0.0682**		**0.0682**	**0.0682**	**0.0000**	**22.1400**	**22.1400**	**0.0212**	**0.0000**	**22.6703**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5117					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.1923					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3690	0.1415	12.2837	6.5000e-004		0.0682	0.0682		0.0682	0.0682		22.1400	22.1400	0.0212		22.6703
Total	**4.0729**	**0.1415**	**12.2837**	**6.5000e-004**		**0.0682**	**0.0682**		**0.0682**	**0.0682**	**0.0000**	**22.1400**	**22.1400**	**0.0212**	**0.0000**	**22.6703**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Piraeus Point 149 Unit MF

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	26.00	Space	0.23	10,400.00	0
Condo/Townhouse	149.00	Dwelling Unit	6.65	149,000.00	426

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	431.18	**CH4 Intensity (lb/MWhr)**	0.026	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2025 46.5%

Land Use - Area is 6.88 acres

Construction Phase - schedule provided by applicant

Trips and VMT -

Grading -

Architectural Coating - Rule 67 Paint

Vehicle Trips - Updated based on Project Traffic Trip Generation

Woodstoves - No hearth

Area Coating - Rule 67 Paint

Energy Use - Project will be 100% electric

Water And Wastewater -

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Solid Waste -

Construction Off-road Equipment Mitigation - T4

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Parking	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	163.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	NT24NG	4,180.00	0.00
tblEnergyUse	T24NG	9,243.79	0.00
tblFireplaces	NumberGas	81.95	0.00
tblFireplaces	NumberNoFireplace	14.90	149.00
tblFireplaces	NumberWood	52.15	0.00
tblGrading	MaterialExported	0.00	57,600.00
tblLandUse	LotAcreage	9.31	6.65
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.026
tblProjectCharacteristics	CO2IntensityFactor	539.98	431.18
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.003

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	8.14	6.00
tblVehicleTrips	SU_TR	6.28	6.00
tblVehicleTrips	WD_TR	7.32	6.00
tblWoodstoves	NumberCatalytic	7.45	0.00
tblWoodstoves	NumberNoncatalytic	7.45	0.00

2.0 Emissions Summary

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0441	0.5331	0.3686	1.1400e-003	0.3033	0.0199	0.3233	0.1192	0.0184	0.1376	0.0000	105.6345	105.6345	0.0216	7.0200e-003	108.2647
2024	0.2340	2.4471	2.3286	6.1900e-003	0.6061	0.0914	0.6975	0.2587	0.0851	0.3438	0.0000	567.5486	567.5486	0.1021	0.0317	579.5528
2025	1.0281	0.7616	1.0942	2.1500e-003	0.0537	0.0313	0.0850	0.0144	0.0294	0.0438	0.0000	191.0180	191.0180	0.0349	3.4000e-003	192.9024
Maximum	**1.0281**	**2.4471**	**2.3286**	**6.1900e-003**	**0.6061**	**0.0914**	**0.6975**	**0.2587**	**0.0851**	**0.3438**	**0.0000**	**567.5486**	**567.5486**	**0.1021**	**0.0317**	**579.5528**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0108	0.1356	0.4313	1.1400e-003	0.3033	9.9000e-004	0.3043	0.1192	9.5000e-004	0.1202	0.0000	105.6344	105.6344	0.0216	7.0200e-003	108.2647
2024	0.0741	0.7025	2.6085	6.1900e-003	0.6061	4.7500e-003	0.6108	0.2587	4.5700e-003	0.2633	0.0000	567.5482	567.5482	0.1021	0.0317	579.5524
2025	0.9687	0.1712	1.1891	2.1500e-003	0.0537	8.4000e-004	0.0546	0.0144	8.1000e-004	0.0152	0.0000	191.0178	191.0178	0.0349	3.4000e-003	192.9023
Maximum	**0.9687**	**0.7025**	**2.6085**	**6.1900e-003**	**0.6061**	**4.7500e-003**	**0.6108**	**0.2587**	**4.5700e-003**	**0.2633**	**0.0000**	**567.5482**	**567.5482**	**0.1021**	**0.0317**	**579.5524**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**19.33**	**73.03**	**-11.54**	**0.00**	**0.00**	**95.39**	**12.31**	**0.00**	**95.24**	**24.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**11-1-2023**	**1-31-2024**	0.8596	0.2383
2	**2-1-2024**	**4-30-2024**	0.7951	0.2565
3	**5-1-2024**	**7-31-2024**	0.7144	0.2126
4	**8-1-2024**	**10-31-2024**	0.5319	0.1260
5	**11-1-2024**	**1-31-2025**	0.5211	0.1272
6	**2-1-2025**	**4-30-2025**	1.0708	0.7016
7	**5-1-2025**	**7-31-2025**	0.5455	0.3945
		Highest	1.0708	0.7016

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7092	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	141.8680	141.8680	8.5500e-003	9.9000e-004	142.3760
Mobile	0.4325	0.4811	4.0676	8.6400e-003	0.9549	6.7300e-003	0.9616	0.2548	6.2800e-003	0.2611	0.0000	819.1321	819.1321	0.0571	0.0363	831.3664
Waste						0.0000	0.0000		0.0000	0.0000	13.9130	0.0000	13.9130	0.8222	0.0000	34.4689
Water						0.0000	0.0000		0.0000	0.0000	3.0799	38.0213	41.1012	0.3186	7.7300e-003	51.3716
Total	**1.1417**	**0.4938**	**5.1732**	**8.7000e-003**	**0.9549**	**0.0129**	**0.9677**	**0.2548**	**0.0124**	**0.2672**	**16.9929**	**1,000.8291**	**1,017.8220**	**1.2082**	**0.0450**	**1,061.4337**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7092	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	141.8680	141.8680	8.5500e-003	9.9000e-004	142.3760
Mobile	0.4325	0.4811	4.0676	8.6400e-003	0.9549	6.7300e-003	0.9616	0.2548	6.2800e-003	0.2611	0.0000	819.1321	819.1321	0.0571	0.0363	831.3664
Waste						0.0000	0.0000		0.0000	0.0000	13.9130	0.0000	13.9130	0.8222	0.0000	34.4689
Water						0.0000	0.0000		0.0000	0.0000	3.0799	38.0213	41.1012	0.3186	7.7300e-003	51.3716
Total	**1.1417**	**0.4938**	**5.1732**	**8.7000e-003**	**0.9549**	**0.0129**	**0.9677**	**0.2548**	**0.0124**	**0.2672**	**16.9929**	**1,000.8291**	**1,017.8220**	**1.2082**	**0.0450**	**1,061.4337**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2023	11/14/2023	5	10	
2	Grading	Grading	11/15/2023	6/30/2024	5	163	
3	Building Construction	Building Construction	7/1/2024	5/16/2025	5	230	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Architectural Coating	Architectural Coating	4/5/2025	5/16/2025	5	30	
5	Paving	Paving	5/17/2025	6/13/2025	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 163

Acres of Paving: 0.23

Residential Indoor: 301,725; Residential Outdoor: 100,575; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 624 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	7,200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	112.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.7000e-004	2.0600e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5783	0.5783	2.0000e-005	2.0000e-005	0.5834
Total	**2.4000e-004**	**1.7000e-004**	**2.0600e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5783**	**0.5783**	**2.0000e-005**	**2.0000e-005**	**0.5834**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0101	0.1043	1.9000e-004		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**2.3300e-003**	**0.0101**	**0.1043**	**1.9000e-004**	**0.0983**	**5.0000e-005**	**0.0983**	**0.0505**	**5.0000e-005**	**0.0506**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.7000e-004	2.0600e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5783	0.5783	2.0000e-005	2.0000e-005	0.5834
Total	**2.4000e-004**	**1.7000e-004**	**2.0600e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5783**	**0.5783**	**2.0000e-005**	**2.0000e-005**	**0.5834**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1898	0.0000	0.1898	0.0646	0.0000	0.0646	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0282	0.2959	0.2434	4.9000e-004		0.0128	0.0128		0.0118	0.0118	0.0000	43.0000	43.0000	0.0139	0.0000	43.3477
Total	**0.0282**	**0.2959**	**0.2434**	**4.9000e-004**	**0.1898**	**0.0128**	**0.2026**	**0.0646**	**0.0118**	**0.0763**	**0.0000**	**43.0000**	**43.0000**	**0.0139**	**0.0000**	**43.3477**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6100e-003	0.0989	0.0263	4.4000e-004	0.0125	8.1000e-004	0.0133	3.4300e-003	7.7000e-004	4.2000e-003	0.0000	43.7407	43.7407	2.2000e-003	6.9600e-003	45.8686
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.6000e-004	5.6600e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.5902	1.5902	5.0000e-005	4.0000e-005	1.6044
Total	**2.2800e-003**	**0.0994**	**0.0320**	**4.6000e-004**	**0.0145**	**8.2000e-004**	**0.0153**	**3.9600e-003**	**7.8000e-004**	**4.7400e-003**	**0.0000**	**45.3309**	**45.3309**	**2.2500e-003**	**7.0000e-003**	**47.4730**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1898	0.0000	0.1898	0.0646	0.0000	0.0646	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9900e-003	0.0260	0.2929	4.9000e-004		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	43.0000	43.0000	0.0139	0.0000	43.3476
Total	**5.9900e-003**	**0.0260**	**0.2929**	**4.9000e-004**	**0.1898**	**1.2000e-004**	**0.1900**	**0.0646**	**1.2000e-004**	**0.0647**	**0.0000**	**43.0000**	**43.0000**	**0.0139**	**0.0000**	**43.3476**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6100e-003	0.0989	0.0263	4.4000e-004	0.0125	8.1000e-004	0.0133	3.4300e-003	7.7000e-004	4.2000e-003	0.0000	43.7407	43.7407	2.2000e-003	6.9600e-003	45.8686
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.6000e-004	5.6600e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.5902	1.5902	5.0000e-005	4.0000e-005	1.6044
Total	**2.2800e-003**	**0.0994**	**0.0320**	**4.6000e-004**	**0.0145**	**8.2000e-004**	**0.0153**	**3.9600e-003**	**7.8000e-004**	**4.7400e-003**	**0.0000**	**45.3309**	**45.3309**	**2.2500e-003**	**7.0000e-003**	**47.4730**

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4819	0.0000	0.4819	0.2251	0.0000	0.2251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1080	1.1070	0.9594	1.9300e-003		0.0471	0.0471		0.0433	0.0433	0.0000	169.4154	169.4154	0.0548	0.0000	170.7852
Total	**0.1080**	**1.1070**	**0.9594**	**1.9300e-003**	**0.4819**	**0.0471**	**0.5290**	**0.2251**	**0.0433**	**0.2684**	**0.0000**	**169.4154**	**169.4154**	**0.0548**	**0.0000**	**170.7852**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2600e-003	0.3863	0.1051	1.6800e-003	0.0492	3.2100e-003	0.0524	0.0135	3.0700e-003	0.0166	0.0000	169.2795	169.2795	8.9400e-003	0.0269	177.5314
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4800e-003	1.6400e-003	0.0209	7.0000e-005	7.8200e-003	4.0000e-005	7.8600e-003	2.0800e-003	4.0000e-005	2.1200e-003	0.0000	6.1074	6.1074	1.7000e-004	1.6000e-004	6.1597
Total	**8.7400e-003**	**0.3879**	**0.1260**	**1.7500e-003**	**0.0570**	**3.2500e-003**	**0.0603**	**0.0156**	**3.1100e-003**	**0.0187**	**0.0000**	**175.3870**	**175.3870**	**9.1100e-003**	**0.0271**	**183.6910**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4819	0.0000	0.4819	0.2251	0.0000	0.2251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0236	0.1023	1.1539	1.9300e-003		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	169.4152	169.4152	0.0548	0.0000	170.7850
Total	**0.0236**	**0.1023**	**1.1539**	**1.9300e-003**	**0.4819**	**4.7000e-004**	**0.4824**	**0.2251**	**4.7000e-004**	**0.2256**	**0.0000**	**169.4152**	**169.4152**	**0.0548**	**0.0000**	**170.7850**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2600e-003	0.3863	0.1051	1.6800e-003	0.0492	3.2100e-003	0.0524	0.0135	3.0700e-003	0.0166	0.0000	169.2795	169.2795	8.9400e-003	0.0269	177.5314
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4800e-003	1.6400e-003	0.0209	7.0000e-005	7.8200e-003	4.0000e-005	7.8600e-003	2.0800e-003	4.0000e-005	2.1200e-003	0.0000	6.1074	6.1074	1.7000e-004	1.6000e-004	6.1597
Total	**8.7400e-003**	**0.3879**	**0.1260**	**1.7500e-003**	**0.0570**	**3.2500e-003**	**0.0603**	**0.0156**	**3.1100e-003**	**0.0187**	**0.0000**	**175.3870**	**175.3870**	**9.1100e-003**	**0.0271**	**183.6910**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0971	0.8873	1.0670	1.7800e-003		0.0405	0.0405		0.0381	0.0381	0.0000	153.0204	153.0204	0.0362	0.0000	153.9250
Total	**0.0971**	**0.8873**	**1.0670**	**1.7800e-003**		**0.0405**	**0.0405**		**0.0381**	**0.0381**	**0.0000**	**153.0204**	**153.0204**	**0.0362**	**0.0000**	**153.9250**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3400e-003	0.0524	0.0182	2.4000e-004	7.8900e-003	3.1000e-004	8.2000e-003	2.2800e-003	3.0000e-004	2.5800e-003	0.0000	23.4221	23.4221	7.4000e-004	3.3900e-003	24.4517
Worker	0.0188	0.0125	0.1581	4.9000e-004	0.0593	3.1000e-004	0.0596	0.0158	2.9000e-004	0.0160	0.0000	46.3037	46.3037	1.2700e-003	1.2200e-003	46.6998
Total	**0.0201**	**0.0648**	**0.1763**	**7.3000e-004**	**0.0672**	**6.2000e-004**	**0.0678**	**0.0180**	**5.9000e-004**	**0.0186**	**0.0000**	**69.7258**	**69.7258**	**2.0100e-003**	**4.6100e-003**	**71.1515**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0216	0.1475	1.1524	1.7800e-003		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	153.0202	153.0202	0.0362	0.0000	153.9249
Total	**0.0216**	**0.1475**	**1.1524**	**1.7800e-003**		**4.0000e-004**	**4.0000e-004**		**4.0000e-004**	**4.0000e-004**	**0.0000**	**153.0202**	**153.0202**	**0.0362**	**0.0000**	**153.9249**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3400e-003	0.0524	0.0182	2.4000e-004	7.8900e-003	3.1000e-004	8.2000e-003	2.2800e-003	3.0000e-004	2.5800e-003	0.0000	23.4221	23.4221	7.4000e-004	3.3900e-003	24.4517
Worker	0.0188	0.0125	0.1581	4.9000e-004	0.0593	3.1000e-004	0.0596	0.0158	2.9000e-004	0.0160	0.0000	46.3037	46.3037	1.2700e-003	1.2200e-003	46.6998
Total	**0.0201**	**0.0648**	**0.1763**	**7.3000e-004**	**0.0672**	**6.2000e-004**	**0.0678**	**0.0180**	**5.9000e-004**	**0.0186**	**0.0000**	**69.7258**	**69.7258**	**2.0100e-003**	**4.6100e-003**	**71.1515**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0670	0.6110	0.7882	1.3200e-003		0.0259	0.0259		0.0243	0.0243	0.0000	113.6405	113.6405	0.0267	0.0000	114.3084
Total	**0.0670**	**0.6110**	**0.7882**	**1.3200e-003**		**0.0259**	**0.0259**		**0.0243**	**0.0243**	**0.0000**	**113.6405**	**113.6405**	**0.0267**	**0.0000**	**114.3084**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6000e-004	0.0385	0.0133	1.7000e-004	5.8600e-003	2.3000e-004	6.0900e-003	1.6900e-003	2.2000e-004	1.9100e-003	0.0000	17.0577	17.0577	5.6000e-004	2.4700e-003	17.8077
Worker	0.0132	8.3700e-003	0.1102	3.5000e-004	0.0440	2.2000e-004	0.0442	0.0117	2.0000e-004	0.0119	0.0000	33.5374	33.5374	8.6000e-004	8.5000e-004	33.8127
Total	**0.0141**	**0.0469**	**0.1235**	**5.2000e-004**	**0.0499**	**4.5000e-004**	**0.0503**	**0.0134**	**4.2000e-004**	**0.0138**	**0.0000**	**50.5950**	**50.5950**	**1.4200e-003**	**3.3200e-003**	**51.6205**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1095	0.8556	1.3200e-003		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	113.6404	113.6404	0.0267	0.0000	114.3082
Total	**0.0161**	**0.1095**	**0.8556**	**1.3200e-003**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**113.6404**	**113.6404**	**0.0267**	**0.0000**	**114.3082**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6000e-004	0.0385	0.0133	1.7000e-004	5.8600e-003	2.3000e-004	6.0900e-003	1.6900e-003	2.2000e-004	1.9100e-003	0.0000	17.0577	17.0577	5.6000e-004	2.4700e-003	17.8077
Worker	0.0132	8.3700e-003	0.1102	3.5000e-004	0.0440	2.2000e-004	0.0442	0.0117	2.0000e-004	0.0119	0.0000	33.5374	33.5374	8.6000e-004	8.5000e-004	33.8127
Total	**0.0141**	**0.0469**	**0.1235**	**5.2000e-004**	**0.0499**	**4.5000e-004**	**0.0503**	**0.0134**	**4.2000e-004**	**0.0138**	**0.0000**	**50.5950**	**50.5950**	**1.4200e-003**	**3.3200e-003**	**51.6205**

3.5 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5600e-003	0.0172	0.0271	4.0000e-005		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	3.8299	3.8299	2.1000e-004	0.0000	3.8351
Total	**0.9363**	**0.0172**	**0.0271**	**4.0000e-005**		**7.7000e-004**	**7.7000e-004**		**7.7000e-004**	**7.7000e-004**	**0.0000**	**3.8299**	**3.8299**	**2.1000e-004**	**0.0000**	**3.8351**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.0000e-004	6.6300e-003	2.0000e-005	2.6500e-003	1.0000e-005	2.6600e-003	7.0000e-004	1.0000e-005	7.2000e-004	0.0000	2.0166	2.0166	5.0000e-005	5.0000e-005	2.0332
Total	**7.9000e-004**	**5.0000e-004**	**6.6300e-003**	**2.0000e-005**	**2.6500e-003**	**1.0000e-005**	**2.6600e-003**	**7.0000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**2.0166**	**2.0166**	**5.0000e-005**	**5.0000e-005**	**2.0332**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	1.9300e-003	0.0275	4.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8299	3.8299	2.1000e-004	0.0000	3.8351
Total	**0.9342**	**1.9300e-003**	**0.0275**	**4.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8299**	**3.8299**	**2.1000e-004**	**0.0000**	**3.8351**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.0000e-004	6.6300e-003	2.0000e-005	2.6500e-003	1.0000e-005	2.6600e-003	7.0000e-004	1.0000e-005	7.2000e-004	0.0000	2.0166	2.0166	5.0000e-005	5.0000e-005	2.0332
Total	**7.9000e-004**	**5.0000e-004**	**6.6300e-003**	**2.0000e-005**	**2.6500e-003**	**1.0000e-005**	**2.6600e-003**	**7.0000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**2.0166**	**2.0166**	**5.0000e-005**	**5.0000e-005**	**2.0332**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1500e-003	0.0858	0.1458	2.3000e-004		4.1900e-003	4.1900e-003		3.8500e-003	3.8500e-003	0.0000	20.0193	20.0193	6.4700e-003	0.0000	20.1811
Paving	3.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.4500e-003**	**0.0858**	**0.1458**	**2.3000e-004**		**4.1900e-003**	**4.1900e-003**		**3.8500e-003**	**3.8500e-003**	**0.0000**	**20.0193**	**20.0193**	**6.4700e-003**	**0.0000**	**20.1811**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.3000e-004	3.0100e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9167	0.9167	2.0000e-005	2.0000e-005	0.9242
Total	**3.6000e-004**	**2.3000e-004**	**3.0100e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9167**	**0.9167**	**2.0000e-005**	**2.0000e-005**	**0.9242**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8000e-003	0.0122	0.1730	2.3000e-004		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	20.0192	20.0192	6.4700e-003	0.0000	20.1811
Paving	3.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.1000e-003**	**0.0122**	**0.1730**	**2.3000e-004**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**20.0192**	**20.0192**	**6.4700e-003**	**0.0000**	**20.1811**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.3000e-004	3.0100e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9167	0.9167	2.0000e-005	2.0000e-005	0.9242
Total	**3.6000e-004**	**2.3000e-004**	**3.0100e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9167**	**0.9167**	**2.0000e-005**	**2.0000e-005**	**0.9242**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4325	0.4811	4.0676	8.6400e-003	0.9549	6.7300e-003	0.9616	0.2548	6.2800e-003	0.2611	0.0000	819.1321	819.1321	0.0571	0.0363	831.3664
Unmitigated	0.4325	0.4811	4.0676	8.6400e-003	0.9549	6.7300e-003	0.9616	0.2548	6.2800e-003	0.2611	0.0000	819.1321	819.1321	0.0571	0.0363	831.3664

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	894.00	894.00	894.00	2,552,641	2,552,641
Parking Lot	0.00	0.00	0.00		
Total	894.00	894.00	894.00	2,552,641	2,552,641

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Parking Lot	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

5.0 Energy Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	141.8680	141.8680	8.5500e-003	9.9000e-004	142.3760
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	141.8680	141.8680	8.5500e-003	9.9000e-004	142.3760
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	721731	141.1561	8.5100e-003	9.8000e-004	141.6615
Parking Lot	3640	0.7119	4.0000e-005	0.0000	0.7145
Total		**141.8680**	**8.5500e-003**	**9.8000e-004**	**142.3760**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	721731	141.1561	8.5100e-003	9.8000e-004	141.6615
Parking Lot	3640	0.7119	4.0000e-005	0.0000	0.7145
Total		**141.8680**	**8.5500e-003**	**9.8000e-004**	**142.3760**

6.0 Area Detail

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7092	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Unmitigated	0.7092	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0934					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0332	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Total	**0.7092**	**0.0127**	**1.1055**	**6.0000e-005**		**6.1300e-003**	**6.1300e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**1.8077**	**1.8077**	**1.7300e-003**	**0.0000**	**1.8510**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0934					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0332	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Total	**0.7092**	**0.0127**	**1.1055**	**6.0000e-005**		**6.1300e-003**	**6.1300e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**1.8077**	**1.8077**	**1.7300e-003**	**0.0000**	**1.8510**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	41.1012	0.3186	7.7300e-003	51.3716
Unmitigated	41.1012	0.3186	7.7300e-003	51.3716

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	9.70795 / 6.12023	41.1012	0.3186	7.7300e-003	51.3716
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**41.1012**	**0.3186**	**7.7300e-003**	**51.3716**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	9.70795 / 6.12023	41.1012	0.3186	7.7300e-003	51.3716
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**41.1012**	**0.3186**	**7.7300e-003**	**51.3716**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.9130	0.8222	0.0000	34.4689
Unmitigated	13.9130	0.8222	0.0000	34.4689

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	68.54	13.9130	0.8222	0.0000	34.4689
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**13.9130**	**0.8222**	**0.0000**	**34.4689**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	68.54	13.9130	0.8222	0.0000	34.4689
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**13.9130**	**0.8222**	**0.0000**	**34.4689**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

AERSCREEN Dispersion Modeling Results

TITLE: PIRAEUS MF

********** AREA PARAMETERS **********

SOURCE EMISSION RATE: 0.104E-03 g/s 0.825E-03 lb/hr

AREA EMISSION RATE: 0.372E-08 g/(s-m2) 0.296E-07 lb/(hr-m2)
AREA HEIGHT: 3.00 meters 9.84 feet
AREA SOURCE LONG SIDE: 167.10 meters 548.23 feet
AREA SOURCE SHORT SIDE: 167.10 meters 548.23 feet
INITIAL VERTICAL DIMENSION: 1.00 meters 3.28 feet
RURAL OR URBAN: URBAN
POPULATION: 79000

FLAGPOLE RECEPTOR HEIGHT: 1.50 meters 4.92 feet

INITIAL PROBE DISTANCE = 5000. meters 16404. feet

********** BUILDING DOWNWASH PARAMETERS **********

BUILDING DOWNWASH NOT USED FOR NON-POINT SOURCES

********** FLOW SECTOR ANALYSIS **********
25 meter receptor spacing: 1. meters - 5000. meters

MAXIMUM IMPACT RECEPTOR

Zo SECTOR	SURFACE ROUGHNESS	1-HR CONC (ug/m3)	RADIAL (deg)	DIST (m)	TEMPORAL PERIOD
1*	1.000	0.1232	45	100.0	WIN

* = worst case diagonal

********** MAKEMET METEOROLOGY PARAMETERS **********

MIN/MAX TEMPERATURE: 250.0 / 310.0 (K)

MINIMUM WIND SPEED: 0.5 m/s

ANEMOMETER HEIGHT: 10.000 meters

SURFACE CHARACTERISTICS INPUT: AERMET SEASONAL TABLES

DOMINANT SURFACE PROFILE: Urban
DOMINANT CLIMATE TYPE: Average Moisture
DOMINANT SEASON: Winter

ALBEDO: 0.35
BOWEN RATIO: 1.50
ROUGHNESS LENGTH: 1.000 (meters)

METEOROLOGY CONDITIONS USED TO PREDICT OVERALL MAXIMUM IMPACT

YR	MO	DY	JDY	HR
10	01	28	28	01

H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS
-0.92	0.043	-9.000	0.020	-999.	21.	8.5	1.000	1.50	0.35	0.50

HT	REF TA	HT
10.0	310.0	2.0

METEOROLOGY CONDITIONS USED TO PREDICT AMBIENT BOUNDARY IMPACT

YR	MO	DY	JDY	HR

```
 -- -- -- --- --
 10 01 28  28 01

    H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 -0.92  0.043 -9.000  0.020 -999.   21.      8.5 1.000   1.50   0.35    0.50

    HT  REF TA     HT
- - - - - - - - - - -
  10.0   310.0    2.0
```

********** AERSCREEN AUTOMATED DISTANCES **********

OVERALL MAXIMUM CONCENTRATIONS BY DISTANCE

DIST (m)	MAXIMUM 1-HR CONC (ug/m3)	DIST (m)	MAXIMUM 1-HR CONC (ug/m3)
1.00	0.8978E-01	2525.00	0.3056E-02
25.00	0.9924E-01	2550.00	0.3027E-02
50.01	0.1081	2575.00	0.2999E-02
75.00	0.1160	2600.00	0.2972E-02
100.00	0.1232	2625.00	0.2945E-02
125.00	0.1143	2650.00	0.2919E-02
150.01	0.8834E-01	2675.00	0.2894E-02
174.99	0.7147E-01	2700.00	0.2870E-02
200.00	0.6024E-01	2725.00	0.2846E-02
225.00	0.5229E-01	2750.00	0.2823E-02
250.00	0.4632E-01	2775.00	0.2801E-02
274.99	0.4161E-01	2800.00	0.2779E-02
300.00	0.3779E-01	2825.00	0.2758E-02
325.00	0.3459E-01	2850.00	0.2797E-02
350.00	0.3188E-01	2875.00	0.2775E-02
375.01	0.2952E-01	2900.00	0.2754E-02
400.00	0.2747E-01	2925.00	0.2734E-02
425.00	0.2567E-01	2950.00	0.2713E-02
450.00	0.2406E-01	2975.00	0.2694E-02
475.01	0.2262E-01	3000.00	0.2674E-02
500.00	0.2133E-01	3025.00	0.2656E-02
525.00	0.2017E-01	3050.00	0.2637E-02
550.00	0.1910E-01	3075.00	0.2619E-02
575.01	0.1813E-01	3100.00	0.2601E-02
599.99	0.1724E-01	3125.00	0.2584E-02
625.00	0.1643E-01	3150.00	0.2567E-02
650.00	0.1568E-01	3175.00	0.2551E-02
675.00	0.1498E-01	3200.00	0.2534E-02
699.99	0.1434E-01	3225.00	0.2518E-02
725.00	0.1374E-01	3250.00	0.2503E-02
750.00	0.1319E-01	3275.00	0.2487E-02
775.00	0.1267E-01	3300.00	0.2472E-02
800.01	0.1218E-01	3325.00	0.2457E-02
825.00	0.1173E-01	3350.00	0.2443E-02
850.00	0.1130E-01	3375.00	0.2428E-02
875.00	0.1090E-01	3400.00	0.2414E-02
900.01	0.1053E-01	3425.00	0.2400E-02
924.99	0.1018E-01	3450.00	0.2387E-02
950.00	0.9842E-02	3475.00	0.2373E-02
975.00	0.9525E-02	3500.00	0.2360E-02
1000.00	0.9225E-02	3525.00	0.2347E-02
1024.99	0.8943E-02	3550.00	0.2335E-02
1050.00	0.8677E-02	3575.00	0.2322E-02
1075.00	0.8423E-02	3600.00	0.2310E-02
1100.00	0.8182E-02	3625.00	0.2298E-02
1125.01	0.7951E-02	3650.00	0.2286E-02
1150.00	0.7730E-02	3675.00	0.2274E-02
1175.00	0.7521E-02	3700.00	0.2262E-02
1200.00	0.7322E-02	3725.00	0.2251E-02
1225.01	0.7132E-02	3750.00	0.2240E-02
1250.00	0.6952E-02	3775.00	0.2229E-02
1275.00	0.6780E-02	3800.00	0.2218E-02
1300.00	0.6615E-02	3825.00	0.2207E-02
1325.01	0.6456E-02	3849.99	0.2196E-02
1349.99	0.6304E-02	3875.00	0.2186E-02
1375.00	0.6157E-02	3900.00	0.2176E-02
1400.00	0.6018E-02	3925.00	0.2165E-02
1425.00	0.5884E-02	3950.00	0.2155E-02
1450.00	0.5756E-02	3975.00	0.2145E-02
1475.00	0.5632E-02	4000.00	0.2135E-02
1500.00	0.5514E-02	4025.00	0.2126E-02
1525.00	0.5401E-02	4050.00	0.2116E-02
1550.00	0.5293E-02	4075.00	0.2107E-02
1575.00	0.5189E-02	4100.00	0.2097E-02
1600.00	0.5089E-02	4125.00	0.2088E-02
1625.00	0.4993E-02	4150.00	0.2079E-02
1650.01	0.4899E-02	4175.00	0.2070E-02
1675.00	0.4810E-02	4200.00	0.2061E-02
1700.00	0.4723E-02	4225.00	0.2052E-02

1725.00	0.4640E-02	4250.00	0.2044E-02
1750.00	0.4559E-02	4275.00	0.2035E-02
1775.00	0.4482E-02	4300.00	0.2026E-02
1800.00	0.4407E-02	4325.00	0.2018E-02
1825.00	0.4335E-02	4350.00	0.2010E-02
1850.00	0.4266E-02	4375.00	0.2001E-02
1875.00	0.4199E-02	4400.00	0.1993E-02
1900.00	0.4134E-02	4425.00	0.1985E-02
1925.00	0.4072E-02	4450.00	0.1977E-02
1950.01	0.4012E-02	4475.00	0.1969E-02
1975.00	0.3954E-02	4500.00	0.1962E-02
2000.01	0.3898E-02	4525.00	0.1954E-02
2025.00	0.3844E-02	4550.00	0.1946E-02
2050.00	0.3792E-02	4575.00	0.1939E-02
2075.00	0.3741E-02	4600.00	0.1931E-02
2099.99	0.3692E-02	4625.00	0.1924E-02
2125.00	0.3644E-02	4650.00	0.1916E-02
2150.00	0.3598E-02	4675.00	0.1909E-02
2175.00	0.3554E-02	4700.00	0.1902E-02
2200.00	0.3511E-02	4725.00	0.1895E-02
2225.00	0.3469E-02	4750.00	0.1888E-02
2250.00	0.3429E-02	4774.99	0.1881E-02
2275.00	0.3389E-02	4800.00	0.1874E-02
2300.00	0.3351E-02	4825.00	0.1867E-02
2325.00	0.3314E-02	4850.00	0.1860E-02
2350.00	0.3278E-02	4875.00	0.1853E-02
2375.00	0.3243E-02	4900.00	0.1847E-02
2400.00	0.3210E-02	4925.00	0.1840E-02
2425.00	0.3177E-02	4950.00	0.1833E-02
2450.00	0.3146E-02	4975.00	0.1827E-02
2475.00	0.3115E-02	5000.00	0.1821E-02
2500.00	0.3085E-02		

********** AERSCREEN MAXIMUM IMPACT SUMMARY **********

3-hour, 8-hour, and 24-hour scaled
concentrations are equal to the 1-hour concentration as referenced in
SCREENING PROCEDURES FOR ESTIMATING THE AIR QUALITY
IMPACT OF STATIONARY SOURCES, REVISED (Section 4.5.4)
Report number EPA-454/R-92-019
http://www.epa.gov/scram001/guidance_permit.htm
under Screening Guidance

CALCULATION PROCEDURE	MAXIMUM 1-HOUR CONC (ug/m3)	SCALED 3-HOUR CONC (ug/m3)	SCALED 8-HOUR CONC (ug/m3)	SCALED 24-HOUR CONC (ug/m3)	SCALED ANNUAL CONC (ug/m3)
FLAT TERRAIN	0.1276	0.1276	0.1276	0.1276	N/A

DISTANCE FROM SOURCE 117.00 meters

IMPACT AT THE AMBIENT BOUNDARY	0.8978E-01	0.8978E-01	0.8978E-01	0.8978E-01	N/A

DISTANCE FROM SOURCE 1.00 meters

ATTACHMENT C

Cancer Risk Calculations (Tier 4 Equipment)

Air Quality Health Risk Calculations
Piraeus Point (Tier 4 w/ DPF)

From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	**0.00141**
	Number of Workdays	**423**
	Emission per day (lb/day)	**0.006666667**
	Construction day (Hours)	**8**
	Emission Rate (Grams/Second)	**0.000104861**
	Project Site Size (Acres)	**6.9**
	Project Site Size (meters	**27923.30931**
	Length of Smalles Side (meters)	**167.1026909**
Used as an input to AERSCREEN	Emission Rate over Grading Area	**3.75533E-09**

	Concentration Annual	**0.009856**

	Construction Days	Construction Days converted to years				
Duration	423	1.15890411				
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15	0.009856	0.009856	0.009856	0.009856	0.009856	0.009856
Breathing Rate per agegroup BR/BW (Page 5-25)	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000342	0.00001031	0.00000815	0.00000705	0.00000317	0.00000274

Calculating Residential and Offsite Worker
Inhalation Cancer Risk

Construction Days	423	1.15890411				
potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	1.15890411	1.15890411	1.15890411	1.15890411	1.15890411
AT	70	70	70	70	70	70
FAH (USE 1 if School for 3rd and 2-9)	0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group	1.1406E-07	1.59647E-06	3.20458E-07	2.77284E-07	4.21388E-08	3.64783E-08
	0.114059827	1.59646536	0.320457897	0.277283546	0.042138759	0.036478329

Cancer Risk Per Million 9-years	2.03
Cancer Risk Per Million 30-years	2.03
Cancer Risk Per Million 70-years	2.02

APPENDIX C-2.
HEALTH RISK SCREENING LETTER

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September 26, 2022

Lennar Homes
16465 Via Esprillo, Suite 150
San Diego, CA 92127

RE: Piraeus Point Development – Health Risk Screening Letter City of Encinitas CA

The purpose of this Air Quality Heath Risk screening letter is to identify potential health risks at the proposed project site from Diesel Particulate Matter (DPM) originating from Interstate-5 (I-5). The Project proposes to construct 149 multi-family residential units on a 6.88 acre development located east of I-5 between La Costa Avenue and Leucadia Boulevard within the City of Encinitas.

This health risk analysis uses the California Office of Environmental Health Hazard Assessment (OEHHA) methodologies (Office of Environmental Health Hazard Assessment, 2015) as outlined by the California Air Pollution Control Officers Association (CAPCOA, July 2009). Health risk impacts are generally broken up into two various types. Type A project: are projects which have the potential to emit toxic emissions and have the potential to impact nearby receptor. Type B projects: place receptors in the vicinity of existing toxic sources like freeways, high traffic roads or rail yards. Based on this information the proposed project is classified as Type B.

Projects within the San Diego County air basin are generally regulated by San Diego Air Pollution Control District (SDAPCD). For Type A projects, significance thresholds have been established under SDAPCDs "Hot Spots" and permitting program (SDAPCD Rule 1200 and 1210). Under this program, excess cancer risk significance threshold is set at ***10 in a million*** and acute and chronic, non-carcinogenic health effect, a hazard index of ***one*** must not be exceeded.

For Type B projects, there are no clear significance thresholds. California Environmental Quality Act (CEQA) statutes encourage an air district or any lead agency to establish Type B significance thresholds under CEQA for any pollutant. While there are considerations that support the establishment of thresholds, there is no obligation to do so. Significance thresholds for Type B projects within the City of Encinitas and the County of San Diego have also not been defined. According to CAPCOA Air districts have historically recommended CEQA thresholds for air pollutants in the context of the air district's clean air attainment plan, or (in the case of toxic air pollutants) within the framework of a rule or policy that manages risks and exposures due to toxic pollutants such as SDAPCDs Rule 1200 and 1210 for Type A projects above. For purposes of this analysis significance thresholds will be assumed to be those of the "Hot Spot" program

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discussed above. In addition, these thresholds would be generally applied to living conditions within a home.

Cancer risk calculations are based on a 70 year lifetime exposure. In some limited cases, it may be appropriate to also use between 9 to 40 years exposure in the calculation. The 9 year exposure scenario is based on exposure to children during the first 9 years of life. Some districts use the 9 year exposure scenario to model short term projects. (CAPCOA, July 2009). For purposes of this analysis, it is reasonable to assume a 30 year duration though a 70 year duration is also reported.

For purposes of modeling, AERMOD was used for air quality dispersion modeling and is the preferred/recommended U.S. Environmental Protection Agency (EPA) model for roadway modeling. The software has the ability to incorporate meteorological inputs as well as multiple source and receptor locations and is now used throughout the world. The model input/output is shown in ***Attachment A*** to this letter.

The project is adjacent to I-5 between the off ramp of La Costa Avenue and Leucadia Boulevard. According to Caltrans, the annual average daily trips are 213,000 AADT (CALTRANS, 2020). Using the California Air Resource Boards EMFAC 2017 web database model, Emission rates for a 2025 calendar Year having mixed vehicle categories, aggregated vehicle model years and speeds matching I-5 were downloaded. The emission rates for each vehicle type were then categorized in terms of Categorized Vehicle Miles Traveled (VMT) divided by Total fleet VMT. The data is further broken down into only Diesel particulates which are then used as inputs to AERMOD. From this data I-5 would generate 0.0013 grams/second of diesel particulates over the modeled segment. The EMFAC Model and Normalization calculations are shown in ***Attachment B*** to this letter.

Modeling at the site included coordinates for I-5 represented by multiple volume sources used by AERMOD to calculate roadway emissions and are identified as red squares, yellow points which represents a receptor matrix made up of gridded (computer generated) and discreet (manually selected) receptors which is used by AERMOD to calculate emission values for contour and discreet outputs.

A graphical representation of the modeling locations is shown on a site aerial below in Figure 1 on the following page and again in Figure 2 which also shows the descriptive discreet receptors locations around the facility on Page 4 of this report which provide. The modeled output plot from AERMOD is shown in Figure 3 on Page 5 of this report. Also, four (4) discreet receptors were selected at building facades and have been reported separately within AERMOD outputs for easier viewing and are summarized in Table 1 on Page 6 of this report.

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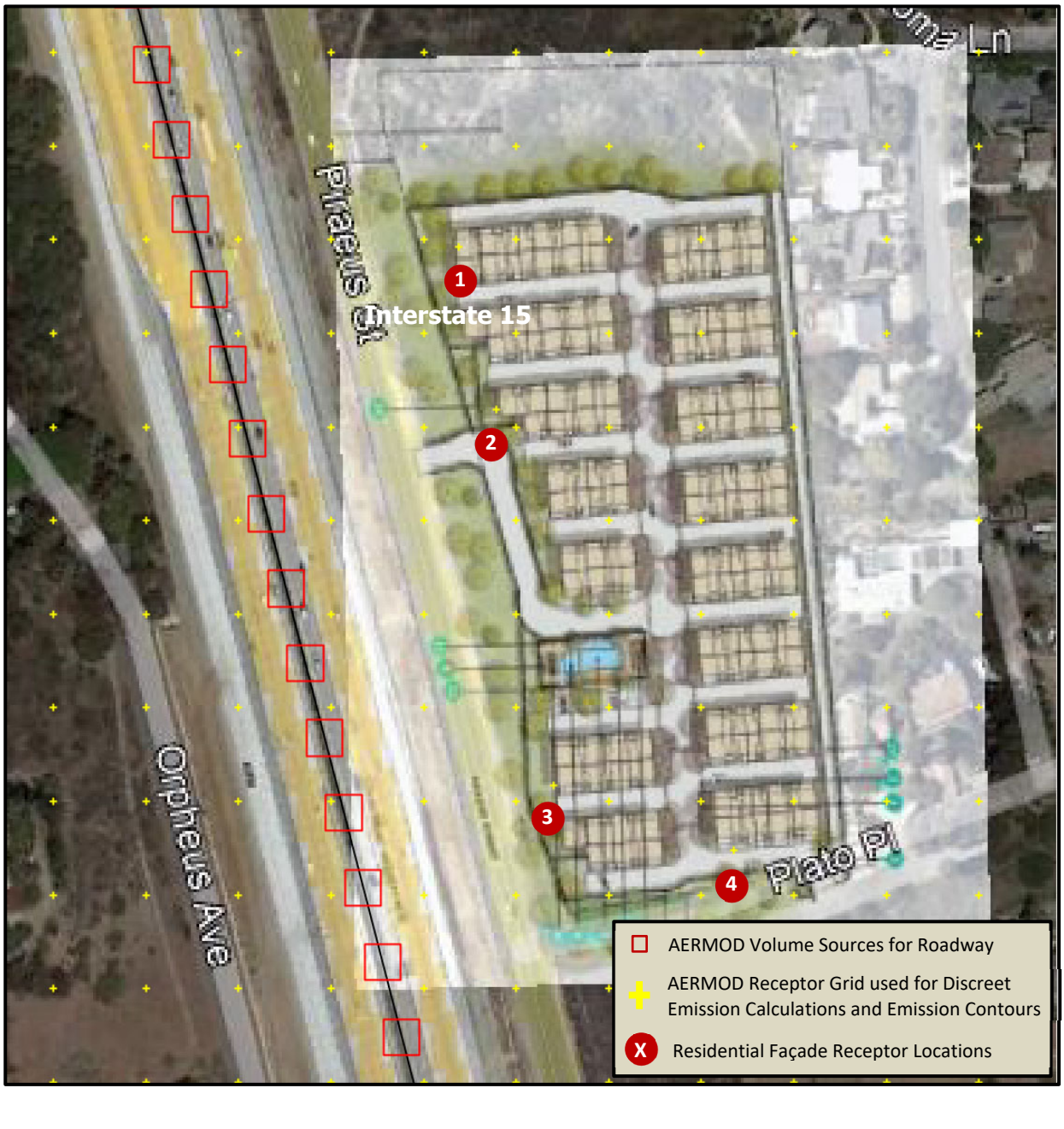
Figure 1: Modeling Graphical Layout



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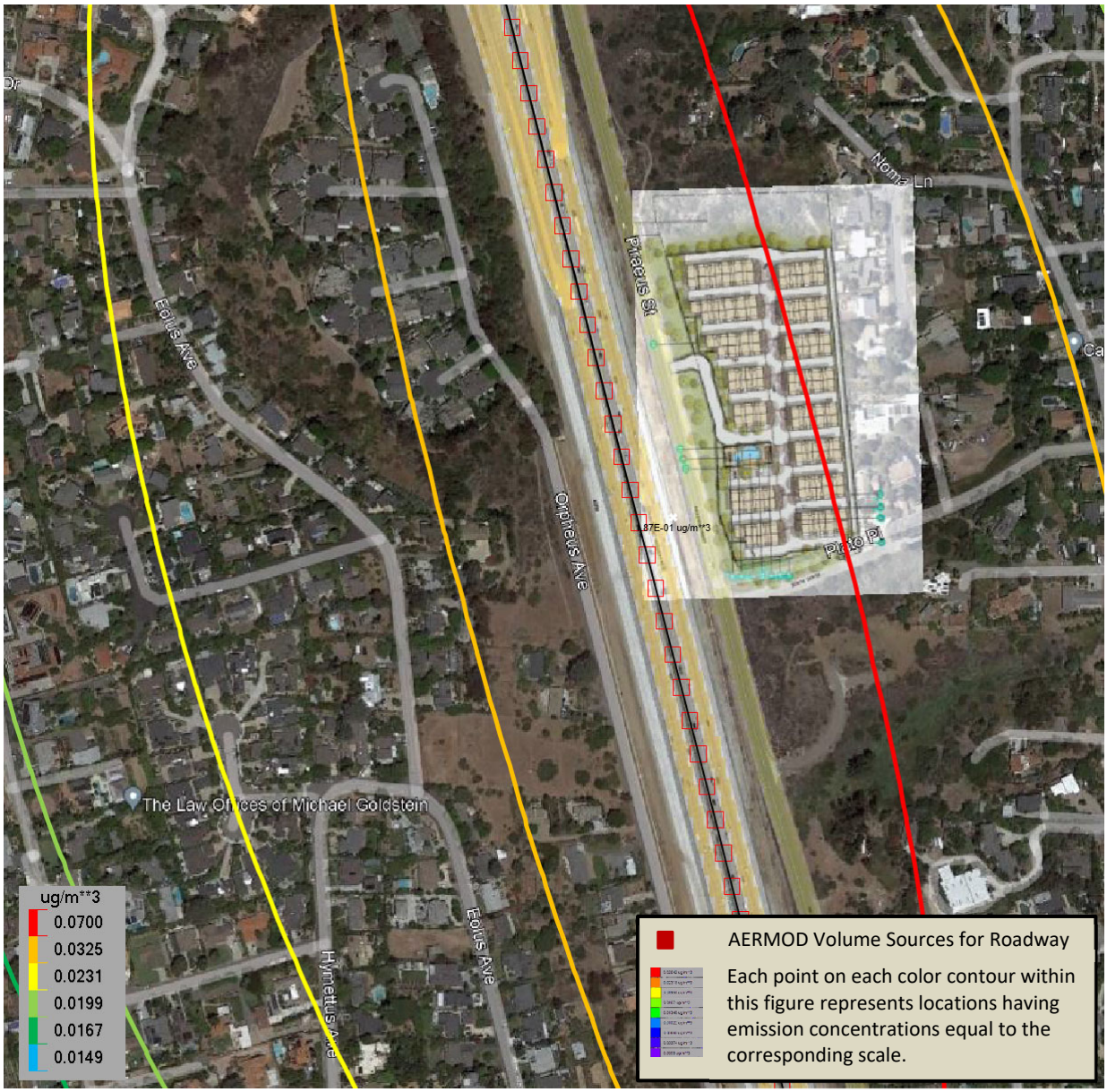
Figure 2: Discreet Receptor Locations



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Figure 3: Modeling Graphical DPM Concentration Output



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Table 1: Unmitigated DPM Concentrations at each Receptor

Receptor #	Discreet Receptor AERMOD Name	Concentration (µg/m^3)
1	R1	0.101
2	R2	0.103
3	R3	0.115
4	R4	0.079

Once the dispersed concentrations of diesel particulates are estimated in the surrounding air, they are used to evaluate estimated exposure to people.

Cancer Risk Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst case cancer risk dose calculation is defined in Equation 1 below (OEHHA, 2015):

Equation 1 $$Dose_{air}=C_{air}*(BR/BW)*A*EF*(1x10^{-6})$$

$Dose_{air}$	=	Dose through inhalation (mg/kg/d)
C_{air}	=	Concentration in air (µg/m3) Annual average DPM concentration in µg/m3 – AERMOD
BR/BW	=	Daily average breathing rates normalized to body weight (L/kg BW-day).
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
1x10-6	=	Milligrams to micrograms conversion (10^{-3} mg/ µg), cubic meters to liters conversion (10^{-3} m^3/l)

Once the dose is determined then you must calculate the cancer risk. The average daily inhalation dose (mg/kg-day) multiplied by the cancer potency factor (mg/kg-day)-1 will give the inhalation cancer risk (unitless), which is an expression of the chemical's cancer risk during a 70-year lifespan of exposure. For example, an inhalation cancer risk of 5 x 10-6 is the same as stating that an individual has an estimated probability of developing cancer from their exposure of 5 chances per million people exposed.

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any

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given location. The worst-case cancer risk calculation is defined in Equation 2 below (OEHHA, 2015).

Equation 2

$$RISK_{inh\text{-}res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$$

$RISK_{inh\text{-}res}$	=	Residential inhalation cancer risk
$DOSE_{air}$	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor ($mg/kg\text{-}day^{-1}$)
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

Based on review of the discreet receptors, the highest three emissions at the project site were selected as a means to calculate the worst-case cancer risks at the project exterior façade. The results of the cancer risk calculations which do not account for heating and ventilation air filtration are shown in Table 2 below and are shown in detail in ***Attachment C*** to this report. Based on these calculations, cancer risks would exceed 10 per one million exposed and could be considered a significant impact.

Table 2: Cancer Risk at Worst-Case Outdoor Receptors (Unmitigated)

Receptor	C_i	Cancer Risk (30 Years)	Cancer Risk (70 Years)	Impact
R1	0.101	42.1	54.1	Yes
R2	0.103	42.7	55.6	Yes
R3	0.115	47.5	61.8	Yes
R4	0.079	32.9	42.8	Yes

C_i annual inputs from AERMOD at building facade.
Cancer Risk = $DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$

These risks would likely be lower within the interior of the residential units where residents will likely be spending most of their time since new homes have tighter building envelopes and better heating and ventilation systems compatible with energy efficient designs. Typical indoor air filtration systems used within todays heating and ventilation systems have a Minimum Efficiency Reporting Value (MERV) rating which is used to describe how well a particular filtration media removes particles from the air.

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In a study funded by CARB, the Lawrence Berkeley National Laboratory found that MERV 16 filtration on a supply ventilation system reduced PM2.5 by 96-97% and ultrafine particles (UFP) by 97-99% relative to outdoors (CARB, 2017) and is recommended for homes with exposure to higher levels of $PM_{2.5}$. It was found that installing MERV 16 filters as a mitigation measure would reduce exposure within the homes to levels considered less than significant. The expected emissions with MERV 16 filtration installed within the homes is shown in Table 3 below. The mitigated cancer risk calculations using MERV 16 filtration is provide as ***Attachment D*** to this report.

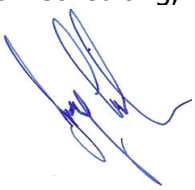
Table 3: Cancer Risk at Worst-Case Indoor Receptors (Mitigated with MERV 16)

Receptor	C_i	Cancer Risk (30 Years)	Cancer Risk (70 Years)	Impact
R1	0.015	1.26	1.62	No
R2	0.012	1.28	1.67	No
R3	0.015	1.43	1.85	No
R4	0.012	0.99	1.28	No

C_i annual inputs from AERMOD at building facade.
Cancer Risk = DOSEair × CPF × ASF × ED/AT × FAH

It is important to note that this assessment serves simply as a disclosure document to provide a characterization of the background emissions that occupants of the proposed project may be exposed to. If you should have any questions regarding this assessment, please do not hesitate to contact me at (760) 473-1253.

Sincerely,
Ldn Consulting, Inc.



Jeremy Louden

Attachments:

A: AERMOD
B: EMFAC 2017 Emission Factors (2025)
C: Cancer Risk Calculations – Outdoor Facade
D: Cancer Risk Calculations – MERV 16 Indoor

Ldn Consulting, Inc.
42428 Chisolm Trail, Murrieta CA 92562
phone 760-473-1253
Fax 760-689-4943

References:

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OEHHA. (2015). *Risk Assessment Guidelines - Guidance Manual for Preparation of Health Risk Assessments.* OEHHHA. Retrieved from http://oehha.ca.gov/air/hot_spots/2015/2015GuidanceManual.pdf

Office of Environmental Health Hazard Assessment. (2015). *Hot Spot Guidlines*. Retrieved April 16, 2015, from http://www.oehha.ca.gov/air/hot_spots/index.html

ATTACHMENT A

AERMOD

```
1                    AERMOD PRIME - (DATED  19191)

                   AERMODPrMSPx VERSION
             (C) COPYRIGHT 1998-2017, Trinity Consultants

 Run Began on  4/24/2022 at  9:17:09

** BREEZE AERMOD
** Trinity Consultants
** VERSION  10.0

CO STARTING
CO TITLEONE  PM10 Exhaust I-5
CO MODELOPT  DFAULT  CONC  NODRYDPLT  NOWETDPLT
CO RUNORNOT  RUN
CO AVERTIME  ANNUAL
CO POLLUTID  PM10
CO FINISHED

SO STARTING
SO ELEVUNIT  METERS
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RE DISCCART  472892.2  3660233.1  0  0
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RE DISCCART  472502.2  3660596.7  0  0
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RE DISCCART  472532.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472562.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472592.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472622.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472652.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472682.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472712.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472742.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472772.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472802.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472832.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472862.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  472892.2  3660596.7  0  0
** RCPDESCR  grid receptor
RE DISCCART  471692.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471722.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471752.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471782.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471812.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471842.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471872.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471902.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471932.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471962.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  471992.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472022.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472052.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472082.2  3660627.0  0  0
** RCPDESCR  grid receptor
```

```
RE DISCCART  472112.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472142.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472172.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472202.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472232.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472262.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472292.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472322.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472352.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472382.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472412.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472442.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472472.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472502.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472532.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472562.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472592.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472622.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472652.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472682.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472712.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472742.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472772.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472802.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472832.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472862.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE DISCCART  472892.2  3660627.0  0  0
** RCPDESCR  grid receptor
RE FINISHED

ME STARTING
ME SURFFILE  "C:\Users\ryan\OneDrive\LDN One Drive 2\City of Encinitas\22-08 Piraeus Townhomes\Aermod\KMA2012V15181.SFC"
** SURFFILE  "C:\Users\ryan\OneDrive\LDN One Drive 2\City of Encinitas\22-08 Piraeus Townhomes\Aermod\KMA2012V15181.SFC"
ME PROFFILE  "C:\Users\ryan\OneDrive\LDN One Drive 2\City of Encinitas\22-08 Piraeus Townhomes\Aermod\KMA2012V15181.PFL"
** PROFFILE  "C:\Users\ryan\OneDrive\LDN One Drive 2\City of Encinitas\22-08 Piraeus Townhomes\Aermod\KMA2012V15181.PFL"
ME SURFDATA  93107 2012 OVERLANDSURFACESTATION
ME UAIRDATA  3190 2012 OVERLANDUPPERSTATION
ME SITEDATA  00001016 2012
ME PROFBASE  116  METERS
ME FINISHED

OU STARTING
OU FILEFORM  FIX
OU PLOTFILE  ANNUAL  ALL  ALL`ANNUAL.plt  10000
OU FINISHED

** **************************************************************************
** It is recommended that the user not edit any data below this line
** **************************************************************************


** TAG NAM  E5LRT04Q
** TAG PRM  0  2  F  F  1  255,0,0,0
** TAG CRD
472183.6,3660626.6,0,472217.1,3660526.0,0,472258.1,3660371.4,0,472325.2,3660106.9,0,472405.3,3659797.7,0,472477.9,3659510.8,0,472496.5,3659428.9,0,47249
8.4,3659428.9,0
** TAG NAM  E5LRT1H2
** TAG PRM  0  1  F  F  1  255,0,255,0
** TAG CRD  471692.2,3659415,0

** TERRFILE  C:\USERS\RYAN_000\ONEDRIVE\LDNWOR~1\17-903~1\AERMOD\NEDU17~1\NEDU17991156.TIF  2  0  WGS84  11  0  486620.4  3617040.8  486627.8  3622511.1
 491372.6  3622505.8  491367.9  3617035.5
** AMPTYPE  NED
** AMPDATUM  3
** AMPZONE  11
** AMPHEMISPHERE  N
```

```
** PROJECTIONWKT
PROJCS["UTM_4326_Zone11",GEOGCS["WGS_84",DATUM["World_Geodetic_System_1984",SPHEROID["WGS_1984",6378137,298.257223563],TOWGS84[0,0,0,0,0,0,0]],PRIMEM["G
reenwich",0],UNIT["Degree",0.0174532925199433]],PROJECTION["Universal_Transverse_Mercator"],PARAMETER["Zone",11],UNIT["Meter",1,AUTHORITY["EPSG","9001"]
]]
** PROJECTION  UTM
** DATUM  WGE
** UNITS  METER
** ZONE  11
** HEMISPHERE  N
** ORIGINLON  0
** ORIGINLAT  0
** PARALLEL1  0
** PARALLEL2  0
** AZIMUTH  0
** SCALEFACT  0
** FALSEEAST  0
** FALSENORTH  0

** POSTFMT  UNFORM
** TEMPLATE UserDefined
** AERMODEXE  AERMOD_BREEZE_19191_64.EXE
** AERMAPEXE  AERMAP_EPA_11103.EXE



  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            1 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
                ***  NONE  ***


    ********   WARNING MESSAGES   ********
 MX W403    3562       PFLCNV: Turbulence data is being used w/o ADJ_U* option       SigA Data

 *********************************
 *** SETUP Finishes Successfully ***
 *********************************

↑ *** AERMOD - VERSION  19191 ***   ***  PM10 Exhaust I-5                                                    ***        04/24/22
 *** AERMET - VERSION  15181 ***   ***                                                                      ***        09:17:09
                                                                                                                      PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  SigA Data

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses RURAL Dispersion Only.

 **Model Uses Regulatory DEFAULT Options:
        1. Stack-tip Downwash.
        2. Model Accounts for ELEVated Terrain Effects.
        3. Use Calms Processing Routine.
        4. Use Missing Data Processing Routine.
        5. No Exponential Decay.

 **Other Options Specified:
        TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Assumes No FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM10

 **Model Calculates ANNUAL Averages Only

 **This Run Includes:     50 Source(s);       1 Source Group(s); and    1685 Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:     50 VOLUME source(s)
                 and:      0 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with      0 line(s)
```

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 15181

**Output Options Selected:
        Model Outputs Tables of ANNUAL Averages by Receptor
        Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
                                                                m for Missing Hours
                                                                b for Both Calm and Missing Hours

**Misc. Inputs: Base Elev. for Pot. Temp. Profile (m MSL) =   116.00 ; Decay Coef. =   0.000   ; Rot. Angle =   0.0
                 Emission Units = GRAMS/SEC   ; Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =   3.7 MB of RAM.

**Input Runstream File: aermod.inp
**Output Print File: aermod.out

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
E5LRT04R	0	0.27000E-04	472187.5	3660614.7	0.0	3.00	11.63	2.79	NO	
E5LRT04S	0	0.27000E-04	472195.4	3660591.0	0.0	3.00	11.63	2.79	NO	
E5LRT04T	0	0.27000E-04	472203.3	3660567.3	0.0	3.00	11.63	2.79	NO	
E5LRT04U	0	0.27000E-04	472211.2	3660543.6	0.0	3.00	11.63	2.79	NO	
E5LRT04V	0	0.27000E-04	472218.8	3660519.7	0.0	3.00	11.63	2.79	NO	
E5LRT04W	0	0.27000E-04	472225.2	3660495.6	0.0	3.00	11.63	2.79	NO	
E5LRT04X	0	0.27000E-04	472231.6	3660471.4	0.0	3.00	11.63	2.79	NO	
E5LRT04Y	0	0.27000E-04	472238.0	3660447.3	0.0	3.00	11.63	2.79	NO	
E5LRT04Z	0	0.27000E-04	472244.4	3660423.1	0.0	3.00	11.63	2.79	NO	
E5LRT050	0	0.27000E-04	472250.8	3660398.9	0.0	3.00	11.63	2.79	NO	
E5LRT051	0	0.27000E-04	472257.2	3660374.8	0.0	3.00	11.63	2.79	NO	
E5LRT052	0	0.27000E-04	472263.4	3660350.5	0.0	3.00	11.63	2.79	NO	
E5LRT053	0	0.27000E-04	472269.5	3660326.3	0.0	3.00	11.63	2.79	NO	
E5LRT054	0	0.27000E-04	472275.7	3660302.1	0.0	3.00	11.63	2.79	NO	
E5LRT055	0	0.27000E-04	472281.8	3660277.8	0.0	3.00	11.63	2.79	NO	
E5LRT056	0	0.27000E-04	472288.0	3660253.6	0.0	3.00	11.63	2.79	NO	
E5LRT057	0	0.27000E-04	472294.1	3660229.4	0.0	3.00	11.63	2.79	NO	
E5LRT058	0	0.27000E-04	472300.3	3660205.1	0.0	3.00	11.63	2.79	NO	
E5LRT059	0	0.27000E-04	472306.4	3660180.9	0.0	3.00	11.63	2.79	NO	
E5LRT05A	0	0.27000E-04	472312.6	3660156.7	0.0	3.00	11.63	2.79	NO	
E5LRT05B	0	0.27000E-04	472318.7	3660132.4	0.0	3.00	11.63	2.79	NO	
E5LRT05C	0	0.27000E-04	472324.9	3660108.2	0.0	3.00	11.63	2.79	NO	
E5LRT05D	0	0.27000E-04	472331.1	3660084.0	0.0	3.00	11.63	2.79	NO	
E5LRT05E	0	0.27000E-04	472337.4	3660059.8	0.0	3.00	11.63	2.79	NO	
E5LRT05F	0	0.27000E-04	472343.7	3660035.6	0.0	3.00	11.63	2.79	NO	
E5LRT05G	0	0.27000E-04	472349.9	3660011.4	0.0	3.00	11.63	2.79	NO	
E5LRT05H	0	0.27000E-04	472356.2	3659987.2	0.0	3.00	11.63	2.79	NO	
E5LRT05I	0	0.27000E-04	472362.5	3659963.0	0.0	3.00	11.63	2.79	NO	
E5LRT05J	0	0.27000E-04	472368.7	3659938.8	0.0	3.00	11.63	2.79	NO	
E5LRT05K	0	0.27000E-04	472375.0	3659914.6	0.0	3.00	11.63	2.79	NO	
E5LRT05L	0	0.27000E-04	472381.3	3659890.4	0.0	3.00	11.63	2.79	NO	
E5LRT05M	0	0.27000E-04	472387.6	3659866.2	0.0	3.00	11.63	2.79	NO	
E5LRT05N	0	0.27000E-04	472393.8	3659842.0	0.0	3.00	11.63	2.79	NO	
E5LRT05O	0	0.27000E-04	472400.1	3659817.8	0.0	3.00	11.63	2.79	NO	
E5LRT05P	0	0.27000E-04	472406.3	3659793.6	0.0	3.00	11.63	2.79	NO	
E5LRT05Q	0	0.27000E-04	472412.5	3659769.4	0.0	3.00	11.63	2.79	NO	
E5LRT05R	0	0.27000E-04	472418.6	3659745.1	0.0	3.00	11.63	2.79	NO	
E5LRT05S	0	0.27000E-04	472424.7	3659720.9	0.0	3.00	11.63	2.79	NO	
E5LRT05T	0	0.27000E-04	472430.9	3659696.6	0.0	3.00	11.63	2.79	NO	
E5LRT05U	0	0.27000E-04	472437.0	3659672.4	0.0	3.00	11.63	2.79	NO	

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	URBAN SOURCE	EMISSION RATE SCALAR VARY BY
E5LRT05V	0	0.27000E-04	472443.1	3659648.2	0.0	3.00	11.63	2.79	NO	
E5LRT05W	0	0.27000E-04	472449.3	3659623.9	0.0	3.00	11.63	2.79	NO	
E5LRT05X	0	0.27000E-04	472455.4	3659599.7	0.0	3.00	11.63	2.79	NO	
E5LRT05Y	0	0.27000E-04	472461.5	3659575.5	0.0	3.00	11.63	2.79	NO	
E5LRT05Z	0	0.27000E-04	472467.7	3659551.2	0.0	3.00	11.63	2.79	NO	

E5LRT060	0	0.27000E-04	472473.8	3659527.0	0.0	3.00	11.63	2.79	NO
E5LRT061	0	0.27000E-04	472479.7	3659502.7	0.0	3.00	11.63	2.79	NO
E5LRT062	0	0.27000E-04	472485.3	3659478.3	0.0	3.00	11.63	2.79	NO
E5LRT063	0	0.27000E-04	472490.8	3659454.0	0.0	3.00	11.63	2.79	NO
E5LRT064	0	0.27000E-04	472496.3	3659429.6	0.0	3.00	11.63	2.79	NO

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V , E5LRT04W , E5LRT04X , E5LRT04Y ,
	E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 , E5LRT054 , E5LRT055 , E5LRT056 ,
	E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B , E5LRT05C , E5LRT05D , E5LRT05E ,
	E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , E5LRT05J , E5LRT05K , E5LRT05L , E5LRT05M ,
	E5LRT05N , E5LRT05O , E5LRT05P , E5LRT05Q , E5LRT05R , E5LRT05S , E5LRT05T , E5LRT05U ,
	E5LRT05V , E5LRT05W , E5LRT05X , E5LRT05Y , E5LRT05Z , E5LRT060 , E5LRT061 , E5LRT062 ,
	E5LRT063 , E5LRT064 ,

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(471692.2,	3659415.0,	0.0,	0.0,	0.0);	(471722.2,	3659415.0,	0.0,	0.0,	0.0);
(471752.2,	3659415.0,	0.0,	0.0,	0.0);	(471782.2,	3659415.0,	0.0,	0.0,	0.0);
(471812.2,	3659415.0,	0.0,	0.0,	0.0);	(471842.2,	3659415.0,	0.0,	0.0,	0.0);
(471872.2,	3659415.0,	0.0,	0.0,	0.0);	(471902.2,	3659415.0,	0.0,	0.0,	0.0);
(471932.2,	3659415.0,	0.0,	0.0,	0.0);	(471962.2,	3659415.0,	0.0,	0.0,	0.0);
(471992.2,	3659415.0,	0.0,	0.0,	0.0);	(472022.2,	3659415.0,	0.0,	0.0,	0.0);
(472052.2,	3659415.0,	0.0,	0.0,	0.0);	(472082.2,	3659415.0,	0.0,	0.0,	0.0);
(472112.2,	3659415.0,	0.0,	0.0,	0.0);	(472142.2,	3659415.0,	0.0,	0.0,	0.0);
(472172.2,	3659415.0,	0.0,	0.0,	0.0);	(472202.2,	3659415.0,	0.0,	0.0,	0.0);
(472232.2,	3659415.0,	0.0,	0.0,	0.0);	(472262.2,	3659415.0,	0.0,	0.0,	0.0);
(472292.2,	3659415.0,	0.0,	0.0,	0.0);	(472322.2,	3659415.0,	0.0,	0.0,	0.0);
(472352.2,	3659415.0,	0.0,	0.0,	0.0);	(472382.2,	3659415.0,	0.0,	0.0,	0.0);
(472412.2,	3659415.0,	0.0,	0.0,	0.0);	(472442.2,	3659415.0,	0.0,	0.0,	0.0);
(472472.2,	3659415.0,	0.0,	0.0,	0.0);	(472502.2,	3659415.0,	0.0,	0.0,	0.0);
(472532.2,	3659415.0,	0.0,	0.0,	0.0);	(472562.2,	3659415.0,	0.0,	0.0,	0.0);
(472592.2,	3659415.0,	0.0,	0.0,	0.0);	(472622.2,	3659415.0,	0.0,	0.0,	0.0);
(472652.2,	3659415.0,	0.0,	0.0,	0.0);	(472682.2,	3659415.0,	0.0,	0.0,	0.0);
(472712.2,	3659415.0,	0.0,	0.0,	0.0);	(472742.2,	3659415.0,	0.0,	0.0,	0.0);
(472772.2,	3659415.0,	0.0,	0.0,	0.0);	(472802.2,	3659415.0,	0.0,	0.0,	0.0);
(472832.2,	3659415.0,	0.0,	0.0,	0.0);	(472862.2,	3659415.0,	0.0,	0.0,	0.0);
(472892.2,	3659415.0,	0.0,	0.0,	0.0);	(471692.2,	3659445.3,	0.0,	0.0,	0.0);
(471722.2,	3659445.3,	0.0,	0.0,	0.0);	(471752.2,	3659445.3,	0.0,	0.0,	0.0);
(471782.2,	3659445.3,	0.0,	0.0,	0.0);	(471812.2,	3659445.3,	0.0,	0.0,	0.0);
(471842.2,	3659445.3,	0.0,	0.0,	0.0);	(471872.2,	3659445.3,	0.0,	0.0,	0.0);
(471902.2,	3659445.3,	0.0,	0.0,	0.0);	(471932.2,	3659445.3,	0.0,	0.0,	0.0);
(471962.2,	3659445.3,	0.0,	0.0,	0.0);	(471992.2,	3659445.3,	0.0,	0.0,	0.0);
(472022.2,	3659445.3,	0.0,	0.0,	0.0);	(472052.2,	3659445.3,	0.0,	0.0,	0.0);
(472082.2,	3659445.3,	0.0,	0.0,	0.0);	(472112.2,	3659445.3,	0.0,	0.0,	0.0);
(472142.2,	3659445.3,	0.0,	0.0,	0.0);	(472172.2,	3659445.3,	0.0,	0.0,	0.0);
(472202.2,	3659445.3,	0.0,	0.0,	0.0);	(472232.2,	3659445.3,	0.0,	0.0,	0.0);
(472262.2,	3659445.3,	0.0,	0.0,	0.0);	(472292.2,	3659445.3,	0.0,	0.0,	0.0);
(472322.2,	3659445.3,	0.0,	0.0,	0.0);	(472352.2,	3659445.3,	0.0,	0.0,	0.0);
(472382.2,	3659445.3,	0.0,	0.0,	0.0);	(472412.2,	3659445.3,	0.0,	0.0,	0.0);
(472442.2,	3659445.3,	0.0,	0.0,	0.0);	(472472.2,	3659445.3,	0.0,	0.0,	0.0);
(472502.2,	3659445.3,	0.0,	0.0,	0.0);	(472532.2,	3659445.3,	0.0,	0.0,	0.0);
(472562.2,	3659445.3,	0.0,	0.0,	0.0);	(472592.2,	3659445.3,	0.0,	0.0,	0.0);
(472622.2,	3659445.3,	0.0,	0.0,	0.0);	(472652.2,	3659445.3,	0.0,	0.0,	0.0);
(472682.2,	3659445.3,	0.0,	0.0,	0.0);	(472712.2,	3659445.3,	0.0,	0.0,	0.0);
(472742.2,	3659445.3,	0.0,	0.0,	0.0);	(472772.2,	3659445.3,	0.0,	0.0,	0.0);
(472802.2,	3659445.3,	0.0,	0.0,	0.0);	(472832.2,	3659445.3,	0.0,	0.0,	0.0);
(472862.2,	3659445.3,	0.0,	0.0,	0.0);	(472892.2,	3659445.3,	0.0,	0.0,	0.0);
(471692.2,	3659475.6,	0.0,	0.0,	0.0);	(471722.2,	3659475.6,	0.0,	0.0,	0.0);
(471752.2,	3659475.6,	0.0,	0.0,	0.0);	(471782.2,	3659475.6,	0.0,	0.0,	0.0);
(471812.2,	3659475.6,	0.0,	0.0,	0.0);	(471842.2,	3659475.6,	0.0,	0.0,	0.0);
(471872.2,	3659475.6,	0.0,	0.0,	0.0);	(471902.2,	3659475.6,	0.0,	0.0,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(471932.2, 3659475.6, 0.0, 0.0, 0.0); (471962.2, 3659475.6, 0.0, 0.0, 0.0);
(471992.2, 3659475.6, 0.0, 0.0, 0.0); (472022.2, 3659475.6, 0.0, 0.0, 0.0);
(472052.2, 3659475.6, 0.0, 0.0, 0.0); (472082.2, 3659475.6, 0.0, 0.0, 0.0);
(472112.2, 3659475.6, 0.0, 0.0, 0.0); (472142.2, 3659475.6, 0.0, 0.0, 0.0);
(472172.2, 3659475.6, 0.0, 0.0, 0.0); (472202.2, 3659475.6, 0.0, 0.0, 0.0);
(472232.2, 3659475.6, 0.0, 0.0, 0.0); (472262.2, 3659475.6, 0.0, 0.0, 0.0);
(472292.2, 3659475.6, 0.0, 0.0, 0.0); (472322.2, 3659475.6, 0.0, 0.0, 0.0);
(472352.2, 3659475.6, 0.0, 0.0, 0.0); (472382.2, 3659475.6, 0.0, 0.0, 0.0);
(472412.2, 3659475.6, 0.0, 0.0, 0.0); (472442.2, 3659475.6, 0.0, 0.0, 0.0);
(472472.2, 3659475.6, 0.0, 0.0, 0.0); (472502.2, 3659475.6, 0.0, 0.0, 0.0);
(472532.2, 3659475.6, 0.0, 0.0, 0.0); (472562.2, 3659475.6, 0.0, 0.0, 0.0);
(472592.2, 3659475.6, 0.0, 0.0, 0.0); (472622.2, 3659475.6, 0.0, 0.0, 0.0);
(472652.2, 3659475.6, 0.0, 0.0, 0.0); (472682.2, 3659475.6, 0.0, 0.0, 0.0);
(472712.2, 3659475.6, 0.0, 0.0, 0.0); (472742.2, 3659475.6, 0.0, 0.0, 0.0);
(472772.2, 3659475.6, 0.0, 0.0, 0.0); (472802.2, 3659475.6, 0.0, 0.0, 0.0);
(472832.2, 3659475.6, 0.0, 0.0, 0.0); (472862.2, 3659475.6, 0.0, 0.0, 0.0);
(472892.2, 3659475.6, 0.0, 0.0, 0.0); (471692.2, 3659505.9, 0.0, 0.0, 0.0);
(471722.2, 3659505.9, 0.0, 0.0, 0.0); (471752.2, 3659505.9, 0.0, 0.0, 0.0);
(471782.2, 3659505.9, 0.0, 0.0, 0.0); (471812.2, 3659505.9, 0.0, 0.0, 0.0);
(471842.2, 3659505.9, 0.0, 0.0, 0.0); (471872.2, 3659505.9, 0.0, 0.0, 0.0);
(471902.2, 3659505.9, 0.0, 0.0, 0.0); (471932.2, 3659505.9, 0.0, 0.0, 0.0);
(471962.2, 3659505.9, 0.0, 0.0, 0.0); (471992.2, 3659505.9, 0.0, 0.0, 0.0);
(472022.2, 3659505.9, 0.0, 0.0, 0.0); (472052.2, 3659505.9, 0.0, 0.0, 0.0);
(472082.2, 3659505.9, 0.0, 0.0, 0.0); (472112.2, 3659505.9, 0.0, 0.0, 0.0);
(472142.2, 3659505.9, 0.0, 0.0, 0.0); (472172.2, 3659505.9, 0.0, 0.0, 0.0);
(472202.2, 3659505.9, 0.0, 0.0, 0.0); (472232.2, 3659505.9, 0.0, 0.0, 0.0);
(472262.2, 3659505.9, 0.0, 0.0, 0.0); (472292.2, 3659505.9, 0.0, 0.0, 0.0);
(472322.2, 3659505.9, 0.0, 0.0, 0.0); (472352.2, 3659505.9, 0.0, 0.0, 0.0);
(472382.2, 3659505.9, 0.0, 0.0, 0.0); (472412.2, 3659505.9, 0.0, 0.0, 0.0);
(472442.2, 3659505.9, 0.0, 0.0, 0.0); (472472.2, 3659505.9, 0.0, 0.0, 0.0);
(472502.2, 3659505.9, 0.0, 0.0, 0.0); (472532.2, 3659505.9, 0.0, 0.0, 0.0);
(472562.2, 3659505.9, 0.0, 0.0, 0.0); (472592.2, 3659505.9, 0.0, 0.0, 0.0);
(472622.2, 3659505.9, 0.0, 0.0, 0.0); (472652.2, 3659505.9, 0.0, 0.0, 0.0);
(472682.2, 3659505.9, 0.0, 0.0, 0.0); (472712.2, 3659505.9, 0.0, 0.0, 0.0);
(472742.2, 3659505.9, 0.0, 0.0, 0.0); (472772.2, 3659505.9, 0.0, 0.0, 0.0);
(472802.2, 3659505.9, 0.0, 0.0, 0.0); (472832.2, 3659505.9, 0.0, 0.0, 0.0);
(472862.2, 3659505.9, 0.0, 0.0, 0.0); (472892.2, 3659505.9, 0.0, 0.0, 0.0);
(471692.2, 3659536.2, 0.0, 0.0, 0.0); (471722.2, 3659536.2, 0.0, 0.0, 0.0);
(471752.2, 3659536.2, 0.0, 0.0, 0.0); (471782.2, 3659536.2, 0.0, 0.0, 0.0);
(471812.2, 3659536.2, 0.0, 0.0, 0.0); (471842.2, 3659536.2, 0.0, 0.0, 0.0);
(471872.2, 3659536.2, 0.0, 0.0, 0.0); (471902.2, 3659536.2, 0.0, 0.0, 0.0);
(471932.2, 3659536.2, 0.0, 0.0, 0.0); (471962.2, 3659536.2, 0.0, 0.0, 0.0);
(471992.2, 3659536.2, 0.0, 0.0, 0.0); (472022.2, 3659536.2, 0.0, 0.0, 0.0);
(472052.2, 3659536.2, 0.0, 0.0, 0.0); (472082.2, 3659536.2, 0.0, 0.0, 0.0);
(472112.2, 3659536.2, 0.0, 0.0, 0.0); (472142.2, 3659536.2, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472172.2, 3659536.2, 0.0, 0.0, 0.0); (472202.2, 3659536.2, 0.0, 0.0, 0.0);
(472232.2, 3659536.2, 0.0, 0.0, 0.0); (472262.2, 3659536.2, 0.0, 0.0, 0.0);
(472292.2, 3659536.2, 0.0, 0.0, 0.0); (472322.2, 3659536.2, 0.0, 0.0, 0.0);
(472352.2, 3659536.2, 0.0, 0.0, 0.0); (472382.2, 3659536.2, 0.0, 0.0, 0.0);
(472412.2, 3659536.2, 0.0, 0.0, 0.0); (472442.2, 3659536.2, 0.0, 0.0, 0.0);
(472472.2, 3659536.2, 0.0, 0.0, 0.0); (472502.2, 3659536.2, 0.0, 0.0, 0.0);
(472532.2, 3659536.2, 0.0, 0.0, 0.0); (472562.2, 3659536.2, 0.0, 0.0, 0.0);
(472592.2, 3659536.2, 0.0, 0.0, 0.0); (472622.2, 3659536.2, 0.0, 0.0, 0.0);
(472652.2, 3659536.2, 0.0, 0.0, 0.0); (472682.2, 3659536.2, 0.0, 0.0, 0.0);
(472712.2, 3659536.2, 0.0, 0.0, 0.0); (472742.2, 3659536.2, 0.0, 0.0, 0.0);
(472772.2, 3659536.2, 0.0, 0.0, 0.0); (472802.2, 3659536.2, 0.0, 0.0, 0.0);
(472832.2, 3659536.2, 0.0, 0.0, 0.0); (472862.2, 3659536.2, 0.0, 0.0, 0.0);
(472892.2, 3659536.2, 0.0, 0.0, 0.0); (471692.2, 3659566.5, 0.0, 0.0, 0.0);
(471722.2, 3659566.5, 0.0, 0.0, 0.0); (471752.2, 3659566.5, 0.0, 0.0, 0.0);
(471782.2, 3659566.5, 0.0, 0.0, 0.0); (471812.2, 3659566.5, 0.0, 0.0, 0.0);
(471842.2, 3659566.5, 0.0, 0.0, 0.0); (471872.2, 3659566.5, 0.0, 0.0, 0.0);
(471902.2, 3659566.5, 0.0, 0.0, 0.0); (471932.2, 3659566.5, 0.0, 0.0, 0.0);
(471962.2, 3659566.5, 0.0, 0.0, 0.0); (471992.2, 3659566.5, 0.0, 0.0, 0.0);
(472022.2, 3659566.5, 0.0, 0.0, 0.0); (472052.2, 3659566.5, 0.0, 0.0, 0.0);
(472082.2, 3659566.5, 0.0, 0.0, 0.0); (472112.2, 3659566.5, 0.0, 0.0, 0.0);
(472142.2, 3659566.5, 0.0, 0.0, 0.0); (472172.2, 3659566.5, 0.0, 0.0, 0.0);
(472202.2, 3659566.5, 0.0, 0.0, 0.0); (472232.2, 3659566.5, 0.0, 0.0, 0.0);
(472262.2, 3659566.5, 0.0, 0.0, 0.0); (472292.2, 3659566.5, 0.0, 0.0, 0.0);
(472322.2, 3659566.5, 0.0, 0.0, 0.0); (472352.2, 3659566.5, 0.0, 0.0, 0.0);
(472382.2, 3659566.5, 0.0, 0.0, 0.0); (472412.2, 3659566.5, 0.0, 0.0, 0.0);
(472442.2, 3659566.5, 0.0, 0.0, 0.0); (472472.2, 3659566.5, 0.0, 0.0, 0.0);
(472502.2, 3659566.5, 0.0, 0.0, 0.0); (472532.2, 3659566.5, 0.0, 0.0, 0.0);
(472562.2, 3659566.5, 0.0, 0.0, 0.0); (472592.2, 3659566.5, 0.0, 0.0, 0.0);
(472622.2, 3659566.5, 0.0, 0.0, 0.0); (472652.2, 3659566.5, 0.0, 0.0, 0.0);
(472682.2, 3659566.5, 0.0, 0.0, 0.0); (472712.2, 3659566.5, 0.0, 0.0, 0.0);
(472742.2, 3659566.5, 0.0, 0.0, 0.0); (472772.2, 3659566.5, 0.0, 0.0, 0.0);
(472802.2, 3659566.5, 0.0, 0.0, 0.0); (472832.2, 3659566.5, 0.0, 0.0, 0.0);
(472862.2, 3659566.5, 0.0, 0.0, 0.0); (472892.2, 3659566.5, 0.0, 0.0, 0.0);
(471692.2, 3659596.8, 0.0, 0.0, 0.0); (471722.2, 3659596.8, 0.0, 0.0, 0.0);
(471752.2, 3659596.8, 0.0, 0.0, 0.0); (471782.2, 3659596.8, 0.0, 0.0, 0.0);
(471812.2, 3659596.8, 0.0, 0.0, 0.0); (471842.2, 3659596.8, 0.0, 0.0, 0.0);
(471872.2, 3659596.8, 0.0, 0.0, 0.0); (471902.2, 3659596.8, 0.0, 0.0, 0.0);

(471932.2, 3659596.8,	0.0,	0.0,	0.0);	(471962.2, 3659596.8,	0.0,	0.0,	0.0);
(471992.2, 3659596.8,	0.0,	0.0,	0.0);	(472022.2, 3659596.8,	0.0,	0.0,	0.0);
(472052.2, 3659596.8,	0.0,	0.0,	0.0);	(472082.2, 3659596.8,	0.0,	0.0,	0.0);
(472112.2, 3659596.8,	0.0,	0.0,	0.0);	(472142.2, 3659596.8,	0.0,	0.0,	0.0);
(472172.2, 3659596.8,	0.0,	0.0,	0.0);	(472202.2, 3659596.8,	0.0,	0.0,	0.0);
(472232.2, 3659596.8,	0.0,	0.0,	0.0);	(472262.2, 3659596.8,	0.0,	0.0,	0.0);
(472292.2, 3659596.8,	0.0,	0.0,	0.0);	(472322.2, 3659596.8,	0.0,	0.0,	0.0);
(472352.2, 3659596.8,	0.0,	0.0,	0.0);	(472382.2, 3659596.8,	0.0,	0.0,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472412.2, 3659596.8,	0.0,	0.0,	0.0);	(472442.2, 3659596.8,	0.0,	0.0,	0.0);
(472472.2, 3659596.8,	0.0,	0.0,	0.0);	(472502.2, 3659596.8,	0.0,	0.0,	0.0);
(472532.2, 3659596.8,	0.0,	0.0,	0.0);	(472562.2, 3659596.8,	0.0,	0.0,	0.0);
(472592.2, 3659596.8,	0.0,	0.0,	0.0);	(472622.2, 3659596.8,	0.0,	0.0,	0.0);
(472652.2, 3659596.8,	0.0,	0.0,	0.0);	(472682.2, 3659596.8,	0.0,	0.0,	0.0);
(472712.2, 3659596.8,	0.0,	0.0,	0.0);	(472742.2, 3659596.8,	0.0,	0.0,	0.0);
(472772.2, 3659596.8,	0.0,	0.0,	0.0);	(472802.2, 3659596.8,	0.0,	0.0,	0.0);
(472832.2, 3659596.8,	0.0,	0.0,	0.0);	(472862.2, 3659596.8,	0.0,	0.0,	0.0);
(472892.2, 3659596.8,	0.0,	0.0,	0.0);	(471692.2, 3659627.1,	0.0,	0.0,	0.0);
(471722.2, 3659627.1,	0.0,	0.0,	0.0);	(471752.2, 3659627.1,	0.0,	0.0,	0.0);
(471782.2, 3659627.1,	0.0,	0.0,	0.0);	(471812.2, 3659627.1,	0.0,	0.0,	0.0);
(471842.2, 3659627.1,	0.0,	0.0,	0.0);	(471872.2, 3659627.1,	0.0,	0.0,	0.0);
(471902.2, 3659627.1,	0.0,	0.0,	0.0);	(471932.2, 3659627.1,	0.0,	0.0,	0.0);
(471962.2, 3659627.1,	0.0,	0.0,	0.0);	(471992.2, 3659627.1,	0.0,	0.0,	0.0);
(472022.2, 3659627.1,	0.0,	0.0,	0.0);	(472052.2, 3659627.1,	0.0,	0.0,	0.0);
(472082.2, 3659627.1,	0.0,	0.0,	0.0);	(472112.2, 3659627.1,	0.0,	0.0,	0.0);
(472142.2, 3659627.1,	0.0,	0.0,	0.0);	(472172.2, 3659627.1,	0.0,	0.0,	0.0);
(472202.2, 3659627.1,	0.0,	0.0,	0.0);	(472232.2, 3659627.1,	0.0,	0.0,	0.0);
(472262.2, 3659627.1,	0.0,	0.0,	0.0);	(472292.2, 3659627.1,	0.0,	0.0,	0.0);
(472322.2, 3659627.1,	0.0,	0.0,	0.0);	(472352.2, 3659627.1,	0.0,	0.0,	0.0);
(472382.2, 3659627.1,	0.0,	0.0,	0.0);	(472412.2, 3659627.1,	0.0,	0.0,	0.0);
(472442.2, 3659627.1,	0.0,	0.0,	0.0);	(472472.2, 3659627.1,	0.0,	0.0,	0.0);
(472502.2, 3659627.1,	0.0,	0.0,	0.0);	(472532.2, 3659627.1,	0.0,	0.0,	0.0);
(472562.2, 3659627.1,	0.0,	0.0,	0.0);	(472592.2, 3659627.1,	0.0,	0.0,	0.0);
(472622.2, 3659627.1,	0.0,	0.0,	0.0);	(472652.2, 3659627.1,	0.0,	0.0,	0.0);
(472682.2, 3659627.1,	0.0,	0.0,	0.0);	(472712.2, 3659627.1,	0.0,	0.0,	0.0);
(472742.2, 3659627.1,	0.0,	0.0,	0.0);	(472772.2, 3659627.1,	0.0,	0.0,	0.0);
(472802.2, 3659627.1,	0.0,	0.0,	0.0);	(472832.2, 3659627.1,	0.0,	0.0,	0.0);
(472862.2, 3659627.1,	0.0,	0.0,	0.0);	(472892.2, 3659627.1,	0.0,	0.0,	0.0);
(471692.2, 3659657.4,	0.0,	0.0,	0.0);	(471722.2, 3659657.4,	0.0,	0.0,	0.0);
(471752.2, 3659657.4,	0.0,	0.0,	0.0);	(471782.2, 3659657.4,	0.0,	0.0,	0.0);
(471812.2, 3659657.4,	0.0,	0.0,	0.0);	(471842.2, 3659657.4,	0.0,	0.0,	0.0);
(471872.2, 3659657.4,	0.0,	0.0,	0.0);	(471902.2, 3659657.4,	0.0,	0.0,	0.0);
(471932.2, 3659657.4,	0.0,	0.0,	0.0);	(471962.2, 3659657.4,	0.0,	0.0,	0.0);
(471992.2, 3659657.4,	0.0,	0.0,	0.0);	(472022.2, 3659657.4,	0.0,	0.0,	0.0);
(472052.2, 3659657.4,	0.0,	0.0,	0.0);	(472082.2, 3659657.4,	0.0,	0.0,	0.0);
(472112.2, 3659657.4,	0.0,	0.0,	0.0);	(472142.2, 3659657.4,	0.0,	0.0,	0.0);
(472172.2, 3659657.4,	0.0,	0.0,	0.0);	(472202.2, 3659657.4,	0.0,	0.0,	0.0);
(472232.2, 3659657.4,	0.0,	0.0,	0.0);	(472262.2, 3659657.4,	0.0,	0.0,	0.0);
(472292.2, 3659657.4,	0.0,	0.0,	0.0);	(472322.2, 3659657.4,	0.0,	0.0,	0.0);
(472352.2, 3659657.4,	0.0,	0.0,	0.0);	(472382.2, 3659657.4,	0.0,	0.0,	0.0);
(472412.2, 3659657.4,	0.0,	0.0,	0.0);	(472442.2, 3659657.4,	0.0,	0.0,	0.0);
(472472.2, 3659657.4,	0.0,	0.0,	0.0);	(472502.2, 3659657.4,	0.0,	0.0,	0.0);
(472532.2, 3659657.4,	0.0,	0.0,	0.0);	(472562.2, 3659657.4,	0.0,	0.0,	0.0);
(472592.2, 3659657.4,	0.0,	0.0,	0.0);	(472622.2, 3659657.4,	0.0,	0.0,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472652.2, 3659657.4,	0.0,	0.0,	0.0);	(472682.2, 3659657.4,	0.0,	0.0,	0.0);
(472712.2, 3659657.4,	0.0,	0.0,	0.0);	(472742.2, 3659657.4,	0.0,	0.0,	0.0);
(472772.2, 3659657.4,	0.0,	0.0,	0.0);	(472802.2, 3659657.4,	0.0,	0.0,	0.0);
(472832.2, 3659657.4,	0.0,	0.0,	0.0);	(472862.2, 3659657.4,	0.0,	0.0,	0.0);
(472892.2, 3659657.4,	0.0,	0.0,	0.0);	(471692.2, 3659687.7,	0.0,	0.0,	0.0);
(471722.2, 3659687.7,	0.0,	0.0,	0.0);	(471752.2, 3659687.7,	0.0,	0.0,	0.0);
(471782.2, 3659687.7,	0.0,	0.0,	0.0);	(471812.2, 3659687.7,	0.0,	0.0,	0.0);
(471842.2, 3659687.7,	0.0,	0.0,	0.0);	(471872.2, 3659687.7,	0.0,	0.0,	0.0);
(471902.2, 3659687.7,	0.0,	0.0,	0.0);	(471932.2, 3659687.7,	0.0,	0.0,	0.0);
(471962.2, 3659687.7,	0.0,	0.0,	0.0);	(471992.2, 3659687.7,	0.0,	0.0,	0.0);
(472022.2, 3659687.7,	0.0,	0.0,	0.0);	(472052.2, 3659687.7,	0.0,	0.0,	0.0);
(472082.2, 3659687.7,	0.0,	0.0,	0.0);	(472112.2, 3659687.7,	0.0,	0.0,	0.0);
(472142.2, 3659687.7,	0.0,	0.0,	0.0);	(472172.2, 3659687.7,	0.0,	0.0,	0.0);
(472202.2, 3659687.7,	0.0,	0.0,	0.0);	(472232.2, 3659687.7,	0.0,	0.0,	0.0);
(472262.2, 3659687.7,	0.0,	0.0,	0.0);	(472292.2, 3659687.7,	0.0,	0.0,	0.0);
(472322.2, 3659687.7,	0.0,	0.0,	0.0);	(472352.2, 3659687.7,	0.0,	0.0,	0.0);
(472382.2, 3659687.7,	0.0,	0.0,	0.0);	(472412.2, 3659687.7,	0.0,	0.0,	0.0);
(472442.2, 3659687.7,	0.0,	0.0,	0.0);	(472472.2, 3659687.7,	0.0,	0.0,	0.0);
(472502.2, 3659687.7,	0.0,	0.0,	0.0);	(472532.2, 3659687.7,	0.0,	0.0,	0.0);
(472562.2, 3659687.7,	0.0,	0.0,	0.0);	(472592.2, 3659687.7,	0.0,	0.0,	0.0);
(472622.2, 3659687.7,	0.0,	0.0,	0.0);	(472652.2, 3659687.7,	0.0,	0.0,	0.0);

(472682.2, 3659687.7, 0.0, 0.0, 0.0); (472712.2, 3659687.7, 0.0, 0.0, 0.0);
(472742.2, 3659687.7, 0.0, 0.0, 0.0); (472772.2, 3659687.7, 0.0, 0.0, 0.0);
(472802.2, 3659687.7, 0.0, 0.0, 0.0); (472832.2, 3659687.7, 0.0, 0.0, 0.0);
(472862.2, 3659687.7, 0.0, 0.0, 0.0); (472892.2, 3659687.7, 0.0, 0.0, 0.0);
(471692.2, 3659718.0, 0.0, 0.0, 0.0); (471722.2, 3659718.0, 0.0, 0.0, 0.0);
(471752.2, 3659718.0, 0.0, 0.0, 0.0); (471782.2, 3659718.0, 0.0, 0.0, 0.0);
(471812.2, 3659718.0, 0.0, 0.0, 0.0); (471842.2, 3659718.0, 0.0, 0.0, 0.0);
(471872.2, 3659718.0, 0.0, 0.0, 0.0); (471902.2, 3659718.0, 0.0, 0.0, 0.0);
(471932.2, 3659718.0, 0.0, 0.0, 0.0); (471962.2, 3659718.0, 0.0, 0.0, 0.0);
(471992.2, 3659718.0, 0.0, 0.0, 0.0); (472022.2, 3659718.0, 0.0, 0.0, 0.0);
(472052.2, 3659718.0, 0.0, 0.0, 0.0); (472082.2, 3659718.0, 0.0, 0.0, 0.0);
(472112.2, 3659718.0, 0.0, 0.0, 0.0); (472142.2, 3659718.0, 0.0, 0.0, 0.0);
(472172.2, 3659718.0, 0.0, 0.0, 0.0); (472202.2, 3659718.0, 0.0, 0.0, 0.0);
(472232.2, 3659718.0, 0.0, 0.0, 0.0); (472262.2, 3659718.0, 0.0, 0.0, 0.0);
(472292.2, 3659718.0, 0.0, 0.0, 0.0); (472322.2, 3659718.0, 0.0, 0.0, 0.0);
(472352.2, 3659718.0, 0.0, 0.0, 0.0); (472382.2, 3659718.0, 0.0, 0.0, 0.0);
(472412.2, 3659718.0, 0.0, 0.0, 0.0); (472442.2, 3659718.0, 0.0, 0.0, 0.0);
(472472.2, 3659718.0, 0.0, 0.0, 0.0); (472502.2, 3659718.0, 0.0, 0.0, 0.0);
(472532.2, 3659718.0, 0.0, 0.0, 0.0); (472562.2, 3659718.0, 0.0, 0.0, 0.0);
(472592.2, 3659718.0, 0.0, 0.0, 0.0); (472622.2, 3659718.0, 0.0, 0.0, 0.0);
(472652.2, 3659718.0, 0.0, 0.0, 0.0); (472682.2, 3659718.0, 0.0, 0.0, 0.0);
(472712.2, 3659718.0, 0.0, 0.0, 0.0); (472742.2, 3659718.0, 0.0, 0.0, 0.0);
(472772.2, 3659718.0, 0.0, 0.0, 0.0); (472802.2, 3659718.0, 0.0, 0.0, 0.0);
(472832.2, 3659718.0, 0.0, 0.0, 0.0); (472862.2, 3659718.0, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472892.2, 3659718.0, 0.0, 0.0, 0.0); (471692.2, 3659748.3, 0.0, 0.0, 0.0);
(471722.2, 3659748.3, 0.0, 0.0, 0.0); (471752.2, 3659748.3, 0.0, 0.0, 0.0);
(471782.2, 3659748.3, 0.0, 0.0, 0.0); (471812.2, 3659748.3, 0.0, 0.0, 0.0);
(471842.2, 3659748.3, 0.0, 0.0, 0.0); (471872.2, 3659748.3, 0.0, 0.0, 0.0);
(471902.2, 3659748.3, 0.0, 0.0, 0.0); (471932.2, 3659748.3, 0.0, 0.0, 0.0);
(471962.2, 3659748.3, 0.0, 0.0, 0.0); (471992.2, 3659748.3, 0.0, 0.0, 0.0);
(472022.2, 3659748.3, 0.0, 0.0, 0.0); (472052.2, 3659748.3, 0.0, 0.0, 0.0);
(472082.2, 3659748.3, 0.0, 0.0, 0.0); (472112.2, 3659748.3, 0.0, 0.0, 0.0);
(472142.2, 3659748.3, 0.0, 0.0, 0.0); (472172.2, 3659748.3, 0.0, 0.0, 0.0);
(472202.2, 3659748.3, 0.0, 0.0, 0.0); (472232.2, 3659748.3, 0.0, 0.0, 0.0);
(472262.2, 3659748.3, 0.0, 0.0, 0.0); (472292.2, 3659748.3, 0.0, 0.0, 0.0);
(472322.2, 3659748.3, 0.0, 0.0, 0.0); (472352.2, 3659748.3, 0.0, 0.0, 0.0);
(472382.2, 3659748.3, 0.0, 0.0, 0.0); (472412.2, 3659748.3, 0.0, 0.0, 0.0);
(472442.2, 3659748.3, 0.0, 0.0, 0.0); (472472.2, 3659748.3, 0.0, 0.0, 0.0);
(472502.2, 3659748.3, 0.0, 0.0, 0.0); (472532.2, 3659748.3, 0.0, 0.0, 0.0);
(472562.2, 3659748.3, 0.0, 0.0, 0.0); (472592.2, 3659748.3, 0.0, 0.0, 0.0);
(472622.2, 3659748.3, 0.0, 0.0, 0.0); (472652.2, 3659748.3, 0.0, 0.0, 0.0);
(472682.2, 3659748.3, 0.0, 0.0, 0.0); (472712.2, 3659748.3, 0.0, 0.0, 0.0);
(472742.2, 3659748.3, 0.0, 0.0, 0.0); (472772.2, 3659748.3, 0.0, 0.0, 0.0);
(472802.2, 3659748.3, 0.0, 0.0, 0.0); (472832.2, 3659748.3, 0.0, 0.0, 0.0);
(472862.2, 3659748.3, 0.0, 0.0, 0.0); (472892.2, 3659748.3, 0.0, 0.0, 0.0);
(471692.2, 3659778.6, 0.0, 0.0, 0.0); (471722.2, 3659778.6, 0.0, 0.0, 0.0);
(471752.2, 3659778.6, 0.0, 0.0, 0.0); (471782.2, 3659778.6, 0.0, 0.0, 0.0);
(471812.2, 3659778.6, 0.0, 0.0, 0.0); (471842.2, 3659778.6, 0.0, 0.0, 0.0);
(471872.2, 3659778.6, 0.0, 0.0, 0.0); (471902.2, 3659778.6, 0.0, 0.0, 0.0);
(471932.2, 3659778.6, 0.0, 0.0, 0.0); (471962.2, 3659778.6, 0.0, 0.0, 0.0);
(471992.2, 3659778.6, 0.0, 0.0, 0.0); (472022.2, 3659778.6, 0.0, 0.0, 0.0);
(472052.2, 3659778.6, 0.0, 0.0, 0.0); (472082.2, 3659778.6, 0.0, 0.0, 0.0);
(472112.2, 3659778.6, 0.0, 0.0, 0.0); (472142.2, 3659778.6, 0.0, 0.0, 0.0);
(472172.2, 3659778.6, 0.0, 0.0, 0.0); (472202.2, 3659778.6, 0.0, 0.0, 0.0);
(472232.2, 3659778.6, 0.0, 0.0, 0.0); (472262.2, 3659778.6, 0.0, 0.0, 0.0);
(472292.2, 3659778.6, 0.0, 0.0, 0.0); (472322.2, 3659778.6, 0.0, 0.0, 0.0);
(472352.2, 3659778.6, 0.0, 0.0, 0.0); (472382.2, 3659778.6, 0.0, 0.0, 0.0);
(472412.2, 3659778.6, 0.0, 0.0, 0.0); (472442.2, 3659778.6, 0.0, 0.0, 0.0);
(472472.2, 3659778.6, 0.0, 0.0, 0.0); (472502.2, 3659778.6, 0.0, 0.0, 0.0);
(472532.2, 3659778.6, 0.0, 0.0, 0.0); (472562.2, 3659778.6, 0.0, 0.0, 0.0);
(472592.2, 3659778.6, 0.0, 0.0, 0.0); (472622.2, 3659778.6, 0.0, 0.0, 0.0);
(472652.2, 3659778.6, 0.0, 0.0, 0.0); (472682.2, 3659778.6, 0.0, 0.0, 0.0);
(472712.2, 3659778.6, 0.0, 0.0, 0.0); (472742.2, 3659778.6, 0.0, 0.0, 0.0);
(472772.2, 3659778.6, 0.0, 0.0, 0.0); (472802.2, 3659778.6, 0.0, 0.0, 0.0);
(472832.2, 3659778.6, 0.0, 0.0, 0.0); (472862.2, 3659778.6, 0.0, 0.0, 0.0);
(472892.2, 3659778.6, 0.0, 0.0, 0.0); (471692.2, 3659808.9, 0.0, 0.0, 0.0);
(471722.2, 3659808.9, 0.0, 0.0, 0.0); (471752.2, 3659808.9, 0.0, 0.0, 0.0);
(471782.2, 3659808.9, 0.0, 0.0, 0.0); (471812.2, 3659808.9, 0.0, 0.0, 0.0);
(471842.2, 3659808.9, 0.0, 0.0, 0.0); (471872.2, 3659808.9, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(471902.2, 3659808.9, 0.0, 0.0, 0.0); (471932.2, 3659808.9, 0.0, 0.0, 0.0);
(471962.2, 3659808.9, 0.0, 0.0, 0.0); (471992.2, 3659808.9, 0.0, 0.0, 0.0);
(472022.2, 3659808.9, 0.0, 0.0, 0.0); (472052.2, 3659808.9, 0.0, 0.0, 0.0);
(472082.2, 3659808.9, 0.0, 0.0, 0.0); (472112.2, 3659808.9, 0.0, 0.0, 0.0);
(472142.2, 3659808.9, 0.0, 0.0, 0.0); (472172.2, 3659808.9, 0.0, 0.0, 0.0);

(472202.2, 3659808.9, 0.0, 0.0, 0.0); (472232.2, 3659808.9, 0.0, 0.0, 0.0);
(472262.2, 3659808.9, 0.0, 0.0, 0.0); (472292.2, 3659808.9, 0.0, 0.0, 0.0);
(472322.2, 3659808.9, 0.0, 0.0, 0.0); (472352.2, 3659808.9, 0.0, 0.0, 0.0);
(472382.2, 3659808.9, 0.0, 0.0, 0.0); (472412.2, 3659808.9, 0.0, 0.0, 0.0);
(472442.2, 3659808.9, 0.0, 0.0, 0.0); (472472.2, 3659808.9, 0.0, 0.0, 0.0);
(472502.2, 3659808.9, 0.0, 0.0, 0.0); (472532.2, 3659808.9, 0.0, 0.0, 0.0);
(472562.2, 3659808.9, 0.0, 0.0, 0.0); (472592.2, 3659808.9, 0.0, 0.0, 0.0);
(472622.2, 3659808.9, 0.0, 0.0, 0.0); (472652.2, 3659808.9, 0.0, 0.0, 0.0);
(472682.2, 3659808.9, 0.0, 0.0, 0.0); (472712.2, 3659808.9, 0.0, 0.0, 0.0);
(472742.2, 3659808.9, 0.0, 0.0, 0.0); (472772.2, 3659808.9, 0.0, 0.0, 0.0);
(472802.2, 3659808.9, 0.0, 0.0, 0.0); (472832.2, 3659808.9, 0.0, 0.0, 0.0);
(472862.2, 3659808.9, 0.0, 0.0, 0.0); (472892.2, 3659808.9, 0.0, 0.0, 0.0);
(471692.2, 3659839.2, 0.0, 0.0, 0.0); (471722.2, 3659839.2, 0.0, 0.0, 0.0);
(471752.2, 3659839.2, 0.0, 0.0, 0.0); (471782.2, 3659839.2, 0.0, 0.0, 0.0);
(471812.2, 3659839.2, 0.0, 0.0, 0.0); (471842.2, 3659839.2, 0.0, 0.0, 0.0);
(471872.2, 3659839.2, 0.0, 0.0, 0.0); (471902.2, 3659839.2, 0.0, 0.0, 0.0);
(471932.2, 3659839.2, 0.0, 0.0, 0.0); (471962.2, 3659839.2, 0.0, 0.0, 0.0);
(471992.2, 3659839.2, 0.0, 0.0, 0.0); (472022.2, 3659839.2, 0.0, 0.0, 0.0);
(472052.2, 3659839.2, 0.0, 0.0, 0.0); (472082.2, 3659839.2, 0.0, 0.0, 0.0);
(472112.2, 3659839.2, 0.0, 0.0, 0.0); (472142.2, 3659839.2, 0.0, 0.0, 0.0);
(472172.2, 3659839.2, 0.0, 0.0, 0.0); (472202.2, 3659839.2, 0.0, 0.0, 0.0);
(472232.2, 3659839.2, 0.0, 0.0, 0.0); (472262.2, 3659839.2, 0.0, 0.0, 0.0);
(472292.2, 3659839.2, 0.0, 0.0, 0.0); (472322.2, 3659839.2, 0.0, 0.0, 0.0);
(472352.2, 3659839.2, 0.0, 0.0, 0.0); (472382.2, 3659839.2, 0.0, 0.0, 0.0);
(472412.2, 3659839.2, 0.0, 0.0, 0.0); (472442.2, 3659839.2, 0.0, 0.0, 0.0);
(472472.2, 3659839.2, 0.0, 0.0, 0.0); (472502.2, 3659839.2, 0.0, 0.0, 0.0);
(472532.2, 3659839.2, 0.0, 0.0, 0.0); (472562.2, 3659839.2, 0.0, 0.0, 0.0);
(472592.2, 3659839.2, 0.0, 0.0, 0.0); (472622.2, 3659839.2, 0.0, 0.0, 0.0);
(472652.2, 3659839.2, 0.0, 0.0, 0.0); (472682.2, 3659839.2, 0.0, 0.0, 0.0);
(472712.2, 3659839.2, 0.0, 0.0, 0.0); (472742.2, 3659839.2, 0.0, 0.0, 0.0);
(472772.2, 3659839.2, 0.0, 0.0, 0.0); (472802.2, 3659839.2, 0.0, 0.0, 0.0);
(472832.2, 3659839.2, 0.0, 0.0, 0.0); (472862.2, 3659839.2, 0.0, 0.0, 0.0);
(472892.2, 3659839.2, 0.0, 0.0, 0.0); (471692.2, 3659869.5, 0.0, 0.0, 0.0);
(471722.2, 3659869.5, 0.0, 0.0, 0.0); (471752.2, 3659869.5, 0.0, 0.0, 0.0);
(471782.2, 3659869.5, 0.0, 0.0, 0.0); (471812.2, 3659869.5, 0.0, 0.0, 0.0);
(471842.2, 3659869.5, 0.0, 0.0, 0.0); (471872.2, 3659869.5, 0.0, 0.0, 0.0);
(471902.2, 3659869.5, 0.0, 0.0, 0.0); (471932.2, 3659869.5, 0.0, 0.0, 0.0);
(471962.2, 3659869.5, 0.0, 0.0, 0.0); (471992.2, 3659869.5, 0.0, 0.0, 0.0);
(472022.2, 3659869.5, 0.0, 0.0, 0.0); (472052.2, 3659869.5, 0.0, 0.0, 0.0);
(472082.2, 3659869.5, 0.0, 0.0, 0.0); (472112.2, 3659869.5, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472142.2, 3659869.5, 0.0, 0.0, 0.0); (472172.2, 3659869.5, 0.0, 0.0, 0.0);
(472202.2, 3659869.5, 0.0, 0.0, 0.0); (472232.2, 3659869.5, 0.0, 0.0, 0.0);
(472262.2, 3659869.5, 0.0, 0.0, 0.0); (472292.2, 3659869.5, 0.0, 0.0, 0.0);
(472322.2, 3659869.5, 0.0, 0.0, 0.0); (472352.2, 3659869.5, 0.0, 0.0, 0.0);
(472382.2, 3659869.5, 0.0, 0.0, 0.0); (472412.2, 3659869.5, 0.0, 0.0, 0.0);
(472442.2, 3659869.5, 0.0, 0.0, 0.0); (472472.2, 3659869.5, 0.0, 0.0, 0.0);
(472502.2, 3659869.5, 0.0, 0.0, 0.0); (472532.2, 3659869.5, 0.0, 0.0, 0.0);
(472562.2, 3659869.5, 0.0, 0.0, 0.0); (472592.2, 3659869.5, 0.0, 0.0, 0.0);
(472622.2, 3659869.5, 0.0, 0.0, 0.0); (472652.2, 3659869.5, 0.0, 0.0, 0.0);
(472682.2, 3659869.5, 0.0, 0.0, 0.0); (472712.2, 3659869.5, 0.0, 0.0, 0.0);
(472742.2, 3659869.5, 0.0, 0.0, 0.0); (472772.2, 3659869.5, 0.0, 0.0, 0.0);
(472802.2, 3659869.5, 0.0, 0.0, 0.0); (472832.2, 3659869.5, 0.0, 0.0, 0.0);
(472862.2, 3659869.5, 0.0, 0.0, 0.0); (472892.2, 3659869.5, 0.0, 0.0, 0.0);
(471692.2, 3659899.8, 0.0, 0.0, 0.0); (471722.2, 3659899.8, 0.0, 0.0, 0.0);
(471752.2, 3659899.8, 0.0, 0.0, 0.0); (471782.2, 3659899.8, 0.0, 0.0, 0.0);
(471812.2, 3659899.8, 0.0, 0.0, 0.0); (471842.2, 3659899.8, 0.0, 0.0, 0.0);
(471872.2, 3659899.8, 0.0, 0.0, 0.0); (471902.2, 3659899.8, 0.0, 0.0, 0.0);
(471932.2, 3659899.8, 0.0, 0.0, 0.0); (471962.2, 3659899.8, 0.0, 0.0, 0.0);
(471992.2, 3659899.8, 0.0, 0.0, 0.0); (472022.2, 3659899.8, 0.0, 0.0, 0.0);
(472052.2, 3659899.8, 0.0, 0.0, 0.0); (472082.2, 3659899.8, 0.0, 0.0, 0.0);
(472112.2, 3659899.8, 0.0, 0.0, 0.0); (472142.2, 3659899.8, 0.0, 0.0, 0.0);
(472172.2, 3659899.8, 0.0, 0.0, 0.0); (472202.2, 3659899.8, 0.0, 0.0, 0.0);
(472232.2, 3659899.8, 0.0, 0.0, 0.0); (472262.2, 3659899.8, 0.0, 0.0, 0.0);
(472292.2, 3659899.8, 0.0, 0.0, 0.0); (472322.2, 3659899.8, 0.0, 0.0, 0.0);
(472352.2, 3659899.8, 0.0, 0.0, 0.0); (472382.2, 3659899.8, 0.0, 0.0, 0.0);
(472412.2, 3659899.8, 0.0, 0.0, 0.0); (472442.2, 3659899.8, 0.0, 0.0, 0.0);
(472472.2, 3659899.8, 0.0, 0.0, 0.0); (472502.2, 3659899.8, 0.0, 0.0, 0.0);
(472532.2, 3659899.8, 0.0, 0.0, 0.0); (472562.2, 3659899.8, 0.0, 0.0, 0.0);
(472592.2, 3659899.8, 0.0, 0.0, 0.0); (472622.2, 3659899.8, 0.0, 0.0, 0.0);
(472652.2, 3659899.8, 0.0, 0.0, 0.0); (472682.2, 3659899.8, 0.0, 0.0, 0.0);
(472712.2, 3659899.8, 0.0, 0.0, 0.0); (472742.2, 3659899.8, 0.0, 0.0, 0.0);
(472772.2, 3659899.8, 0.0, 0.0, 0.0); (472802.2, 3659899.8, 0.0, 0.0, 0.0);
(472832.2, 3659899.8, 0.0, 0.0, 0.0); (472862.2, 3659899.8, 0.0, 0.0, 0.0);
(472892.2, 3659899.8, 0.0, 0.0, 0.0); (471692.2, 3659930.1, 0.0, 0.0, 0.0);
(471722.2, 3659930.1, 0.0, 0.0, 0.0); (471752.2, 3659930.1, 0.0, 0.0, 0.0);
(471782.2, 3659930.1, 0.0, 0.0, 0.0); (471812.2, 3659930.1, 0.0, 0.0, 0.0);
(471842.2, 3659930.1, 0.0, 0.0, 0.0); (471872.2, 3659930.1, 0.0, 0.0, 0.0);
(471902.2, 3659930.1, 0.0, 0.0, 0.0); (471932.2, 3659930.1, 0.0, 0.0, 0.0);
(471962.2, 3659930.1, 0.0, 0.0, 0.0); (471992.2, 3659930.1, 0.0, 0.0, 0.0);
(472022.2, 3659930.1, 0.0, 0.0, 0.0); (472052.2, 3659930.1, 0.0, 0.0, 0.0);
(472082.2, 3659930.1, 0.0, 0.0, 0.0); (472112.2, 3659930.1, 0.0, 0.0, 0.0);
(472142.2, 3659930.1, 0.0, 0.0, 0.0); (472172.2, 3659930.1, 0.0, 0.0, 0.0);
(472202.2, 3659930.1, 0.0, 0.0, 0.0); (472232.2, 3659930.1, 0.0, 0.0, 0.0);

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	472382.2,	3659930.1,	0.0,	0.0,	0.0);	(472412.2,	3659930.1,	0.0,	0.0,	0.0);
(	472442.2,	3659930.1,	0.0,	0.0,	0.0);	(472472.2,	3659930.1,	0.0,	0.0,	0.0);
(	472502.2,	3659930.1,	0.0,	0.0,	0.0);	(472532.2,	3659930.1,	0.0,	0.0,	0.0);
(	472562.2,	3659930.1,	0.0,	0.0,	0.0);	(472592.2,	3659930.1,	0.0,	0.0,	0.0);
(	472622.2,	3659930.1,	0.0,	0.0,	0.0);	(472652.2,	3659930.1,	0.0,	0.0,	0.0);
(	472682.2,	3659930.1,	0.0,	0.0,	0.0);	(472712.2,	3659930.1,	0.0,	0.0,	0.0);
(	472742.2,	3659930.1,	0.0,	0.0,	0.0);	(472772.2,	3659930.1,	0.0,	0.0,	0.0);
(	472802.2,	3659930.1,	0.0,	0.0,	0.0);	(472832.2,	3659930.1,	0.0,	0.0,	0.0);
(	472862.2,	3659930.1,	0.0,	0.0,	0.0);	(472892.2,	3659930.1,	0.0,	0.0,	0.0);
(	471692.2,	3659960.4,	0.0,	0.0,	0.0);	(471722.2,	3659960.4,	0.0,	0.0,	0.0);
(	471752.2,	3659960.4,	0.0,	0.0,	0.0);	(471782.2,	3659960.4,	0.0,	0.0,	0.0);
(	471812.2,	3659960.4,	0.0,	0.0,	0.0);	(471842.2,	3659960.4,	0.0,	0.0,	0.0);
(	471872.2,	3659960.4,	0.0,	0.0,	0.0);	(471902.2,	3659960.4,	0.0,	0.0,	0.0);
(	471932.2,	3659960.4,	0.0,	0.0,	0.0);	(471962.2,	3659960.4,	0.0,	0.0,	0.0);
(	471992.2,	3659960.4,	0.0,	0.0,	0.0);	(472022.2,	3659960.4,	0.0,	0.0,	0.0);
(	472052.2,	3659960.4,	0.0,	0.0,	0.0);	(472082.2,	3659960.4,	0.0,	0.0,	0.0);
(	472112.2,	3659960.4,	0.0,	0.0,	0.0);	(472142.2,	3659960.4,	0.0,	0.0,	0.0);
(	472172.2,	3659960.4,	0.0,	0.0,	0.0);	(472202.2,	3659960.4,	0.0,	0.0,	0.0);
(	472232.2,	3659960.4,	0.0,	0.0,	0.0);	(472262.2,	3659960.4,	0.0,	0.0,	0.0);
(	472292.2,	3659960.4,	0.0,	0.0,	0.0);	(472322.2,	3659960.4,	0.0,	0.0,	0.0);
(	472352.2,	3659960.4,	0.0,	0.0,	0.0);	(472382.2,	3659960.4,	0.0,	0.0,	0.0);
(	472412.2,	3659960.4,	0.0,	0.0,	0.0);	(472442.2,	3659960.4,	0.0,	0.0,	0.0);
(	472472.2,	3659960.4,	0.0,	0.0,	0.0);	(472502.2,	3659960.4,	0.0,	0.0,	0.0);
(	472532.2,	3659960.4,	0.0,	0.0,	0.0);	(472562.2,	3659960.4,	0.0,	0.0,	0.0);
(	472592.2,	3659960.4,	0.0,	0.0,	0.0);	(472622.2,	3659960.4,	0.0,	0.0,	0.0);
(	472652.2,	3659960.4,	0.0,	0.0,	0.0);	(472682.2,	3659960.4,	0.0,	0.0,	0.0);
(	472712.2,	3659960.4,	0.0,	0.0,	0.0);	(472742.2,	3659960.4,	0.0,	0.0,	0.0);
(	472772.2,	3659960.4,	0.0,	0.0,	0.0);	(472802.2,	3659960.4,	0.0,	0.0,	0.0);
(	472832.2,	3659960.4,	0.0,	0.0,	0.0);	(472862.2,	3659960.4,	0.0,	0.0,	0.0);
(	472892.2,	3659960.4,	0.0,	0.0,	0.0);	(471692.2,	3659990.7,	0.0,	0.0,	0.0);
(	471722.2,	3659990.7,	0.0,	0.0,	0.0);	(471752.2,	3659990.7,	0.0,	0.0,	0.0);
(	471782.2,	3659990.7,	0.0,	0.0,	0.0);	(471812.2,	3659990.7,	0.0,	0.0,	0.0);
(	471842.2,	3659990.7,	0.0,	0.0,	0.0);	(471872.2,	3659990.7,	0.0,	0.0,	0.0);
(	471902.2,	3659990.7,	0.0,	0.0,	0.0);	(471932.2,	3659990.7,	0.0,	0.0,	0.0);
(	471962.2,	3659990.7,	0.0,	0.0,	0.0);	(471992.2,	3659990.7,	0.0,	0.0,	0.0);
(	472022.2,	3659990.7,	0.0,	0.0,	0.0);	(472052.2,	3659990.7,	0.0,	0.0,	0.0);
(	472082.2,	3659990.7,	0.0,	0.0,	0.0);	(472112.2,	3659990.7,	0.0,	0.0,	0.0);
(	472142.2,	3659990.7,	0.0,	0.0,	0.0);	(472172.2,	3659990.7,	0.0,	0.0,	0.0);
(	472202.2,	3659990.7,	0.0,	0.0,	0.0);	(472232.2,	3659990.7,	0.0,	0.0,	0.0);
(	472262.2,	3659990.7,	0.0,	0.0,	0.0);	(472292.2,	3659990.7,	0.0,	0.0,	0.0);
(	472322.2,	3659990.7,	0.0,	0.0,	0.0);	(472352.2,	3659990.7,	0.0,	0.0,	0.0);
(	472382.2,	3659990.7,	0.0,	0.0,	0.0);	(472412.2,	3659990.7,	0.0,	0.0,	0.0);
(	472442.2,	3659990.7,	0.0,	0.0,	0.0);	(472472.2,	3659990.7,	0.0,	0.0,	0.0);
(	472502.2,	3659990.7,	0.0,	0.0,	0.0);	(472532.2,	3659990.7,	0.0,	0.0,	0.0);
(	472562.2,	3659990.7,	0.0,	0.0,	0.0);	(472592.2,	3659990.7,	0.0,	0.0,	0.0);

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(	472622.2,	3659990.7,	0.0,	0.0,	0.0);	(472652.2,	3659990.7,	0.0,	0.0,	0.0);
(	472682.2,	3659990.7,	0.0,	0.0,	0.0);	(472712.2,	3659990.7,	0.0,	0.0,	0.0);
(	472742.2,	3659990.7,	0.0,	0.0,	0.0);	(472772.2,	3659990.7,	0.0,	0.0,	0.0);
(	472802.2,	3659990.7,	0.0,	0.0,	0.0);	(472832.2,	3659990.7,	0.0,	0.0,	0.0);
(	472862.2,	3659990.7,	0.0,	0.0,	0.0);	(472892.2,	3659990.7,	0.0,	0.0,	0.0);
(	471692.2,	3660021.0,	0.0,	0.0,	0.0);	(471722.2,	3660021.0,	0.0,	0.0,	0.0);
(	471752.2,	3660021.0,	0.0,	0.0,	0.0);	(471782.2,	3660021.0,	0.0,	0.0,	0.0);
(	471812.2,	3660021.0,	0.0,	0.0,	0.0);	(471842.2,	3660021.0,	0.0,	0.0,	0.0);
(	471872.2,	3660021.0,	0.0,	0.0,	0.0);	(471902.2,	3660021.0,	0.0,	0.0,	0.0);
(	471932.2,	3660021.0,	0.0,	0.0,	0.0);	(471962.2,	3660021.0,	0.0,	0.0,	0.0);
(	471992.2,	3660021.0,	0.0,	0.0,	0.0);	(472022.2,	3660021.0,	0.0,	0.0,	0.0);
(	472052.2,	3660021.0,	0.0,	0.0,	0.0);	(472082.2,	3660021.0,	0.0,	0.0,	0.0);
(	472112.2,	3660021.0,	0.0,	0.0,	0.0);	(472142.2,	3660021.0,	0.0,	0.0,	0.0);
(	472172.2,	3660021.0,	0.0,	0.0,	0.0);	(472202.2,	3660021.0,	0.0,	0.0,	0.0);
(	472232.2,	3660021.0,	0.0,	0.0,	0.0);	(472262.2,	3660021.0,	0.0,	0.0,	0.0);
(	472292.2,	3660021.0,	0.0,	0.0,	0.0);	(472322.2,	3660021.0,	0.0,	0.0,	0.0);
(	472352.2,	3660021.0,	0.0,	0.0,	0.0);	(472382.2,	3660021.0,	0.0,	0.0,	0.0);
(	472412.2,	3660021.0,	0.0,	0.0,	0.0);	(472442.2,	3660021.0,	0.0,	0.0,	0.0);
(	472472.2,	3660021.0,	0.0,	0.0,	0.0);	(472502.2,	3660021.0,	0.0,	0.0,	0.0);
(	472532.2,	3660021.0,	0.0,	0.0,	0.0);	(472562.2,	3660021.0,	0.0,	0.0,	0.0);
(	472592.2,	3660021.0,	0.0,	0.0,	0.0);	(472622.2,	3660021.0,	0.0,	0.0,	0.0);
(	472652.2,	3660021.0,	0.0,	0.0,	0.0);	(472682.2,	3660021.0,	0.0,	0.0,	0.0);
(	472712.2,	3660021.0,	0.0,	0.0,	0.0);	(472742.2,	3660021.0,	0.0,	0.0,	0.0);
(	472772.2,	3660021.0,	0.0,	0.0,	0.0);	(472802.2,	3660021.0,	0.0,	0.0,	0.0);
(	472832.2,	3660021.0,	0.0,	0.0,	0.0);	(472862.2,	3660021.0,	0.0,	0.0,	0.0);
(	472892.2,	3660021.0,	0.0,	0.0,	0.0);	(471692.2,	3660051.3,	0.0,	0.0,	0.0);
(	471722.2,	3660051.3,	0.0,	0.0,	0.0);	(471752.2,	3660051.3,	0.0,	0.0,	0.0);

(471782.2, 3660051.3, 0.0, 0.0, 0.0); (471812.2, 3660051.3, 0.0, 0.0, 0.0);
(471842.2, 3660051.3, 0.0, 0.0, 0.0); (471872.2, 3660051.3, 0.0, 0.0, 0.0);
(471902.2, 3660051.3, 0.0, 0.0, 0.0); (471932.2, 3660051.3, 0.0, 0.0, 0.0);
(471962.2, 3660051.3, 0.0, 0.0, 0.0); (471992.2, 3660051.3, 0.0, 0.0, 0.0);
(472022.2, 3660051.3, 0.0, 0.0, 0.0); (472052.2, 3660051.3, 0.0, 0.0, 0.0);
(472082.2, 3660051.3, 0.0, 0.0, 0.0); (472112.2, 3660051.3, 0.0, 0.0, 0.0);
(472142.2, 3660051.3, 0.0, 0.0, 0.0); (472172.2, 3660051.3, 0.0, 0.0, 0.0);
(472202.2, 3660051.3, 0.0, 0.0, 0.0); (472232.2, 3660051.3, 0.0, 0.0, 0.0);
(472262.2, 3660051.3, 0.0, 0.0, 0.0); (472292.2, 3660051.3, 0.0, 0.0, 0.0);
(472322.2, 3660051.3, 0.0, 0.0, 0.0); (472352.2, 3660051.3, 0.0, 0.0, 0.0);
(472382.2, 3660051.3, 0.0, 0.0, 0.0); (472412.2, 3660051.3, 0.0, 0.0, 0.0);
(472442.2, 3660051.3, 0.0, 0.0, 0.0); (472472.2, 3660051.3, 0.0, 0.0, 0.0);
(472502.2, 3660051.3, 0.0, 0.0, 0.0); (472532.2, 3660051.3, 0.0, 0.0, 0.0);
(472562.2, 3660051.3, 0.0, 0.0, 0.0); (472592.2, 3660051.3, 0.0, 0.0, 0.0);
(472622.2, 3660051.3, 0.0, 0.0, 0.0); (472652.2, 3660051.3, 0.0, 0.0, 0.0);
(472682.2, 3660051.3, 0.0, 0.0, 0.0); (472712.2, 3660051.3, 0.0, 0.0, 0.0);
(472742.2, 3660051.3, 0.0, 0.0, 0.0); (472772.2, 3660051.3, 0.0, 0.0, 0.0);
(472802.2, 3660051.3, 0.0, 0.0, 0.0); (472832.2, 3660051.3, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472862.2, 3660051.3, 0.0, 0.0, 0.0); (472892.2, 3660051.3, 0.0, 0.0, 0.0);
(471692.2, 3660081.6, 0.0, 0.0, 0.0); (471722.2, 3660081.6, 0.0, 0.0, 0.0);
(471752.2, 3660081.6, 0.0, 0.0, 0.0); (471782.2, 3660081.6, 0.0, 0.0, 0.0);
(471812.2, 3660081.6, 0.0, 0.0, 0.0); (471842.2, 3660081.6, 0.0, 0.0, 0.0);
(471872.2, 3660081.6, 0.0, 0.0, 0.0); (471902.2, 3660081.6, 0.0, 0.0, 0.0);
(471932.2, 3660081.6, 0.0, 0.0, 0.0); (471962.2, 3660081.6, 0.0, 0.0, 0.0);
(471992.2, 3660081.6, 0.0, 0.0, 0.0); (472022.2, 3660081.6, 0.0, 0.0, 0.0);
(472052.2, 3660081.6, 0.0, 0.0, 0.0); (472082.2, 3660081.6, 0.0, 0.0, 0.0);
(472112.2, 3660081.6, 0.0, 0.0, 0.0); (472142.2, 3660081.6, 0.0, 0.0, 0.0);
(472172.2, 3660081.6, 0.0, 0.0, 0.0); (472202.2, 3660081.6, 0.0, 0.0, 0.0);
(472232.2, 3660081.6, 0.0, 0.0, 0.0); (472262.2, 3660081.6, 0.0, 0.0, 0.0);
(472292.2, 3660081.6, 0.0, 0.0, 0.0); (472322.2, 3660081.6, 0.0, 0.0, 0.0);
(472352.2, 3660081.6, 0.0, 0.0, 0.0); (472382.2, 3660081.6, 0.0, 0.0, 0.0);
(472412.2, 3660081.6, 0.0, 0.0, 0.0); (472442.2, 3660081.6, 0.0, 0.0, 0.0);
(472472.2, 3660081.6, 0.0, 0.0, 0.0); (472502.2, 3660081.6, 0.0, 0.0, 0.0);
(472532.2, 3660081.6, 0.0, 0.0, 0.0); (472562.2, 3660081.6, 0.0, 0.0, 0.0);
(472592.2, 3660081.6, 0.0, 0.0, 0.0); (472622.2, 3660081.6, 0.0, 0.0, 0.0);
(472652.2, 3660081.6, 0.0, 0.0, 0.0); (472682.2, 3660081.6, 0.0, 0.0, 0.0);
(472712.2, 3660081.6, 0.0, 0.0, 0.0); (472742.2, 3660081.6, 0.0, 0.0, 0.0);
(472772.2, 3660081.6, 0.0, 0.0, 0.0); (472802.2, 3660081.6, 0.0, 0.0, 0.0);
(472832.2, 3660081.6, 0.0, 0.0, 0.0); (472862.2, 3660081.6, 0.0, 0.0, 0.0);
(472892.2, 3660081.6, 0.0, 0.0, 0.0); (471692.2, 3660111.9, 0.0, 0.0, 0.0);
(471722.2, 3660111.9, 0.0, 0.0, 0.0); (471752.2, 3660111.9, 0.0, 0.0, 0.0);
(471782.2, 3660111.9, 0.0, 0.0, 0.0); (471812.2, 3660111.9, 0.0, 0.0, 0.0);
(471842.2, 3660111.9, 0.0, 0.0, 0.0); (471872.2, 3660111.9, 0.0, 0.0, 0.0);
(471902.2, 3660111.9, 0.0, 0.0, 0.0); (471932.2, 3660111.9, 0.0, 0.0, 0.0);
(471962.2, 3660111.9, 0.0, 0.0, 0.0); (471992.2, 3660111.9, 0.0, 0.0, 0.0);
(472022.2, 3660111.9, 0.0, 0.0, 0.0); (472052.2, 3660111.9, 0.0, 0.0, 0.0);
(472082.2, 3660111.9, 0.0, 0.0, 0.0); (472112.2, 3660111.9, 0.0, 0.0, 0.0);
(472142.2, 3660111.9, 0.0, 0.0, 0.0); (472172.2, 3660111.9, 0.0, 0.0, 0.0);
(472202.2, 3660111.9, 0.0, 0.0, 0.0); (472232.2, 3660111.9, 0.0, 0.0, 0.0);
(472262.2, 3660111.9, 0.0, 0.0, 0.0); (472292.2, 3660111.9, 0.0, 0.0, 0.0);
(472322.2, 3660111.9, 0.0, 0.0, 0.0); (472352.2, 3660111.9, 0.0, 0.0, 0.0);
(472382.2, 3660111.9, 0.0, 0.0, 0.0); (472412.2, 3660111.9, 0.0, 0.0, 0.0);
(472442.2, 3660111.9, 0.0, 0.0, 0.0); (472472.2, 3660111.9, 0.0, 0.0, 0.0);
(472502.2, 3660111.9, 0.0, 0.0, 0.0); (472532.2, 3660111.9, 0.0, 0.0, 0.0);
(472562.2, 3660111.9, 0.0, 0.0, 0.0); (472592.2, 3660111.9, 0.0, 0.0, 0.0);
(472622.2, 3660111.9, 0.0, 0.0, 0.0); (472652.2, 3660111.9, 0.0, 0.0, 0.0);
(472682.2, 3660111.9, 0.0, 0.0, 0.0); (472712.2, 3660111.9, 0.0, 0.0, 0.0);
(472742.2, 3660111.9, 0.0, 0.0, 0.0); (472772.2, 3660111.9, 0.0, 0.0, 0.0);
(472802.2, 3660111.9, 0.0, 0.0, 0.0); (472832.2, 3660111.9, 0.0, 0.0, 0.0);
(472862.2, 3660111.9, 0.0, 0.0, 0.0); (472892.2, 3660111.9, 0.0, 0.0, 0.0);
(471692.2, 3660142.2, 0.0, 0.0, 0.0); (471722.2, 3660142.2, 0.0, 0.0, 0.0);
(471752.2, 3660142.2, 0.0, 0.0, 0.0); (471782.2, 3660142.2, 0.0, 0.0, 0.0);
(471812.2, 3660142.2, 0.0, 0.0, 0.0); (471842.2, 3660142.2, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(471872.2, 3660142.2, 0.0, 0.0, 0.0); (471902.2, 3660142.2, 0.0, 0.0, 0.0);
(471932.2, 3660142.2, 0.0, 0.0, 0.0); (471962.2, 3660142.2, 0.0, 0.0, 0.0);
(471992.2, 3660142.2, 0.0, 0.0, 0.0); (472022.2, 3660142.2, 0.0, 0.0, 0.0);
(472052.2, 3660142.2, 0.0, 0.0, 0.0); (472082.2, 3660142.2, 0.0, 0.0, 0.0);
(472112.2, 3660142.2, 0.0, 0.0, 0.0); (472142.2, 3660142.2, 0.0, 0.0, 0.0);
(472172.2, 3660142.2, 0.0, 0.0, 0.0); (472202.2, 3660142.2, 0.0, 0.0, 0.0);
(472232.2, 3660142.2, 0.0, 0.0, 0.0); (472262.2, 3660142.2, 0.0, 0.0, 0.0);
(472292.2, 3660142.2, 0.0, 0.0, 0.0); (472322.2, 3660142.2, 0.0, 0.0, 0.0);
(472352.2, 3660142.2, 0.0, 0.0, 0.0); (472382.2, 3660142.2, 0.0, 0.0, 0.0);
(472412.2, 3660142.2, 0.0, 0.0, 0.0); (472442.2, 3660142.2, 0.0, 0.0, 0.0);
(472472.2, 3660142.2, 0.0, 0.0, 0.0); (472502.2, 3660142.2, 0.0, 0.0, 0.0);

(472532.2, 3660142.2, 0.0, 0.0, 0.0); (472562.2, 3660142.2, 0.0, 0.0, 0.0);
(472592.2, 3660142.2, 0.0, 0.0, 0.0); (472622.2, 3660142.2, 0.0, 0.0, 0.0);
(472652.2, 3660142.2, 0.0, 0.0, 0.0); (472682.2, 3660142.2, 0.0, 0.0, 0.0);
(472712.2, 3660142.2, 0.0, 0.0, 0.0); (472742.2, 3660142.2, 0.0, 0.0, 0.0);
(472772.2, 3660142.2, 0.0, 0.0, 0.0); (472802.2, 3660142.2, 0.0, 0.0, 0.0);
(472832.2, 3660142.2, 0.0, 0.0, 0.0); (472862.2, 3660142.2, 0.0, 0.0, 0.0);
(472892.2, 3660142.2, 0.0, 0.0, 0.0); (471692.2, 3660172.5, 0.0, 0.0, 0.0);
(471722.2, 3660172.5, 0.0, 0.0, 0.0); (471752.2, 3660172.5, 0.0, 0.0, 0.0);
(471782.2, 3660172.5, 0.0, 0.0, 0.0); (471812.2, 3660172.5, 0.0, 0.0, 0.0);
(471842.2, 3660172.5, 0.0, 0.0, 0.0); (471872.2, 3660172.5, 0.0, 0.0, 0.0);
(471902.2, 3660172.5, 0.0, 0.0, 0.0); (471932.2, 3660172.5, 0.0, 0.0, 0.0);
(471962.2, 3660172.5, 0.0, 0.0, 0.0); (471992.2, 3660172.5, 0.0, 0.0, 0.0);
(472022.2, 3660172.5, 0.0, 0.0, 0.0); (472052.2, 3660172.5, 0.0, 0.0, 0.0);
(472082.2, 3660172.5, 0.0, 0.0, 0.0); (472112.2, 3660172.5, 0.0, 0.0, 0.0);
(472142.2, 3660172.5, 0.0, 0.0, 0.0); (472172.2, 3660172.5, 0.0, 0.0, 0.0);
(472202.2, 3660172.5, 0.0, 0.0, 0.0); (472232.2, 3660172.5, 0.0, 0.0, 0.0);
(472262.2, 3660172.5, 0.0, 0.0, 0.0); (472292.2, 3660172.5, 0.0, 0.0, 0.0);
(472322.2, 3660172.5, 0.0, 0.0, 0.0); (472352.2, 3660172.5, 0.0, 0.0, 0.0);
(472382.2, 3660172.5, 0.0, 0.0, 0.0); (472412.2, 3660172.5, 0.0, 0.0, 0.0);
(472442.2, 3660172.5, 0.0, 0.0, 0.0); (472472.2, 3660172.5, 0.0, 0.0, 0.0);
(472502.2, 3660172.5, 0.0, 0.0, 0.0); (472532.2, 3660172.5, 0.0, 0.0, 0.0);
(472562.2, 3660172.5, 0.0, 0.0, 0.0); (472592.2, 3660172.5, 0.0, 0.0, 0.0);
(472622.2, 3660172.5, 0.0, 0.0, 0.0); (472652.2, 3660172.5, 0.0, 0.0, 0.0);
(472682.2, 3660172.5, 0.0, 0.0, 0.0); (472712.2, 3660172.5, 0.0, 0.0, 0.0);
(472742.2, 3660172.5, 0.0, 0.0, 0.0); (472772.2, 3660172.5, 0.0, 0.0, 0.0);
(472802.2, 3660172.5, 0.0, 0.0, 0.0); (472832.2, 3660172.5, 0.0, 0.0, 0.0);
(472862.2, 3660172.5, 0.0, 0.0, 0.0); (472892.2, 3660172.5, 0.0, 0.0, 0.0);
(471692.2, 3660202.8, 0.0, 0.0, 0.0); (471722.2, 3660202.8, 0.0, 0.0, 0.0);
(471752.2, 3660202.8, 0.0, 0.0, 0.0); (471782.2, 3660202.8, 0.0, 0.0, 0.0);
(471812.2, 3660202.8, 0.0, 0.0, 0.0); (471842.2, 3660202.8, 0.0, 0.0, 0.0);
(471872.2, 3660202.8, 0.0, 0.0, 0.0); (471902.2, 3660202.8, 0.0, 0.0, 0.0);
(471932.2, 3660202.8, 0.0, 0.0, 0.0); (471962.2, 3660202.8, 0.0, 0.0, 0.0);
(471992.2, 3660202.8, 0.0, 0.0, 0.0); (472022.2, 3660202.8, 0.0, 0.0, 0.0);
(472052.2, 3660202.8, 0.0, 0.0, 0.0); (472082.2, 3660202.8, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472112.2, 3660202.8, 0.0, 0.0, 0.0); (472142.2, 3660202.8, 0.0, 0.0, 0.0);
(472172.2, 3660202.8, 0.0, 0.0, 0.0); (472202.2, 3660202.8, 0.0, 0.0, 0.0);
(472232.2, 3660202.8, 0.0, 0.0, 0.0); (472262.2, 3660202.8, 0.0, 0.0, 0.0);
(472292.2, 3660202.8, 0.0, 0.0, 0.0); (472322.2, 3660202.8, 0.0, 0.0, 0.0);
(472352.2, 3660202.8, 0.0, 0.0, 0.0); (472382.2, 3660202.8, 0.0, 0.0, 0.0);
(472412.2, 3660202.8, 0.0, 0.0, 0.0); (472442.2, 3660202.8, 0.0, 0.0, 0.0);
(472472.2, 3660202.8, 0.0, 0.0, 0.0); (472502.2, 3660202.8, 0.0, 0.0, 0.0);
(472532.2, 3660202.8, 0.0, 0.0, 0.0); (472562.2, 3660202.8, 0.0, 0.0, 0.0);
(472592.2, 3660202.8, 0.0, 0.0, 0.0); (472622.2, 3660202.8, 0.0, 0.0, 0.0);
(472652.2, 3660202.8, 0.0, 0.0, 0.0); (472682.2, 3660202.8, 0.0, 0.0, 0.0);
(472712.2, 3660202.8, 0.0, 0.0, 0.0); (472742.2, 3660202.8, 0.0, 0.0, 0.0);
(472772.2, 3660202.8, 0.0, 0.0, 0.0); (472802.2, 3660202.8, 0.0, 0.0, 0.0);
(472832.2, 3660202.8, 0.0, 0.0, 0.0); (472862.2, 3660202.8, 0.0, 0.0, 0.0);
(472892.2, 3660202.8, 0.0, 0.0, 0.0); (471692.2, 3660233.1, 0.0, 0.0, 0.0);
(471722.2, 3660233.1, 0.0, 0.0, 0.0); (471752.2, 3660233.1, 0.0, 0.0, 0.0);
(471782.2, 3660233.1, 0.0, 0.0, 0.0); (471812.2, 3660233.1, 0.0, 0.0, 0.0);
(471842.2, 3660233.1, 0.0, 0.0, 0.0); (471872.2, 3660233.1, 0.0, 0.0, 0.0);
(471902.2, 3660233.1, 0.0, 0.0, 0.0); (471932.2, 3660233.1, 0.0, 0.0, 0.0);
(471962.2, 3660233.1, 0.0, 0.0, 0.0); (471992.2, 3660233.1, 0.0, 0.0, 0.0);
(472022.2, 3660233.1, 0.0, 0.0, 0.0); (472052.2, 3660233.1, 0.0, 0.0, 0.0);
(472082.2, 3660233.1, 0.0, 0.0, 0.0); (472112.2, 3660233.1, 0.0, 0.0, 0.0);
(472142.2, 3660233.1, 0.0, 0.0, 0.0); (472172.2, 3660233.1, 0.0, 0.0, 0.0);
(472202.2, 3660233.1, 0.0, 0.0, 0.0); (472232.2, 3660233.1, 0.0, 0.0, 0.0);
(472262.2, 3660233.1, 0.0, 0.0, 0.0); (472292.2, 3660233.1, 0.0, 0.0, 0.0);
(472322.2, 3660233.1, 0.0, 0.0, 0.0); (472352.2, 3660233.1, 0.0, 0.0, 0.0);
(472382.2, 3660233.1, 0.0, 0.0, 0.0); (472412.2, 3660233.1, 0.0, 0.0, 0.0);
(472442.2, 3660233.1, 0.0, 0.0, 0.0); (472472.2, 3660233.1, 0.0, 0.0, 0.0);
(472502.2, 3660233.1, 0.0, 0.0, 0.0); (472532.2, 3660233.1, 0.0, 0.0, 0.0);
(472562.2, 3660233.1, 0.0, 0.0, 0.0); (472592.2, 3660233.1, 0.0, 0.0, 0.0);
(472622.2, 3660233.1, 0.0, 0.0, 0.0); (472652.2, 3660233.1, 0.0, 0.0, 0.0);
(472682.2, 3660233.1, 0.0, 0.0, 0.0); (472712.2, 3660233.1, 0.0, 0.0, 0.0);
(472742.2, 3660233.1, 0.0, 0.0, 0.0); (472772.2, 3660233.1, 0.0, 0.0, 0.0);
(472802.2, 3660233.1, 0.0, 0.0, 0.0); (472832.2, 3660233.1, 0.0, 0.0, 0.0);
(472862.2, 3660233.1, 0.0, 0.0, 0.0); (472892.2, 3660233.1, 0.0, 0.0, 0.0);
(471692.2, 3660263.4, 0.0, 0.0, 0.0); (471722.2, 3660263.4, 0.0, 0.0, 0.0);
(471752.2, 3660263.4, 0.0, 0.0, 0.0); (471782.2, 3660263.4, 0.0, 0.0, 0.0);
(471812.2, 3660263.4, 0.0, 0.0, 0.0); (471842.2, 3660263.4, 0.0, 0.0, 0.0);
(471872.2, 3660263.4, 0.0, 0.0, 0.0); (471902.2, 3660263.4, 0.0, 0.0, 0.0);
(471932.2, 3660263.4, 0.0, 0.0, 0.0); (471962.2, 3660263.4, 0.0, 0.0, 0.0);
(471992.2, 3660263.4, 0.0, 0.0, 0.0); (472022.2, 3660263.4, 0.0, 0.0, 0.0);
(472052.2, 3660263.4, 0.0, 0.0, 0.0); (472082.2, 3660263.4, 0.0, 0.0, 0.0);
(472112.2, 3660263.4, 0.0, 0.0, 0.0); (472142.2, 3660263.4, 0.0, 0.0, 0.0);
(472172.2, 3660263.4, 0.0, 0.0, 0.0); (472202.2, 3660263.4, 0.0, 0.0, 0.0);
(472232.2, 3660263.4, 0.0, 0.0, 0.0); (472262.2, 3660263.4, 0.0, 0.0, 0.0);
(472292.2, 3660263.4, 0.0, 0.0, 0.0); (472322.2, 3660263.4, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472352.2, 3660263.4,	0.0,	0.0,	0.0);	(472382.2, 3660263.4,	0.0,	0.0,	0.0);
(472412.2, 3660263.4,	0.0,	0.0,	0.0);	(472442.2, 3660263.4,	0.0,	0.0,	0.0);
(472472.2, 3660263.4,	0.0,	0.0,	0.0);	(472502.2, 3660263.4,	0.0,	0.0,	0.0);
(472532.2, 3660263.4,	0.0,	0.0,	0.0);	(472562.2, 3660263.4,	0.0,	0.0,	0.0);
(472592.2, 3660263.4,	0.0,	0.0,	0.0);	(472622.2, 3660263.4,	0.0,	0.0,	0.0);
(472652.2, 3660263.4,	0.0,	0.0,	0.0);	(472682.2, 3660263.4,	0.0,	0.0,	0.0);
(472712.2, 3660263.4,	0.0,	0.0,	0.0);	(472742.2, 3660263.4,	0.0,	0.0,	0.0);
(472772.2, 3660263.4,	0.0,	0.0,	0.0);	(472802.2, 3660263.4,	0.0,	0.0,	0.0);
(472832.2, 3660263.4,	0.0,	0.0,	0.0);	(472862.2, 3660263.4,	0.0,	0.0,	0.0);
(472892.2, 3660263.4,	0.0,	0.0,	0.0);	(471692.2, 3660293.7,	0.0,	0.0,	0.0);
(471722.2, 3660293.7,	0.0,	0.0,	0.0);	(471752.2, 3660293.7,	0.0,	0.0,	0.0);
(471782.2, 3660293.7,	0.0,	0.0,	0.0);	(471812.2, 3660293.7,	0.0,	0.0,	0.0);
(471842.2, 3660293.7,	0.0,	0.0,	0.0);	(471872.2, 3660293.7,	0.0,	0.0,	0.0);
(471902.2, 3660293.7,	0.0,	0.0,	0.0);	(471932.2, 3660293.7,	0.0,	0.0,	0.0);
(471962.2, 3660293.7,	0.0,	0.0,	0.0);	(471992.2, 3660293.7,	0.0,	0.0,	0.0);
(472022.2, 3660293.7,	0.0,	0.0,	0.0);	(472052.2, 3660293.7,	0.0,	0.0,	0.0);
(472082.2, 3660293.7,	0.0,	0.0,	0.0);	(472112.2, 3660293.7,	0.0,	0.0,	0.0);
(472142.2, 3660293.7,	0.0,	0.0,	0.0);	(472172.2, 3660293.7,	0.0,	0.0,	0.0);
(472202.2, 3660293.7,	0.0,	0.0,	0.0);	(472232.2, 3660293.7,	0.0,	0.0,	0.0);
(472262.2, 3660293.7,	0.0,	0.0,	0.0);	(472292.2, 3660293.7,	0.0,	0.0,	0.0);
(472322.2, 3660293.7,	0.0,	0.0,	0.0);	(472352.2, 3660293.7,	0.0,	0.0,	0.0);
(472382.2, 3660293.7,	0.0,	0.0,	0.0);	(472412.2, 3660293.7,	0.0,	0.0,	0.0);
(472442.2, 3660293.7,	0.0,	0.0,	0.0);	(472472.2, 3660293.7,	0.0,	0.0,	0.0);
(472502.2, 3660293.7,	0.0,	0.0,	0.0);	(472532.2, 3660293.7,	0.0,	0.0,	0.0);
(472562.2, 3660293.7,	0.0,	0.0,	0.0);	(472592.2, 3660293.7,	0.0,	0.0,	0.0);
(472622.2, 3660293.7,	0.0,	0.0,	0.0);	(472652.2, 3660293.7,	0.0,	0.0,	0.0);
(472682.2, 3660293.7,	0.0,	0.0,	0.0);	(472712.2, 3660293.7,	0.0,	0.0,	0.0);
(472742.2, 3660293.7,	0.0,	0.0,	0.0);	(472772.2, 3660293.7,	0.0,	0.0,	0.0);
(472802.2, 3660293.7,	0.0,	0.0,	0.0);	(472832.2, 3660293.7,	0.0,	0.0,	0.0);
(472862.2, 3660293.7,	0.0,	0.0,	0.0);	(472892.2, 3660293.7,	0.0,	0.0,	0.0);
(471692.2, 3660324.0,	0.0,	0.0,	0.0);	(471722.2, 3660324.0,	0.0,	0.0,	0.0);
(471752.2, 3660324.0,	0.0,	0.0,	0.0);	(471782.2, 3660324.0,	0.0,	0.0,	0.0);
(471812.2, 3660324.0,	0.0,	0.0,	0.0);	(471842.2, 3660324.0,	0.0,	0.0,	0.0);
(471872.2, 3660324.0,	0.0,	0.0,	0.0);	(471902.2, 3660324.0,	0.0,	0.0,	0.0);
(471932.2, 3660324.0,	0.0,	0.0,	0.0);	(471962.2, 3660324.0,	0.0,	0.0,	0.0);
(471992.2, 3660324.0,	0.0,	0.0,	0.0);	(472022.2, 3660324.0,	0.0,	0.0,	0.0);
(472052.2, 3660324.0,	0.0,	0.0,	0.0);	(472082.2, 3660324.0,	0.0,	0.0,	0.0);
(472112.2, 3660324.0,	0.0,	0.0,	0.0);	(472142.2, 3660324.0,	0.0,	0.0,	0.0);
(472172.2, 3660324.0,	0.0,	0.0,	0.0);	(472202.2, 3660324.0,	0.0,	0.0,	0.0);
(472232.2, 3660324.0,	0.0,	0.0,	0.0);	(472262.2, 3660324.0,	0.0,	0.0,	0.0);
(472292.2, 3660324.0,	0.0,	0.0,	0.0);	(472322.2, 3660324.0,	0.0,	0.0,	0.0);
(472352.2, 3660324.0,	0.0,	0.0,	0.0);	(472382.2, 3660324.0,	0.0,	0.0,	0.0);
(472412.2, 3660324.0,	0.0,	0.0,	0.0);	(472442.2, 3660324.0,	0.0,	0.0,	0.0);
(472472.2, 3660324.0,	0.0,	0.0,	0.0);	(472502.2, 3660324.0,	0.0,	0.0,	0.0);
(472532.2, 3660324.0,	0.0,	0.0,	0.0);	(472562.2, 3660324.0,	0.0,	0.0,	0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472592.2, 3660324.0,	0.0,	0.0,	0.0);	(472622.2, 3660324.0,	0.0,	0.0,	0.0);
(472652.2, 3660324.0,	0.0,	0.0,	0.0);	(472682.2, 3660324.0,	0.0,	0.0,	0.0);
(472712.2, 3660324.0,	0.0,	0.0,	0.0);	(472742.2, 3660324.0,	0.0,	0.0,	0.0);
(472772.2, 3660324.0,	0.0,	0.0,	0.0);	(472802.2, 3660324.0,	0.0,	0.0,	0.0);
(472832.2, 3660324.0,	0.0,	0.0,	0.0);	(472862.2, 3660324.0,	0.0,	0.0,	0.0);
(472892.2, 3660324.0,	0.0,	0.0,	0.0);	(471692.2, 3660354.3,	0.0,	0.0,	0.0);
(471722.2, 3660354.3,	0.0,	0.0,	0.0);	(471752.2, 3660354.3,	0.0,	0.0,	0.0);
(471782.2, 3660354.3,	0.0,	0.0,	0.0);	(471812.2, 3660354.3,	0.0,	0.0,	0.0);
(471842.2, 3660354.3,	0.0,	0.0,	0.0);	(471872.2, 3660354.3,	0.0,	0.0,	0.0);
(471902.2, 3660354.3,	0.0,	0.0,	0.0);	(471932.2, 3660354.3,	0.0,	0.0,	0.0);
(471962.2, 3660354.3,	0.0,	0.0,	0.0);	(471992.2, 3660354.3,	0.0,	0.0,	0.0);
(472022.2, 3660354.3,	0.0,	0.0,	0.0);	(472052.2, 3660354.3,	0.0,	0.0,	0.0);
(472082.2, 3660354.3,	0.0,	0.0,	0.0);	(472112.2, 3660354.3,	0.0,	0.0,	0.0);
(472142.2, 3660354.3,	0.0,	0.0,	0.0);	(472172.2, 3660354.3,	0.0,	0.0,	0.0);
(472202.2, 3660354.3,	0.0,	0.0,	0.0);	(472232.2, 3660354.3,	0.0,	0.0,	0.0);
(472262.2, 3660354.3,	0.0,	0.0,	0.0);	(472292.2, 3660354.3,	0.0,	0.0,	0.0);
(472322.2, 3660354.3,	0.0,	0.0,	0.0);	(472352.2, 3660354.3,	0.0,	0.0,	0.0);
(472382.2, 3660354.3,	0.0,	0.0,	0.0);	(472412.2, 3660354.3,	0.0,	0.0,	0.0);
(472442.2, 3660354.3,	0.0,	0.0,	0.0);	(472472.2, 3660354.3,	0.0,	0.0,	0.0);
(472502.2, 3660354.3,	0.0,	0.0,	0.0);	(472532.2, 3660354.3,	0.0,	0.0,	0.0);
(472562.2, 3660354.3,	0.0,	0.0,	0.0);	(472592.2, 3660354.3,	0.0,	0.0,	0.0);
(472622.2, 3660354.3,	0.0,	0.0,	0.0);	(472652.2, 3660354.3,	0.0,	0.0,	0.0);
(472682.2, 3660354.3,	0.0,	0.0,	0.0);	(472712.2, 3660354.3,	0.0,	0.0,	0.0);
(472742.2, 3660354.3,	0.0,	0.0,	0.0);	(472772.2, 3660354.3,	0.0,	0.0,	0.0);
(472802.2, 3660354.3,	0.0,	0.0,	0.0);	(472832.2, 3660354.3,	0.0,	0.0,	0.0);
(472862.2, 3660354.3,	0.0,	0.0,	0.0);	(472892.2, 3660354.3,	0.0,	0.0,	0.0);
(471692.2, 3660384.6,	0.0,	0.0,	0.0);	(471722.2, 3660384.6,	0.0,	0.0,	0.0);
(471752.2, 3660384.6,	0.0,	0.0,	0.0);	(471782.2, 3660384.6,	0.0,	0.0,	0.0);
(471812.2, 3660384.6,	0.0,	0.0,	0.0);	(471842.2, 3660384.6,	0.0,	0.0,	0.0);
(471872.2, 3660384.6,	0.0,	0.0,	0.0);	(471902.2, 3660384.6,	0.0,	0.0,	0.0);
(471932.2, 3660384.6,	0.0,	0.0,	0.0);	(471962.2, 3660384.6,	0.0,	0.0,	0.0);
(471992.2, 3660384.6,	0.0,	0.0,	0.0);	(472022.2, 3660384.6,	0.0,	0.0,	0.0);
(472052.2, 3660384.6,	0.0,	0.0,	0.0);	(472082.2, 3660384.6,	0.0,	0.0,	0.0);

(472112.2, 3660384.6, 0.0, 0.0, 0.0); (472142.2, 3660384.6, 0.0, 0.0, 0.0);
(472172.2, 3660384.6, 0.0, 0.0, 0.0); (472202.2, 3660384.6, 0.0, 0.0, 0.0);
(472232.2, 3660384.6, 0.0, 0.0, 0.0); (472262.2, 3660384.6, 0.0, 0.0, 0.0);
(472292.2, 3660384.6, 0.0, 0.0, 0.0); (472322.2, 3660384.6, 0.0, 0.0, 0.0);
(472352.2, 3660384.6, 0.0, 0.0, 0.0); (472382.2, 3660384.6, 0.0, 0.0, 0.0);
(472412.2, 3660384.6, 0.0, 0.0, 0.0); (472442.2, 3660384.6, 0.0, 0.0, 0.0);
(472472.2, 3660384.6, 0.0, 0.0, 0.0); (472502.2, 3660384.6, 0.0, 0.0, 0.0);
(472532.2, 3660384.6, 0.0, 0.0, 0.0); (472562.2, 3660384.6, 0.0, 0.0, 0.0);
(472592.2, 3660384.6, 0.0, 0.0, 0.0); (472622.2, 3660384.6, 0.0, 0.0, 0.0);
(472652.2, 3660384.6, 0.0, 0.0, 0.0); (472682.2, 3660384.6, 0.0, 0.0, 0.0);
(472712.2, 3660384.6, 0.0, 0.0, 0.0); (472742.2, 3660384.6, 0.0, 0.0, 0.0);
(472772.2, 3660384.6, 0.0, 0.0, 0.0); (472802.2, 3660384.6, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472832.2, 3660384.6, 0.0, 0.0, 0.0); (472862.2, 3660384.6, 0.0, 0.0, 0.0);
(472892.2, 3660384.6, 0.0, 0.0, 0.0); (471692.2, 3660414.9, 0.0, 0.0, 0.0);
(471722.2, 3660414.9, 0.0, 0.0, 0.0); (471752.2, 3660414.9, 0.0, 0.0, 0.0);
(471782.2, 3660414.9, 0.0, 0.0, 0.0); (471812.2, 3660414.9, 0.0, 0.0, 0.0);
(471842.2, 3660414.9, 0.0, 0.0, 0.0); (471872.2, 3660414.9, 0.0, 0.0, 0.0);
(471902.2, 3660414.9, 0.0, 0.0, 0.0); (471932.2, 3660414.9, 0.0, 0.0, 0.0);
(471962.2, 3660414.9, 0.0, 0.0, 0.0); (471992.2, 3660414.9, 0.0, 0.0, 0.0);
(472022.2, 3660414.9, 0.0, 0.0, 0.0); (472052.2, 3660414.9, 0.0, 0.0, 0.0);
(472082.2, 3660414.9, 0.0, 0.0, 0.0); (472112.2, 3660414.9, 0.0, 0.0, 0.0);
(472142.2, 3660414.9, 0.0, 0.0, 0.0); (472172.2, 3660414.9, 0.0, 0.0, 0.0);
(472202.2, 3660414.9, 0.0, 0.0, 0.0); (472232.2, 3660414.9, 0.0, 0.0, 0.0);
(472262.2, 3660414.9, 0.0, 0.0, 0.0); (472292.2, 3660414.9, 0.0, 0.0, 0.0);
(472322.2, 3660414.9, 0.0, 0.0, 0.0); (472352.2, 3660414.9, 0.0, 0.0, 0.0);
(472382.2, 3660414.9, 0.0, 0.0, 0.0); (472412.2, 3660414.9, 0.0, 0.0, 0.0);
(472442.2, 3660414.9, 0.0, 0.0, 0.0); (472472.2, 3660414.9, 0.0, 0.0, 0.0);
(472502.2, 3660414.9, 0.0, 0.0, 0.0); (472532.2, 3660414.9, 0.0, 0.0, 0.0);
(472562.2, 3660414.9, 0.0, 0.0, 0.0); (472592.2, 3660414.9, 0.0, 0.0, 0.0);
(472622.2, 3660414.9, 0.0, 0.0, 0.0); (472652.2, 3660414.9, 0.0, 0.0, 0.0);
(472682.2, 3660414.9, 0.0, 0.0, 0.0); (472712.2, 3660414.9, 0.0, 0.0, 0.0);
(472742.2, 3660414.9, 0.0, 0.0, 0.0); (472772.2, 3660414.9, 0.0, 0.0, 0.0);
(472802.2, 3660414.9, 0.0, 0.0, 0.0); (472832.2, 3660414.9, 0.0, 0.0, 0.0);
(472862.2, 3660414.9, 0.0, 0.0, 0.0); (472892.2, 3660414.9, 0.0, 0.0, 0.0);
(471692.2, 3660445.2, 0.0, 0.0, 0.0); (471722.2, 3660445.2, 0.0, 0.0, 0.0);
(471752.2, 3660445.2, 0.0, 0.0, 0.0); (471782.2, 3660445.2, 0.0, 0.0, 0.0);
(471812.2, 3660445.2, 0.0, 0.0, 0.0); (471842.2, 3660445.2, 0.0, 0.0, 0.0);
(471872.2, 3660445.2, 0.0, 0.0, 0.0); (471902.2, 3660445.2, 0.0, 0.0, 0.0);
(471932.2, 3660445.2, 0.0, 0.0, 0.0); (471962.2, 3660445.2, 0.0, 0.0, 0.0);
(471992.2, 3660445.2, 0.0, 0.0, 0.0); (472022.2, 3660445.2, 0.0, 0.0, 0.0);
(472052.2, 3660445.2, 0.0, 0.0, 0.0); (472082.2, 3660445.2, 0.0, 0.0, 0.0);
(472112.2, 3660445.2, 0.0, 0.0, 0.0); (472142.2, 3660445.2, 0.0, 0.0, 0.0);
(472172.2, 3660445.2, 0.0, 0.0, 0.0); (472202.2, 3660445.2, 0.0, 0.0, 0.0);
(472232.2, 3660445.2, 0.0, 0.0, 0.0); (472262.2, 3660445.2, 0.0, 0.0, 0.0);
(472292.2, 3660445.2, 0.0, 0.0, 0.0); (472322.2, 3660445.2, 0.0, 0.0, 0.0);
(472352.2, 3660445.2, 0.0, 0.0, 0.0); (472382.2, 3660445.2, 0.0, 0.0, 0.0);
(472412.2, 3660445.2, 0.0, 0.0, 0.0); (472442.2, 3660445.2, 0.0, 0.0, 0.0);
(472472.2, 3660445.2, 0.0, 0.0, 0.0); (472502.2, 3660445.2, 0.0, 0.0, 0.0);
(472532.2, 3660445.2, 0.0, 0.0, 0.0); (472562.2, 3660445.2, 0.0, 0.0, 0.0);
(472592.2, 3660445.2, 0.0, 0.0, 0.0); (472622.2, 3660445.2, 0.0, 0.0, 0.0);
(472652.2, 3660445.2, 0.0, 0.0, 0.0); (472682.2, 3660445.2, 0.0, 0.0, 0.0);
(472712.2, 3660445.2, 0.0, 0.0, 0.0); (472742.2, 3660445.2, 0.0, 0.0, 0.0);
(472772.2, 3660445.2, 0.0, 0.0, 0.0); (472802.2, 3660445.2, 0.0, 0.0, 0.0);
(472832.2, 3660445.2, 0.0, 0.0, 0.0); (472862.2, 3660445.2, 0.0, 0.0, 0.0);
(472892.2, 3660445.2, 0.0, 0.0, 0.0); (471692.2, 3660475.5, 0.0, 0.0, 0.0);
(471722.2, 3660475.5, 0.0, 0.0, 0.0); (471752.2, 3660475.5, 0.0, 0.0, 0.0);
(471782.2, 3660475.5, 0.0, 0.0, 0.0); (471812.2, 3660475.5, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(471842.2, 3660475.5, 0.0, 0.0, 0.0); (471872.2, 3660475.5, 0.0, 0.0, 0.0);
(471902.2, 3660475.5, 0.0, 0.0, 0.0); (471932.2, 3660475.5, 0.0, 0.0, 0.0);
(471962.2, 3660475.5, 0.0, 0.0, 0.0); (471992.2, 3660475.5, 0.0, 0.0, 0.0);
(472022.2, 3660475.5, 0.0, 0.0, 0.0); (472052.2, 3660475.5, 0.0, 0.0, 0.0);
(472082.2, 3660475.5, 0.0, 0.0, 0.0); (472112.2, 3660475.5, 0.0, 0.0, 0.0);
(472142.2, 3660475.5, 0.0, 0.0, 0.0); (472172.2, 3660475.5, 0.0, 0.0, 0.0);
(472202.2, 3660475.5, 0.0, 0.0, 0.0); (472232.2, 3660475.5, 0.0, 0.0, 0.0);
(472262.2, 3660475.5, 0.0, 0.0, 0.0); (472292.2, 3660475.5, 0.0, 0.0, 0.0);
(472322.2, 3660475.5, 0.0, 0.0, 0.0); (472352.2, 3660475.5, 0.0, 0.0, 0.0);
(472382.2, 3660475.5, 0.0, 0.0, 0.0); (472412.2, 3660475.5, 0.0, 0.0, 0.0);
(472442.2, 3660475.5, 0.0, 0.0, 0.0); (472472.2, 3660475.5, 0.0, 0.0, 0.0);
(472502.2, 3660475.5, 0.0, 0.0, 0.0); (472532.2, 3660475.5, 0.0, 0.0, 0.0);
(472562.2, 3660475.5, 0.0, 0.0, 0.0); (472592.2, 3660475.5, 0.0, 0.0, 0.0);
(472622.2, 3660475.5, 0.0, 0.0, 0.0); (472652.2, 3660475.5, 0.0, 0.0, 0.0);
(472682.2, 3660475.5, 0.0, 0.0, 0.0); (472712.2, 3660475.5, 0.0, 0.0, 0.0);
(472742.2, 3660475.5, 0.0, 0.0, 0.0); (472772.2, 3660475.5, 0.0, 0.0, 0.0);
(472802.2, 3660475.5, 0.0, 0.0, 0.0); (472832.2, 3660475.5, 0.0, 0.0, 0.0);

(472862.2, 3660475.5, 0.0, 0.0, 0.0); (472892.2, 3660475.5, 0.0, 0.0, 0.0);
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(471992.2, 3660505.8, 0.0, 0.0, 0.0); (472022.2, 3660505.8, 0.0, 0.0, 0.0);
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(472172.2, 3660505.8, 0.0, 0.0, 0.0); (472202.2, 3660505.8, 0.0, 0.0, 0.0);
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(472352.2, 3660505.8, 0.0, 0.0, 0.0); (472382.2, 3660505.8, 0.0, 0.0, 0.0);
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(472472.2, 3660505.8, 0.0, 0.0, 0.0); (472502.2, 3660505.8, 0.0, 0.0, 0.0);
(472532.2, 3660505.8, 0.0, 0.0, 0.0); (472562.2, 3660505.8, 0.0, 0.0, 0.0);
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(471722.2, 3660536.1, 0.0, 0.0, 0.0); (471752.2, 3660536.1, 0.0, 0.0, 0.0);
(471782.2, 3660536.1, 0.0, 0.0, 0.0); (471812.2, 3660536.1, 0.0, 0.0, 0.0);
(471842.2, 3660536.1, 0.0, 0.0, 0.0); (471872.2, 3660536.1, 0.0, 0.0, 0.0);
(471902.2, 3660536.1, 0.0, 0.0, 0.0); (471932.2, 3660536.1, 0.0, 0.0, 0.0);
(471962.2, 3660536.1, 0.0, 0.0, 0.0); (471992.2, 3660536.1, 0.0, 0.0, 0.0);
(472022.2, 3660536.1, 0.0, 0.0, 0.0); (472052.2, 3660536.1, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472082.2, 3660536.1, 0.0, 0.0, 0.0); (472112.2, 3660536.1, 0.0, 0.0, 0.0);
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(472202.2, 3660536.1, 0.0, 0.0, 0.0); (472232.2, 3660536.1, 0.0, 0.0, 0.0);
(472262.2, 3660536.1, 0.0, 0.0, 0.0); (472292.2, 3660536.1, 0.0, 0.0, 0.0);
(472322.2, 3660536.1, 0.0, 0.0, 0.0); (472352.2, 3660536.1, 0.0, 0.0, 0.0);
(472382.2, 3660536.1, 0.0, 0.0, 0.0); (472412.2, 3660536.1, 0.0, 0.0, 0.0);
(472442.2, 3660536.1, 0.0, 0.0, 0.0); (472472.2, 3660536.1, 0.0, 0.0, 0.0);
(472502.2, 3660536.1, 0.0, 0.0, 0.0); (472532.2, 3660536.1, 0.0, 0.0, 0.0);
(472562.2, 3660536.1, 0.0, 0.0, 0.0); (472592.2, 3660536.1, 0.0, 0.0, 0.0);
(472622.2, 3660536.1, 0.0, 0.0, 0.0); (472652.2, 3660536.1, 0.0, 0.0, 0.0);
(472682.2, 3660536.1, 0.0, 0.0, 0.0); (472712.2, 3660536.1, 0.0, 0.0, 0.0);
(472742.2, 3660536.1, 0.0, 0.0, 0.0); (472772.2, 3660536.1, 0.0, 0.0, 0.0);
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(472862.2, 3660536.1, 0.0, 0.0, 0.0); (472892.2, 3660536.1, 0.0, 0.0, 0.0);
(471692.2, 3660566.4, 0.0, 0.0, 0.0); (471722.2, 3660566.4, 0.0, 0.0, 0.0);
(471752.2, 3660566.4, 0.0, 0.0, 0.0); (471782.2, 3660566.4, 0.0, 0.0, 0.0);
(471812.2, 3660566.4, 0.0, 0.0, 0.0); (471842.2, 3660566.4, 0.0, 0.0, 0.0);
(471872.2, 3660566.4, 0.0, 0.0, 0.0); (471902.2, 3660566.4, 0.0, 0.0, 0.0);
(471932.2, 3660566.4, 0.0, 0.0, 0.0); (471962.2, 3660566.4, 0.0, 0.0, 0.0);
(471992.2, 3660566.4, 0.0, 0.0, 0.0); (472022.2, 3660566.4, 0.0, 0.0, 0.0);
(472052.2, 3660566.4, 0.0, 0.0, 0.0); (472082.2, 3660566.4, 0.0, 0.0, 0.0);
(472112.2, 3660566.4, 0.0, 0.0, 0.0); (472142.2, 3660566.4, 0.0, 0.0, 0.0);
(472172.2, 3660566.4, 0.0, 0.0, 0.0); (472202.2, 3660566.4, 0.0, 0.0, 0.0);
(472232.2, 3660566.4, 0.0, 0.0, 0.0); (472262.2, 3660566.4, 0.0, 0.0, 0.0);
(472292.2, 3660566.4, 0.0, 0.0, 0.0); (472322.2, 3660566.4, 0.0, 0.0, 0.0);
(472352.2, 3660566.4, 0.0, 0.0, 0.0); (472382.2, 3660566.4, 0.0, 0.0, 0.0);
(472412.2, 3660566.4, 0.0, 0.0, 0.0); (472442.2, 3660566.4, 0.0, 0.0, 0.0);
(472472.2, 3660566.4, 0.0, 0.0, 0.0); (472502.2, 3660566.4, 0.0, 0.0, 0.0);
(472532.2, 3660566.4, 0.0, 0.0, 0.0); (472562.2, 3660566.4, 0.0, 0.0, 0.0);
(472592.2, 3660566.4, 0.0, 0.0, 0.0); (472622.2, 3660566.4, 0.0, 0.0, 0.0);
(472652.2, 3660566.4, 0.0, 0.0, 0.0); (472682.2, 3660566.4, 0.0, 0.0, 0.0);
(472712.2, 3660566.4, 0.0, 0.0, 0.0); (472742.2, 3660566.4, 0.0, 0.0, 0.0);
(472772.2, 3660566.4, 0.0, 0.0, 0.0); (472802.2, 3660566.4, 0.0, 0.0, 0.0);
(472832.2, 3660566.4, 0.0, 0.0, 0.0); (472862.2, 3660566.4, 0.0, 0.0, 0.0);
(472892.2, 3660566.4, 0.0, 0.0, 0.0); (471692.2, 3660596.7, 0.0, 0.0, 0.0);
(471722.2, 3660596.7, 0.0, 0.0, 0.0); (471752.2, 3660596.7, 0.0, 0.0, 0.0);
(471782.2, 3660596.7, 0.0, 0.0, 0.0); (471812.2, 3660596.7, 0.0, 0.0, 0.0);
(471842.2, 3660596.7, 0.0, 0.0, 0.0); (471872.2, 3660596.7, 0.0, 0.0, 0.0);
(471902.2, 3660596.7, 0.0, 0.0, 0.0); (471932.2, 3660596.7, 0.0, 0.0, 0.0);
(471962.2, 3660596.7, 0.0, 0.0, 0.0); (471992.2, 3660596.7, 0.0, 0.0, 0.0);
(472022.2, 3660596.7, 0.0, 0.0, 0.0); (472052.2, 3660596.7, 0.0, 0.0, 0.0);
(472082.2, 3660596.7, 0.0, 0.0, 0.0); (472112.2, 3660596.7, 0.0, 0.0, 0.0);
(472142.2, 3660596.7, 0.0, 0.0, 0.0); (472172.2, 3660596.7, 0.0, 0.0, 0.0);
(472202.2, 3660596.7, 0.0, 0.0, 0.0); (472232.2, 3660596.7, 0.0, 0.0, 0.0);
(472262.2, 3660596.7, 0.0, 0.0, 0.0); (472292.2, 3660596.7, 0.0, 0.0, 0.0);

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

(472322.2, 3660596.7, 0.0, 0.0, 0.0); (472352.2, 3660596.7, 0.0, 0.0, 0.0);

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    ( 472442.2, 3660596.7,       0.0,       0.0,       0.0);         ( 472472.2, 3660596.7,       0.0,       0.0,       0.0);
    ( 472502.2, 3660596.7,       0.0,       0.0,       0.0);         ( 472532.2, 3660596.7,       0.0,       0.0,       0.0);
    ( 472562.2, 3660596.7,       0.0,       0.0,       0.0);         ( 472592.2, 3660596.7,       0.0,       0.0,       0.0);
    ( 472622.2, 3660596.7,       0.0,       0.0,       0.0);         ( 472652.2, 3660596.7,       0.0,       0.0,       0.0);
    ( 472682.2, 3660596.7,       0.0,       0.0,       0.0);         ( 472712.2, 3660596.7,       0.0,       0.0,       0.0);
    ( 472742.2, 3660596.7,       0.0,       0.0,       0.0);         ( 472772.2, 3660596.7,       0.0,       0.0,       0.0);
    ( 472802.2, 3660596.7,       0.0,       0.0,       0.0);         ( 472832.2, 3660596.7,       0.0,       0.0,       0.0);
    ( 472862.2, 3660596.7,       0.0,       0.0,       0.0);         ( 472892.2, 3660596.7,       0.0,       0.0,       0.0);
    ( 471692.2, 3660627.0,       0.0,       0.0,       0.0);         ( 471722.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 471752.2, 3660627.0,       0.0,       0.0,       0.0);         ( 471782.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 471812.2, 3660627.0,       0.0,       0.0,       0.0);         ( 471842.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 471872.2, 3660627.0,       0.0,       0.0,       0.0);         ( 471902.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 471932.2, 3660627.0,       0.0,       0.0,       0.0);         ( 471962.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 471992.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472022.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472052.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472082.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472112.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472142.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472172.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472202.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472232.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472262.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472292.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472322.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472352.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472382.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472412.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472442.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472472.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472502.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472532.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472562.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472592.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472622.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472652.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472682.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472712.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472742.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472772.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472802.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472832.2, 3660627.0,       0.0,       0.0,       0.0);         ( 472862.2, 3660627.0,       0.0,       0.0,       0.0);
    ( 472892.2, 3660627.0,       0.0,       0.0,       0.0);
*** AERMOD - VERSION  19191 ***   ***  PM10 Exhaust I-5                                                    ***       04/24/22
*** AERMET - VERSION  15181 ***   ***                                                                     ***       09:17:09
                                                                                                                   PAGE  24

*** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  SigA Data

                    * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
                      LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL


                          SOURCE          - - RECEPTOR LOCATION - -         DISTANCE
                            ID            XR (METERS)   YR (METERS)         (METERS)
                        - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                        E5LRT04R            472172.2     3660596.7            -1.38
                        E5LRT04R            472202.2     3660596.7            -1.76
                        E5LRT04R            472172.2     3660627.0            -5.37
                        E5LRT04R            472202.2     3660627.0            -5.83
                        E5LRT04S            472202.2     3660566.4             0.52
                        E5LRT04S            472172.2     3660596.7            -1.11
                        E5LRT04S            472202.2     3660596.7           -16.13
                        E5LRT04T            472202.2     3660566.4           -23.58
                        E5LRT04U            472202.2     3660536.1           -13.28
                        E5LRT04U            472232.2     3660536.1            -2.70
                        E5LRT04U            472202.2     3660566.4            -0.49
                        E5LRT04V            472202.2     3660505.8            -3.35
                        E5LRT04V            472232.2     3660505.8            -5.69
                        E5LRT04V            472202.2     3660536.1            -1.67
                        E5LRT04V            472232.2     3660536.1            -3.82
                        E5LRT04W            472232.2     3660475.5            -3.72
                        E5LRT04W            472202.2     3660505.8             0.16
                        E5LRT04W            472232.2     3660505.8           -12.63
                        E5LRT04X            472232.2     3660475.5           -20.86
                        E5LRT04Y            472232.2     3660445.2           -18.83
                        E5LRT04Y            472262.2     3660445.2            -0.71
                        E5LRT04Z            472232.2     3660414.9           -10.30
                        E5LRT04Z            472262.2     3660414.9            -5.40
                        E5LRT04Z            472232.2     3660445.2             0.24
                        E5LRT050            472232.2     3660384.6            -1.54
                        E5LRT050            472262.2     3660384.6            -6.71
                        E5LRT050            472232.2     3660414.9            -0.47
                        E5LRT050            472262.2     3660414.9            -5.35
                        E5LRT051            472262.2     3660354.3            -3.90
                        E5LRT051            472262.2     3660384.6           -14.00
                        E5LRT052            472262.2     3660354.3           -21.02
                        E5LRT053            472262.2     3660324.0           -17.35
                        E5LRT053            472292.2     3660324.0            -2.18
                        E5LRT054            472262.2     3660293.7            -9.10
                        E5LRT054            472292.2     3660293.7            -6.48
                        E5LRT054            472262.2     3660324.0             0.73
                        E5LRT055            472262.2     3660263.4            -0.68
                        E5LRT055            472292.2     3660263.4            -7.24
                        E5LRT055            472262.2     3660293.7             0.24
                        E5LRT055            472292.2     3660293.7            -6.00
*** AERMOD - VERSION  19191 ***   ***  PM10 Exhaust I-5                                                    ***       04/24/22
*** AERMET - VERSION  15181 ***   ***                                                                     ***       09:17:09
                                                                                                                   PAGE  25

*** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  SigA Data

                    * SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
                      LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL
```

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
E5LRT056	472292.2	3660233.1	-4.07
E5LRT056	472292.2	3660263.4	-14.34
E5LRT057	472292.2	3660233.1	-20.84
E5LRT058	472292.2	3660202.8	-16.58
E5LRT058	472322.2	3660202.8	-2.98
E5LRT059	472292.2	3660172.5	-8.50
E5LRT059	472322.2	3660172.5	-7.11
E5LRT05A	472292.2	3660142.2	0.03
E5LRT05A	472322.2	3660142.2	-7.61
E5LRT05A	472292.2	3660172.5	0.80
E5LRT05A	472322.2	3660172.5	-6.51
E5LRT05B	472322.2	3660111.9	-4.20
E5LRT05B	472322.2	3660142.2	-14.59
E5LRT05C	472322.2	3660111.9	-20.42
E5LRT05D	472322.2	3660081.6	-15.78
E5LRT05D	472352.2	3660081.6	-3.76
E5LRT05E	472322.2	3660051.3	-7.58
E5LRT05E	472352.2	3660051.3	-7.93
E5LRT05F	472322.2	3660021.0	0.99
E5LRT05F	472352.2	3660021.0	-8.11
E5LRT05F	472352.2	3660051.3	-7.15
E5LRT05G	472352.2	3659990.7	-4.17
E5LRT05G	472352.2	3660021.0	-15.13
E5LRT05H	472352.2	3659990.7	-19.68
E5LRT05I	472352.2	3659960.4	-14.38
E5LRT05I	472382.2	3659960.4	-5.13
E5LRT05J	472352.2	3659930.1	-6.35
E5LRT05J	472382.2	3659930.1	-8.94
E5LRT05J	472382.2	3659960.4	0.47
E5LRT05K	472382.2	3659899.8	-8.54
E5LRT05K	472382.2	3659930.1	-7.91
E5LRT05L	472382.2	3659869.5	-4.08
E5LRT05L	472382.2	3659899.8	-15.56
E5LRT05M	472382.2	3659869.5	-18.67
E5LRT05M	472412.2	3659869.5	-0.18
E5LRT05N	472382.2	3659839.2	-13.07
E5LRT05N	472412.2	3659839.2	-6.39
E5LRT05O	472382.2	3659808.9	-5.01
E5LRT05O	472412.2	3659808.9	-9.98
E5LRT05O	472412.2	3659839.2	-0.42

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

* SOURCE-RECEPTOR COMBINATIONS FOR WHICH CALCULATIONS MAY NOT BE PERFORMED *
LESS THAN 1.0 METER; WITHIN OPENPIT; OR BEYOND 80KM FOR FASTAREA/FASTALL

SOURCE ID	- - RECEPTOR LOCATION - - XR (METERS)	YR (METERS)	DISTANCE (METERS)
E5LRT05P	472412.2	3659778.6	-8.88
E5LRT05P	472412.2	3659808.9	-8.60
E5LRT05Q	472412.2	3659748.3	-3.90
E5LRT05Q	472412.2	3659778.6	-15.80
E5LRT05R	472412.2	3659748.3	-17.84
E5LRT05R	472442.2	3659748.3	-1.18
E5LRT05S	472412.2	3659718.0	-12.17
E5LRT05S	472442.2	3659718.0	-7.26
E5LRT05T	472412.2	3659687.7	-4.29
E5LRT05T	472442.2	3659687.7	-10.62
E5LRT05T	472442.2	3659718.0	-0.80
E5LRT05U	472442.2	3659657.4	-9.12
E5LRT05U	472442.2	3659687.7	-8.84
E5LRT05V	472442.2	3659627.1	-3.88
E5LRT05V	472442.2	3659657.4	-15.76
E5LRT05W	472442.2	3659627.1	-17.21
E5LRT05W	472472.2	3659627.1	-1.88
E5LRT05X	472442.2	3659596.8	-11.49
E5LRT05X	472472.2	3659596.8	-7.95
E5LRT05Y	472442.2	3659566.5	-3.70
E5LRT05Y	472472.2	3659566.5	-11.02
E5LRT05Y	472472.2	3659596.8	-1.16
E5LRT05Z	472472.2	3659536.2	-9.34
E5LRT05Z	472472.2	3659566.5	-9.05
E5LRT060	472472.2	3659505.9	-3.84
E5LRT060	472472.2	3659536.2	-15.66
E5LRT061	472472.2	3659505.9	-16.85
E5LRT061	472502.2	3659505.9	-2.27
E5LRT062	472472.2	3659475.6	-11.62
E5LRT062	472502.2	3659475.6	-7.89
E5LRT063	472472.2	3659445.3	-4.47
E5LRT063	472502.2	3659445.3	-10.66
E5LRT063	472502.2	3659475.6	-0.58
E5LRT064	472502.2	3659415.0	-9.25
E5LRT064	472502.2	3659445.3	-8.23

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

1 1 1

471752.20	3659415.00	0.01251	471782.20	3659415.00	0.01303
471812.20	3659415.00	0.01360	471842.20	3659415.00	0.01421
471872.20	3659415.00	0.01487	471902.20	3659415.00	0.01558
471932.20	3659415.00	0.01635	471962.20	3659415.00	0.01718
471992.20	3659415.00	0.01809	472022.20	3659415.00	0.01909
472052.20	3659415.00	0.02019	472082.20	3659415.00	0.02141
472112.20	3659415.00	0.02277	472142.20	3659415.00	0.02429
472172.20	3659415.00	0.02601	472202.20	3659415.00	0.02798
472232.20	3659415.00	0.03026	472262.20	3659415.00	0.03293
472292.20	3659415.00	0.03611	472322.20	3659415.00	0.03999
472352.20	3659415.00	0.04486	472382.20	3659415.00	0.05121
472412.20	3659415.00	0.05998	472442.20	3659415.00	0.07325
472472.20	3659415.00	0.09820	472502.20	3659415.00	0.07029
472532.20	3659415.00	0.08957	472562.20	3659415.00	0.06630
472592.20	3659415.00	0.05327	472622.20	3659415.00	0.04476
472652.20	3659415.00	0.03868	472682.20	3659415.00	0.03409
472712.20	3659415.00	0.03048	472742.20	3659415.00	0.02755
472772.20	3659415.00	0.02512	472802.20	3659415.00	0.02306
472832.20	3659415.00	0.02130	472862.20	3659415.00	0.01978
472892.20	3659415.00	0.01844	471692.20	3659445.30	0.01188
471722.20	3659445.30	0.01237	471752.20	3659445.30	0.01289
471782.20	3659445.30	0.01346	471812.20	3659445.30	0.01406
471842.20	3659445.30	0.01471	471872.20	3659445.30	0.01542
471902.20	3659445.30	0.01618	471932.20	3659445.30	0.01701
471962.20	3659445.30	0.01792	471992.20	3659445.30	0.01891
472022.20	3659445.30	0.02001	472052.20	3659445.30	0.02122
472082.20	3659445.30	0.02257	472112.20	3659445.30	0.02408
472142.20	3659445.30	0.02579	472172.20	3659445.30	0.02775
472202.20	3659445.30	0.03001	472232.20	3659445.30	0.03266
472262.20	3659445.30	0.03581	472292.20	3659445.30	0.03964
472322.20	3659445.30	0.04444	472352.20	3659445.30	0.05067
472382.20	3659445.30	0.05918	472412.20	3659445.30	0.07181
472442.20	3659445.30	0.09353	472472.20	3659445.30	0.10245
472502.20	3659445.30	0.07758	472532.20	3659445.30	0.10857
472562.20	3659445.30	0.07537	472592.20	3659445.30	0.05871
472622.20	3659445.30	0.04842	472652.20	3659445.30	0.04133
472682.20	3659445.30	0.03610	472712.20	3659445.30	0.03205
472742.20	3659445.30	0.02882	472772.20	3659445.30	0.02616
472802.20	3659445.30	0.02393	472832.20	3659445.30	0.02204

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472862.20	3659445.30	0.02040	472892.20	3659445.30	0.01898
471692.20	3659475.60	0.01220	471722.20	3659475.60	0.01272
471752.20	3659475.60	0.01327	471782.20	3659475.60	0.01387
471812.20	3659475.60	0.01451	471842.20	3659475.60	0.01521
471872.20	3659475.60	0.01596	471902.20	3659475.60	0.01678
471932.20	3659475.60	0.01767	471962.20	3659475.60	0.01865
471992.20	3659475.60	0.01972	472022.20	3659475.60	0.02091
472052.20	3659475.60	0.02223	472082.20	3659475.60	0.02371
472112.20	3659475.60	0.02537	472142.20	3659475.60	0.02727
472172.20	3659475.60	0.02946	472202.20	3659475.60	0.03200
472232.20	3659475.60	0.03501	472262.20	3659475.60	0.03863
472292.20	3659475.60	0.04309	472322.20	3659475.60	0.04876
472352.20	3659475.60	0.05627	472382.20	3659475.60	0.06682
472412.20	3659475.60	0.08305	472442.20	3659475.60	0.11233
472472.20	3659475.60	0.12726	472502.20	3659475.60	0.09842
472532.20	3659475.60	0.11200	472562.20	3659475.60	0.07960
472592.20	3659475.60	0.06203	472622.20	3659475.60	0.05096
472652.20	3659475.60	0.04330	472682.20	3659475.60	0.03766
472712.20	3659475.60	0.03332	472742.20	3659475.60	0.02986
472772.20	3659475.60	0.02703	472802.20	3659475.60	0.02467
472832.20	3659475.60	0.02267	472862.20	3659475.60	0.02095
472892.20	3659475.60	0.01945	471692.20	3659505.90	0.01251
471722.20	3659505.90	0.01306	471752.20	3659505.90	0.01365
471782.20	3659505.90	0.01428	471812.20	3659505.90	0.01496
471842.20	3659505.90	0.01569	471872.20	3659505.90	0.01649
471902.20	3659505.90	0.01736	471932.20	3659505.90	0.01832
471962.20	3659505.90	0.01936	471992.20	3659505.90	0.02052
472022.20	3659505.90	0.02180	472052.20	3659505.90	0.02322
472082.20	3659505.90	0.02483	472112.20	3659505.90	0.02665
472142.20	3659505.90	0.02873	472172.20	3659505.90	0.03114
472202.20	3659505.90	0.03396	472232.20	3659505.90	0.03732
472262.20	3659505.90	0.04140	472292.20	3659505.90	0.04648
472322.20	3659505.90	0.05302	472352.20	3659505.90	0.06182
472382.20	3659505.90	0.07440	472412.20	3659505.90	0.09414
472442.20	3659505.90	0.13102	472472.20	3659505.90	0.10576
472502.20	3659505.90	0.13087	472532.20	3659505.90	0.11029

472562.20	3659505.90	0.08091	472592.20	3659505.90	0.06378
472622.20	3659505.90	0.05258	472652.20	3659505.90	0.04470
472682.20	3659505.90	0.03884	472712.20	3659505.90	0.03432
472742.20	3659505.90	0.03070	472772.20	3659505.90	0.02775

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472802.20	3659505.90	0.02529	472832.20	3659505.90	0.02321
472862.20	3659505.90	0.02142	472892.20	3659505.90	0.01986
471692.20	3659536.20	0.01282	471722.20	3659536.20	0.01340
471752.20	3659536.20	0.01401	471782.20	3659536.20	0.01468
471812.20	3659536.20	0.01539	471842.20	3659536.20	0.01617
471872.20	3659536.20	0.01702	471902.20	3659536.20	0.01794
471932.20	3659536.20	0.01895	471962.20	3659536.20	0.02007
471992.20	3659536.20	0.02130	472022.20	3659536.20	0.02267
472052.20	3659536.20	0.02421	472082.20	3659536.20	0.02594
472112.20	3659536.20	0.02791	472142.20	3659536.20	0.03017
472172.20	3659536.20	0.03280	472202.20	3659536.20	0.03589
472232.20	3659536.20	0.03961	472262.20	3659536.20	0.04415
472292.20	3659536.20	0.04986	472322.20	3659536.20	0.05729
472352.20	3659536.20	0.06738	472382.20	3659536.20	0.08199
472412.20	3659536.20	0.10535	472442.20	3659536.20	0.15177
472472.20	3659536.20	0.11164	472502.20	3659536.20	0.15825
472532.20	3659536.20	0.10672	472562.20	3659536.20	0.08054
472592.20	3659536.20	0.06441	472622.20	3659536.20	0.05348
472652.20	3659536.20	0.04561	472682.20	3659536.20	0.03969
472712.20	3659536.20	0.03507	472742.20	3659536.20	0.03137
472772.20	3659536.20	0.02833	472802.20	3659536.20	0.02580
472832.20	3659536.20	0.02365	472862.20	3659536.20	0.02181
472892.20	3659536.20	0.02021	471692.20	3659566.50	0.01313
471722.20	3659566.50	0.01373	471752.20	3659566.50	0.01437
471782.20	3659566.50	0.01507	471812.20	3659566.50	0.01582
471842.20	3659566.50	0.01664	471872.20	3659566.50	0.01753
471902.20	3659566.50	0.01851	471932.20	3659566.50	0.01958
471962.20	3659566.50	0.02076	471992.20	3659566.50	0.02207
472022.20	3659566.50	0.02353	472052.20	3659566.50	0.02517
472082.20	3659566.50	0.02703	472112.20	3659566.50	0.02915
472142.20	3659566.50	0.03159	472172.20	3659566.50	0.03444
472202.20	3659566.50	0.03782	472232.20	3659566.50	0.04189
472262.20	3659566.50	0.04691	472292.20	3659566.50	0.05326
472322.20	3659566.50	0.06157	472352.20	3659566.50	0.07297
472382.20	3659566.50	0.08968	472412.20	3659566.50	0.11712
472442.20	3659566.50	0.13402	472472.20	3659566.50	0.11679
472502.20	3659566.50	0.14477	472532.20	3659566.50	0.10256
472562.20	3659566.50	0.07928	472592.20	3659566.50	0.06428
472622.20	3659566.50	0.05382	472652.20	3659566.50	0.04612
472682.20	3659566.50	0.04024	472712.20	3659566.50	0.03561

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472742.20	3659566.50	0.03187	472772.20	3659566.50	0.02879
472802.20	3659566.50	0.02621	472832.20	3659566.50	0.02402
472862.20	3659566.50	0.02214	472892.20	3659566.50	0.02050
471692.20	3659596.80	0.01342	471722.20	3659596.80	0.01405
471752.20	3659596.80	0.01472	471782.20	3659596.80	0.01545
471812.20	3659596.80	0.01624	471842.20	3659596.80	0.01710
471872.20	3659596.80	0.01804	471902.20	3659596.80	0.01906
471932.20	3659596.80	0.02019	471962.20	3659596.80	0.02144
471992.20	3659596.80	0.02283	472022.20	3659596.80	0.02438
472052.20	3659596.80	0.02612	472082.20	3659596.80	0.02811
472112.20	3659596.80	0.03037	472142.20	3659596.80	0.03300
472172.20	3659596.80	0.03608	472202.20	3659596.80	0.03975
472232.20	3659596.80	0.04419	472262.20	3659596.80	0.04969
472292.20	3659596.80	0.05667	472322.20	3659596.80	0.06588

472352.20	3659596.80	0.07862	472382.20	3659596.80	0.09759
472412.20	3659596.80	0.13003	472442.20	3659596.80	0.14812
472472.20	3659596.80	0.12092	472502.20	3659596.80	0.13390
472532.20	3659596.80	0.09837	472562.20	3659596.80	0.07755
472592.20	3659596.80	0.06368	472622.20	3659596.80	0.05375
472652.20	3659596.80	0.04631	472682.20	3659596.80	0.04054
472712.20	3659596.80	0.03595	472742.20	3659596.80	0.03221
472772.20	3659596.80	0.02912	472802.20	3659596.80	0.02652
472832.20	3659596.80	0.02430	472862.20	3659596.80	0.02240
472892.20	3659596.80	0.02074	471692.20	3659627.10	0.01371
471722.20	3659627.10	0.01436	471752.20	3659627.10	0.01506
471782.20	3659627.10	0.01583	471812.20	3659627.10	0.01665
471842.20	3659627.10	0.01755	471872.20	3659627.10	0.01853
471902.20	3659627.10	0.01961	471932.20	3659627.10	0.02079
471962.20	3659627.10	0.02211	471992.20	3659627.10	0.02357
472022.20	3659627.10	0.02521	472052.20	3659627.10	0.02707
472082.20	3659627.10	0.02918	472112.20	3659627.10	0.03160
472142.20	3659627.10	0.03442	472172.20	3659627.10	0.03773
472202.20	3659627.10	0.04169	472232.20	3659627.10	0.04650
472262.20	3659627.10	0.05247	472292.20	3659627.10	0.06010
472322.20	3659627.10	0.07024	472352.20	3659627.10	0.08440
472382.20	3659627.10	0.10596	472412.20	3659627.10	0.14493
472442.20	3659627.10	0.12055	472472.20	3659627.10	0.14585
472502.20	3659627.10	0.12481	472532.20	3659627.10	0.09433
472562.20	3659627.10	0.07561	472592.20	3659627.10	0.06277
472622.20	3659627.10	0.05339	472652.20	3659627.10	0.04624

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472682.20	3659627.10	0.04063	472712.20	3659627.10	0.03612
472742.20	3659627.10	0.03243	472772.20	3659627.10	0.02934
472802.20	3659627.10	0.02674	472832.20	3659627.10	0.02452
472862.20	3659627.10	0.02260	472892.20	3659627.10	0.02092
471692.20	3659657.40	0.01398	471722.20	3659657.40	0.01466
471752.20	3659657.40	0.01539	471782.20	3659657.40	0.01619
471812.20	3659657.40	0.01705	471842.20	3659657.40	0.01798
471872.20	3659657.40	0.01901	471902.20	3659657.40	0.02014
471932.20	3659657.40	0.02138	471962.20	3659657.40	0.02277
471992.20	3659657.40	0.02431	472022.20	3659657.40	0.02605
472052.20	3659657.40	0.02801	472082.20	3659657.40	0.03025
472112.20	3659657.40	0.03283	472142.20	3659657.40	0.03584
472172.20	3659657.40	0.03939	472202.20	3659657.40	0.04363
472232.20	3659657.40	0.04881	472262.20	3659657.40	0.05527
472292.20	3659657.40	0.06357	472322.20	3659657.40	0.07467
472352.20	3659657.40	0.09041	472382.20	3659657.40	0.11505
472412.20	3659657.40	0.16341	472442.20	3659657.40	0.12258
472472.20	3659657.40	0.16782	472502.20	3659657.40	0.11706
472532.20	3659657.40	0.09051	472562.20	3659657.40	0.07357
472592.20	3659657.40	0.06166	472622.20	3659657.40	0.05282
472652.20	3659657.40	0.04598	472682.20	3659657.40	0.04056
472712.20	3659657.40	0.03615	472742.20	3659657.40	0.03252
472772.20	3659657.40	0.02947	472802.20	3659657.40	0.02688
472832.20	3659657.40	0.02466	472862.20	3659657.40	0.02274
472892.20	3659657.40	0.02106	471692.20	3659687.70	0.01425
471722.20	3659687.70	0.01495	471752.20	3659687.70	0.01571
471782.20	3659687.70	0.01653	471812.20	3659687.70	0.01743
471842.20	3659687.70	0.01841	471872.20	3659687.70	0.01948
471902.20	3659687.70	0.02066	471932.20	3659687.70	0.02197
471962.20	3659687.70	0.02342	471992.20	3659687.70	0.02505
472022.20	3659687.70	0.02688	472052.20	3659687.70	0.02895
472082.20	3659687.70	0.03133	472112.20	3659687.70	0.03407
472142.20	3659687.70	0.03726	472172.20	3659687.70	0.04104
472202.20	3659687.70	0.04558	472232.20	3659687.70	0.05113
472262.20	3659687.70	0.05809	472292.20	3659687.70	0.06709
472322.20	3659687.70	0.07923	472352.20	3659687.70	0.09676
472382.20	3659687.70	0.12519	472412.20	3659687.70	0.14296
472442.20	3659687.70	0.12495	472472.20	3659687.70	0.15198
472502.20	3659687.70	0.11032	472532.20	3659687.70	0.08693
472562.20	3659687.70	0.07150	472592.20	3659687.70	0.06044

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,

E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472622.20	3659687.70	0.05210	472652.20	3659687.70	0.04558
472682.20	3659687.70	0.04034	472712.20	3659687.70	0.03606
472742.20	3659687.70	0.03250	472772.20	3659687.70	0.02950
472802.20	3659687.70	0.02694	472832.20	3659687.70	0.02474
472862.20	3659687.70	0.02282	472892.20	3659687.70	0.02114
471692.20	3659718.00	0.01450	471722.20	3659718.00	0.01523
471752.20	3659718.00	0.01602	471782.20	3659718.00	0.01687
471812.20	3659718.00	0.01781	471842.20	3659718.00	0.01882
471872.20	3659718.00	0.01994	471902.20	3659718.00	0.02118
471932.20	3659718.00	0.02254	471962.20	3659718.00	0.02407
471992.20	3659718.00	0.02578	472022.20	3659718.00	0.02770
472052.20	3659718.00	0.02989	472082.20	3659718.00	0.03240
472112.20	3659718.00	0.03530	472142.20	3659718.00	0.03868
472172.20	3659718.00	0.04270	472202.20	3659718.00	0.04753
472232.20	3659718.00	0.05347	472262.20	3659718.00	0.06095
472292.20	3659718.00	0.07069	472322.20	3659718.00	0.08400
472352.20	3659718.00	0.10361	472382.20	3659718.00	0.13695
472412.20	3659718.00	0.15525	472442.20	3659718.00	0.12706
472472.20	3659718.00	0.13947	472502.20	3659718.00	0.10439
472532.20	3659718.00	0.08356	472562.20	3659718.00	0.06945
472592.20	3659718.00	0.05915	472622.20	3659718.00	0.05128
472652.20	3659718.00	0.04505	472682.20	3659718.00	0.04002
472712.20	3659718.00	0.03587	472742.20	3659718.00	0.03240
472772.20	3659718.00	0.02945	472802.20	3659718.00	0.02693
472832.20	3659718.00	0.02475	472862.20	3659718.00	0.02285
472892.20	3659718.00	0.02119	471692.20	3659748.30	0.01475
471722.20	3659748.30	0.01550	471752.20	3659748.30	0.01632
471782.20	3659748.30	0.01720	471812.20	3659748.30	0.01817
471842.20	3659748.30	0.01923	471872.20	3659748.30	0.02040
471902.20	3659748.30	0.02169	471932.20	3659748.30	0.02312
471962.20	3659748.30	0.02471	471992.20	3659748.30	0.02650
472022.20	3659748.30	0.02853	472052.20	3659748.30	0.03083
472082.20	3659748.30	0.03347	472112.20	3659748.30	0.03652
472142.20	3659748.30	0.04010	472172.20	3659748.30	0.04436
472202.20	3659748.30	0.04950	472232.20	3659748.30	0.05584
472262.20	3659748.30	0.06387	472292.20	3659748.30	0.07442
472322.20	3659748.30	0.08904	472352.20	3659748.30	0.11114
472382.20	3659748.30	0.15107	472412.20	3659748.30	0.12606
472442.20	3659748.30	0.15019	472472.20	3659748.30	0.12924
472502.20	3659748.30	0.09910	472532.20	3659748.30	0.08041

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472562.20	3659748.30	0.06743	472592.20	3659748.30	0.05782
472622.20	3659748.30	0.05038	472652.20	3659748.30	0.04445
472682.20	3659748.30	0.03961	472712.20	3659748.30	0.03559
472742.20	3659748.30	0.03221	472772.20	3659748.30	0.02934
472802.20	3659748.30	0.02686	472832.20	3659748.30	0.02472
472862.20	3659748.30	0.02284	472892.20	3659748.30	0.02118
471692.20	3659778.60	0.01498	471722.20	3659778.60	0.01576
471752.20	3659778.60	0.01661	471782.20	3659778.60	0.01753
471812.20	3659778.60	0.01853	471842.20	3659778.60	0.01964
471872.20	3659778.60	0.02085	471902.20	3659778.60	0.02219
471932.20	3659778.60	0.02369	471962.20	3659778.60	0.02535
471992.20	3659778.60	0.02723	472022.20	3659778.60	0.02934
472052.20	3659778.60	0.03175	472082.20	3659778.60	0.03453
472112.20	3659778.60	0.03774	472142.20	3659778.60	0.04152
472172.20	3659778.60	0.04603	472202.20	3659778.60	0.05149
472232.20	3659778.60	0.05825	472262.20	3659778.60	0.06688
472292.20	3659778.60	0.07832	472322.20	3659778.60	0.09445
472352.20	3659778.60	0.11963	472382.20	3659778.60	0.16918
472412.20	3659778.60	0.12691	472442.20	3659778.60	0.17044
472472.20	3659778.60	0.12060	472502.20	3659778.60	0.09432
472532.20	3659778.60	0.07743	472562.20	3659778.60	0.06546
472592.20	3659778.60	0.05646	472622.20	3659778.60	0.04943
472652.20	3659778.60	0.04377	472682.20	3659778.60	0.03913
472712.20	3659778.60	0.03525	472742.20	3659778.60	0.03197
472772.20	3659778.60	0.02916	472802.20	3659778.60	0.02674
472832.20	3659778.60	0.02463	472862.20	3659778.60	0.02277
472892.20	3659778.60	0.02114	471692.20	3659808.90	0.01521

471722.20	3659808.90	0.01601	471752.20	3659808.90	0.01689
471782.20	3659808.90	0.01784	471812.20	3659808.90	0.01889
471842.20	3659808.90	0.02003	471872.20	3659808.90	0.02129
471902.20	3659808.90	0.02269	471932.20	3659808.90	0.02424
471962.20	3659808.90	0.02598	471992.20	3659808.90	0.02794
472022.20	3659808.90	0.03015	472052.20	3659808.90	0.03267
472082.20	3659808.90	0.03558	472112.20	3659808.90	0.03896
472142.20	3659808.90	0.04295	472172.20	3659808.90	0.04771
472202.20	3659808.90	0.05350	472232.20	3659808.90	0.06072
472262.20	3659808.90	0.06999	472292.20	3659808.90	0.08244
472322.20	3659808.90	0.10036	472352.20	3659808.90	0.12943
472382.20	3659808.90	0.14763	472412.20	3659808.90	0.12831
472442.20	3659808.90	0.15404	472472.20	3659808.90	0.11312

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472502.20	3659808.90	0.08996	472532.20	3659808.90	0.07461
472562.20	3659808.90	0.06353	472592.20	3659808.90	0.05510
472622.20	3659808.90	0.04844	472652.20	3659808.90	0.04304
472682.20	3659808.90	0.03859	472712.20	3659808.90	0.03484
472742.20	3659808.90	0.03166	472772.20	3659808.90	0.02893
472802.20	3659808.90	0.02656	472832.20	3659808.90	0.02449
472862.20	3659808.90	0.02267	472892.20	3659808.90	0.02106
471692.20	3659839.20	0.01542	471722.20	3659839.20	0.01626
471752.20	3659839.20	0.01716	471782.20	3659839.20	0.01815
471812.20	3659839.20	0.01923	471842.20	3659839.20	0.02042
471872.20	3659839.20	0.02173	471902.20	3659839.20	0.02318
471932.20	3659839.20	0.02479	471962.20	3659839.20	0.02660
471992.20	3659839.20	0.02864	472022.20	3659839.20	0.03094
472052.20	3659839.20	0.03359	472082.20	3659839.20	0.03663
472112.20	3659839.20	0.04018	472142.20	3659839.20	0.04438
472172.20	3659839.20	0.04941	472202.20	3659839.20	0.05555
472232.20	3659839.20	0.06325	472262.20	3659839.20	0.07324
472292.20	3659839.20	0.08685	472322.20	3659839.20	0.10689
472352.20	3659839.20	0.14109	472382.20	3659839.20	0.15951
472412.20	3659839.20	0.12943	472442.20	3659839.20	0.14099
472472.20	3659839.20	0.10654	472502.20	3659839.20	0.08596
472532.20	3659839.20	0.07194	472562.20	3659839.20	0.06165
472592.20	3659839.20	0.05373	472622.20	3659839.20	0.04742
472652.20	3659839.20	0.04228	472682.20	3659839.20	0.03800
472712.20	3659839.20	0.03439	472742.20	3659839.20	0.03131
472772.20	3659839.20	0.02865	472802.20	3659839.20	0.02634
472832.20	3659839.20	0.02432	472862.20	3659839.20	0.02253
472892.20	3659839.20	0.02094	471692.20	3659869.50	0.01563
471722.20	3659869.50	0.01649	471752.20	3659869.50	0.01742
471782.20	3659869.50	0.01845	471812.20	3659869.50	0.01956
471842.20	3659869.50	0.02079	471872.20	3659869.50	0.02215
471902.20	3659869.50	0.02365	471932.20	3659869.50	0.02533
471962.20	3659869.50	0.02720	471992.20	3659869.50	0.02932
472022.20	3659869.50	0.03173	472052.20	3659869.50	0.03449
472082.20	3659869.50	0.03768	472112.20	3659869.50	0.04140
472142.20	3659869.50	0.04582	472172.20	3659869.50	0.05113
472202.20	3659869.50	0.05765	472232.20	3659869.50	0.06588
472262.20	3659869.50	0.07667	472292.20	3659869.50	0.09161
472322.20	3659869.50	0.11424	472352.20	3659869.50	0.15548
472382.20	3659869.50	0.12887	472412.20	3659869.50	0.15111

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472442.20	3659869.50	0.13027	472472.20	3659869.50	0.10071
472502.20	3659869.50	0.08226	472532.20	3659869.50	0.06940
472562.20	3659869.50	0.05982	472592.20	3659869.50	0.05237
472622.20	3659869.50	0.04639	472652.20	3659869.50	0.04148
472682.20	3659869.50	0.03737	472712.20	3659869.50	0.03390

472742.20	3659869.50	0.03092	472772.20	3659869.50	0.02834
472802.20	3659869.50	0.02608	472832.20	3659869.50	0.02410
472862.20	3659869.50	0.02235	472892.20	3659869.50	0.02080
471692.20	3659899.80	0.01583	471722.20	3659899.80	0.01671
471752.20	3659899.80	0.01767	471782.20	3659899.80	0.01873
471812.20	3659899.80	0.01988	471842.20	3659899.80	0.02115
471872.20	3659899.80	0.02255	471902.20	3659899.80	0.02411
471932.20	3659899.80	0.02585	471962.20	3659899.80	0.02780
471992.20	3659899.80	0.03000	472022.20	3659899.80	0.03251
472052.20	3659899.80	0.03538	472082.20	3659899.80	0.03872
472112.20	3659899.80	0.04263	472142.20	3659899.80	0.04727
472172.20	3659899.80	0.05287	472202.20	3659899.80	0.05980
472232.20	3659899.80	0.06861	472262.20	3659899.80	0.08031
472292.20	3659899.80	0.09681	472322.20	3659899.80	0.12266
472352.20	3659899.80	0.17436	472382.20	3659899.80	0.12893
472412.20	3659899.80	0.16932	472442.20	3659899.80	0.12120
472472.20	3659899.80	0.09548	472502.20	3659899.80	0.07884
472532.20	3659899.80	0.06699	472562.20	3659899.80	0.05805
472592.20	3659899.80	0.05102	472622.20	3659899.80	0.04535
472652.20	3659899.80	0.04066	472682.20	3659899.80	0.03672
472712.20	3659899.80	0.03337	472742.20	3659899.80	0.03048
472772.20	3659899.80	0.02798	472802.20	3659899.80	0.02579
472832.20	3659899.80	0.02386	472862.20	3659899.80	0.02214
472892.20	3659899.80	0.02062	471692.20	3659930.10	0.01601
471722.20	3659930.10	0.01692	471752.20	3659930.10	0.01791
471782.20	3659930.10	0.01900	471812.20	3659930.10	0.02019
471842.20	3659930.10	0.02150	471872.20	3659930.10	0.02294
471902.20	3659930.10	0.02455	471932.20	3659930.10	0.02635
471962.20	3659930.10	0.02837	471992.20	3659930.10	0.03066
472022.20	3659930.10	0.03327	472052.20	3659930.10	0.03627
472082.20	3659930.10	0.03976	472112.20	3659930.10	0.04385
472142.20	3659930.10	0.04873	472172.20	3659930.10	0.05465
472202.20	3659930.10	0.06202	472232.20	3659930.10	0.07148
472262.20	3659930.10	0.08420	472292.20	3659930.10	0.10254
472322.20	3659930.10	0.13250	472352.20	3659930.10	0.15113

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472382.20	3659930.10	0.12950	472412.20	3659930.10	0.15298
472442.20	3659930.10	0.11340	472472.20	3659930.10	0.09075
472502.20	3659930.10	0.07564	472532.20	3659930.10	0.06469
472562.20	3659930.10	0.05632	472592.20	3659930.10	0.04969
472622.20	3659930.10	0.04429	472652.20	3659930.10	0.03981
472682.20	3659930.10	0.03604	472712.20	3659930.10	0.03281
472742.20	3659930.10	0.03002	472772.20	3659930.10	0.02759
472802.20	3659930.10	0.02546	472832.20	3659930.10	0.02358
472862.20	3659930.10	0.02190	472892.20	3659930.10	0.02041
471692.20	3659960.40	0.01618	471722.20	3659960.40	0.01711
471752.20	3659960.40	0.01813	471782.20	3659960.40	0.01925
471812.20	3659960.40	0.02047	471842.20	3659960.40	0.02182
471872.20	3659960.40	0.02332	471902.20	3659960.40	0.02498
471932.20	3659960.40	0.02684	471962.20	3659960.40	0.02893
471992.20	3659960.40	0.03131	472022.20	3659960.40	0.03402
472052.20	3659960.40	0.03715	472082.20	3659960.40	0.04079
472112.20	3659960.40	0.04508	472142.20	3659960.40	0.05021
472172.20	3659960.40	0.05648	472202.20	3659960.40	0.06432
472232.20	3659960.40	0.07451	472262.20	3659960.40	0.08840
472292.20	3659960.40	0.10894	472322.20	3659960.40	0.14430
472352.20	3659960.40	0.16264	472382.20	3659960.40	0.12975
472412.20	3659960.40	0.14002	472442.20	3659960.40	0.10659
472472.20	3659960.40	0.08644	472502.20	3659960.40	0.07264
472532.20	3659960.40	0.06248	472562.20	3659960.40	0.05463
472592.20	3659960.40	0.04837	472622.20	3659960.40	0.04324
472652.20	3659960.40	0.03896	472682.20	3659960.40	0.03533
472712.20	3659960.40	0.03222	472742.20	3659960.40	0.02953
472772.20	3659960.40	0.02718	472802.20	3659960.40	0.02511
472832.20	3659960.40	0.02327	472862.20	3659960.40	0.02164
472892.20	3659960.40	0.02017	471692.20	3659990.70	0.01634
471722.20	3659990.70	0.01729	471752.20	3659990.70	0.01833
471782.20	3659990.70	0.01948	471812.20	3659990.70	0.02074
471842.20	3659990.70	0.02213	471872.20	3659990.70	0.02367
471902.20	3659990.70	0.02539	471932.20	3659990.70	0.02731
471962.20	3659990.70	0.02948	471992.20	3659990.70	0.03194
472022.20	3659990.70	0.03476	472052.20	3659990.70	0.03802
472082.20	3659990.70	0.04182	472112.20	3659990.70	0.04631
472142.20	3659990.70	0.05172	472172.20	3659990.70	0.05835
472202.20	3659990.70	0.06673	472232.20	3659990.70	0.07772
472262.20	3659990.70	0.09298	472292.20	3659990.70	0.11621

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472322.20	3659990.70	0.15910	472352.20	3659990.70	0.13015
472382.20	3659990.70	0.18717	472412.20	3659990.70	0.12931
472442.20	3659990.70	0.10055	472472.20	3659990.70	0.08248
472502.20	3659990.70	0.06982	472532.20	3659990.70	0.06037
472562.20	3659990.70	0.05299	472592.20	3659990.70	0.04706
472622.20	3659990.70	0.04218	472652.20	3659990.70	0.03809
472682.20	3659990.70	0.03461	472712.20	3659990.70	0.03161
472742.20	3659990.70	0.02901	472772.20	3659990.70	0.02673
472802.20	3659990.70	0.02472	472832.20	3659990.70	0.02294
472862.20	3659990.70	0.02134	472892.20	3659990.70	0.01991
471692.20	3660021.00	0.01647	471722.20	3660021.00	0.01745
471752.20	3660021.00	0.01852	471782.20	3660021.00	0.01969
471812.20	3660021.00	0.02099	471842.20	3660021.00	0.02242
471872.20	3660021.00	0.02400	471902.20	3660021.00	0.02577
471932.20	3660021.00	0.02776	471962.20	3660021.00	0.03001
471992.20	3660021.00	0.03256	472022.20	3660021.00	0.03549
472052.20	3660021.00	0.03887	472082.20	3660021.00	0.04284
472112.20	3660021.00	0.04755	472142.20	3660021.00	0.05325
472172.20	3660021.00	0.06028	472202.20	3660021.00	0.06924
472232.20	3660021.00	0.08115	472262.20	3660021.00	0.09801
472292.20	3660021.00	0.12457	472322.20	3660021.00	0.14348
472352.20	3660021.00	0.12946	472382.20	3660021.00	0.16653
472412.20	3660021.00	0.12022	472442.20	3660021.00	0.09513
472472.20	3660021.00	0.07881	472502.20	3660021.00	0.06715
472532.20	3660021.00	0.05833	472562.20	3660021.00	0.05139
472592.20	3660021.00	0.04577	472622.20	3660021.00	0.04112
472652.20	3660021.00	0.03720	472682.20	3660021.00	0.03386
472712.20	3660021.00	0.03098	472742.20	3660021.00	0.02847
472772.20	3660021.00	0.02626	472802.20	3660021.00	0.02431
472832.20	3660021.00	0.02257	472862.20	3660021.00	0.02102
472892.20	3660021.00	0.01962	471692.20	3660051.30	0.01659
471722.20	3660051.30	0.01759	471752.20	3660051.30	0.01868
471782.20	3660051.30	0.01988	471812.20	3660051.30	0.02121
471842.20	3660051.30	0.02268	471872.20	3660051.30	0.02431
471902.20	3660051.30	0.02614	471932.20	3660051.30	0.02819
471962.20	3660051.30	0.03051	471992.20	3660051.30	0.03315
472022.20	3660051.30	0.03619	472052.20	3660051.30	0.03972
472082.20	3660051.30	0.04386	472112.20	3660051.30	0.04881
472142.20	3660051.30	0.05481	472172.20	3660051.30	0.06228
472202.20	3660051.30	0.07189	472232.20	3660051.30	0.08485

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472262.20	3660051.30	0.10359	472292.20	3660051.30	0.13443
472322.20	3660051.30	0.15350	472352.20	3660051.30	0.12929
472382.20	3660051.30	0.15068	472412.20	3660051.30	0.11236
472442.20	3660051.30	0.09022	472472.20	3660051.30	0.07539
472502.20	3660051.30	0.06461	472532.20	3660051.30	0.05636
472562.20	3660051.30	0.04982	472592.20	3660051.30	0.04449
472622.20	3660051.30	0.04006	472652.20	3660051.30	0.03631
472682.20	3660051.30	0.03310	472712.20	3660051.30	0.03033
472742.20	3660051.30	0.02790	472772.20	3660051.30	0.02577
472802.20	3660051.30	0.02387	472832.20	3660051.30	0.02219
472862.20	3660051.30	0.02067	472892.20	3660051.30	0.01931
471692.20	3660081.60	0.01669	471722.20	3660081.60	0.01771
471752.20	3660081.60	0.01882	471782.20	3660081.60	0.02005
471812.20	3660081.60	0.02141	471842.20	3660081.60	0.02292
471872.20	3660081.60	0.02460	471902.20	3660081.60	0.02648
471932.20	3660081.60	0.02859	471962.20	3660081.60	0.03099
471992.20	3660081.60	0.03373	472022.20	3660081.60	0.03688
472052.20	3660081.60	0.04055	472082.20	3660081.60	0.04488

472112.20	3660081.60	0.05007	472142.20	3660081.60	0.05640
472172.20	3660081.60	0.06435	472202.20	3660081.60	0.07469
472232.20	3660081.60	0.08884	472262.20	3660081.60	0.10985
472292.20	3660081.60	0.14640	472322.20	3660081.60	0.16434
472352.20	3660081.60	0.15925	472382.20	3660081.60	0.13792
472412.20	3660081.60	0.10545	472442.20	3660081.60	0.08573
472472.20	3660081.60	0.07218	472502.20	3660081.60	0.06218
472532.20	3660081.60	0.05445	472562.20	3660081.60	0.04828
472592.20	3660081.60	0.04322	472622.20	3660081.60	0.03899
472652.20	3660081.60	0.03541	472682.20	3660081.60	0.03233
472712.20	3660081.60	0.02966	472742.20	3660081.60	0.02731
472772.20	3660081.60	0.02525	472802.20	3660081.60	0.02341
472832.20	3660081.60	0.02177	472862.20	3660081.60	0.02030
472892.20	3660081.60	0.01897	471692.20	3660111.90	0.01677
471722.20	3660111.90	0.01780	471752.20	3660111.90	0.01894
471782.20	3660111.90	0.02019	471812.20	3660111.90	0.02158
471842.20	3660111.90	0.02313	471872.20	3660111.90	0.02486
471902.20	3660111.90	0.02679	471932.20	3660111.90	0.02897
471962.20	3660111.90	0.03145	471992.20	3660111.90	0.03428
472022.20	3660111.90	0.03755	472052.20	3660111.90	0.04137
472082.20	3660111.90	0.04589	472112.20	3660111.90	0.05134
472142.20	3660111.90	0.05804	472172.20	3660111.90	0.06651

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472202.20	3660111.90	0.07766	472232.20	3660111.90	0.09319
472262.20	3660111.90	0.11694	472292.20	3660111.90	0.16144
472322.20	3660111.90	0.13012	472352.20	3660111.90	0.18279
472382.20	3660111.90	0.12732	472412.20	3660111.90	0.09930
472442.20	3660111.90	0.08159	472472.20	3660111.90	0.06915
472502.20	3660111.90	0.05985	472532.20	3660111.90	0.05259
472562.20	3660111.90	0.04676	472592.20	3660111.90	0.04195
472622.20	3660111.90	0.03792	472652.20	3660111.90	0.03449
472682.20	3660111.90	0.03153	472712.20	3660111.90	0.02896
472742.20	3660111.90	0.02670	472772.20	3660111.90	0.02470
472802.20	3660111.90	0.02292	472832.20	3660111.90	0.02133
472862.20	3660111.90	0.01990	472892.20	3660111.90	0.01861
471692.20	3660142.20	0.01683	471722.20	3660142.20	0.01788
471752.20	3660142.20	0.01903	471782.20	3660142.20	0.02031
471812.20	3660142.20	0.02173	471842.20	3660142.20	0.02331
471872.20	3660142.20	0.02508	471902.20	3660142.20	0.02707
471932.20	3660142.20	0.02931	471962.20	3660142.20	0.03187
471992.20	3660142.20	0.03480	472022.20	3660142.20	0.03819
472052.20	3660142.20	0.04217	472082.20	3660142.20	0.04690
472112.20	3660142.20	0.05262	472142.20	3660142.20	0.05972
472172.20	3660142.20	0.06878	472202.20	3660142.20	0.08084
472232.20	3660142.20	0.09797	472262.20	3660142.20	0.12511
472292.20	3660142.20	0.14471	472322.20	3660142.20	0.12867
472352.20	3660142.20	0.16309	472382.20	3660142.20	0.11830
472412.20	3660142.20	0.09377	472442.20	3660142.20	0.07774
472472.20	3660142.20	0.06628	472502.20	3660142.20	0.05760
472532.20	3660142.20	0.05078	472562.20	3660142.20	0.04526
472592.20	3660142.20	0.04069	472622.20	3660142.20	0.03685
472652.20	3660142.20	0.03356	472682.20	3660142.20	0.03072
472712.20	3660142.20	0.02824	472742.20	3660142.20	0.02606
472772.20	3660142.20	0.02413	472802.20	3660142.20	0.02241
472832.20	3660142.20	0.02087	472862.20	3660142.20	0.01948
472892.20	3660142.20	0.01823	471692.20	3660172.50	0.01686
471722.20	3660172.50	0.01792	471752.20	3660172.50	0.01910
471782.20	3660172.50	0.02040	471812.20	3660172.50	0.02184
471842.20	3660172.50	0.02346	471872.20	3660172.50	0.02527
471902.20	3660172.50	0.02731	471932.20	3660172.50	0.02962
471962.20	3660172.50	0.03226	471992.20	3660172.50	0.03529
472022.20	3660172.50	0.03880	472052.20	3660172.50	0.04295
472082.20	3660172.50	0.04790	472112.20	3660172.50	0.05392

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472142.20	3660172.50	0.06145	472172.20	3660172.50	0.07115
472202.20	3660172.50	0.08425	472232.20	3660172.50	0.10327
472262.20	3660172.50	0.13478	472292.20	3660172.50	0.12261
472322.20	3660172.50	0.12790	472352.20	3660172.50	0.14779
472382.20	3660172.50	0.11043	472412.20	3660172.50	0.08871
472442.20	3660172.50	0.07412	472472.20	3660172.50	0.06352
472502.20	3660172.50	0.05542	472532.20	3660172.50	0.04900
472562.20	3660172.50	0.04377	472592.20	3660172.50	0.03943
472622.20	3660172.50	0.03576	472652.20	3660172.50	0.03261
472682.20	3660172.50	0.02989	472712.20	3660172.50	0.02750
472742.20	3660172.50	0.02540	472772.20	3660172.50	0.02354
472802.20	3660172.50	0.02187	472832.20	3660172.50	0.02038
472862.20	3660172.50	0.01904	472892.20	3660172.50	0.01782
471692.20	3660202.80	0.01686	471722.20	3660202.80	0.01794
471752.20	3660202.80	0.01913	471782.20	3660202.80	0.02045
471812.20	3660202.80	0.02192	471842.20	3660202.80	0.02357
471872.20	3660202.80	0.02542	471902.20	3660202.80	0.02751
471932.20	3660202.80	0.02989	471962.20	3660202.80	0.03260
471992.20	3660202.80	0.03573	472022.20	3660202.80	0.03939
472052.20	3660202.80	0.04370	472082.20	3660202.80	0.04888
472112.20	3660202.80	0.05524	472142.20	3660202.80	0.06323
472172.20	3660202.80	0.07365	472202.20	3660202.80	0.08794
472232.20	3660202.80	0.10923	472262.20	3660202.80	0.14651
472292.20	3660202.80	0.16405	472322.20	3660202.80	0.15643
472352.20	3660202.80	0.13526	472382.20	3660202.80	0.10343
472412.20	3660202.80	0.08403	472442.20	3660202.80	0.07070
472472.20	3660202.80	0.06087	472502.20	3660202.80	0.05329
472532.20	3660202.80	0.04724	472562.20	3660202.80	0.04229
472592.20	3660202.80	0.03816	472622.20	3660202.80	0.03465
472652.20	3660202.80	0.03164	472682.20	3660202.80	0.02903
472712.20	3660202.80	0.02674	472742.20	3660202.80	0.02472
472772.20	3660202.80	0.02292	472802.20	3660202.80	0.02131
472832.20	3660202.80	0.01987	472862.20	3660202.80	0.01857
472892.20	3660202.80	0.01740	471692.20	3660233.10	0.01682
471722.20	3660233.10	0.01792	471752.20	3660233.10	0.01913
471782.20	3660233.10	0.02047	471812.20	3660233.10	0.02196
471842.20	3660233.10	0.02364	471872.20	3660233.10	0.02553
471902.20	3660233.10	0.02767	471932.20	3660233.10	0.03010
471962.20	3660233.10	0.03290	471992.20	3660233.10	0.03614
472022.20	3660233.10	0.03993	472052.20	3660233.10	0.04442

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472082.20	3660233.10	0.04986	472112.20	3660233.10	0.05656
472142.20	3660233.10	0.06507	472172.20	3660233.10	0.07630
472202.20	3660233.10	0.09197	472232.20	3660233.10	0.11604
472262.20	3660233.10	0.16150	472292.20	3660233.10	0.12868
472322.20	3660233.10	0.17880	472352.20	3660233.10	0.12466
472382.20	3660233.10	0.09710	472412.20	3660233.10	0.07966
472442.20	3660233.10	0.06743	472472.20	3660233.10	0.05830
472502.20	3660233.10	0.05120	472532.20	3660233.10	0.04549
472562.20	3660233.10	0.04080	472592.20	3660233.10	0.03687
472622.20	3660233.10	0.03353	472652.20	3660233.10	0.03065
472682.20	3660233.10	0.02815	472712.20	3660233.10	0.02595
472742.20	3660233.10	0.02400	472772.20	3660233.10	0.02227
472802.20	3660233.10	0.02072	472832.20	3660233.10	0.01934
472862.20	3660233.10	0.01808	472892.20	3660233.10	0.01695
471692.20	3660263.40	0.01675	471722.20	3660263.40	0.01785
471752.20	3660263.40	0.01908	471782.20	3660263.40	0.02044
471812.20	3660263.40	0.02196	471842.20	3660263.40	0.02366
471872.20	3660263.40	0.02558	471902.20	3660263.40	0.02777
471932.20	3660263.40	0.03026	471962.20	3660263.40	0.03314
471992.20	3660263.40	0.03649	472022.20	3660263.40	0.04042
472052.20	3660263.40	0.04511	472082.20	3660263.40	0.05081
472112.20	3660263.40	0.05790	472142.20	3660263.40	0.06698
472172.20	3660263.40	0.07912	472202.20	3660263.40	0.09640
472232.20	3660263.40	0.12393	472262.20	3660263.40	0.14393
472292.20	3660263.40	0.12654	472322.20	3660263.40	0.15938
472352.20	3660263.40	0.11545	472382.20	3660263.40	0.09130
472412.20	3660263.40	0.07553	472442.20	3660263.40	0.06428
472472.20	3660263.40	0.05579	472502.20	3660263.40	0.04913
472532.20	3660263.40	0.04375	472562.20	3660263.40	0.03931
472592.20	3660263.40	0.03557	472622.20	3660263.40	0.03238
472652.20	3660263.40	0.02963	472682.20	3660263.40	0.02723

472712.20	3660263.40	0.02512	472742.20	3660263.40	0.02326
472772.20	3660263.40	0.02160	472802.20	3660263.40	0.02011
472832.20	3660263.40	0.01878	472862.20	3660263.40	0.01757
472892.20	3660263.40	0.01648	471692.20	3660293.70	0.01663
471722.20	3660293.70	0.01775	471752.20	3660293.70	0.01899
471782.20	3660293.70	0.02036	471812.20	3660293.70	0.02190
471842.20	3660293.70	0.02363	471872.20	3660293.70	0.02558
471902.20	3660293.70	0.02781	471932.20	3660293.70	0.03036
471962.20	3660293.70	0.03332	471992.20	3660293.70	0.03677

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472022.20	3660293.70	0.04085	472052.20	3660293.70	0.04575
472082.20	3660293.70	0.05173	472112.20	3660293.70	0.05924
472142.20	3660293.70	0.06895	472172.20	3660293.70	0.08213
472202.20	3660293.70	0.10133	472232.20	3660293.70	0.13331
472262.20	3660293.70	0.12055	472292.20	3660293.70	0.12507
472322.20	3660293.70	0.14395	472352.20	3660293.70	0.10728
472382.20	3660293.70	0.08592	472412.20	3660293.70	0.07160
472442.20	3660293.70	0.06122	472472.20	3660293.70	0.05331
472502.20	3660293.70	0.04707	472532.20	3660293.70	0.04199
472562.20	3660293.70	0.03779	472592.20	3660293.70	0.03424
472622.20	3660293.70	0.03120	472652.20	3660293.70	0.02858
472682.20	3660293.70	0.02629	472712.20	3660293.70	0.02428
472742.20	3660293.70	0.02249	472772.20	3660293.70	0.02090
472802.20	3660293.70	0.01948	472832.20	3660293.70	0.01820
472862.20	3660293.70	0.01705	472892.20	3660293.70	0.01601
471692.20	3660324.00	0.01645	471722.20	3660324.00	0.01758
471752.20	3660324.00	0.01883	471782.20	3660324.00	0.02022
471812.20	3660324.00	0.02178	471842.20	3660324.00	0.02353
471872.20	3660324.00	0.02551	471902.20	3660324.00	0.02778
471932.20	3660324.00	0.03038	471962.20	3660324.00	0.03341
471992.20	3660324.00	0.03698	472022.20	3660324.00	0.04121
472052.20	3660324.00	0.04632	472082.20	3660324.00	0.05261
472112.20	3660324.00	0.06057	472142.20	3660324.00	0.07100
472172.20	3660324.00	0.08537	472202.20	3660324.00	0.10687
472232.20	3660324.00	0.14485	472262.20	3660324.00	0.13136
472292.20	3660324.00	0.15234	472322.20	3660324.00	0.13115
472352.20	3660324.00	0.09988	472382.20	3660324.00	0.08084
472412.20	3660324.00	0.06780	472442.20	3660324.00	0.05822
472472.20	3660324.00	0.05085	472502.20	3660324.00	0.04499
472532.20	3660324.00	0.04021	472562.20	3660324.00	0.03623
472592.20	3660324.00	0.03287	472622.20	3660324.00	0.02999
472652.20	3660324.00	0.02750	472682.20	3660324.00	0.02532
472712.20	3660324.00	0.02340	472742.20	3660324.00	0.02170
472772.20	3660324.00	0.02019	472802.20	3660324.00	0.01883
472832.20	3660324.00	0.01762	472862.20	3660324.00	0.01652
472892.20	3660324.00	0.01552	471692.20	3660354.30	0.01622
471722.20	3660354.30	0.01735	471752.20	3660354.30	0.01861
471782.20	3660354.30	0.02001	471812.20	3660354.30	0.02159
471842.20	3660354.30	0.02335	471872.20	3660354.30	0.02536
471902.20	3660354.30	0.02766	471932.20	3660354.30	0.03031

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
471962.20	3660354.30	0.03342	471992.20	3660354.30	0.03708
472022.20	3660354.30	0.04147	472052.20	3660354.30	0.04681
472082.20	3660354.30	0.05343	472112.20	3660354.30	0.06189
472142.20	3660354.30	0.07312	472172.20	3660354.30	0.08889
472202.20	3660354.30	0.11322	472232.20	3660354.30	0.15962
472262.20	3660354.30	0.12531	472292.20	3660354.30	0.17296
472322.20	3660354.30	0.12007	472352.20	3660354.30	0.09305
472382.20	3660354.30	0.07599	472412.20	3660354.30	0.06408
472442.20	3660354.30	0.05524	472472.20	3660354.30	0.04838

472502.20	3660354.30	0.04289	472532.20	3660354.30	0.03840
472562.20	3660354.30	0.03464	472592.20	3660354.30	0.03147
472622.20	3660354.30	0.02874	472652.20	3660354.30	0.02638
472682.20	3660354.30	0.02432	472712.20	3660354.30	0.02250
472742.20	3660354.30	0.02089	472772.20	3660354.30	0.01946
472802.20	3660354.30	0.01817	472832.20	3660354.30	0.01702
472862.20	3660354.30	0.01597	472892.20	3660354.30	0.01503
471692.20	3660384.60	0.01592	471722.20	3660384.60	0.01705
471752.20	3660384.60	0.01831	471782.20	3660384.60	0.01972
471812.20	3660384.60	0.02130	471842.20	3660384.60	0.02308
471872.20	3660384.60	0.02511	471902.20	3660384.60	0.02744
471932.20	3660384.60	0.03014	471962.20	3660384.60	0.03331
471992.20	3660384.60	0.03707	472022.20	3660384.60	0.04161
472052.20	3660384.60	0.04718	472082.20	3660384.60	0.05416
472112.20	3660384.60	0.06317	472142.20	3660384.60	0.07531
472172.20	3660384.60	0.09274	472202.20	3660384.60	0.12071
472232.20	3660384.60	0.14116	472262.20	3660384.60	0.12199
472292.20	3660384.60	0.15302	472322.20	3660384.60	0.11016
472352.20	3660384.60	0.08660	472382.20	3660384.60	0.07128
472412.20	3660384.60	0.06041	472442.20	3660384.60	0.05225
472472.20	3660384.60	0.04587	472502.20	3660384.60	0.04074
472532.20	3660384.60	0.03653	472562.20	3660384.60	0.03301
472592.20	3660384.60	0.03002	472622.20	3660384.60	0.02746
472652.20	3660384.60	0.02524	472682.20	3660384.60	0.02329
472712.20	3660384.60	0.02158	472742.20	3660384.60	0.02007
472772.20	3660384.60	0.01872	472802.20	3660384.60	0.01751
472832.20	3660384.60	0.01642	472862.20	3660384.60	0.01543
472892.20	3660384.60	0.01453	471692.20	3660414.90	0.01557
471722.20	3660414.90	0.01668	471752.20	3660414.90	0.01792
471782.20	3660414.90	0.01932	471812.20	3660414.90	0.02090
471842.20	3660414.90	0.02269	471872.20	3660414.90	0.02474

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
471902.20	3660414.90	0.02709	471932.20	3660414.90	0.02983
471962.20	3660414.90	0.03305	471992.20	3660414.90	0.03690
472022.20	3660414.90	0.04159	472052.20	3660414.90	0.04739
472082.20	3660414.90	0.05475	472112.20	3660414.90	0.06437
472142.20	3660414.90	0.07755	472172.20	3660414.90	0.09697
472202.20	3660414.90	0.12974	472232.20	3660414.90	0.11604
472262.20	3660414.90	0.11915	472292.20	3660414.90	0.13658
472322.20	3660414.90	0.10108	472352.20	3660414.90	0.08042
472382.20	3660414.90	0.06665	472412.20	3660414.90	0.05673
472442.20	3660414.90	0.04921	472472.20	3660414.90	0.04330
472502.20	3660414.90	0.03853	472532.20	3660414.90	0.03461
472562.20	3660414.90	0.03133	472592.20	3660414.90	0.02854
472622.20	3660414.90	0.02615	472652.20	3660414.90	0.02407
472682.20	3660414.90	0.02226	472712.20	3660414.90	0.02066
472742.20	3660414.90	0.01924	472772.20	3660414.90	0.01798
472802.20	3660414.90	0.01684	472832.20	3660414.90	0.01582
472862.20	3660414.90	0.01489	472892.20	3660414.90	0.01404
471692.20	3660445.20	0.01516	471722.20	3660445.20	0.01624
471752.20	3660445.20	0.01746	471782.20	3660445.20	0.01883
471812.20	3660445.20	0.02039	471842.20	3660445.20	0.02216
471872.20	3660445.20	0.02421	471902.20	3660445.20	0.02657
471932.20	3660445.20	0.02934	471962.20	3660445.20	0.03261
471992.20	3660445.20	0.03654	472022.20	3660445.20	0.04136
472052.20	3660445.20	0.04739	472082.20	3660445.20	0.05513
472112.20	3660445.20	0.06542	472142.20	3660445.20	0.07980
472172.20	3660445.20	0.10165	472202.20	3660445.20	0.14104
472232.20	3660445.20	0.12584	472262.20	3660445.20	0.14337
472292.20	3660445.20	0.12253	472322.20	3660445.20	0.09257
472352.20	3660445.20	0.07439	472382.20	3660445.20	0.06200
472412.20	3660445.20	0.05298	472442.20	3660445.20	0.04609
472472.20	3660445.20	0.04065	472502.20	3660445.20	0.03626
472532.20	3660445.20	0.03264	472562.20	3660445.20	0.02961
472592.20	3660445.20	0.02704	472622.20	3660445.20	0.02483
472652.20	3660445.20	0.02291	472682.20	3660445.20	0.02123
472712.20	3660445.20	0.01974	472742.20	3660445.20	0.01842
472772.20	3660445.20	0.01724	472802.20	3660445.20	0.01618
472832.20	3660445.20	0.01522	472862.20	3660445.20	0.01435
472892.20	3660445.20	0.01356	471692.20	3660475.50	0.01472
471722.20	3660475.50	0.01576	471752.20	3660475.50	0.01692
471782.20	3660475.50	0.01825	471812.20	3660475.50	0.01976

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
471842.20	3660475.50	0.02149	471872.20	3660475.50	0.02350
471902.20	3660475.50	0.02585	471932.20	3660475.50	0.02861
471962.20	3660475.50	0.03192	471992.20	3660475.50	0.03591
472022.20	3660475.50	0.04084	472052.20	3660475.50	0.04707
472082.20	3660475.50	0.05521	472112.20	3660475.50	0.06622
472142.20	3660475.50	0.08199	472172.20	3660475.50	0.10684
472202.20	3660475.50	0.15583	472232.20	3660475.50	0.11703
472262.20	3660475.50	0.15962	472292.20	3660475.50	0.10990
472322.20	3660475.50	0.08435	472352.20	3660475.50	0.06833
472382.20	3660475.50	0.05725	472412.20	3660475.50	0.04911
472442.20	3660475.50	0.04286	472472.20	3660475.50	0.03793
472502.20	3660475.50	0.03394	472532.20	3660475.50	0.03065
472562.20	3660475.50	0.02789	472592.20	3660475.50	0.02554
472622.20	3660475.50	0.02352	472652.20	3660475.50	0.02175
472682.20	3660475.50	0.02021	472712.20	3660475.50	0.01884
472742.20	3660475.50	0.01762	472772.20	3660475.50	0.01652
472802.20	3660475.50	0.01553	472832.20	3660475.50	0.01464
472862.20	3660475.50	0.01382	472892.20	3660475.50	0.01308
471692.20	3660505.80	0.01426	471722.20	3660505.80	0.01524
471752.20	3660505.80	0.01635	471782.20	3660505.80	0.01760
471812.20	3660505.80	0.01904	471842.20	3660505.80	0.02069
471872.20	3660505.80	0.02262	471902.20	3660505.80	0.02489
471932.20	3660505.80	0.02760	471962.20	3660505.80	0.03088
471992.20	3660505.80	0.03489	472022.20	3660505.80	0.03990
472052.20	3660505.80	0.04631	472082.20	3660505.80	0.05482
472112.20	3660505.80	0.06661	472142.20	3660505.80	0.08401
472172.20	3660505.80	0.11277	472202.20	3660505.80	0.10049
472232.20	3660505.80	0.11045	472262.20	3660505.80	0.13774
472292.20	3660505.80	0.09787	472322.20	3660505.80	0.07608
472352.20	3660505.80	0.06210	472382.20	3660505.80	0.05233
472412.20	3660505.80	0.04511	472442.20	3660505.80	0.03957
472472.20	3660505.80	0.03518	472502.20	3660505.80	0.03162
472532.20	3660505.80	0.02867	472562.20	3660505.80	0.02618
472592.20	3660505.80	0.02406	472622.20	3660505.80	0.02223
472652.20	3660505.80	0.02063	472682.20	3660505.80	0.01921
472712.20	3660505.80	0.01796	472742.20	3660505.80	0.01683
472772.20	3660505.80	0.01582	472802.20	3660505.80	0.01490
472832.20	3660505.80	0.01407	472862.20	3660505.80	0.01331
472892.20	3660505.80	0.01261	471692.20	3660536.10	0.01378
471722.20	3660536.10	0.01470	471752.20	3660536.10	0.01574

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
471782.20	3660536.10	0.01692	471812.20	3660536.10	0.01826
471842.20	3660536.10	0.01981	471872.20	3660536.10	0.02162
471902.20	3660536.10	0.02375	471932.20	3660536.10	0.02632
471962.20	3660536.10	0.02945	471992.20	3660536.10	0.03335
472022.20	3660536.10	0.03832	472052.20	3660536.10	0.04482
472082.20	3660536.10	0.05363	472112.20	3660536.10	0.06621
472142.20	3660536.10	0.08561	472172.20	3660536.10	0.12012
472202.20	3660536.10	0.10379	472232.20	3660536.10	0.10242
472262.20	3660536.10	0.11757	472292.20	3660536.10	0.08572
472322.20	3660536.10	0.06750	472352.20	3660536.10	0.05563
472382.20	3660536.10	0.04728	472412.20	3660536.10	0.04107
472442.20	3660536.10	0.03628	472472.20	3660536.10	0.03246
472502.20	3660536.10	0.02934	472532.20	3660536.10	0.02674
472562.20	3660536.10	0.02453	472592.20	3660536.10	0.02264
472622.20	3660536.10	0.02099	472652.20	3660536.10	0.01954
472682.20	3660536.10	0.01825	472712.20	3660536.10	0.01711
472742.20	3660536.10	0.01607	472772.20	3660536.10	0.01514
472802.20	3660536.10	0.01429	472832.20	3660536.10	0.01352
472862.20	3660536.10	0.01281	472892.20	3660536.10	0.01216
471692.20	3660566.40	0.01329	471722.20	3660566.40	0.01416
471752.20	3660566.40	0.01513	471782.20	3660566.40	0.01622
471812.20	3660566.40	0.01746	471842.20	3660566.40	0.01889

471872.20	3660566.40	0.02055	471902.20	3660566.40	0.02250
471932.20	3660566.40	0.02484	471962.20	3660566.40	0.02771
471992.20	3660566.40	0.03131	472022.20	3660566.40	0.03596
472052.20	3660566.40	0.04220	472082.20	3660566.40	0.05098
472112.20	3660566.40	0.06411	472142.20	3660566.40	0.08570
472172.20	3660566.40	0.12922	472202.20	3660566.40	0.06905
472232.20	3660566.40	0.14978	472262.20	3660566.40	0.09766
472292.20	3660566.40	0.07314	472322.20	3660566.40	0.05867
472352.20	3660566.40	0.04910	472382.20	3660566.40	0.04228
472412.20	3660566.40	0.03713	472442.20	3660566.40	0.03311
472472.20	3660566.40	0.02986	472502.20	3660566.40	0.02717
472532.20	3660566.40	0.02490	472562.20	3660566.40	0.02296
472592.20	3660566.40	0.02128	472622.20	3660566.40	0.01980
472652.20	3660566.40	0.01850	472682.20	3660566.40	0.01733
472712.20	3660566.40	0.01629	472742.20	3660566.40	0.01534
472772.20	3660566.40	0.01449	472802.20	3660566.40	0.01370
472832.20	3660566.40	0.01299	472862.20	3660566.40	0.01233
472892.20	3660566.40	0.01172	471692.20	3660596.70	0.01281

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
471722.20	3660596.70	0.01361	471752.20	3660596.70	0.01451
471782.20	3660596.70	0.01552	471812.20	3660596.70	0.01666
471842.20	3660596.70	0.01796	471872.20	3660596.70	0.01946
471902.20	3660596.70	0.02122	471932.20	3660596.70	0.02331
471962.20	3660596.70	0.02584	471992.20	3660596.70	0.02899
472022.20	3660596.70	0.03303	472052.20	3660596.70	0.03846
472082.20	3660596.70	0.04623	472112.20	3660596.70	0.05845
472142.20	3660596.70	0.08082	472172.20	3660596.70	0.06224
472202.20	3660596.70	0.07616	472232.20	3660596.70	0.11161
472262.20	3660596.70	0.07763	472292.20	3660596.70	0.06061
472322.20	3660596.70	0.05013	472352.20	3660596.70	0.04292
472382.20	3660596.70	0.03759	472412.20	3660596.70	0.03346
472442.20	3660596.70	0.03015	472472.20	3660596.70	0.02743
472502.20	3660596.70	0.02513	472532.20	3660596.70	0.02318
472562.20	3660596.70	0.02148	472592.20	3660596.70	0.01999
472622.20	3660596.70	0.01868	472652.20	3660596.70	0.01751
472682.20	3660596.70	0.01646	472712.20	3660596.70	0.01551
472742.20	3660596.70	0.01465	472772.20	3660596.70	0.01386
472802.20	3660596.70	0.01314	472832.20	3660596.70	0.01248
472862.20	3660596.70	0.01186	472892.20	3660596.70	0.01130
471692.20	3660627.00	0.01234	471722.20	3660627.00	0.01309
471752.20	3660627.00	0.01392	471782.20	3660627.00	0.01485
471812.20	3660627.00	0.01588	471842.20	3660627.00	0.01706
471872.20	3660627.00	0.01841	471902.20	3660627.00	0.01998
471932.20	3660627.00	0.02181	471962.20	3660627.00	0.02401
471992.20	3660627.00	0.02668	472022.20	3660627.00	0.03004
472052.20	3660627.00	0.03441	472082.20	3660627.00	0.04042
472112.20	3660627.00	0.04940	472142.20	3660627.00	0.06505
472172.20	3660627.00	0.06070	472202.20	3660627.00	0.06687
472232.20	3660627.00	0.07626	472262.20	3660627.00	0.05966
472292.20	3660627.00	0.04959	472322.20	3660627.00	0.04262
472352.20	3660627.00	0.03744	472382.20	3660627.00	0.03341
472412.20	3660627.00	0.03015	472442.20	3660627.00	0.02746
472472.20	3660627.00	0.02520	472502.20	3660627.00	0.02326
472532.20	3660627.00	0.02157	472562.20	3660627.00	0.02010
472592.20	3660627.00	0.01879	472622.20	3660627.00	0.01762
472652.20	3660627.00	0.01657	472682.20	3660627.00	0.01563
472712.20	3660627.00	0.01477	472742.20	3660627.00	0.01398
472772.20	3660627.00	0.01326	472802.20	3660627.00	0.01259
472832.20	3660627.00	0.01198	472862.20	3660627.00	0.01141

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): E5LRT04R , E5LRT04S , E5LRT04T , E5LRT04U , E5LRT04V ,
E5LRT04W , E5LRT04X , E5LRT04Y , E5LRT04Z , E5LRT050 , E5LRT051 , E5LRT052 , E5LRT053 ,
E5LRT054 , E5LRT055 , E5LRT056 , E5LRT057 , E5LRT058 , E5LRT059 , E5LRT05A , E5LRT05B ,
E5LRT05C , E5LRT05D , E5LRT05E , E5LRT05F , E5LRT05G , E5LRT05H , E5LRT05I , . . . ,

*** SENSITIVE DISCRETE RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
472393.60	3660170.30	0.10145	472405.70	3660117.50	0.10305
472424.20	3659995.80	0.11463	472482.80	3659974.80	0.07934

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.18717 AT (472382.20, 3659990.70, 0.00, 0.00, 0.00)	DC	
	2ND HIGHEST VALUE IS	0.18279 AT (472352.20, 3660111.90, 0.00, 0.00, 0.00)	DC	
	3RD HIGHEST VALUE IS	0.17880 AT (472322.20, 3660233.10, 0.00, 0.00, 0.00)	DC	
	4TH HIGHEST VALUE IS	0.17436 AT (472352.20, 3659899.80, 0.00, 0.00, 0.00)	DC	
	5TH HIGHEST VALUE IS	0.17296 AT (472292.20, 3660354.30, 0.00, 0.00, 0.00)	DC	
	6TH HIGHEST VALUE IS	0.17044 AT (472442.20, 3659778.60, 0.00, 0.00, 0.00)	DC	
	7TH HIGHEST VALUE IS	0.16932 AT (472412.20, 3659899.80, 0.00, 0.00, 0.00)	DC	
	8TH HIGHEST VALUE IS	0.16918 AT (472382.20, 3659778.60, 0.00, 0.00, 0.00)	DC	
	9TH HIGHEST VALUE IS	0.16782 AT (472472.20, 3659657.40, 0.00, 0.00, 0.00)	DC	
	10TH HIGHEST VALUE IS	0.16653 AT (472382.20, 3660021.00, 0.00, 0.00, 0.00)	DC	

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL SigA Data

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 1 Warning Message(s)
A Total of 178 Informational Message(s)

A Total of 8784 Hours Were Processed

A Total of 101 Calm Hours Identified

A Total of 77 Missing Hours Identified (0.88 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
MX W403 3562 PFLCNV: Turbulence data is being used w/o ADJ_U* option SigA Data

****
*** AERMOD Finishes Successfully ***
****

ATTACHMENT B

EMFAC 2017 Emission Factors (2025)

EMFAC2017 (v1.0.2) Emission Rates
Region Type: County

Region: SAN DIEGO
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, g/mile for RUNEX, PMBW and PMTW. Note 'day' in the unit is operation day.

RoadwayADT	213000	Trips/Day	
RoadwaySegmentAERMOD_VolumeSourceDistance	0.78	Miles/Trip	
SegmentVMT	166140	Miles/Day	

From EMFAC2017

Region	CalYr	VehClass	MdlYr	Speed	Fuel	VMT	%ofTotalVMT	VMT on Roadway Segment	PM2.5_RUNEX	Total Grams	Grams from DSL Only
SAN DIEGO	2025	HHDT	Aggregated	65	GAS	56.95663	0.00016%	0.270913159	0.000891759	0.000241589	0
SAN DIEGO	2025	HHDT	Aggregated	65	DSL	611511.9	1.75072%	2908.645225	0.034232466	99.57009982	99.57009982
SAN DIEGO	2025	HHDT	Aggregated	65	NG	1018.599	0.00292%	4.844947924	0.00326309	0.015809501	0
SAN DIEGO	2025	LDA	Aggregated	65	GAS	20864473	59.73365%	99241.48484	0.001068927	106.0818691	0
SAN DIEGO	2025	LDA	Aggregated	65	DSL	253782	0.72656%	1207.109589	0.003947112	4.764596695	4.764596695
SAN DIEGO	2025	LDT1	Aggregated	65	GAS	2191107	6.27300%	10421.95963	0.001388917	14.47523951	0
SAN DIEGO	2025	LDT1	Aggregated	65	DSL	591.5601	0.00169%	2.813744713	0.131898696	0.371129258	0.371129258
SAN DIEGO	2025	LDT2	Aggregated	65	GAS	6365270	18.22336%	30276.28913	0.001082644	32.77844539	0
SAN DIEGO	2025	LDT2	Aggregated	65	DSL	53663.17	0.15363%	255.2478924	0.003624213	0.925072705	0.925072705
SAN DIEGO	2025	MCY	Aggregated	65	GAS	227826.8	0.65225%	1083.6538	0.001821564	1.973944577	0
SAN DIEGO	2025	MDV	Aggregated	65	GAS	4108220	11.76157%	19540.67241	0.001081705	21.13724802	0
SAN DIEGO	2025	MDV	Aggregated	65	DSL	126986.6	0.36355%	604.009592	0.002951969	1.783017886	1.783017886
SAN DIEGO	2025	MH	Aggregated	65	GAS	1925.541	0.00551%	9.158801696	0.001097407	0.010050932	0
SAN DIEGO	2025	MH	Aggregated	65	DSL	898.7858	0.00257%	4.275058224	0.125566089	0.536802343	0.536802343
SAN DIEGO	2025	MHDT	Aggregated	65	GAS	5204.125	0.01490%	24.75332349	0.000897487	0.022215781	0
SAN DIEGO	2025	MHDT	Aggregated	65	DSL	96832.62	0.27723%	460.5825756	0.01405112	6.471701008	6.471701008
SAN DIEGO	2025	OBUS	Aggregated	65	GAS	1395.163	0.00399%	6.636064841	0.000863981	0.005733432	0
SAN DIEGO	2025	OBUS	Aggregated	65	DSL	12485.41	0.03574%	59.38660022	0.029971831	1.779925152	1.779925152
SAN DIEGO	2025	SBUS	Aggregated	65	DSL	5203.457	0.01490%	24.75014922	0.039714338	0.982935798	0.982935798
SAN DIEGO	2025	UBUS	Aggregated	65	GAS	90.24649	0.00026%	0.429255752	0.000935042	0.00401372	0
SAN DIEGO	2025	UBUS	Aggregated	65	DSL	0	0.00000%	0	0	0	0
SAN DIEGO	2025	UBUS	Aggregated	65	NG	636.2805	0.00182%	3.026456376	0.001776022	0.005375052	0
				Total VMT		34929179	100.000%			Total Grams from DSL Only PM10 per Day	117.1852807
										Total Grams from DSL PM10 per Second (g/s)	0.001356311

ATTACHMENT B

EMFAC 2017 Emission Factors (2025)

ATTACHMENT C

EMFAC 2017 Emission Factors (2025)

Building Outdoor Cancer Risk Calculations (Unmitigated)

R1						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0.10145	0.10145	0.10145	0.10145	0.10145	0.10145
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00002191	0.00006408	0.00005210	0.00004402	0.00002045	0.00001802
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	7.31744E-07	1.71196E-05	1.23801E-05	2.09189E-05	3.28464E-06	1.52892E-05
	0.731744357	17.11956576	12.38008147	20.91886664	3.284642592	15.28915269
Cancer Risk Per Million 30-years	42.05					
Cancer Risk Per Million 70-years	54.06					

R2						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0.10305	0.10305	0.10305	0.10305	0.10305	0.10305
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	1
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00002226	0.00006509	0.00005293	0.00004472	0.00002077	0.00001906
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	7.43285E-07	1.73896E-05	1.25753E-05	2.12488E-05	3.33645E-06	1.61774E-05
	0.743284929	17.38956384	12.57533165	21.24878469	3.336445728	16.17737786
Cancer Risk Per Million 30-years	42.72					
Cancer Risk Per Million 70-years	55.56					

R3						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0.11463	0.11463	0.11463	0.11463	0.11463	0.11463
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	1
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00002476	0.00007241	0.00005887	0.00004974	0.00002311	0.00002121
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	8.2681E-07	1.93437E-05	1.39885E-05	2.36366E-05	3.71137E-06	1.79953E-05
	0.826809814	19.34367494	13.9884548	23.63656661	3.711370925	17.99527243
Cancer Risk Per Million 30-years	47.52					
Cancer Risk Per Million 70-years	61.80					

Building Outdoor Cancer Risk Calculations (Unmitigated)

R4						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0.07934	0.07934	0.07934	0.07934	0.07934	0.07934
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	1
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00001714	0.00005012	0.00004075	0.00003443	0.00001599	0.00001468
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	5.72268E-07	1.33885E-05	9.68197E-06	1.63598E-05	2.56879E-06	1.24552E-05
	0.572268086	13.38852979	9.681968102	16.35981152	2.568788006	12.45524657
Cancer Risk Per Million 30-years	32.89					
Cancer Risk Per Million 70-years	42.78					

R5						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0	0	0	0	0	0
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	1
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	0	0	0	0	0	0
	0	0	0	0	0	0
Cancer Risk Per Million 30-years	0.00					
Cancer Risk Per Million 70-years	0.00					

R6						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0	0	0	0	0	0
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	1
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	0	0	0	0	0	0
	0	0	0	0	0	0
Cancer Risk Per Million 30-years	0.00					
Cancer Risk Per Million 70-years	0.00					

Building Outdoor Cancer Risk Calculations (Unmitigated)

R7						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0	0	0	0	0	0
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	1
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000	0.00000000
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	0	0	0	0	0	0
	0	0	0	0	0	0
Cancer Risk Per Million 30-years	0.00					
Cancer Risk Per Million 70-years	0.00					

ATTACHMENT D

Cancer Risk Calculations – MERV 16 Indoor

Building Indoor Cancer Risk Calculations (MERV 16)

R1						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0.0030435	0.0030435	0.0030435	0.0030435	0.0030435	0.0030435
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000066	0.00000192	0.00000156	0.00000132	0.00000061	0.00000054
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	2.19523E-08	5.13587E-07	3.71402E-07	6.27566E-07	9.85393E-08	4.58675E-07
	0.021952331	0.513586973	0.371402444	0.627565999	0.098539278	0.458674581
Cancer Risk Per Million 30-years	1.26					
Cancer Risk Per Million 70-years	1.62					

R2						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0.0030915	0.0030915	0.0030915	0.0030915	0.0030915	0.0030915
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	1
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000067	0.00000195	0.00000159	0.00000134	0.00000062	0.00000057
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	2.22985E-08	5.21687E-07	3.7726E-07	6.37464E-07	1.00093E-07	4.85321E-07
	0.022298548	0.521686915	0.377259949	0.637463541	0.100093372	0.485321336
Cancer Risk Per Million 30-years	1.28					
Cancer Risk Per Million 70-years	1.67					

R3						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0.0034389	0.0034389	0.0034389	0.0034389	0.0034389	0.0034389
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	1
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000074	0.00000217	0.00000177	0.00000149	0.00000069	0.00000064
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	2.48043E-08	5.8031E-07	4.19654E-07	7.09097E-07	1.11341E-07	5.39858E-07
	0.024804294	0.580310248	0.419653644	0.709096998	0.111341128	0.539858173
Cancer Risk Per Million 30-years	1.43					
Cancer Risk Per Million 70-years	1.85					

Building Indoor Cancer Risk Calculations (MERV 16)

R4						
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From AERMOD	0.0023802	0.0023802	0.0023802	0.0023802	0.0023802	0.0023802
Average Breathing Rate per agegroup BR/BW	225	658	535	452	210	185
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	1
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000051	0.00000150	0.00000122	0.00000103	0.00000048	0.00000044
Potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED (Residents live onsite for 30 years)	0.25	2	7	14	14	54
AT	70	70	70	70	70	70
FAH	0.85	0.85	0.72	0.72	0.73	1
Risk for Each Age Group	1.7168E-08	4.01656E-07	2.90459E-07	4.90794E-07	7.70636E-08	3.73657E-07
	0.017168043	0.401655894	0.290459043	0.490794346	0.07706364	0.373657397
Cancer Risk Per Million 30-years	0.99					
Cancer Risk Per Million 70-years	1.28					

APPENDIX D.
BIOLOGICAL TECHNICAL REPORT

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Biological Technical Report
for the
Piraeus Point Project

Encinitas, San Diego County, California

APN 254-144-01-00
APN 216-110-35-00

Prepared For:

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October 2022/Final

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
APN	Assessor's Parcel Number
BCLA	Biological Core and Linkage Area
BTR	Biological Technical Report
CAL FIRE	California Department of Forestry and Fire Protection
CCC	California Coastal Commission
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
CNPSEI	California Native Plant Society Electronic Inventory
CRPR	California Rare Plant Rank
CSS	Coastal Sage Scrub
ECORP	ECORP Consulting, Inc.
ESA	Endangered Species Act
FMZ	Fuel Modification Zone
FP	Fully Protected
FPA	Focused Planning Area
GPS	Global Positioning System
HCP	Habitat Conservation Plan
LBZ	Limited Building Zone
LCP	Local Coastal Program
MBTA	Migratory Bird Treaty Act
MHCP	Multiple Habitat Conservation Program
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
Proposed Project	Development Area and Preserve Area of the Piraeus Property
SANDAG	San Diego Association of Governments
SAP	Subarea Plan
SSAR	Society for the Study of Amphibians and Reptiles
SSC	Species of Special Concern
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WL	Watch List

1.0 INTRODUCTION

ECORP Consulting, Inc. conducted a biological reconnaissance survey of an approximately 11.83-acre property for the proposed Piraeus Point Project (Proposed Project), located in the City of Encinitas (City) in San Diego County, California. The study was conducted to identify any potential biological resources that could be affected by the Proposed Project, pursuant to the terms of the California Environmental Quality Act (CEQA), and for the purposes of identifying any biological constraints that would affect the Proposed Project's site plan. The Proposed Project will be subject to federal, state, county, and city regulations for compliance with the federal Endangered Species Act (ESA), California ESA, Migratory Bird Treaty Act (MBTA), California Fish and Game Code, California Coastal Act (Coastal Act), San Diego North County Multiple Habitat Conservation Program (MHCP) Plan, and the Draft Encinitas Subarea Plan (SAP).

1.1 Purpose of the Report

The study area consists of two parcels of land (Assessor's Parcel Numbers [APN] 254-144-01-00 and 216-110-35-00). The Proposed Project is limited to the southern parcel (APN 254-144-01-00). For the purposes of this report, the term Development Area refers to the areas proposed to be directly affected by implementation of the Proposed Project and corresponds to the client-supplied Project boundary. The Development Area includes the townhome property footprint (onsite impacts), offsite improvements (offsite impacts) required by the City adjacent to the Project boundary along Piraeus Street and Plato Place, and the Fuel Modification Zone (FMZ) which totals approximately 6.78 acres. The Preserve Area consists of lands planned to be preserved in perpetuity and left untouched in order to achieve mitigation for impacts due to development of the Proposed Project. The Preserve Area comprises the northern parcel (APN 216-110-35-00) and small northern portion of the southern parcel (APN 254-144-01-00) and totals approximately 5.51 acres. A San Diego Gas and Electric (SDGE) easement (0.02 acre) traverses east-west within the Preserve Area along the property line between the APNs.

1.2 Location and Setting

The Proposed Project is located in San Diego County in the City of Encinitas (Figure 1-1). It is located directly east of U.S. Interstate 5 (I-5) between Leucadia Boulevard and La Costa Avenue (Figure 1-2). The property inclusive of the Proposed Project, as depicted on the U.S. Geological Survey (USGS) Encinitas 7.5-minute topographic quadrangle, is located within Sections 4 and 33, Townships 12 and 13 South, Range 4 West.

1.3 Project Description

The Proposed Project entails the development of a 149-home modern townhome community. The Project will be utilizing State Density Bonus Law. A Design Review Permit and Coastal Development Permit (both issued by the City of Encinitas) are necessary to allow for development of the property located at the northeast corner of Piraeus Street and Plato Place (APN 254-144-01-00) in the Leucadia community of Encinitas.



Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\location_vicinity\PPE_Vicinity.mxd *(TR)-trotellini 2/17/2022*

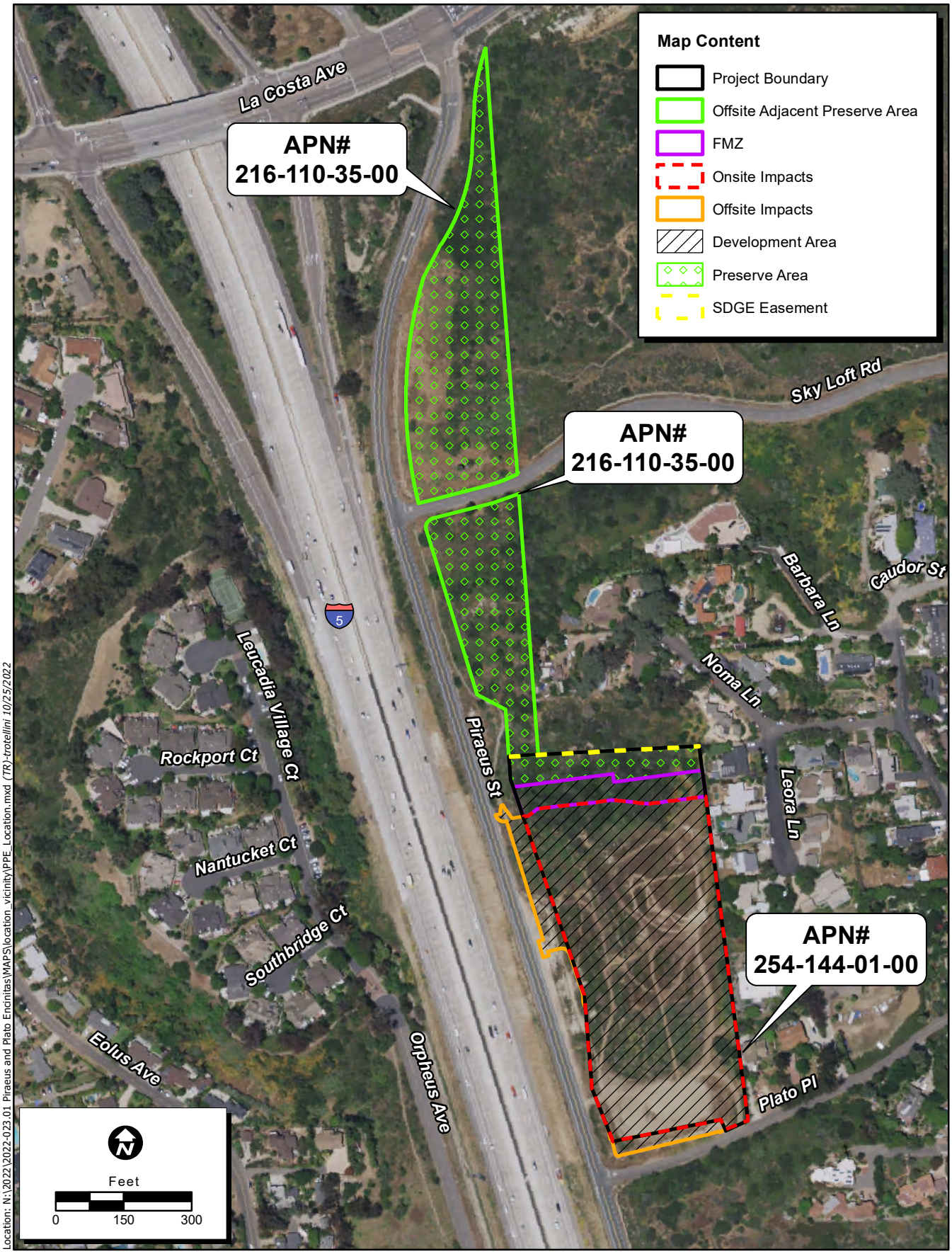
Map Date: 2/17/2022

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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ENVIRONMENTAL CONSULTANTS

Figure 1-1. Project Vicinity

2022-023.01 Piraeus and Plato Encinitas



Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\location_vicinity\PPE_Location.mxd (TR)-trotellini 10/25/2022

Map Date: 10/25/2022

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community Photo Source: NAIP

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Figure 1-2. Project Location

2022-023.01 Piraeus Point

The Condominium Tentative Map is required to subdivide the 149 condominiums into separate parcels pursuant to the State of California Subdivision Map Act. The Street Vacation is to vacate excess right-of-way on a portion of Piraeus Street and a portion of Plato Place. The Design Review Permit is required in order to ensure Project consistency with design review guidelines established by the City of Encinitas. The Coastal Development Permit is required in conjunction with the issuance of the Design Review Permit, given the Project's location within the Coastal Zone.

The community would consist of 52 one-bedroom homes, 37 two-bedroom homes, and 60 three-bedroom homes for a total of 149 residential homes, which would be built within 16 separate three-story residential buildings. A total of 271 parking spaces are planned, including private garage spaces and outdoor shared parking. Proposed amenities include a pool, spa, pool house, and lounge seating. Of the 149 residential homes proposed in the community, 134 would be market-rate homes and 15 would be *very low* income affordable residential homes.

The Project site is currently vacant land. The site is one of 16 sites included in the City of Encinitas Housing Element Update, which was adopted by the City of Encinitas on March 13, 2019. As part of that Housing Element Update, a portion of the Project site was designated with an R-30 overlay zone.

Surrounding land uses include single-family residences to the east and south, Piraeus Street and Interstate 5 to the west, and vacant land to the north.

Additionally, the establishment and maintenance of a Fuel Modification Zone (FMZ) to the north of the townhomes would be required for the Proposed Project. It is located within a Very High Fire Hazard Severity Zone (California Department of Forestry and Fire Protection ([CAL FIRE] 2022). The FMZ proposed would include the clearing/modifying of trees and shrubs within 100 feet of the habitable structures as a wildland fire safety measure.

1.4 Environmental Setting

The Proposed Project is surrounded by residential development to the west, south, and east with open habitat to the north. The Proposed Project is within the Coastal Zone as defined by the California Coastal Commission (CCC, 2022). The Coastal Zone extends three nautical miles offshore and the Project is approximately 4,500 feet from the California coastline. Topography of the site is relatively flat within the Development Area with slopes on the western and northern edge. There is a steep drop where the Development Area meets the Preserve Area. Within the Preserve Area, a steep slope occurs in a northeasterly direction. Elevation ranges from 16 feet (5 meters) to 171 feet (52 meters) above mean sea level across the landscape.

1.5 Regulatory Considerations

ECORP biologists conducted the biological reconnaissance survey to identify potential constraints to development and to ensure compliance with federal, state, and county regulations regarding listed, protected, and sensitive species. Table 1-1 summarizes these regulations.

Table 1-1. Summary Table of Federal, State, and Local Regulations		
Regulation	**Resource**	**Regulating Agency**
Federal Regulations		
Federal Endangered Species Act	Listed *Endangered* or *Threatened* plant and animal species	USFWS
Migratory Bird Treaty Act	Migratory birds, or their parts, nests, or eggs	USFWS
State Regulations		
California ESA	Listed *Endangered*, *Threatened*, or *Candidate* native species and their habitats	CDFW
Fully Protected Species	37 California ESA threatened or endangered species that are rare or face possible extinction	CDFW
Native Plant Protection Act	64 species, subspecies, and varieties of endangered or rare native plants	CDFW
California Fish and Game Code	Fish, wildlife, and native plants	CDFW
California Coastal Act	Sensitive coastal and marine habitats and biodiversity	CCC
CEQA Significance Criteria	Special status species, riparian habitat or sensitive natural communities, federal wetlands, and wildlife movement and nursery sites	City of Encinitas
Local Regulations		
North County MHCP	Sensitive, rare, threatened, and endangered plant and animal species; preserve areas, and pre-approved mitigation areas	SANDAG
Draft Encinitas Subarea Plan	Sensitive, rare, threatened, and endangered plant and animal species; preserve areas, and pre-approved mitigation areas	City of Encinitas

The Proposed Project is located within the La Costa *softline* Focused Planning Area (FPA), a planning area delineated by the City of Encinitas as part of their Draft Subarea Plan. The Draft Subarea Plan is based on policies outlined in the North County MHCP. The FPAs consist of a combination of *hardline* preserves (i.e., lands that will be conserved and managed for biological resources) and *softline* planning areas (i.e., within which preserve areas will ultimately be delineated based on further data and planning) (SANDAG 2003). The City of Encinitas specifies: "For softlined areas, which do not have development approvals, development and conservation standards and criteria will be applied to achieve the projected conservation" (City of Encinitas 2001).

The Proposed Project is located within the Coastal Zone therefore the City of Encinitas is responsible for the Project's adherence to the Coastal Act. This is implemented through the Local Coastal Program (LCP)

via acquisition of a Coastal Development Permit. The Coastal Act is a guiding document for development or protection of coastal land within California.

2.0 METHODS

2.1 Literature and Background Review

ECORP biologists performed a literature review prior to conducting the biological reconnaissance survey using the CDFW California Natural Diversity Data Base (CNDDB; CDFW 2022a) and the California Native Plant Society (CNPS) Electronic Inventory (CNPSEI; CNPS 2022) to determine the special-status plant and wildlife species documented in the vicinity of the Proposed Project. ECORP searched CNDDB and CNPSEI records within the Proposed Project Site boundaries as depicted on the USGS 7.5-minute "Encinitas, California" topographic quadrangle. The CNDDB and CNPSEI contain records of reported occurrences of federal- or state-listed endangered, threatened, proposed endangered or threatened species, California Species of Special Concern (SSC), or other special-status species or habitat that may occur within or in the vicinity of the Proposed Project. Additional information was gathered from the following sources and includes, but is not limited to:

- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) *Web Soil Survey* (NRCS 2022);
- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2022b);
- Special Animals List (CDFW 2022c);
- CDFW's Vegetation Classification and Mapping Program (VegCAMP; CDFW 2022d)
- *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012);
- *The Manual of California Vegetation*, 2nd Edition (Sawyer et al. 2009);
- USFWS Critical Habitat Portal and Information for Planning and Consultation (IPaC) Trust Resource List (USFWS 2022a);
- USFWS National Wetland Inventory (NWI; USFWS 2022b);
- North County MHCP (San Diego Association of Governments [SANDAG] 2003);
- Draft Encinitas Subarea Plan (City of Encinitas 2001) and;
- Various online websites (e.g., CalFlora 2022).

ECORP generated a list of special-status plant and wildlife species that have potential to occur within the Proposed Project using this information and field observations. Note that not all North County MHCP-covered species are addressed by the literature review. Some species were not included due to their habitats being absent from the Project site. For the purposes of this assessment, special-status species are defined as plants or animals that:

- have been designated as either rare, threatened, or endangered by CDFW, CNPS, or the USFWS, or are protected under either the federal or California ESAs;
- are candidate species being considered or proposed for listing under these same acts;
- are fully protected by the California Fish and Game Code, §§ 3511, 4700, 5050, or 5515; or
- are of expressed concern to resource and regulatory agencies or local jurisdictions.

Special-status species reported for the region in the literature review, or for which suitable habitat occurs on the Proposed Project, were assessed for their potential to occur within the site.

Potential for occurrence of special-status species were determined based on the following guidelines:

- **Present:** Species was observed within the Project site during a site visit or focused survey.
- **High:** Habitat (including soils and elevation factors) for the species occurs within the Project site and a known occurrence has recently been recorded (within the last 20 years) within 1 mile of the Project site or habitat highly associated with the species occurs and a recent documented observation occurs within 5 miles of the site.
- **Moderate:** Habitat (including soils and elevation factors) for the species occurs within the Project site and a documented observation occurs within the database search, but not within one mile of the area; a historic documented observation (more than 20 years old) was recorded within 5 miles of the Project site and habitat highly associated with the species is present; or a recently documented observation occurs within 1 mile of the area and marginal or limited amounts of habitat occurs in the Project site.
- **Low:** Limited or marginal habitat for the species occurs within the Project site and a recently documented observation occurs within the database search, but not within 1 mile of the area; a historic documented observation (more than 20 years old) was recorded within 5 miles of the Project site; or suitable habitat strongly associated with the species occurs on site, but no records or only historic records were found within the database search.
- **Presumed Absent:** Species was not observed during a site visit or surveys conducted in accordance with protocol guidelines at an appropriate time for identification; habitat (including soils and elevation factors) does not exist within the Project site; or the known geographic range of the species does not include the Project site.

Note that location information on some special-status species in the CNDDB may be of questionable accuracy or may be unavailable. Therefore, for survey purposes, the environmental factors associated with a species' occurrence requirements may be considered sufficient reason to give a species a positive potential for occurrence. In addition, just because a record of a species does not exist in the databases does not mean it does not occur. In many cases, records may not be present in the databases because an area has not been surveyed for that particular species.

A desktop review of the NRCS' Web Soil Survey (NRCS 2022), USFWS' NWI (USFWS 2022b) and the corresponding USGS topographic maps was also conducted to determine the presence of any blue line streams or drainages that might potentially fall under the jurisdiction of either federal or state agencies.

The background review also included previous biological studies that were conducted for the site:

- *Preliminary Biological Resources Assessment – the Cannon Property at Piraeus Street, Encinitas* (Scheidt 2017); and
- *Results of a Biology Field Study of the Cannon-Covelop Project, Encinitas* (Scheidt 2019).

2.2 Field Surveys

2.2.1 Reconnaissance-Level Biological Survey

Following the literature review, ECORP biologists conducted a biological reconnaissance survey of the entire property and adjacent areas to characterize the existing biological conditions. The biologists walked meandering transects throughout the property assessing existing vegetation communities and habitat types. The property was surveyed to provide for 100 percent visual coverage. The biologists scanned for biological resources using binoculars where access was restricted within the property. They evaluated the potential for special-status plant and animal species to occur, as well as identified other potential biological resource constraints (e.g., jurisdictional waters or wetlands) within and adjacent to the Project Site. All plant and animal species observed or detected during the survey were recorded on survey datasheets. Focused protocol-level surveys were not conducted as a part of this visit. Vegetation mapping was conducting using aerial imagery and ground-truthed during field surveys. The habitat and vegetation community mapping follows the classifications described in *A Manual of California Vegetation* (Sawyer et al. 2009) and were updated from previous survey efforts that used the *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008) and Holland code classification (Holland 1986). The ArcGIS Collector™ application was utilized to map the vegetation communities and land covers and record any special-status biological resources directly in the field. Plant and wildlife species observed during the survey were recorded and representative photographs of the property were taken.

ECORP biologists recorded plant and wildlife species, including any special-status species observed during the survey. Plant nomenclature follows that of *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wildlife nomenclature follows Society for the Study of Amphibians and Reptiles (SSAR, 2017), *Check-list of North American Birds* (Chesser et al. 2021), and the *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014).

ECORP biologists recorded the species, location, habitat, and GPS coordinates of all special-status species observed.

2.2.2 Rare Plant Focused Surveys

Focused surveys for rare plants and vegetation mapping were conducted from spring through summer of 2022. Methodology for the rare plant focused survey effort is described in the associated report included as Attachment A.

2.2.3 Coastal California Gnatcatcher Focused Surveys

Focused breeding season surveys for the coastal California gnatcatcher were conducted in the spring of 2022. Methodology for the coastal California gnatcatcher focused survey efforts is described in the associated report included as Attachment B.

2.2.4 Pacific Pocket Mouse Focused Surveys

Focused surveys for Pacific pocket mouse (*Perognathus longimembris pacificus*) were conducted in the summer of 2022. Methodology for the Pacific pocket mouse focused survey effort is described in the associated report included as Attachment C.

3.0 RESULTS

The following sections summarize the results of the literature review and field surveys, including site characteristics, vegetation communities, wildlife, special-status species, and special-status habitats (including any potential wildlife corridors).

3.1 Literature Review

3.1.1 Special-Status Plants and Wildlife

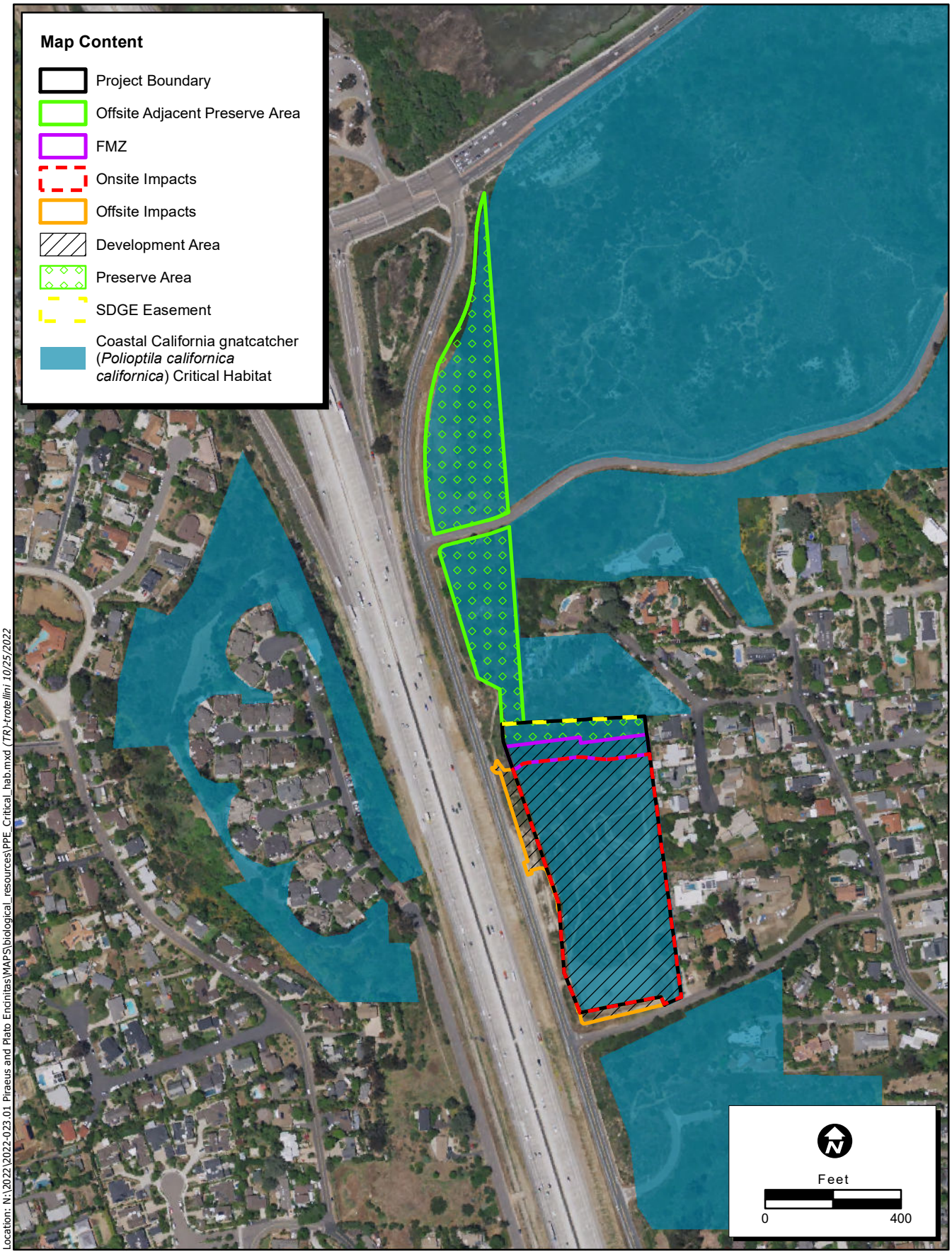
ECORP biologists conducted the CNDDB and CNPSEI searches in February 2022. The database searches identified 56 special-status plant species and 32 special-status wildlife species that could occur on or near the Proposed Project. The biologists generated a list from the results of the literature review and evaluated the Proposed Project for suitable habitat that could support any of the special-status plant or wildlife species on the list.

3.1.2 U.S. Fish and Wildlife Service-Designated Critical Habitat

The entirety of the Proposed Project is within USFWS-designated critical habitat for the federally-listed coastal California gnatcatcher (USFWS 2007) (Figure 3-1).

3.1.3 Jurisdictional Aquatic Resources Assessment

A review of the NWI determined that there are no mapped wetlands and/or waterways within the Proposed Project Area (USFWS 2022b) or within 100 feet of the Proposed Project. One detention basin mapped as freshwater pond, freshwater emergent wetland, and riverine habitat occurs west of Piraeus Street northwest of the Preserve Area (see Figure 3-2). Estuary and marine wetlands are located north of the Proposed Project, north of La Costa Avenue within the Batiquitos Lagoon State Marine Conservation Area. No indicators of jurisdictional aquatic resources (i.e. hydrophytic vegetation, ordinary high water marks, etc.) were observed within the Project Area, therefore a formal delineation was not conducted for the Proposed Project.



Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\biological_resources\PPE_Critical_hab.mxd *(TR)-trotellini 10/25/2022*

Map Date: 9/7/2022

Service Layer Credits: Photo Source: NAIP (2020)

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Figure 3-1. USFWS Final Critical Habitat

2022-023.01 Pireaus and Plato Encinitas

Figure 3-2. National Wetlands Inventory



Map Content

- Project Boundary
- Offsite Adjacent Preserve Area
- FMZ
- Onsite Impacts
- Offsite Impacts
- Development Area
- Preserve Area
- SDGE Easement
- 100-ft Buffer

NWI Features

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine
- Forested/Shrub Riparian

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Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\hydro\PPE_NWI.mxd (TR)-trotellini 10/25/2022

2022-023.01 Piraeus and Plato Encinitas

Scale in Feet
0 150 300

Photo (or Base) Source: NAIP (2020)

Map Date: 10/25/2022

3.1.4 Soils

There are five soil types within the Development Area and three within the Preserve Area:

- Development Area
  - GaF - Gaviota fine sandy loam, 30 to 50 percent slopes
  - MlE - Marina loamy coarse sand, 9 to 30 percent slopes
  - ClD2 - Cieneba coarse sandy loam, 5 to 15 percent slopes, eroded
  - GaE - Gaviota fine sandy loam, 9 to 30 percent slopes
  - RuG - Rough broken land
- Preserve Area
  - GaF - Gaviota fine sandy loam, 30 to 50 percent slopes
  - CsD - Corralitos loamy sand, 9 to 15 percent slopes
  - MlE - Marina loamy coarse sand, 9 to 30 percent slopes

These soils are well drained or somewhat excessively drained. None are hydric soils (NRCS 2022) (Figure 3-3).

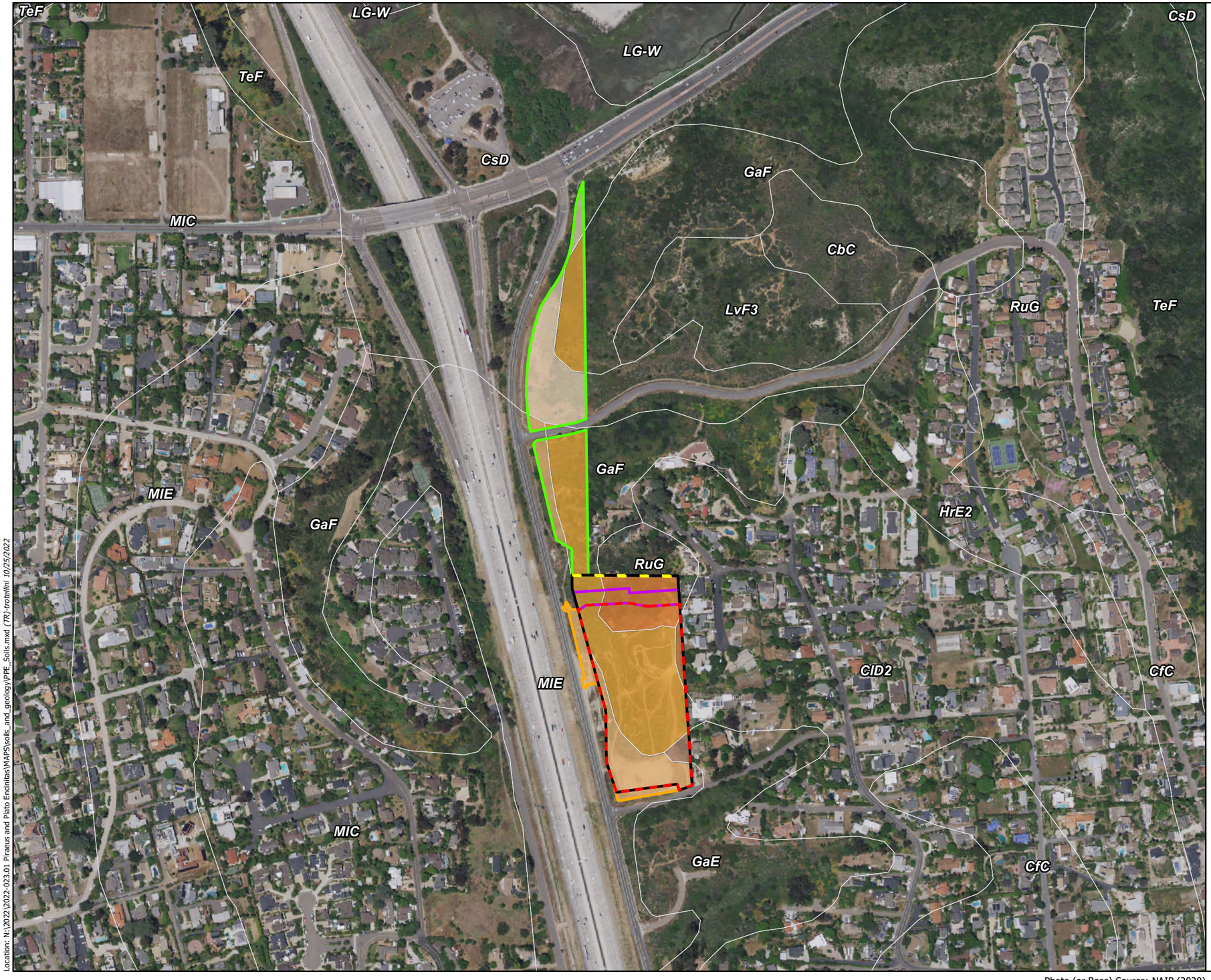
3.2 Field Surveys

The following sections summarize the results of the biological reconnaissance-level and focused surveys, including site characteristics, plants and plant communities, wildlife, special-status species, and special-status habitats (including any potential wildlife corridors). Table 3-1 summarizes survey dates and surveyors for each of the 2022 field surveys.

Table 3-1. 2022 Field Survey Dates and Personnel

Date	Survey Type	Surveyor
3/10	Biological Reconnaissance	Greg Hampton, Caroline Garcia
3/18	California Gnatcatcher 1	Christine Tischer (TE-053379-5), Taylor Dee
3/24	California Gnatcatcher 2	Christine Tischer (TE-053379-5), Taylor Dee
4/7	California Gnatcatcher 3	Christine Tischer (TE-053379-5), Christina Torres
4/14	California Gnatcatcher 4	Shannan Shaffer (TE-67555A-2), Caroline Garcia
4/19, 4/21	Rare Plant 1	Greg Hampton, Caroline Garcia
4/21	California Gnatcatcher 5	Shannan Shaffer (TE-67555A-2), Christina Torres
4/28	California Gnatcatcher 6	Shannan Shaffer (TE-67555A-2)
6/29	Rare Plant 2	Greg Hampton, Reena Lam
8/18	Rare Plant 3	Greg Hampton, Reena Lam
8/23-8/27	Pacific Pocket Mouse (5 nights)	Phil Brylski (TE 148555-2)

Figure 3-3. Natural Resources Conservation Service Soil Types



Map Content

- Project Boundary
- Offsite Adjacent Preserve Area
- FMZ
- Onsite Impacts
- Offsite Impacts
- SDGE Easement

Series Designation - Series Description

- CID2 - Cieneba coarse sandy loam, 5 to 15 percent slopes, eroded
- CsD - Corralitos loamy sand, 9 to 15 percent slopes
- GaE - Gaviota fine sandy loam, 9 to 30 percent slopes
- GaF - Gaviota fine sandy loam, 30 to 50 percent slopes
- MIE - Marina loamy coarse sand, 9 to 30 percent slopes
- RuG - Rough broken land

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Location: N:\2022\2022-023.01 Pireaus and Plato Encinitas\MAPS\soils_and_geology\PPE_Soils.mxd (TR)-trotellini 10/25/2022

2022-023.01 Pireaus and Plato Encinitas

Scale in Feet
0 200 400

Photo (or Base) Source: NAIP (2020)

Map Date: 10/25/2022

3.2.1 Biological Reconnaissance Survey

ECORP biologists Caroline Garcia and Greg Hampton conducted the biological reconnaissance survey on March 10, 2022. Table 3-2 summarizes weather conditions during the biological reconnaissance field survey.

Table 3-2. Weather Conditions During the Survey

Date	Time		Temperature (˚F)		Cloud Cover (%)		Wind Speed (mph)	
	Start	End	Start	End	Start	End	Start	End
3/10/22	0815	1405	63	67	7	0	0-2	2-5

3.2.2 Site Characteristics and Land Use

The Proposed Project consists of undeveloped land. A majority of the Development Area appears to have been previously disturbed with some native vegetation communities present. The Preserve Area consists of primarily unaltered open space. Disturbances within the Development Area include scattered trash, dirt roads, and off-road vehicle tracks.

The Development Area is bounded to the north by open space; to the south and the east by residential developments; and to the west by I-5 and more residential developments. Representative site photographs are included in Attachment D.

3.2.3 Vegetation Communities/Land Covers

Vegetation community type classifications and descriptions followed the Oberbauer designations (Oberbauer) outlined in Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008). However, a classification crosswalk was used from Appendix C of Vegetation Classification Manual for Western San Diego County (Sproul et al. 2011) to convert Oberbauer classifications to A Manual of California Vegetation (MCV; Sawyer et al. 2009) so that sensitive vegetation communities based on the California Sensitive Natural Communities list provided as part of CDFW's Vegetation Classification and Mapping Program (VegCAMP; CDFW 2022d) could also be identified. The vegetation crosswalk to convert these classifications and their impact mitigation ratio requirements are provided in Table 3-3. Acreages of each vegetation community present within the property are presented in Table 3-4. Vegetation communities within the property limits are displayed on Figure 3-4.

Table 3-3. Vegetation Crosswalk of Communities, Land Cover Types, and Impact Mitigation Ratios within Survey Area

Oberbauer Vegetation Communities and Land Covers	MCV Vegetation Communities and Land Covers	Impact Mitigation Ratio Inside FPA (Preserved: Disturbed)
Diegan Coastal Sage Scrub (32500)	California Sagebrush-California Buckwheat Scrub (*Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance)	2:1
Diegan Coastal Sage Scrub (32500)	Brittle Bush Scrub (*Encelia farinosa* Shrubland Alliance)	2:1
Diegan Coastal Sage Scrub (32500)	Lemonade Berry Scrub (*Rhus integrifolia* Shrubland Alliance)[1]	2:1
Southern Mixed Chaparral (37120)	Chamise-Mission Manzanita Chaparral (*Adenostoma fasciculatum-Xylococcus bicolor* Shrubland Alliance)[1]	1:1
Coastal Scrub (32000)	Deerweed Scrub (*Lotus scoparius* Shrubland Alliance)	2:1
Nonnative Grassland (42200)	Annual Brome Grassland (*Bromus* [*diandrus, hordeaceus*]-*Brachypodium distachyon* Semi-Natural Herbaceous Stands)	0.5:1
Nonnative Riparian (65000)	Giant Reed Break (*Arundo donax* Semi-Natural Herbaceous Stands)	No net loss goal [Replacement Ratio between 1:1 to 3:1]
Disturbed	Disturbed	None

[1]Sensitive vegetation community

Table 3-4. Vegetation Communities and Land Cover Types within the Survey Area

Vegetation Communities and Land Covers (Oberbauer/MCV)	Development Area[2] (Acres)	Preserve Area[3] (Acres)		Total (Acres)
		Onsite (Acres)	Offsite Adjacent (Acres)	
Diegan Coastal Sage Scrub/California Sagebrush-California Buckwheat Scrub (*Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance)	0.93	-	-	0.93
Diegan Coastal Sage Scrub/Brittle Bush Scrub (*Encelia farinosa* Shrubland Alliance)	-	-	2.43	2.43
Diegan Coastal Sage Scrub/Lemonade Berry Scrub (*Rhus integrifolia* Shrubland Alliance)[1]	-	-	0.71	0.71
Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral (*Adenostoma fasciculatum-Xylococcus bicolor* Shrubland Alliance)[1]	1.13	0.56	0.25	1.95
Coastal Scrub/Deerweed Scrub (*Lotus scoparius* Shrubland Alliance)	1.44	-	-	1.44
Nonnative Grassland/Annual Brome Grassland (*Bromus* [*diandrus, hordeaceus*]-*Brachypodium distachyon* Semi-Natural Herbaceous Stands)	-	-	1.38	1.38
Nonnative Riparian/Giant Reed Break (*Arundo donax* Semi-Natural Herbaceous Stands)	-	-	0.18	0.18
Disturbed/Disturbed	3.28	<0.01	-	3.28
Total	**6.78**	**0.56**	**4.95**	**12.30**

[1]Sensitive vegetation community
[2]Development Area = onsite impact areas, offsite impact areas, and fuel modification zone
[3]Preserve Area = all non-impact areas within property boundary and excluding 0.02-acre SDG&E easement

Figure 3-4. Vegetation Communities and Land Cover Types

Map Content

- Project Boundary
- Offsite Adjacent Preserve Area
- FMZ
- Onsite Impacts
- Offsite Impacts
- SDGE Easement

Vegetation Communities and Land Cover Types

- MCV - Annual Brome Grasslands (*Bromus* [*diandrus*, *hordeaceus*]-*Brachypodium distachyon* Semi-Natural Herbaceous Stand) Oberbauer - Non-native Grassland (42200) **1.380 acres**
- MCV - California Brittle Bush Scrub (*Encelia californica* Shrubland Alliance) Oberbauer - Diegan Coastal Sage Scrub (32500) **2.430 acres**
- MCV - California sagebrush -California buckwheat scrub (*Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance) Oberbauer - Diegan Coastal Sage Scrub (32500) **0.930 acres**
- MCV - Chamise-mission manzanita chaparral (*Adenostoma fasciculatum-Xylococcus bicolor* Shrubland Alliance) Oberbauer – Southern Mixed Chaparral (37120) **1.968 acres**
- MCV - Deerweed Scrub (*Lotus scoparius* Shrubland Alliance) Oberbauer - Coastal Scrub (32000) **1.441 acres**
- MCV - Giant Reed Break (*Arundo donax* Semi-Natural Herbaceous Stand) Oberbauer - Non-Native Riparian (65000) **0.176 acres**
- MCV - Lemonade Berry Scrub (*Rhus integrifolia* Shrubland Alliance) Oberbauer - Diegan Coastal Sage Scrub (32500) **0.713 acres**
- Disturbed **3.282 acres**

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Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\vegetation_and_landcover\PPE_Vegetation.mxd (TR) -trotellini 10/25/2022

2022-023.01 Pireaus Point

Scale in Feet
0 300

Photo (or Base) Source: NAIP (2020)

Map Date: 10/25/2022

3.2.3.1 Vegetation Community Descriptions

DEVELOPMENT AREA

The dominant vegetation community present throughout the Development Area is Coastal Scrub and disturbed land cover. Large trees are not present within the Development Area and a patch of Coastal Scrub is located within the center which transitions into Diegan Coastal Sage Scrub along the slopes to the northwest and south. Southern Mixed Chaparral occupies the northern area and transitions into the Preserve Area. The majority of the Preserve Area contains Diegan Coastal Sage Scrub but also contains smaller portions of Nonnative Riparian and Nonnative Grassland communities. The FMZ to the north of the Development Area footprint is comprised of Southern Mixed Chaparral. Impacts occurring to Southern Mixed Chaparral within the FMZ are included in the Development Area impact calculations.

In reference to MCV communities, Chamise-Mission Manzanita Chaparral and Lemonade Berry Scrub were the only vegetation communities categorized as a California Sensitive Natural Community; however, most of the vegetation communities documented within the Survey Area have mitigation ratios outlined by the MHCP and Draft SAP (VegCAMP; CDFW 2022d; City of Encinitas 2001; SANDAG 2003).

Diegan Coastal Sage Scrub (32400)

The three MCV vegetation communities documented within the Project Area are California Sagebrush-California Buckwheat Scrub (*Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance), Brittle Bush Scrub (*Encelia farinosa* Shrubland Alliance), and Lemonade Berry Scrub (*Rhus integrifolia* Shrubland Alliance). However, to consider the mitigation ratios of the MHCP and the Draft SAP, all three can be converted to Oberbauer's Diegan Coastal Sage Scrub. Within the Project Area, this community was co-dominated with California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*).

Other species such as deerweed (*Acmispon glaber*), lemonade berry (*Rhus integrifolia*), and coastal prickly pear (*Opuntia littoralis*) were also present. Most shrubs were less than 2 meters tall on southern and western facing slopes. This vegetation community is located in the southern and northwestern portions of the Development Area, and within the middle and northern portions of the offsite adjacent Preserve Area. Diegan Coastal Sage Scrub is included in the Group C: Coastal Sage Scrub habitat group under the MHCP and Draft SAP. Within the FPA, Diegan Coastal Sage Scrub is required to be mitigated at a 2:1 ratio. (City of Encinitas 2001; SANDAG 2003). California Sagebrush-California Buckwheat Scrub, one of the three MCV vegetation communities considered as Diegan Coastal Sage Scrub, is not considered a sensitive natural community by CDFW, with a global rarity rank of G4 and state rarity rank of S4. The second MCV equivalent, Brittle Bush Scrub, is also not considered a sensitive natural community with a global rarity rank of G5 and state rarity rank of S4. Finally, the last MCV equivalent, Lemonade Berry Scrub, is considered a sensitive vegetation community with a global and state rarity rank of G3 and S3, respectively (VegCAMP; CDFW 2022d).

Southern Mixed Chaparral (37120)

Chamise-Mission Manzanita Chaparral (*Adenostoma fasciculatum-Xylococcus bicolor* Shrubland Alliance) an MCV classification, can be converted to Oberbauer's Southern Mixed Chaparral. It was found within the Development Area and Preserve Area. It is a chaparral community, which consists of mostly hard-woody shrubs less than 3 meters tall with an intermittent to continuous canopy. Dominant species within this community consisted of chamise (*Adenostoma fasciculatum*) and mission manzanita (*Xylococcus bicolor*) as a subdominant, but also consisted of laurel sumac, toyon (*Heteromeles arbutifolia*), lemonade berry, and black sage (*Salvia mellifera*). This vegetation community is located in the northern portion of the Development Area and southern portions of the Preserve Area. Southern Mixed Chaparral is included in the Group D: Chaparral habitat group under the Draft SAP and MHCP (City of Encinitas 2001; SANDAG 2003). Within the FPA, Southern Mixed Chaparral must be mitigated at a 1:1 ratio. (City of Encinitas 2001; SANDAG 2003). CDFW considers Chamise-Mission Manzanita Chaparral as a sensitive vegetation community as this community has a global rarity rank of G4 and a state rank of S3 (VegCAMP; CDFW 2022d).

Coastal Scrub (32000)

Deerweed Scrub (*Lotus scoparius* Shrubland Alliance), an MCV classification, can be converted to Oberbauer's Coastal Scrub. This community is associated with moderate to dense scrub and was primarily dominated by deerweed within the Development Area. Other species included California sagebrush, coyote brush (*Baccharis pilularis*), and scattered individuals of California everlasting (*Pseudognaphalium californicum*). Deerweed Scrub/Coastal Scrub is included in the Group C: Coastal Scrub habitat group under the Draft SAP and MHCP. Within the FPA, Coastal Scrub must be mitigated at a 2:1 ratio. (City of Encinitas 2001; SANDAG 2003). CDFW does not consider Deerweed Scrub a sensitive community, it has a global rarity rank of G5 and a state rarity rank of S5 (VegCAMP; CDFW 2022d).

Disturbed

The classification disturbed is a land cover type and not a vegetation classification. Areas mapped as disturbed were heavily altered due to human disturbance and were dominated by open areas, dirt paths, and nonnative weedy and ruderal vegetation. Dominant plant species of the disturbed areas of the Development Area were nonnative herbs including red-stemmed filaree, hottentot fig (*Carpobrotus edulis*), and crystalline ice plant (*Mesembryanthemum crystallinum*). Disturbed land cover type is included in the Group F: Other group under the Draft SAP and MHCP (City of Encinitas 2001; SANDAG 2003). CDFW does not consider disturbed as a vegetation community.

PRESERVE AREA

Additional vegetation communities are present within the Preserve Area. Southern Mixed Chaparral is the only vegetation community found within both the Development Area and Preserve Area and occurs at the boundary line between the two areas. Similarly, a small, disturbed area exists at the eastern boundary line between the two areas. The dominant vegetation communities present throughout the Preserve Area are the Diegan Coastal Sage Scrub community California Brittle Bush Scrub *(Encelia californica* Shrubland Alliance) and Annual Brome Grassland (*Bromus* [*diandrus*, *hordeaceus*]-*Brachypodium distachyon* Semi-

Natural Herbaceous Stand). Multiple northern California black walnut (*Juglans hindsii*) trees and a few Mexican fan palms (*Washingtonia robusta*) are present within the Preserve Area. In the northernmost portion of the offsite adjacent Preserve Area is Diegan Coastal Sage Scrub. A patch of nonnative riparian occurs just north of Skyloft Road. Southern Mixed Chaparral occupies the southern-most area.

Nonnative Riparian (65000)

Giant Reed Break (*Arundo donax* Semi-Natural Herbaceous Stands), an MCV classification, can be converted to Oberbauer's Nonnative Riparian community. This community is associated with a continuous canopy and usually associated with riparian areas. Within the Survey Area, this community was dominated by giant reed (*Arundo donax*) but also included castor bean (*Ricinus communis)* and hottentot fig within a small portion of the offsite adjacent Preserve Area north of Sky Loft Road. Nonnative Riparian is included in the Group A: Wetland/Riparian under the Draft SAP and MHCP (City of Encinitas 2001; SANDAG 2003). CDFW considers Nonnative Riparian a semi-natural stand and a global and state rarity rank is not applicable (VegCAMP; CDFW 2022d). The water source for this vegetation community appears to be from urban runoff and this community will not be impacted by the Proposed Project.

Nonnative Grassland (42200)

Annual Brome Grassland (*Bromus* [*diandrus, hordeaceus*]-*Brachypodium distachyon* Semi-Natural Herbaceous Stands), an MCV classification, can be converted to Oberbauer's Nonnative Grassland. This community is only present within the offsite adjacent Preserve Area north of Sky Loft Road and was primarily dominated by ripgut brome (*Bromus diandrus*). Other species included black mustard (*Brassica nigra*), foxtail brome (*Bromus madritensis*), and red-stemmed filaree (*Erodium cicutarium*). Nonnative Grassland is included in the Group E: Annual Grassland habitat group under the Draft SAP and MHCP (City of Encinitas 2001; SANDAG 2003). CDFW considers Nonnative Grassland a semi-natural stand and a global and state rarity rank is not applicable (VegCAMP; CDFW 2022d).

3.2.4 Plants

Plant species observed within the Survey Area were generally characteristic of coastal sage scrub, chaparral, and grassland communities. Nonnative plant species observed on the property were dominant within the grassland and disturbed areas, intermittently found within native vegetation communities. A full list of plant species observed on the property is included in Attachment E. Plant species observed during previous surveys of the property are also included in this list by year of observation.

3.2.5 Wildlife

The property provides habitat for species adapted to coastal scrub environments. ECORP biologists observed 18 bird species during the reconnaissance survey and an additional 22 were observed over the course of focused wildlife surveys. The biologists also observed sign or presence of eight mammal species, three reptile species, and nine insect species. Woodrat middens were identified within the Development Area that could potentially belong to the San Diego desert woodrat (*Neotoma lepida intermedia*). San Diego desert woodrat is a special-status species that was confirmed during focused Pacific pocket mouse surveys and discussed in more detail in Section 3.2.6.4. A full list of wildlife species observed on the

property is included in Attachment F. Wildlife species observed during previous surveys of the property are also included in this list by year of observation.

3.2.6 Special-Status Plant and Wildlife Species

3.2.6.1 Special-Status Plants Considered

The literature review and database search identified 56 special-status plant species that have the potential to occur on or near the Proposed Project. For the purposes of this study, the results of the literature review were limited to plant species records occurring within 5 miles of the Proposed Project. Descriptions of the CNPS designations can be found in Table 3-5.

Table 3-5. CNPS Status Designations

List Designation	Meaning
1A	Plants presumed extirpated in California and either rare or extinct elsewhere
1B	Plants rare, threatened, or endangered in California and elsewhere
2A	Plants presumed extirpated in California, but common elsewhere
2B	Plants rare, threatened, or endangered in California, but more common elsewhere
3	Plants about which we need more information; a review list
4	Plants of limited distribution; a watch list
List 1B, 2, 3, and 4 extension meanings:	
.1	Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2	Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3	0.3-Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Note: According to CNPS (Skinner and Pavlik 1994), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code (CDFG 1984). This interpretation is inconsistent with other definitions.

The results of the literature review outlining each special-status plant species, their designations, and potential for occurrence based on site conditions determined during the reconnaissance-level survey can be found in Attachment G. One special-status plant species (California adolphia [*Adolphia californica*]) was observed during the biological reconnaissance-level survey. Thirteen special-status plant species were determined to have a high potential, four species were determined to have a moderate potential to occur and the remaining 38 species were determined to have a low potential to occur or were presumed absent from the Proposed Project based on lack of potential habitat, soils, and/or elevational requirements were not met. 2022 focused special-status plant species surveys commenced during the appropriate blooming

periods based on the plant species that were determined to be present or those with a high or moderate potential to occur.

3.2.6.2 Special-Status Plants Observed

One special-status plant species (California adolphia) was observed during the initial reconnaissance survey. Focused rare plant surveys confirmed number and locations of California adolphia populations and detected three additional special-status plant species: wart-stemmed ceanothus (*Ceanothus verrucosus*), Engelmann oak (*Quercus engelmannii*), and ashy spike-moss (*Selaginella cinerascens*). All rare plant species observed within the Survey Area are designated as rare by the CNPS. Wart-stemmed ceanothus and Engelmann oak are covered by the MHCP and Draft SAP. None of the rare plant species found within the Survey Area are state or federally listed. Special-status plant species present within the Proposed Project are discussed below. Observations of special-status plant species are displayed on Figure 3-5.

Rare Plant Focused Surveys

The below species occurrences are taken from the 2022 Focused Rare Plant Survey Report (Attachment A).

California Adolphia (CRPR 2B.1)

California adolphia is a dicot, a spiny shrub in the Rhamnaceae family that is native to California. Adolphia has a CNPS California Rare Plant Rank (CRPR) rating of 2B.1, 2B meaning that the species' distribution is "rare, threatened, or endangered in California but common elsewhere", and its threat rank of 0.1 defined as "seriously threatened in California". California adolphia is not covered by the Draft SAP or MHCP. This species was observed in the Southern Mixed Chaparral and Diegan Coastal Sage Scrub vegetation communities. Based on extent of occupied habitat, this was the most prevalent rare plant species within the Survey Area. Approximately 154 individuals were documented within the Development Area (inclusive of 9 individuals within the FMZ) and 17 individuals within its 100-ft buffer. The Preserve Area contains 103 individuals of California adolphia, and 53 individuals within its 100-foot buffer.

Wart-Stemmed Ceanothus (CRPR 2B.2, MHCP Covered)

Wart-stemmed ceanothus is a dicot, a shrub in the Rhamnaceae family that is native to California. Wart-stemmed ceanothus has a CRPR rating of 2B.2, with the same distribution description as California adolphia, and 0.2 threat rank described as "moderately threatened in California." Wart-stemmed ceanothus is a proposed covered species for the Draft SAP and is a MHCP covered species, which is subject to species-specific permit conditions outlined in Section 4, Volume II of the Final MHCP (SANDAG 2003). This species was observed in the Southern Mixed Chaparral vegetation community. One wart-stemmed ceanothus was observed in the onsite Preserve Area and one other individual was documented within the 100-foot buffer of the Project Area.

Figure 3-5. Biological Survey Results Plants

Map Content

- Project Boundary
- Offsite Adjacent Preserve Area
- FMZ
- Onsite Impacts
- Offsite Impacts
- SDGE Easement
- 100-ft Buffer

Rare Plant Observations

- California adolphia (*Adolphia californica*)
- Engelmann oak (*Quercus engelmannii*)
- Wart-stemmed ceanothus (*Ceanothus verrucosus*)

Rare plant Occupied Habitat

- Ashy-spike moss (*Selaginella cinerascens*)
- California adolphia (*Adolphia californica*)
- Engelmann oak (*Quercus engelmannii*)
- wart-stemmed ceanothus (*Ceanothus verrucosus*)

Scale in Feet
0 35

Scale in Feet
0 275

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ENVIRONMENTAL CONSULTANTS

2022-023.01 Pireaus and Plato Encinitas

Photo (or Base) Source: NAIP (2020)

Map Date: 9/7/2022

Location: N:\2022\2022-023.01 Pireaus and Plato Encinitas\MAPS\biological_resources\PPE_Bio_Results_V2_Plants.mxd (TR)-trotellini 10/25/2022

Engelmann Oak (CRPR 4.2, MHCP Covered)

Engelmann oak is a dicot, a deciduous tree in the Fagaceae family that is native to California. Engelmann oak has a CRPR rating of 4.2, 4.0 meaning that the species distribution is limited and is referred to as a "watch list," and the same threat rank of wart-stemmed ceanothus. Engelmann oak is a proposed covered species for the Draft SAP and is a MHCP covered species, which is subject to species-specific permit conditions outlined in Section 4, Volume II of the Final MHCP (SANDAG 2003). A single Engelmann oak was documented in the onsite Preserve Area within Southern Mixed Chapparal.

Ashy Spike-Moss (CRPR 4.1)

Ashy spike-moss is a lycopod, a perennial rhizomatous herb in the Selaginellaceae family that is native to California. Ashy spike-moss has a CRPR rating of 4.1, with the same distribution description as Engelmann oak, and its threat rank of 0.1 defined as "seriously threatened in California." Ashy spike-moss is not covered by the Draft SAP or MHCP. Approximately 500 individuals of ashy spike-moss were documented within the offsite adjacent Preserve Area and 250 individuals were documented within the 100-foot buffer of the Project Area, in Southern Mixed Chapparal.

3.2.6.3 Special-Status Wildlife

Results of the literature search and the reconnaissance-level survey identified 32 special-status wildlife species as having potential to occur on or in the vicinity of the Proposed Project. For the purposes of this study, the results of the literature review were limited to wildlife species records occurring within 5 miles of the Proposed Project. The results of the literature review outlining each special-status wildlife species, their designations, and their potential for occurrence can be found in Attachment H. Six special-status wildlife species were determined present within the Survey Area based on detections during the biological surveys. One special-status wildlife species was determined to have a high potential to occur, five species were determined to have a moderate potential to occur, and the remaining 20 species were determined to have a low potential to occur or were presumed absent. The special-status wildlife species observed or found to have a high or moderate potential to occur within the Survey Area are listed below. Observations of special-status wildlife species are displayed on Figure 3-6.

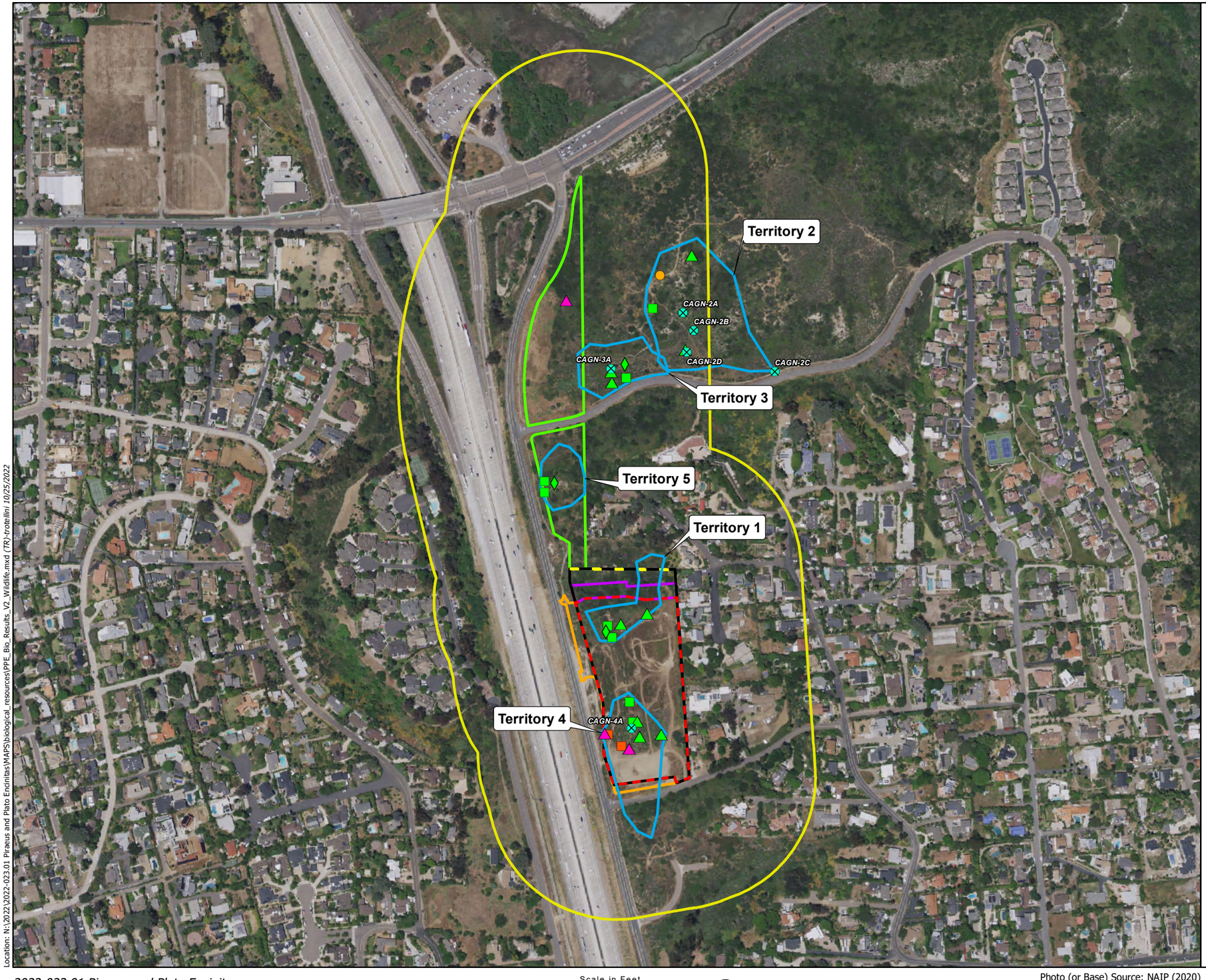
3.2.6.4 Special-Status Wildlife Species Observed

Six special-status wildlife species were observed within the Project Area, the Preserve Area, or immediately adjacent to the Survey Area during the biological reconnaissance survey and/or subsequent focused surveys. These species are discussed in detail below.

Monarch Butterfly

Monarch butterfly (*Danaus plexippus*), the California overwintering population, is a candidate species for listing under the federal ESA. This species inhabits a variety of habitats and has a reliance on milkweeds (*Asclepias* spp.) as its obligate larval host plant. No milkweed plants were observed within the Survey Area. The overwintering population is known to have a preference for and dependency on nonnative trees planted in the mild Coastal Zone. This species was observed within the Preserve Area of the Proposed

Figure 3-6. Biological Survey Results Wildlife



Map Content

- Project Boundary
- Offsite Adjacent Preserve Area
- FMZ
- Onsite Impacts
- Offsite Impacts
- SDGE Easement
- 500-ft Buffer
- Woodrat (*Neotoma* sp.) Middens
- Orange-throated Whiptail

CAGN Incidental Detection

- Coastal California Gnatcatcher (*Polioptila californica californica*)

CAGN Focused Survey Detection

- CAGN Territory
- CAGN Nest
- Male
- Pair
- Unknown

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Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\biological_resources\PPE_Bio_Results_V2_Wildlife.mxd (TR) -trotellini 10/25/2022

2022-023.01 Pireaus and Plato Encinitas

Scale in Feet
0 200 400

Photo (or Base) Source: NAIP (2020)

Map Date: 9/7/2022

Project during the reconnaissance survey and within the southern portion of the Development Area during one of the focused surveys. Both detections were likely transients as the Proposed Project does not provide overwintering or breeding habitat.

Orange-throated Whiptail

Orange-throated whiptail (*Aspidoscelis hyperythra*) is a CDFW Watch List (WL) species and an MHCP covered species. This species inhabits semi-arid brushy areas typically with loose soil and rocks, including washes, stream sides and coastal chaparral. Its range extends from the southern edges of Orange and San Bernardino Counties to coastal areas of San Diego County. This species was observed adjacent to the offsite adjacent Preserve Area during the 2022 focused coastal California gnatcatcher surveys.

Coastal California Gnatcatcher

The coastal California gnatcatcher is a federally listed (threatened) species, a CDFW SSC, and is a covered species under the North County MHCP. Final designated critical habitat comprises the entirety of the property (USFWS 2007). Several recent occurrences in the CNDDB have been recorded within five miles of the site; the most recent occurrence is approximately 0.8 mile southeast of the site in 2005.

Additionally, this species was observed during previous studies of the site (Scheidt 2017, 2019). The Diegan Coastal Sage Scrub and edges of the Southern Mixed Chaparral communities provide highly suitable habitat for this species while the Deerweed/Coastal Scrub provides moderate to low quality habitat depending on its proximity to the aforementioned communities. A pair of coastal California gnatcatchers was observed within the Diegan Coastal Sage Scrub and adjacent Coastal Scrub communities in the southern half of the Development Area during the reconnaissance survey. A single male was also observed in the Diegan Coastal Sage Scrub of the Preserve Area north of Sky Loft Road during the reconnaissance survey and one additional individual was incidentally detected in the Diegan Coastal Sage Scrub during the initial special-status plant survey on April 21, 2022. A total of four pairs and one territorial individual were confirmed during 2022 focused gnatcatcher breeding season surveys; two pairs within the Development Area, two pairs mostly east of the offsite adjacent Preserve Area north of Sky Loft Road, and one territorial individual within the offsite adjacent Preserve Area south of Sky Loft Road.

Cooper's Hawk

Cooper's hawk (*Accipiter cooperii*) is a CDFW WL species and is a covered species under the North County MHCP. It inhabits a variety of habitats from wooded areas of deep forests to leafy subdivisions. One individual was observed flying over the Development Area during the reconnaissance survey and during three of six focused gnatcatcher surveys. Nesting habitat associated with this species occurs within the 500-foot buffer of the property but is absent within the Development Area. Foraging habitat is present throughout the property and buffer. No active nests for this species were observed within the area.

Northwestern San Diego pocket mouse

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) is a CDFW SSC and is a covered species under the North County MHCP. This species inhabits a variety of habitats including including chaparral,

annual grassland, and coastal sage scrub in association with rocks or coarse gravel. This species was incidentally captured, identified, and safely released during focused 2022 Pacific pocket mouse trapping surveys.

San Diego Desert Woodrat

San Diego desert woodrat is a CDFW SSC. This species inhabits a variety of habitats including chaparral, coastal sage scrub, Riversidean alluvial fan sage scrub, and desert scrubs. Their range includes southern California and the Great Basin, Mojave and Colorado deserts. Woodrats build large dens known as middens which consist of vegetation and woody materials. A midden was observed within the Development Area during the reconnaissance survey that could be occupied by this species. This species was incidentally captured, identified, and safely released during focused 2022 Pacific pocket mouse trapping surveys.

3.2.6.5 Special-Status Wildlife Species with a High Potential to Occur

The following species has a high potential to occur within the Survey Area because the site provides high-quality habitat for the species, and/or the species has been documented within the last 20 years and within 5 miles of the Proposed Project.

- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), CDFW WL species, MHCP Covered species

3.2.6.6 Special-Status Wildlife Species with a Moderate Potential to Occur

The following five species have a moderate potential to occur within the Survey Area because habitat for the species occurs within the Survey Area and a documented observation occurs within the database search, but not within 1 mile of the area; a historic documented observation (more than 20 years old) was recorded within 5 miles of the Project Area and habitat highly associated with the species is present; or a recently documented observation occurs within 1 mile of the area and marginal or limited amounts of habitat occurs in the Proposed Project.

- Southern California legless lizard (*Anniella stebbinsi*), CDFW SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*), CDFW SSC
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*), CDFW SSC
- Bell's sage sparrow (*Artemisiospiza belli belli*), CDFW WL species, MHCP Covered species
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), CDFW SSC, MHCP Covered species

3.3 Raptors and Migratory Birds

Potential nesting habitat for migratory birds and raptors protected by the MBTA and California Fish and Game Code, including the special-status bird species present or with potential to occur on the Proposed Project (i.e., coastal California gnatcatcher, Cooper's hawk, southern California rufous-crowned sparrow,

Bell's sage sparrow), was present on the Proposed Project and adjacent areas, in the larger shrubs and nearby anthropogenic structures (e.g., wooden utility poles, nearby buildings). Additionally, suitable habitat for ground nesting species, such as mourning dove (*Zenaida macroura*), is present throughout the site. The scrub and chaparral habitats are suitable for the habitat-associated songbird and other passerine species to nest. Raptors typically breed between February and August, and songbirds and other passerines generally nest between March and August. While suitable nesting habitat for raptors is limited on the Proposed Project due to the lack of large solitary trees or other perching and nesting structures, nearby buildings and wooden utility poles are present in the areas surrounding the Proposed Project. An active red-tailed hawk (*Buteo jamaicensis*) nest was identified just outside of the 500-foot buffer of the Proposed Project to the south.

3.4 Wildlife Movement Corridors, Linkages, and Significant Ecological Areas

The concept of habitat corridors addresses the linkage between large blocks of habitat that allow the safe movement of mammals and other wildlife species between habitat areas. The definition of a corridor varies; however, corridors may include areas such as greenbelts, refuge systems, underpasses, and biogeographic land bridges. In general, a corridor is described as a linear habitat, embedded in a dissimilar matrix, which connects two or more large blocks of habitat. Wildlife movement corridors are critical for the survivorship of ecological systems for several reasons. Corridors can connect water, food, and cover sources, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides for the potential of genetic exchange between wildlife species populations, thereby maintaining genetic variability and adaptability to maximize the success of wildlife responses to changing environmental conditions. This is especially critical for small populations subject to loss of variability from genetic drift and effects of inbreeding. Naturally, the nature of corridor use and wildlife movement patterns varies greatly among species.

The Proposed Project is within a Biological Core and Linkage Area (BCLA) under the MHCP but not within a defined wildlife corridor. It is within the La Costa *softline* FPA for the City of Encinitas. The FPAs consist of a combination of *hardline* preserves (i.e., lands that will be conserved and managed for biological resources) and *softline* planning areas (i.e., within which preserve areas will ultimately be delineated based on further data and planning) (SANDAG 2003). The City of Encinitas specifies: "For softlined areas, which do not have development approvals, development and conservation standards and criteria will be applied to achieve the projected conservation. Conservation targets in upland areas within these softlined areas will vary based on the mitigation ratio to be applied to each vegetation community type. For example, if a 2:1 (conservation:take) ratio applies to a vegetation community type, conservation of that community is calculated at 67 percent of its total mapped acreage on the property (i.e., 2 out of every 3 acres will be conserved). This approach requires that onsite and offsite mitigation is balanced among all the ratio areas within the City (i.e., mitigation is generally required to be within the Encinitas Subarea. Conservation of wetland communities will be at 100 percent in softlined areas, and narrow endemics will be conserved at 95 percent in these areas" (City of Encinitas 2001).

ECORP assessed the property for its ability to function as a wildlife corridor. The Preserve Area provides

unlimited wildlife movement opportunities due to its connectivity to open space to the northeast and adjacency to Batiquitos Lagoon. However, the Development Area's value as a corridor is lessened by the fact that a majority of the Development Area is sparse, disturbed land cover bordered by residential development. The coastal scrub communities within the center of the Development Area provides a discontiguous connection to the dense chaparral habitat at the north end of the Development Area, which transitions into the Preserve Area; therefore south-north movement is established. The I-5 corridor west of the Proposed Project and residential developments to the east likely block east-west movement through the area. The Preserve Area contains vegetation structure and topography that does provide unique or additional vegetative cover or shelter from adjacent areas, which is a characteristic of wildlife corridor areas.

3.5 Rare Plant Focused Survey

As summarized in Section 3.2.6, focused surveys for rare plants determined presence of four rare plant species within the property (Figure 3-5). See the associated focused survey report included as Attachment A for more detail.

3.6 Coastal California Gnatcatcher Focused Survey

As summarized in Section 3.2.6, focused surveys for coastal California gnatcatcher confirmed presence of this species within the Proposed Project. A total of five coastal California gnatcatcher territories (two pairs within the Development Area, one territorial male within the offsite adjacent Preserve Area south of Sky Loft Road, and two CAGN pairs within the 500-foot survey buffer mostly east of the offsite adjacent Preserve Area north of Sky Loft Road (Figure 3-6). A small portion of Territory 3 overlaps the offsite adjacent Preserve Area. See the associated focused survey report included as Attachment B for more detail.

3.7 Pacific Pocket Mouse Focused Survey

Focused surveys for Pacific pocket mouse were negative for the Proposed Project. See the associated focused survey report included as Attachment C for more detail.

4.0 IMPACT ANALYSIS

This section provides a Project-level biological resource impact analysis and addresses biological resource issues derived from Appendix G of the CEQA Guidelines, as well as biological resource issues specific to the City of Encinitas. Direct impacts include the primary effects of construction that displace habitats and species. These impacts will occur in association with Proposed Project construction due to grading, paving, and other disturbances associated with general construction activities. Indirect impacts occur from a secondary effect of construction activities. Indirect impacts are those which occur due to the proximity of a disturbance or development to a species or its habitat. These impacts occur over the short term, during construction, and over the long term due to proximity of the new Proposed Project features. This type of impact could include habitat isolation or degradation, urban edge effects, nonnative species introduction, runoff, alteration of a wildlife species' normal behaviors and activities, vehicular noise or

increased human or pet intrusion. The magnitude of an indirect effect can be as adverse as that of a direct effect, depending on the circumstances. Mitigation, monitoring and reporting requirements to avoid, eliminate, or reduce potentially significant impacts to special-status biological resources to a less than significant level are discussed below. The following sections present impacts to sensitive biological resources resulting from Proposed Project activities.

4.1 Sensitive Natural Communities

Direct impacts could occur to three Oberbauer/MCV vegetation communities: Diegan Coastal Sage Scrub/California Sagebrush – California Buckwheat Scrub, Coastal Scrub/Deerweed Scrub, and Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral. Of these, Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral is the only sensitive natural community that would be impacted; however, all three communities have specific mitigation ratios according to the MHCP and Draft SAP (VegCAMP; CDFW 2022d; City of Encinitas 2001; SANDAG 2003). Furthermore, the Project could indirectly impact additional acreages of Diegan Coastal Sage Scrub/California Sagebrush – California Buckwheat Scrub and Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral if mitigation measures are not employed. Both communities have specific mitigation ratios according to the MHCP and Draft SAP (City of Encinitas 2001; SANDAG 2003). Unavoidable impacts to sensitive and/or mitigated natural communities would result from the development of the Proposed Project within the Development Area, which includes the townhome property footprint (onsite impacts), offsite improvements required by the City adjacent to the property along Piraeus Street and Plato Place (offsite impacts), and the associated 100-foot FMZ. These impacts are considered significant and mitigation will be required. Implementation of Mitigation Measures **BIO-1**, **BIO-2**, **BIO-6**, **BIO-7**, **BIO-8, and BIO-9** would reduce these impacts to a **less than significant** level. Table 4-1 provides expected impact acreages with recommended mitigation ratios applied.

Table 4-1. Impact Acreages of Vegetation Communities and Land Covers within the Proposed Project

Oberbauer Vegetation Communities	**MCV Vegetation Communities**	**Development Area (Impact) (Acres)**			**Development Area (Impact)** Total **(Acres)**	**Required Mitigation Ratio**	**Total (Acres)**
		Site	**Offsite Improvements**	**FMZ**			
Diegan Coastal Sage Scrub (32500)	California Sagebrush – California Buckwheat Scrub	0.77	0.16	-	0.93	2:1	1.86
Southern Mixed Chaparral (37120)	Chamise-Mission Manzanita Chaparral[1]	0.65	<0.01	0.48	1.13	1:1	1.13
Coastal Scrub (32000)	Deerweed Scrub	1.38	0.06	-	1.44	2:1	2.88
Disturbed	Disturbed	2.96	0.27	0.05	3.28	-	3.28
				Total	**6.78**	**-**	**9.15**

[1]Sensitive vegetation community
[2]Excludes San Diego Gas and Electric (SDG&E) easement
MCV = Manual of California Vegetation

Table 4-1. Impact Acreages of Vegetation Communities and Land Covers within the Proposed Project							
Oberbauer Vegetation Communities	**MCV Vegetation Communities**	**Development Area (Impact) (Acres)**			**Development Area (Impact)** Total **(Acres)**	**Required Mitigation Ratio**	**Total (Acres)**
		Site	**Offsite Improvements**	**FMZ**			

FMZ = Fuel Modification Zone

4.2 Special-Status Species

4.2.1 Special-Status Plants

Results of the 2022 focused rare plant surveys identified four special-status plant species (California adolphia, wart-stemmed ceanothus, Engelmann oak, and ashy spike-moss) within the property and its 100-foot buffer. Based on the Development Area boundaries, the Project would directly impact 154 California adolphia individuals, nine of which occur within the FMZ. California adolphia has a CRPR rating of 2B.1. In addition, direct Project-related impacts would remove 0.02 acre of occupied California adolphia habitat. Indirect impacts to rare or special-status plant species may occur due to habitat degradation and increased dust if present in the areas adjacent to the Development Area. The Project has potential to indirectly impact 26 individuals of California adolphia, 1 wart-stemmed ceanothus, and 1 Engelmann oak if mitigation measures are not enacted. Both wart-stemmed ceanothus and Engelmann oak are covered by the MHCP and Draft SAP and have a CRPR rating of 2B.2 and 4.2, respectively. Impacts to rare plant species would be **less than significant** with the implementation of Mitigation Measures **BIO-2**, **BIO-3**, **BIO-6, BIO-7, BIO-8, and BIO-9**. Recommended mitigation measures are presented in Section 5.0.

4.2.2 Special-Status Wildlife Species

The results of the literature review and reconnaissance-level survey identified six special-status wildlife species present (monarch butterfly, orange-throated whiptail, coastal California gnatcatcher, Cooper's hawk, northwestern San Diego pocket mouse, and San Diego desert woodrat), one species (southern California rufous crowned sparrow) was found to have a high potential to occur, and five species (southern California legless lizard, coastal whiptail, coast patch-nosed snake, Bell's sage sparrow, and San Diego black-tailed jackrabbit) were found to have a moderate potential to occur.

If present, direct impacts to rare or special-status wildlife species may occur as a result of the Proposed Project in the form of mortality or injury due to ground-disturbing and vegetation removal activities within the Development Area. Indirect impacts to rare or special-status wildlife species may occur due to habitat degradation, edge effects, construction noise, and other associated construction activities if present in the areas adjacent to the Development Area. Impacts to special-status wildlife species would be **less than significant** with the implementation of Mitigation Measures **BIO-1**, **BIO-2**, **BIO-5**, **BIO-6, BIO-7, BIO-8, and BIO-9.** Recommended mitigation measures are presented in Section 5.0.

4.2.2.1 Coastal California Gnatcatcher

The property provides nesting and foraging habitat for the federally listed threatened coastal California gnatcatcher. This species was observed within both the Development Area and the Preserve Area during the reconnaissance survey. Focused protocol-level surveys determined two pairs occupying the Development Area, one territorial male occupying the offsite adjacent Preserve Area south of Sky Loft Road, and two pairs mostly within the 500-foot buffer east of the offsite adjacent Preserve Area north of Sky Loft Road. Direct impacts resulting from the Proposed Project could occur to the coastal California gnatcatcher in the form of vegetation removal, destruction of active nests, harm to individuals, and the loss of occupied Critical Habitat. Indirect impacts could occur to the species in the form of noise, ground vibrations, habitat degradation, increased human and pet activity and visual disturbances, and dust. The primary reasons for coastal California gnatcatcher population decline are habitat loss, degradation, and fragmentation due to urban development of coastal sage scrub habitats. Properties located in the Coastal Zone shall conserve a minimum of 75 percent of the coastal California gnatcatchers onsite. Conservation of gnatcatchers shall be determined in consultation with the wildlife agencies (CCC 2022).

Impacts to the coastal California gnatcatcher would be significant under CEQA; therefore, ECORP recommends that Mitigation Measures **BIO-1**, **BIO-2, BIO-4**, **BIO-5**, **BIO-6, BIO-7, BIO-8, and BIO-9** be implemented to reduce these impacts to a **less than significant** level.

4.2.2.2 Raptors and Migratory Birds

The vegetation within the property and infrastructure adjacent to the site (e.g., utility poles, existing buildings) could provide nesting habitat for nesting birds and raptors protected by the MBTA and California Fish and Game Code, and also provides foraging habitat for songbird and raptor species, including the special-status bird species with potential to occur on the Proposed Project. If construction of the Proposed Project occurs during the bird breeding season (typically February 1 through August 31 for passerines and January 15 through July 31 for raptors), ground-disturbing construction activities could directly affect MBTA-protected birds and their nests through the removal of habitat within the Proposed Project limits, and indirectly through increased noise, ground vibrations, and increased human activity. Implementation of Mitigation Measure **BIO-5, BIO-6, BIO-7, BIO-8, and BIO-9** would reduce impacts to a **less than significant** level.

4.2.2.3 Pacific Pocket Mouse

The Proposed Project provides only low-quality habitat for the federally listed endangered and state species of special concern Pacific pocket mouse. Focused survey results for this species were negative within the Development Area. Therefore, there will be **no impact** to this species due to implementation of the Proposed Project.

4.3 Wildlife Corridors, Linkages, and Significant Ecological Areas

Overall, the Proposed Project does not function as a wildlife corridor but the Preserve Area does function as a significant ecological area of open space habitat. The Proposed Project was identified to be within a

softline FPA area, which means the area is biologically significant and projects in this area are subject to higher scrutiny in order to adhere to and achieve the goals set forth in the MHCP and Draft Encinitas Subarea Plan. Per the Draft Encinitas Subarea Plan, conservation targets in upland areas within these softlined areas: (1) 2 out of every 3 acres of its total mapped acreage [of mitigated communities] on the property will be conserved; (2) onsite preservation of 75% of the onsite coastal California gnatcatchers; and (3) generally mitigation is required to be within the Encinitas Subarea (City of Encinitas 2001). Development of the Proposed Project would isolate the coastal California designated critical habitat from the small patch of undeveloped habitat south of Plato Place that is surrounded by residential developments to the east, and south, and by I-5 to the west. Implementation of Mitigation Measures **BIO-1, BIO-4**, **BIO-6, BIO-7, BIO-8, and BIO-9** would reduce impacts to a **less than significant** level.

4.4 Jurisdictional Aquatic Resources

There will be **no impact** to jurisdictional aquatic resources due to implementation of the Proposed Project as the Project occurs more than 100 feet from the closest NWI mapped coastal wetlands.

4.5 Habitat Conservation Plans and Natural Community Conservation Plans

The Proposed Project is located within the MHCP and Draft Encinitas Subarea Plan. The MHCP plan serves as an umbrella document to guide the preparation of subarea plans by each participating city and does not itself receive any permits. To be approved, subarea plans must be consistent with the conservation and policy guidelines of the MHCP. Although the Encinitas Subarea Plan is still in draft form, guidelines should be followed as it is planned to be finalized in the future and projects will need to adhere to commitments made in the MHCP. Implementation of all Mitigation Measures listed below would reduce impacts to a **less than significant level** or mitigate for unavoidable significant impacts.

5.0 DESIGN CONSIDERATIONS AND RECOMMENDED MITIGATION MEASURES

5.1 Design Considerations

ECORP recommends maintaining the planned Proposed Project Development Area and Preserve Area boundaries. The 100-foot FMZ is adequate in maintaining an appropriate preservation of habitat while simultaneously ensuring public safety. Any change to these delineated boundaries would alter acreage impacts to sensitive vegetation and habitats.

The following are recommended design measures for development adjacent to preserve areas directly inserted from the Draft Encinitas Subarea Plan (City of Encinitas 2001):

> "Drainage and Toxics. All new and proposed parking lots and developed areas in and adjacent to the preserve shall not drain directly into the preserve. All developed and paved areas and agricultural and recreational use areas shall prevent the release of toxins, chemicals, petroleum products, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystem processes within the preserve. This can be accomplished using a variety of methods, including natural detention basins, grass swales, or mechanical trapping

devices. These systems shall be maintained approximately once a year, or as often as needed to ensure proper functioning. Maintenance shall include dredging out sediments if needed, removing exotic plant materials, and adding chemical-neutralizing compounds (e.g., clay compounds when necessary and appropriate).

Erosion and Sedimentation. All new development adjacent to preserve areas shall be required to adhere to measures outlined in the City's Grading, Erosion, and Sediment Control Ordinance to avoid degradation of lagoons, other wetland habitats, and upland habitats from erosion and sedimentation. These measures include restrictions on the Section 4 Preserve Design and Land Use Considerations Encinitas Subarea Plan 4-14 314555000 Public Review Draft timing and amount of grading and vegetation removal. For example, grading or vegetation removal shall be prohibited during the rainy season (October 1 through April 15) without an approved erosion control plan and program in place. Grading or vegetation removal shall be prohibited adjacent to preserve areas during the rainy season unless determined to be allowable on a site-specific basis. In addition, all necessary erosion control devices must be in place, and appropriate monitoring and maintenance must be implemented during the grading period. Once the subarea plan is adopted, the City will amend the ordinance to restrict grading when covered bird species are using the habitat for breeding (see Section 6.3).

Lighting. Lighting of all developed areas adjacent to the preserve shall be directed away from the preserve. Where necessary, development shall provide adequate shielding, berming, or other methods to protect the preserve and sensitive species from night lighting. Noise. Land uses adjacent to the preserve shall be designed to minimize noise impacts. Berms and walls shall be constructed adjacent to commercial areas, recreational areas, and any other use that may introduce noises that could impact or interfere with wildlife utilization of the preserve. Any activities that generate noise levels greater than 60 decibels (A-weighted scale) within 500 feet of nesting sensitive bird species (such as California gnatcatcher, least Bell's vireo, southwestern willow flycatcher, California least tern, and snowy plover) shall be conducted outside of the breeding season or include sound attenuation devices.

Barriers. New development adjacent to the preserve may be required to provide barriers (e.g., noninvasive vegetation, rocks/boulders, fences, walls, and signs) along the preserve boundary to direct public access to appropriate entrance locations and reduce domestic animal predation.

Landscaping Restrictions. When landscaping within or adjacent to the preserve, the following guidelines shall be followed. Prohibit the use of nonnative, invasive plant species (i.e., container stock and hydroseed material) in landscaping palettes. Revegetate areas of exotic species removal with native species appropriate to the adjacent preserve area. Table 4-2 (Page 4-15 of Draft SAP) provides a partial list of attractive native landscape plants that are tolerant of some summer irrigation and are compatible with adjacent preserve areas.

See also Table 7-1 in Section 7 (Page 7-6 of Draft SAP) for a list of landscape plants not recommended within 1,000 feet of preserve areas. Control and monitor horticultural regimes (e.g., irrigation, fertilization, pest control, and pruning), which can alter site conditions in natural areas, to prevent shifts in species composition from native to nonnative flora. Irrigation runoff, for example, can alter natural areas that are adapted to xeric (dry) conditions, thereby promoting establishment of nonnative plants and displacement of native species. Irrigation can also carry pesticides into natural areas, adversely affecting both plants and wildlife. Irrigation should generally be directed away from the preserve, as this could foster conditions favorable to Argentine and fire ants. Finally, fertilizer management programs shall be implemented that apply the minimal amount of fertilizer required for all public horticultural areas adjacent to the preserve.

> Fire and Brush Management. Fire and brush management guidelines shall be enforced so that both biological and safety goals are met, consistent with the recommendations of the Wildland/Urban Interface Task Force. Brush management to reduce fuel and protect urban uses shall occur where existing development is adjacent to the preserve. New residential development located adjacent to the preserve must be set back to incorporate brush management zones on the development pad and outside the preserve. For existing projects and approved projects, the brush management zones, standards and locations, and clearing techniques will not change from those required under existing regulations. Where consistent with the Wildland/Urban Interface Development Standards, vegetation clearing for fire management shall involve brushing rather than disking. Brushing maintains a more firm ground surface that is less prone to erosion and invasion of exotic plant species. Brushing shall require an approved erosion control program and shall be prohibited when covered species are using the habitat for breeding."

Additionally, ECORP recommends site-appropriate landscaping for the Proposed Project and use of plants listed in "*Table 4-2. Native Landscaping Shrubs Suitable For Use Adjacent To Preserve Areas*" from the Draft Encinitas Subarea Plan.

5.2 Avoidance, Minimization, and Mitigation Measures

The following recommended avoidance, minimization, and mitigation measures are provided based on the impacts analysis presented above and would reduce impacts to sensitive biological resources to a **less than significant** level.

BIO-1: **On and Offsite Adjacent Preservation of Sensitive Habitat.** The majority of preservation goals and required mitigation ratios for impacted vegetation communities (see Tables 3-3, 4-1, and 6-1) will be met through establishment of the onsite and offsite adjacent Preserve Area. Prior to grading, establishment of the Preserve Area will preserve in place 5.51 acres (47%) of the 11.83-acre (including onsite and offsite acreages) property, including 100% (0.71-acre) of CDFW sensitive Diegan Coastal Sage Scrub/Lemonade Berry Scrub and 72% (0.81-acre) of CDFW sensitive Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral (see Table 3-4). Preservation in perpetuity of the vegetation and habitat within the aforementioned Preserve Area shall occur and be set aside as an open space conservation easement in favor of the City of Encinitas. In addition, prior to any grading, a long-term management plan shall be prepared for the mitigation areas, to the satisfaction of the City, and wildlife agencies. The preserve management plan shall provide an entity and endowment funding to maintain the biological open space in perpetuity.

BIO-2: **Biological Monitoring.** A qualified biologist (biological monitor) with experience monitoring for and identifying sensitive biological resources known to occur in the area shall be present during all site preparation, vegetation clearing, and ground-disturbing activities related to the Proposed Project regardless of permit association. A biological monitor shall be present to ensure wildlife species are relocated out of harm's way. The biological monitor, with assistance from crews when necessary, shall also deconstruct woodrat middens prior to vegetation clearing within the Development Area. Woodrat middens within the FMZ shall be protected in place to the maximum extent practicable, but may be deconstructed if deemed a fire hazard. Biological monitoring duties include, but are not limited to, conducting worker

education training, verifying compliance with the Project's biological resources protection requirements, and ensuring Project activities stay within designated work areas. The biologist shall be responsible for providing Worker Environmental Awareness Training to all personnel working on the Proposed Project prior to the start of ground-disturbing activities. The training shall include, but not be limited to, discussions of the sensitive biological resources associated with the Proposed Project, Proposed Project-specific measures to avoid or eliminate impacts to these resources, consequences for not complying with Proposed Project permits and agreements, and contact information for the lead biologist. Attendees will sign a sign-in sheet documenting their attendance at the training.

During ground-disturbing activities, including any vegetation removal within the Development Area and FMZ, the biological monitor shall have the right to halt all activities in the area affected if a special-status wildlife species is identified in a work area and is in danger of injury or mortality. If work is halted in the area affected as determined by the biological monitor, work shall proceed only after the hazard(s) to the individual is removed and the animal is no longer at risk, or the individual has been removed from harm's way in accordance with the Project's permits and/or management/translocation plans. The biological monitor shall take representative photographs of the daily activities and maintain a daily log that documents general project activities and compliance with the project's biological resources protection requirements. The biologist shall document non-compliances in the daily log, including any measures that were implemented to rectify the issue.

BIO-3: **Rare Plant Salvage and Avoidance.** Establishment of the on and offsite Preserve Area (BIO-1) shall result in avoidance and protection of 103 California adolphia in place. Nine California adolphia individuals identified within the FMZ shall be flagged prior to fuel reduction activities and avoided in place. Project related impacts to 145 California adolphia individuals and 0.02-acre of California adolphia occupied habitat are anticipated to be unavoidable, therefore salvage of seed and donation to a City refuge or preserve, donation to a local native plant nursery, or propagation within an off-site mitigation area shall be required to the satisfaction of the City. A qualified biologist shall collect seed from the California adolphia to be impacted during the appropriate time, store under appropriate conditions, and coordinate with the appropriate personnel to facilitate propagation of the seed. California adolphia individuals within the FMZ (9 individuals) shall be flagged for avoidance by a qualified botanist prior to development and thinning of the FMZ and a qualified botanist shall be present during vegetation thinning of the FMZ to ensure avoidance is properly achieved. Run-off from the Proposed Project shall be directed away from the Preserve Area. Dust control measures shall be implemented during construction to minimize impacts to rare plants within the adjacent Preserve Area.

BIO-4: **Coastal California Gnatcatcher Protection.** Focused surveys determined presence of this species within the Proposed Project Area. Project-related impacts to two pairs (4 individuals) and their territories are unavoidable, therefore the applicant will need to obtain USFWS approval pursuant to Section 10 of the federal Endangered Species Act for the impacts to

the coastal California gnatcatcher prior to the issuance of any grading permits. The onsite preservation of sensitive habitat (BIO-1) would preserve one single male coastal California gnatcatcher territory in place within the offsite adjacent Preserve Area south of Sky Loft Road and one additional breeding pair's territory that overlaps a small portion of the offsite adjacent Preserve Area north of Sky Loft Road. More importantly, the Preserve (on and offsite adjacent) would allow for the safe passage of the two displaced pairs of coastal California gnatcatchers to preserved habitat north of the Development Area and continuous with open space areas to the north, northeast (which includes at least one additional breeding pair of coastal California gnatcatchers within 500 feet of the Preserve Area), and to Batiquitos Lagoon State Marine Conservation Area which functions to preserve important coastal-inland wildlife movement. The Project will require development of a Low-Effect Habitat Conservation Plan under Section 10 of the ESA.

BIO-5: **Pre-Construction Survey for Nesting Birds and Special-Status Avian Species.** Where feasible, ground-disturbing activities, including vegetation removal, shall be conducted during the non-breeding season (approximately September 1 through January 14) to avoid violations of the MBTA and California Fish and Game Code §§ 3503, 3503.5 and 3513. Several species that were identified as having potential to occur can nest year-round; therefore, regardless of time of year, a pre-construction survey for nesting birds and special-status avian species shall be conducted by a qualified biologist (experienced in the identification of avian species and conducting nesting bird surveys) if activities with the potential to disrupt nesting birds or special-status avian species are scheduled to occur. The survey shall include the Proposed Project and adjacent areas where Proposed Project activities have the potential to cause nest failure. The pre-construction survey shall be conducted no more than three days prior to the start of ground-disturbing activities (including vegetation removal and FMZ thinning) within the bird breeding season. Site preparation and construction activities may begin if no nesting birds or special-status avian species are observed during the survey. If nesting birds (including raptors) or special-status avian species are found to be present, biological monitoring in accordance with BIO-3 in addition to nest avoidance and minimization measures shall be implemented to avoid potential Project-related impacts to the species. Avoidance and minimization measures shall be developed by the qualified biologist and may include seasonal work restrictions, additional nesting bird survey and nest monitoring requirements, and/or establishment of non-disturbance buffers around active nests until the biologist has determined that the nesting cycle is completed. The circumference of non-disturbance buffers established around active nests shall be determined by the qualified biologist (typically 300 feet for songbirds and 500 feet for raptors and listed species). The qualified avian biologist shall consider and have the authority to reduce or increase non-disturbance buffers based on vertical distances, species life history, sensitivity to disturbances, individual behavior and sensitivity to disturbances, nest stage (incubation, feeding nestlings, etc.), location of nest and site conditions, presence of screening vegetation or other features, ambient and ongoing construction activities at the time of nest establishment, and remaining Project activities in the immediate area when

determining non-disturbance buffers. Once nesting is deemed complete by the qualified biologist as determined through periodic nest monitoring, the non-disturbance buffer will be removed by the qualified biologist and Proposed Project work may resume in the area. The Pre-Construction Nesting Bird Survey will be an ongoing requirement for long-term maintenance activities associated with the Project, including annual maintenance of the FMZ.

BIO-6: **Construction Fencing.** The limits of Project impacts (including construction staging areas and access routes) shall be clearly delineated by the construction contractor under the direct supervision of a qualified biological monitor with bright orange plastic fencing, stakes, flags, or markers that will be installed in a manner that does not impact habitats to be avoided, and such that they are clearly visible to personnel on foot and operating heavy equipment. Silt fence barriers shall be installed as required to prevent the spread of silt from the construction zone into adjacent habitats and aquatic features. Temporary construction fencing and markers shall be maintained in good repair until the completion of Project construction. The applicant shall submit the final plans for Project construction to the City for approval at least 30 days prior to initiating Project impacts. These final plans shall include photographs that show the fenced limits of impact and areas to be impacted or avoided.

The construction team shall strictly limit their activities, vehicles, equipment, and construction materials to the fenced Project footprint. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas within the fenced Project impact limits. These designated areas shall be located in previously compacted and disturbed areas to the maximum extent practicable in such a manner as to prevent any runoff from entering adjacent open space and shall be shown on the construction plans. Equipment fueling shall take place within existing disturbed areas. Contractor equipment shall be checked for leaks prior to operation and repair, as necessary. "No-fueling" zones shall be designated on construction plans.

BIO-7: **Offsite Mitigation.** Prior to any grading**,** offsite mitigation will be required for an additional 1.92 acres of impacts to sensitive and/or mitigated habitats not achieved within the on and offsite adjacent Preserve Area established in BIO-1, including 1.60 acres of coastal sage scrub within the Coastal Zone and 0.32 acre of Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral (see Table 6-1 in Section 6.0). This can be achieved through purchasing of mitigation credits or acquiring additional land within the Coastal Zone. Because available land and established mitigation banks within the Coastal Zone are not available, and because the City of Encinitas SAP is still in draft form, purchasing of mitigation credits within a North County MHPA mitigation bank (https://www.sandiegocounty.gov/content/sdc/pds/mitbnks.html) or at another City-approved preserve area in the process of being established will need to be negotiated to the satisfaction of the City, CDFW, and USFWS.

BIO-8: **Limited Building Zone Easement.** A Limited Building Zone (LBZ) Easement shall be granted to prohibit the building of structures that would require vegetation clearing within the

protected biological open space for fuel management purposes. The easement must extend at least 100 feet from the biological open space boundary.

Grant to the City of Encinitas a LBZ Easement to the satisfaction of the City. The only exceptions to this prohibition are structures that do not require fuel modification/vegetation management. The LBZ easement will also include language that rare plant avoidance within the LBZ shall be required by requiring a biologist onsite prior to any fuel management activities.

Prior to recordation of the final map, the applicant shall show the easement on the Final Map with the appropriate granting language on the title sheet concurrent with Final Map review.

BIO-9 **Open Space Signage and Fencing.** In order to protect the proposed open space easement from entry, or disturbance, permanent fencing and signage shall be installed. DESCRIPTION OF REQUIREMENT: Signage shall be placed on posts in prominent areas and no more than 100 feet apart along the southern boundary of the biological open space boundary (i.e. onsite Preserve Area) at the interface with the FMZ. In addition, signs shall be posted along the Preserve Boundaries at 300-foot intervals and facing the public right of ways along Piraeus Street and Sky Loft Road.

a. Evidence shall be site photos and a statement from a California Registered Engineer, or licensed surveyor that the open space signs have been installed.

b. The sign must be corrosion resistant, a minimum of 6" x 9" in size, on posts not less than three (3) feet in height from the ground surface, and must state the following:

   Sensitive Environmental Resources Area Restricted by Easement

   Entry without express written permission from the City of Encinitas is prohibited. To report a violation or for more information about easement restrictions and exceptions contact the City of Encinitas, Development Services

   Reference: MULTI-005158-2022

DOCUMENTATION: The applicant shall install the signage and fencing as indicated above and provide site photos and a statement from a California Registered Engineer, or licensed surveyor that the open space fencing has been installed at the open space easement boundary. TIMING: Prior to any occupancy, final grading release, or use of the premises in reliance of this permit, the fencing and signage shall be placed. MONITORING: The Development Services Department shall review the photos and statement for compliance with this condition.

6.0 SUMMARY OF PROJECT IMPACTS AND MITIGATION MEASURES

Properties containing coastal sage scrub located in the Coastal Zone shall conserve a minimum 67% of the coastal sage scrub and 75% of the coastal California gnatcatchers onsite. The Proposed Project is within a BCLA, *softline* FPA, and Coastal Zone, therefore it is assumed that impact avoidance and

preservation of habitat through establishment of an open space easement on and offsite adjacent (BIO-1) would be credited toward satisfaction of the majority of mitigation obligations. Mitigation ratios are based on guidelines outlined in the MHCP, Draft Encinitas Subarea Plan, and as recommended for Coastal Zone projects. Per the Draft Encinitas Subarea Plan, "Conservation targets in upland areas within these softlined areas will vary based on the mitigation ratio to be applied to each vegetation community type. For example, if a 2:1 (conservation:take) ratio applies to a vegetation community type, conservation of that community is calculated at 67 percent of its total mapped acreage on the property (i.e., 2 out of every 3 acres will be conserved). This approach requires that onsite and offsite mitigation is balanced among all the ratio areas within the City (i.e., mitigation is generally required to be within the Encinitas Subarea" (City of Encinitas 2001). It has been calculated that the onsite preservation of 75% of the onsite coastal California gnatcatchers will be achieved through establishment of the on and offsite adjacent Preserve Area (1+ territories with 3 individuals preserved: 2 territories with 4 individuals impacted). However, conservation of coastal California gnatcatchers shall be determined in consultation with the wildlife agencies. Offsite mitigation (BIO-7) will be required for an additional 1.92 acres of impacts to sensitive and/or mitigated habitats not achieved within the Preserve Area including 1.60 acres of Diegan Coastal Sage Scrub and Coastal Scrub and 0.32 acre of Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral.

6.1 Summary of Existing Habitats/Communities, Impacts, and Mitigation

Table 6-1. Summary Table of Existing Habitats/Communities, Impacts, and Mitigation

General Habitat Type	Preserve Area[1] (Acres)		Development Area (Acres)	Total[1] (Acres)	Mitigation Ratio Required	% Conserved[2]	Mitigation Ratio Achieved	Deficit (Acres)
	Onsite	Offsite Adjacent						
CSS[3]	3.14		2.37	5.51	2:1	57	No	-1.60
Chaparral	0.56	0.25	1.13	1.95	1:1	42	No	-0.32
Total	3.70	0.25	3.50	7.45		53%		-1.92

[1]Preserve Area (on and offsite adjacent) and Total acreage does not include 0.02-acre SDG&E easement.
[2]California Coastal Commission requires conservation of 67% of coastal sage scrub for properties within Coastal Zone
[3]CSS = Coastal Sage Scrub and includes Diegan Coastal Sage Scrub and Coastal Scrub

In the table above, the Development Area acreage includes impacts due to development of the site plan itself, offsite improvements, and establishment of an FMZ. The required mitigation ratios will be achieved through preservation of onsite, offsite adjacent, and offsite habitat as recommended by Mitigation Measures **BIO-1** and **BIO-7.**

6.2 MHCP Consistency Statement

In committing to incorporate the aforementioned avoidance, minimization, and mitigation measures above, the Proposed Project would be consistent with the MHCP and Draft Encinitas Subarea Plan.

7.0 ADDITIONAL RECOMMENDATIONS

In addition to implementing the recommended mitigation measures outlined in Section 6.0, ECORP recommends the following best management practices, which are not mitigation measures pursuant to CEQA but recommended to further reduce impacts to special-status species that have potential to occur on the property:

- Confine all work activities to a pre-determined work area. Stay on previously designated roads or, if not possible, create one-way-in and one-way-out roads during construction.
- To prevent inadvertent entrapment of wildlife during the construction phase of the Project, all excavated, steep-walled holes or trenches more than 2 feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks should be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.
- Wildlife are often attracted to burrow- or den-like structures such as pipes and may enter stored pipes and become trapped or injured. To prevent wildlife use of these structures, all construction pipes, culverts, or similar structures with a diameter of 4 inches or greater should be capped while stored on the site.
- All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from the construction or Project Area.
- Use of rodenticides and herbicides on the Project should be restricted. This is necessary to prevent primary or secondary poisoning of wildlife and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other state and federal legislation. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to raptors.

8.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the Project applicant or the applicant's representative and that I have no financial interest in the Proposed Project.

SIGNED:

Caroline Garcia _____ DATE: 10/28/22

Caroline Garcia
Associate Biologist
ECORP Consulting, Inc.

Under the direction of:

SIGNED:

Christine Tischer _____ DATE: 10/28/22

Christine Tischer
Senior Biologist/Project Manager
ECORP Consulting, Inc.

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Attachment E – Plant Species Observed

Attachment F – Wildlife Species Observed

Attachment G – Special-Status Plant Species Potential For Occurrence

Attachment H – Special-Status Wildlife Species Potential For Occurrence

ATTACHMENT A

Rare Plant Focused Survey Report

Results of the 2022 Focused Rare Plant Surveys for the Piraeus Point Project

San Diego County, California

Prepared For:

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Prepared By:

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September 2022

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
APN	Assessor's Parcel Number
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
Development Area	149-home modern townhome community, offsite improvements, and the associated Fuel Modification Zone
Draft SAP	Draft Encinitas Subarea Plan
ESHAs	Environmentally Sensitive Habitat Areas
FMZ	Fuel Modification Zone
FPA	Focused Planning Area
GNSS	Global Navigation Satellite System
GIS	Geographic Information System
MCV	*A Manual of California Vegetation*
MHCP	Multiple Habitat Conservation Plan
NOAA	National Oceanic and Atmospheric Administration
Oberbauer	Oberbauer designations
Preserve Area	Northern Portion of the Piraeus Property
Proposed Project	Development Area and Preserve Area of the Piraeus Property
SANDAG	San Diego Association of Governments
Survey Area	Project Area and a 100-foot buffer
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VegCAMP	Vegetation Classification and Mapping Program

1.0 INTRODUCTION

Lennar Homes (Client) contracted ECORP Consulting, Inc. to conduct focused botanical surveys for rare plants within the Piraeus property. The development portion of the Piraeus Point Project consists of a 149-home modern townhome community, offsite improvements, and the associated Fuel Modification Zone (FMZ; Development Area). The northern portion of the Piraeus property will be preserved in perpetuity and left untouched, excluding the San Diego Gas & Electric (SDG&E) easement that also occurs on the property (Preserve Area). Together, the Development Area and the onsite Preserve Area are the Proposed Project or Project Area. Focused surveys were conducted to identify target rare plant species within the property and a 100-foot buffer, hereafter referred to the Survey Area. This report summarizes the results of the three surveys conducted at the property during the 2022 blooming season (April, June, and August).

1.1 Project Location

The Proposed Project is located in San Diego County in the City of Encinitas (Figure 1). It is located directly east of U.S. Interstate 5 between Leucadia Boulevard and La Costa Avenue. The Project consists of two parcels of land (Assessor's Parcel Numbers [APN] 254-144-01-00 and 216-110-35-00). The Development Area occurs entirely within the southern parcel (APN 254-144-01-00) and consists of a 149-home modern townhome community, offsite improvements, and the associated Fuel Modification Zone. The northern portion of APN 254-144-01-00 and the entirety of the northern parcel (APN 216-110-35-00) will be preserved in perpetuity and left untouched (Preserve Area). The property is centered at latitude 33.0804247° and longitude -117.2960667° within Sections 4 and 33, Townships 12 and 13 South, Range 4 West of the U.S. Geological Survey (USGS) Encinitas 7.5-minute topographic quadrangle (Figure 2).

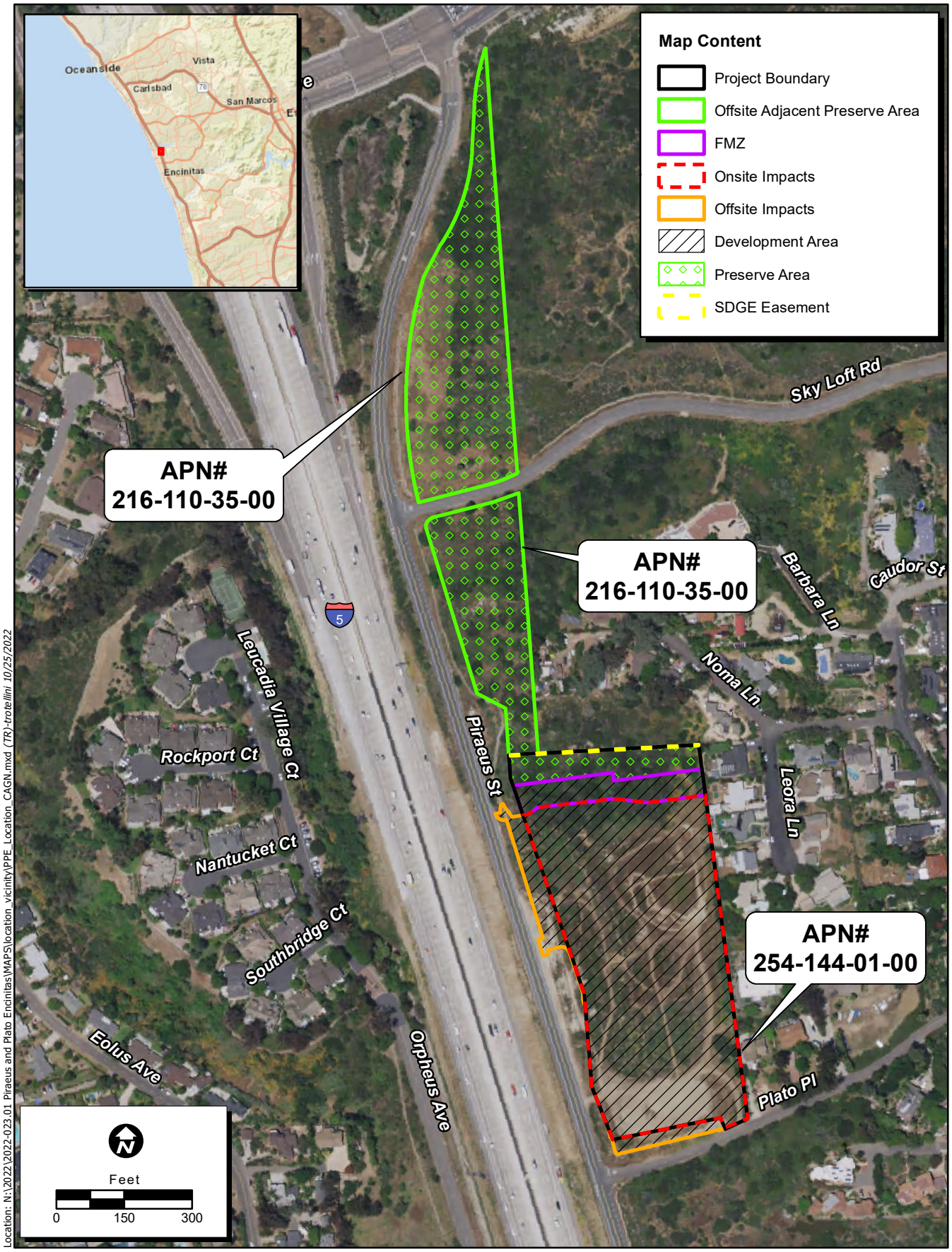
2.0 SURVEY METHODOLOGY

2.1 Literature Review

Prior to conducting the rare plant survey, ECORP conducted a review of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (USFWS 2022), the California Natural Diversity Database (CNDDB; California Department of Fish and Wildlife [CDFW] 2022) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (hereafter referred to as CNPS Electronic Inventory; CNPS 2022) to determine whether rare plant species have been previously reported within the Project Area and the surrounding USGS Encinitas 7.5-minute topographic quadrangle (3311713).

In addition, a background review of previously observed plant species on the Project site from previous biological studies included:

- *Preliminary Biological Resources Assessment – the Cannon Property at Piraeus Street, Encinitas* (Scheidt 2017); and
- Results of a Biology Field Study of the Cannon-Covelop Project, Encinitas (Scheidt 2019).



Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\location_vicinity\PPE_Location_CAGN.mxd (TR)-trotellini 10/25/2022

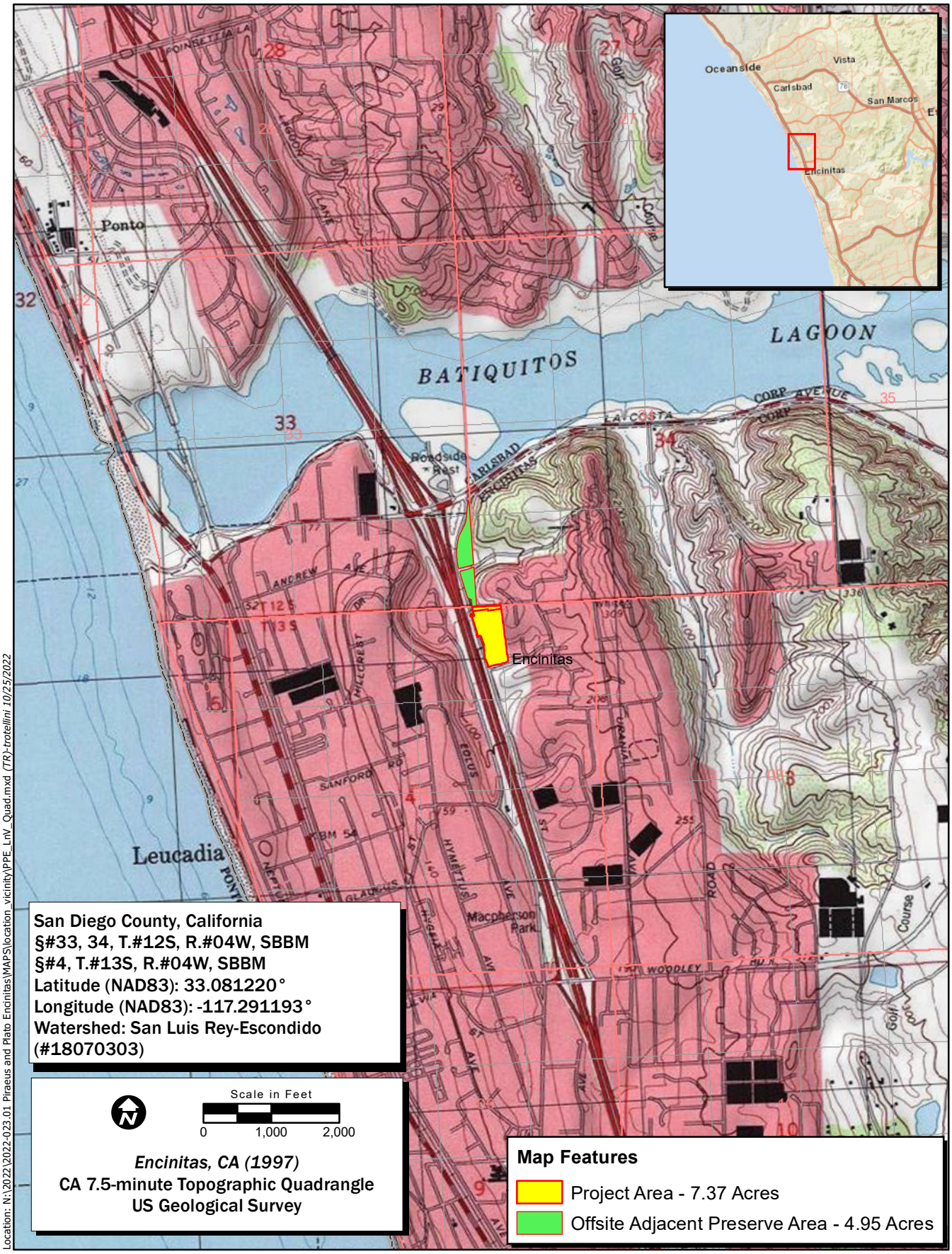
Map Date: 9/8/2022

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community Photo Source: NAIP

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Figure 1. Project Vicinity and Location

2022-023.01 Piraeus Point



Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\location_vicinity\PPE_LnV_Quad.mxd (TR)-trotellini 10/25/2022

Map Date: 10/25/2022

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed, Compiled by the Bureau of Land Management (BLM), National Operations Center (NOC), OC-530.

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Figure 2. USGS 7.5-Minute Topographic Quadrangle

2022-023.01 Piraeus and Plato Encinitas

2.1.1 Regulatory Review

Data regarding the Survey Area was also reviewed to determine consistency with the San Diego North County Multiple Habitat Conservation Plan (MHCP), Draft Encinitas Subarea Plan (Draft SAP), and the policies of the California Coastal Act that are included as the Local Coastal Program Land Use Plan in the Draft SAP.

2.1.2 Reference Population Assessments

Following the literature review, a list of target rare plant species was developed for the surveys. In order to verify the blooming status of plants in the region and target rare plant species for the Survey Area, two locations were visited. The field observations during these reference population site visits assisted with refining the optimal period to conduct the spring and summer survey events.

2.2 Focused Rare Plant Surveys

Rare plant species are those listed under the California or federal Endangered Species Acts, those covered under the MHCP, or those considered rare by CNPS. Three separate focused rare plant surveys were conducted within the Survey Area in 2022 based on the expected blooming periods of target plant species: April 19 and April 21, June 29, and August 18. Surveys were conducted by ECORP biologists Greg Hampton (lead surveyor), Caroline Garcia, and Reena Lam. Table 2 summarizes survey dates and personnel involved during the surveys. Surveys were conducted by biologists with extensive experience with botanical surveys and knowledge regarding plant taxonomy, plant species in the region, and special-status plant species.

Table 1. 2022 Survey Dates and Personnel

Date	Personnel
4/19 & 4/21	Greg Hampton and Caroline Garcia
6/29	Greg Hampton and Reena Lam
8/18	Greg Hampton and Reena Lam

The purpose of the surveys was to determine the presence or absence and number of individuals of rare plant species within the Survey Area.

Survey methods were devised with consideration of the following resources:

1. *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants* (USFWS 1996),
2. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018), and
3. *CNPS Botanical Survey Guidelines* (CNPS 2001).

The surveys were scheduled to coincide with the target rare plant species that have blooming periods in April, June, and August, and during a period when those target species were most likely identifiable.

A total of four survey days were conducted in April through August 2022 to provide 100-percent visual coverage of the entire Survey Area at different blooming periods of target rare plant species. Each survey gave priority to vegetation communities within the Survey Area known to support rare plant species that were blooming at that time. Vegetation communities that were not disturbed (i.e., infested by invasive plant species, lots, dirt roads) were also given priority. Areas that were not known to support rare plant species and/or were disturbed were surveyed after prioritized vegetation communities.

Pedestrian-based 10-meter survey transects were walked by two biologists. For heavily disturbed and developed portions of the Survey Area (e.g., bare lots, dirt roads) transects were extended to 20 meters based on higher visibility and the low probability of rare plants occurring in those areas. Global Navigation Satellite System (GNSS) devices, coupled with iPads® running ArcGIS Field Maps software were used during surveys to record the coordinates of any rare plant species. Juniper® Geode™ receivers were used to obtain submeter accuracy. Each GNSS device displayed a position using the Universal Transverse Mercator coordinate system, North American Datum 1983.

Common plant species were identified and recorded in order to maintain a compendium of plant species that occur in the Project Area. In some cases, biologists took plant samples from the site when a dissecting microscope was necessary for identification. Taxonomy of plant species identified within the Project site is based on the following sources:

- *The Jepson Manual* (Hickman 1993)
- *The Jepson Manual, 2nd Edition* (Baldwin et al. 2012)

The GNSS data collected in the field were uploaded from the GNSS device to a server, and differential correction post-processing was performed. The data were then viewed and analyzed for verification, edited, and converted to a Geographic Information System (GIS) format at the time of upload. In addition, field map notes were completed concurrent with GNSS data collection and in some cases field data forms were also completed when appropriate.

Population size and extent were estimated and recorded for every rare plant GNSS feature collected. In addition, all GNSS data features that were within 7 meters of each other were merged into a larger polygon, thereby increasing the acreage by including all potential habitat.

2.3 Meteorological Conditions

The nearest weather station with reviewable weather data and similar physical conditions was reviewed for the historical weather data of the Project Area using data from the National Oceanic and Atmospheric Administration (NOAA, 2022). Obtaining weather data for the Survey Area helps identify drought conditions and limitations to the survey.

2.4 Vegetation Mapping

Vegetation community mapping assists in providing baseline information on the existing vegetation communities within the Survey Area, including the acreage and specific locations of each community. This document and associated deliverables were prepared to assist the responsible local, federal, and state agencies to make appropriate land-use decisions regarding the management of the vegetation communities present in the Survey Area. Vegetation descriptions and impacts within the Survey Area are discussed further in Sections 3.0 and 4.0 of this report.

Vegetation community mapping was completed concurrently with the rare plant surveys, and the classification descriptions of vegetation communities within the Survey Area are included in Section 3.3. Vegetation community type classifications and descriptions followed the Oberbauer designations (Oberbauer) outlined in *Draft Vegetation Communities of San Diego County* (Oberbauer et al. 2008). However, a classification crosswalk was used from Appendix C of Vegetation Classification Manual for Western San Diego County (Sproul et al. 2011) to convert Oberbauer classifications to *A Manual of California Vegetation* (MCV; Sawyer et al. 2009) so that sensitive vegetation communities based on the California Sensitive Natural Communities list provided as part of CDFW's Vegetation Classification and Mapping Program (VegCAMP; CDFW 2022b) could also be identified.

Vegetation mapping was completed using pedestrian surveys and assessments from key vantage points to characterize and map the vegetation communities and to identify any sensitive habitats within the Survey Area. Vegetation mapping was conducted in consideration of Protocols for *Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018).

During vegetation community mapping, the boundaries of the vegetation communities were drawn on aerial field maps by hand and were then digitized with GIS software to create the vegetation community map.

3.0 RESULTS

3.1 Literature Review

Numerous rare plant species have been recorded within 5 miles of the Project Area according to the CNDDB (CDFW 2022a), CNPS Electronic Inventory (CNPS 2022), and What Grows Here (Calflora 2022). Of all available records, a total of 56 rare plant species were identified as those with the potential for occurrence within the vicinity of the Project Area. The 56 species are discussed and detailed in the Potential for Occurrence Table included as Appendix A.

3.1.1 Regulatory Consistency

The California Coastal Act includes special protection for Environmentally Sensitive Habitat Areas (ESHAs). ESHAs are "any areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (California Coastal Act 1976). In order to protect ESHAs, the Draft SAP outlines specific species for conservation and mitigation policies for vegetation. "Other sensitive

species" (i.e., those that do not qualify as wetland obligates, narrow endemics, or critical locations) must be conserved according to the mitigation ratio percentage for the vegetation type in which the species occurs" (City of Encinitas 2001).

The Proposed Project is not within the County of San Diego Multiple Species Conservation Program area; however, it is located within the La Costa softline Focused Planning Area (FPA), a planning area delineated by the City of Encinitas as part of their Draft SAP. The Draft SAP is based on policies outlined in the North County MHCP. Covered plant species within the North County MHCP include:

- San Diego thorn-mint (*Acanthomintha ilicifolia*)
- San Diego ambrosia (*Ambrosia pumila*)
- Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*)
- Encinitas baccharis (*Baccharis vanessae*)
- Wart-stemmed ceanothus (*Ceanothus verrucosus*)
- Orcutt's spineflower (*Chorizanthe orcuttiana*)
- Summer-holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)
- Del Mar Mesa sand aster (*Corethrogyne filaginifolia* var. *linifolia*)
- Cliff spurge (*Euphorbia misera*)
- San Diego barrel cactus (*Ferocactus viridescens*)
- Orcutt's hazardia (*Hazardia orcuttii*)
- San Diego marsh-elder (*Iva hayesiana*)
- Nuttall's lotus (*Lotus nuttallianus*)
- Little mousetail (*Myosurus minimus* ssp. *apus*)
- Spreading navarretia (*Navarretia fossalis*)
- California Orcutt grass (*Orcuttia californica*)
- Torrey pine (*Pinus torreyana* ssp. *torreyana*)
- Nuttall's scrub oak (*Quercus dumosa*)
- Engelmann oak (*Quercus engelmannii*)
- Parry's tetracoccus (*Tetracoccus dioicus*)

3.1.2 Reference Population Assessments

All reference populations visited were located within a 10- to 30-mile radius from the Survey Area. Species checked for blooming included Encinitas baccharis and wart-stemmed ceanothus.

Of the reference populations visited, both species were viable (i.e., plants were observed). Encinitas baccharis was observed just prior to its blooming stage but was still identifiable. Wart-stemmed ceanothus was in its blooming stage and identifiable. Table 2 shows the species and dates of reference population assessments.

Table 2. Reference Populations Visited in 2022

Date Visited	Scientific Name	Common Name	Location	Status
4/19/2022	*Ceanothus verrucosus*	wart-stemmed ceanothus	Just south of La Costa Ave in Encinitas, California. On a bluff south of Batiquitos Lagoon and 0.2 miles east of Piraeus St (0.1 miles east of the offsite adjacent Preserve Area).	CRPR 2B.2
6/29/2022	*Baccharis vanessae*	Encinitas baccharis	South of Leucadia Blvd in Encinitas, California. Encinitas Ranch, 0.2 miles west of the junction of Leucadia Blvd and Garden View Road (Approximately 2 miles southeast of Development Area).	FT / SE / CRPR 1B.1

FT – Listed (threatened) under the federal Endangered Species Act
SE – Listed (endangered) under the California Endangered Species Act

California Native Plant Society (CNPS) Rare Plant Ranks:
1B: Plants rare, threatened, and endangered in California and elsewhere.
2B: Plants presumed extirpated in California but common elsewhere.

CNPS Threat Ranks:
0.1: Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2: Fairly threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)

Sources:
California Natural Diversity Data Base (CNDDB) (CDFW 2022a)
CNPS Rare and Endangered Plant Inventory (CNPS 2022)

3.2 Focused Rare Plant Surveys

The surveys were scheduled to coincide with target rare plant species' blooming periods and take place during a period when blooming target rare plant species were readily identifiable. Field survey data sheets are included in Appendix B, a plant species compendium is included in Appendix C, and representative site photographs are included in Appendix D.

3.2.1 Physical Conditions

The Proposed Project is surrounded by residential development to the west, south, and east with open habitat to the north. The Proposed Project is within the coastal zone as defined by the California Coastal Commission (CCC 2022). The coastal zone extends 3 nautical miles offshore and the Project is approximately 4,500 feet from the California coastline. Topography of the site is relatively flat within the Development Area with slopes on the western and northern edge. There is a steep drop where the Development Area meets the Preserve Area. Within the Preserve Area, a steep slope occurs in a northeasterly direction. Elevation ranges from 16 feet (5 meters) to 171 feet (52 meters) above mean sea level across the landscape.

3.2.2 Meteorological Conditions

The Encinitas 2.7N weather station, located approximately 1,000 feet from the Project Area, recorded precipitation at 18.61 inches between October 1, 2019, to July 1, 2020, 4.37 inches in 2020-2021, and 5.78 inches in 2021-2022 respectively. Average annual precipitation for the Encinitas 2.7N weather station is approximately 9.76 inches, which falls as rain (NOAA 2022a). Based on the average rainfall totals for the Encinitas, CA weather station, the 2019-2020 rain season was above average while the 2020-2021 and 2021-2022 rain seasons were drought years (NOAA 2022b).

3.2.3 Rare Plant Species Observed

During the 2022 rare plant surveys, four rare plant species were observed: California adolphia (*Adolphia californica*), wart-stemmed ceanothus, Engelmann oak, and ashy spike moss (*Selaginella cinerascens*). All rare plant species observed within the Survey Area are designated as rare by the CNPS. Wart-stemmed ceanothus and Engelmann oak are covered by the MHCP. None of the special-status species found within the Survey Area are state or federally listed under the Endangered Species Acts.

Figure 3 presents rare plant survey results within the Survey Area. The acreages of permanent and temporary impacts to occupied habitat, as well as projected individual counts within the Survey Area, are discussed in Section 4.0.

California Adolphia (CRPR 2B.1)

California adolphia is a dicot, a spiny shrub in the Rhamnaceae family that is native to California. California adolphia has a CNPS California Rare Plant Rank (CRPR) rating of 2B.1, 2B meaning that the species' distribution is "rare, threatened, or endangered in California but common elsewhere", and its threat rank of 0.1 defined as "seriously threatened in California". California adolphia is not covered by the Draft SAP or MHCP. This species was observed in Diegan Coastal Sage Scrub and Southern Mixed Chaparral vegetation communities. Based on extent of occupied habitat, this was the most prevalent rare plant species within the Survey Area. The Development Area contains approximately 154 individuals of California adolphia (including 9 individuals within the FMZ) and 17 individuals within its 100-ft buffer. The Preserve Area contains 103 individuals of California adolphia and 53 individuals within its 100-ft. buffer.

Figure 3. Rare Plant Survey Results

Map Content

- Project Boundary
- Offsite Adjacent Preserve Area
- FMZ
- Onsite Impacts
- Offsite Impacts
- SDGE Easement
- 100-ft Buffer

Rare Plant Observations

- California adolphia (*Adolphia californica*)
- Engelmann oak (*Quercus engelmannii*)
- Wart-stemmed ceanothus (*Ceanothus verrucosus*)

Rare plant Occupied Habitat

- Ashy-spike moss (*Selaginella cinerascens*)
- California adolphia (*Adolphia californica*)
- Engelmann oak (*Quercus engelmannii*)
- wart-stemmed ceanothus (*Ceanothus verrucosus*)

Scale in Feet
0 35

Scale in Feet
0 275

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2022-023.01 Pireaus and Plato Encinitas

Photo (or Base) Source: NAIP (2020)

Map Date: 10/25/2022

Location: N:\2022\2022-023.01 Pireaus and Plato Encinitas\MAPS\biological_resources\PPE_Bio_Results_V3_Plants.mxd (TR)-trotellini 10/25/2022

Wart-Stemmed Ceanothus (CRPR 2B.2, MHCP Covered)

Wart-stemmed ceanothus is a dicot, a shrub in the Rhamnaceae family that is native to California. Wart-stemmed ceanothus has a CRPR rating of 2B.2, with the same distribution description as California adolphia, and 0.2 threat rank described as "moderately threatened in California." Wart-stemmed ceanothus is a proposed covered species for the Draft SAP and is a MHCP covered species, which is subject to species-specific permit conditions outlined in Section 4, Volume II of the Final MHCP (SANDAG 2003). This species was observed in the Southern Mixed Chaparral vegetation community. One wart-stemmed ceanothus was observed in the onsite Preserve Area and one other individual was documented within the 100-foot buffer of the Project Area.

Engelmann Oak (CRPR 4.2, MHCP Covered)

Engelmann oak is a dicot, a deciduous tree in the Fagaceae family that is native to California. Engelmann oak has a CRPR rating of 4.2, 4.0 meaning that the species distribution is limited and is referred to as a "watch list," and the same threat rank of wart-stemmed ceanothus. Engelmann oak is a proposed covered species for the Draft SAP and is a MHCP covered species, which is subject to species-specific permit conditions outlined in Section 4, Volume II of the Final MHCP (SANDAG 2003). A single Engelmann oak was documented in the onsite Preserve Area, within Southern Mixed Chapparal.

Ashy Spike-Moss (CRPR 4.1)

Ashy spike-moss is a lycopod, a perennial rhizomatous herb in the Selaginellaceae family that is native to California. Ashy spike-moss has a CRPR rating of 4.1, with the same distribution description as Engelmann oak, and its threat rank of 0.1 defined as "seriously threatened in California." Ashy spike-moss is not covered by the Draft SAP or MHCP. Approximately 500 individuals of ashy spike-moss were documented within the offsite adjacent Preserve Area and 250 individuals were documented within the 100-foot buffer of the Project Area, in Southern Mixed Chapparal.

3.3 Vegetation Mapping

The dominant vegetation community present throughout the Development Area is Coastal Scrub and disturbed land cover. Large trees are not present within the Development Area and a patch of Coastal Scrub is located within the center which transitions into Diegan Coastal Sage Scrub along the slopes to the northwest and south. Southern Mixed Chaparral occupies the northern area and transitions into the Preserve Area. The majority of the offsite adjacent Preserve Area contains Diegan Coastal Sage Scrub but also contains smaller portions of Nonnative Riparian and Nonnative Grassland communities.

In reference to MCV communities, Chamise-Mission Manzanita Chaparral and Lemonade Berry Scrub were the only vegetation communities categorized as a California Sensitive Natural Community; however, most of the vegetation communities documented within the Survey Area have mitigation ratios outlined by the MHCP and Draft SAP (VegCAMP; CDFW 2022b; City of Encinitas 2001; SANDAG 2003). The vegetation crosswalk to convert these classifications and their impact mitigation ratio requirements are provided in Table 3. Vegetation communities within the property limits are displayed on Figure 4. The acreages of

each of these communities in the Development Area and the Preserve Areas, are shown in Table 4. Descriptions of each vegetation community or land-use type are provided below.

Table 3. Vegetation Crosswalk of Communities, Land Cover Types, and Impact Mitigation Ratios within Survey Area

Oberbauer Vegetation Communities and Land Covers	MCV Vegetation Communities and Land Covers	Impact Mitigation Ratio Inside FPA (Preserved:Disturbed)
Diegan Coastal Sage Scrub (32500)	California Sagebrush-California Buckwheat Scrub (*Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance)	2:1
Diegan Coastal Sage Scrub (32500)	Brittle Bush Scrub (*Encelia farinosa* Shrubland Alliance)	2:1
Diegan Coastal Sage Scrub (32500)	Lemonade Berry Scrub (*Rhus integrifolia* Shrubland Alliance)[1]	2:1
Southern Mixed Chaparral (37120)	Chamise-Mission Manzanita Chaparral (*Adenostoma fasciculatum-Xylococcus bicolor* Shrubland Alliance)[1]	1:1
Coastal Scrub (32000)	Deerweed Scrub (*Lotus scoparius* Shrubland Alliance)	2:1
Nonnative Grassland (42200)	Annual Brome Grassland (*Bromus* [*diandrus, hordeaceus*]-*Brachypodium distachyon* Semi-Natural Herbaceous Stands)	0.5:1
Nonnative Riparian (65000)	Giant Reed Break (*Arundo donax* Semi-Natural Herbaceous Stands)	No net loss goal [Replacement Ratio between 1:1 to 3:1]
Disturbed	Disturbed	None

Figure 4. Vegetation Communities and Land Cover Types

Map Content

- Project Boundary
- Offsite Adjacent Preserve Area
- FMZ
- Onsite Impacts
- Offsite Impacts
- SDGE Easement

Vegetation Communities and Land Cover Types

- MCV - Annual Brome Grasslands (*Bromus* [*diandrus*, *hordeaceus*]-*Brachypodium distachyon* Semi-Natural Herbaceous Stand) Oberbauer - Non-native Grassland (42200) **1.380 acres**
- MCV - California Brittle Bush Scrub (*Encelia californica* Shrubland Alliance) Oberbauer - Diegan Coastal Sage Scrub (32500) **2.430 acres**
- MCV - California sagebrush -California buckwheat scrub (*Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance) Oberbauer - Diegan Coastal Sage Scrub (32500) **0.930 acres**
- MCV - Chamise-mission manzanita chaparral (*Adenostoma fasciculatum-Xylococcus bicolor* Shrubland Alliance) Oberbauer – Southern Mixed Chaparral (37120) **1.968 acres**
- MCV - Deerweed Scrub (*Lotus scoparius* Shrubland Alliance) Oberbauer - Coastal Scrub (32000) **1.441 acres**
- MCV - Giant Reed Break (*Arundo donax* Semi-Natural Herbaceous Stand) Oberbauer - Non-Native Riparian (65000) **0.176 acres**
- MCV - Lemonade Berry Scrub (*Rhus integrifolia* Shrubland Alliance) Oberbauer - Diegan Coastal Sage Scrub (32500) **0.713 acres**
- Disturbed **3.282 acres**

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Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\vegetation_and_landcover\PPE_Vegetation_V2.mxd (TR)-trotellini 10/25/2022

2022-023.01 Pireaus Point

Scale in Feet
0 300

Photo (or Base) Source: NAIP (2020)

Map Date: 10/25/2022

Table 4. Acreages of Vegetation Communities and Land Covers within the Survey Area

Oberbauer Vegetation Communities	MCV Vegetation Communities	Development Area (Impact) (Acres)			Development Area (Impact) Total (Acres)	Preserve Area (No Impact) (Acres)		SDG&E Easement	Total
		Onsite	Offsite Improvements	FMZ		Onsite	Offsite Adjacent		
Diegan Coastal Sage Scrub (32500)	California Sagebrush – California Buckwheat Scrub	0.77	0.16	-	0.93	-	-	-	0.93
Diegan Coastal Sage Scrub (32500)	California Brittle Bush Scrub	-	-	-	-	-	2.43	-	2.43
Diegan Coastal Sage Scrub (32500)	Lemonade Berry Scrub[1]	-	-	-	-	-	0.71	-	0.71
Southern Mixed Chaparral (37120)	Chamise-Mission Manzanita Chaparral[1]	0.65	<0.01	0.48	1.13	0.56	0.25	0.02	1.97
Coastal Scrub (32000)	Deerweed Scrub	1.38	0.06	-	1.44	-	-	-	1.44
Nonnative Grassland (42200)	Annual Brome Grassland	-	-	-	-	-	1.38	-	1.38
Nonnative Riparian (65000)	Giant Reed Break	-	-	-	-	-	0.18	-	0.18
Disturbed	Disturbed	2.96	0.27	0.05	3.28	<0.01	-	-	3.28
				Total	**6.78**	**0.56**	**4.95**	**0.02**	**12.32**

[1]CDFW sensitive vegetation communities

3.3.1 Diegan Coastal Sage Scrub (32500)

The three MCV vegetation communities documented within the Project Area are California Sagebrush-California Buckwheat Scrub (*Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance), Brittle Bush Scrub (*Encelia farinosa* Shrubland Alliance), and Lemonade Berry Scrub (*Rhus integrifolia* Shrubland Alliance). However, to consider the mitigation ratios of the MHCP and the Draft SAP, all three can be converted to Oberbauer's Diegan Coastal Sage Scrub. Within the Project Area, this community was co-

dominated with California sagebrush (*Artemisia californica*) and California buckwheat (*Eriogonum fasciculatum*). Other species such as deerweed (*Acmispon glaber*), lemonade berry (*Rhus integrifolia*), and coastal prickly pear (*Opuntia littoralis*) were also present. Most shrubs were less than 2 meters tall on southern and western facing slopes. This vegetation community is located in the southern and northwestern portions of the Development Area, and within the middle and northern portions of the offsite adjacent Preserve Area. Diegan Coastal Sage Scrub is included in the Group C: Coastal Sage Scrub habitat group under the MHCP and Draft SAP. Within the FPA, Diegan Coastal Sage Scrub is required to be mitigated at a 2:1 ratio. (City of Encinitas 2001; SANDAG 2003). California Sagebrush-California Buckwheat Scrub, one of the three MCV vegetation communities considered as Diegan Coastal Sage Scrub, is not considered a sensitive natural community by CDFW, with a global rarity rank of G4 and state rarity rank of S4. The second MCV equivalent, Brittle Bush Scrub, is also not considered a sensitive natural community with a global rarity rank of G5 and state rarity rank of S4. Finally, the last MCV equivalent, Lemonade Berry Scrub, is considered a sensitive vegetation community with a global and state rarity rank of G3 and S3, respectively (VegCAMP; CDFW 2022b).

3.3.2 Southern Mixed Chaparral (37120)

Chamise-Mission Manzanita Chaparral (*Adenostoma fasciculatum-Xylococcus bicolor* Shrubland Alliance) an MCV classification, can be converted to Oberbauer's Southern Mixed Chaparral. It was found within the Development Area and Preserve Area. It is a chaparral community, which consists of mostly hard-woody shrubs less than 3 meters tall with an intermittent to continuous canopy. Dominant species within this community consisted of chamise (*Adenostoma fasciculatum*) and mission manzanita (*Xylococcus bicolor*) as a subdominant, but also consisted of laurel sumac, toyon (*Heteromeles arbutifolia*), lemonade berry, and black sage (*Salvia mellifera*). This vegetation community is located in the northern portion of the Development Area and southern portions of the Preserve Area. Southern Mixed Chaparral is included in the Group D: Chaparral habitat group under the Draft SAP and MHCP (City of Encinitas 2001; SANDAG 2003). Within the FPA, Southern Mixed Chaparral must be mitigated at a 1:1 ratio. (City of Encinitas 2001; SANDAG 2003). CDFW considers Chamise-Mission Manzanita Chaparral as a sensitive vegetation community as this community has a global rarity rank of G4 and a state rank of S3 (VegCAMP; CDFW 2022b).

3.3.3 Coastal Scrub (32000)

Deerweed Scrub (*Lotus scoparius* Shrubland Alliance), an MCV classification, can be converted to Oberbauer's Coastal Scrub. This community is associated with moderate to dense scrub and was primarily dominated by deerweed within the Development Area. Other species included California sagebrush, coyote brush (*Baccharis pilularis*), and scattered individuals of California everlasting (*Pseudognaphalium californicum*). Deerweed Scrub/Coastal Scrub is included in the Group C: Coastal Sage Scrub habitat group under the Draft SAP and MHCP. Within the FPA, Coastal Scrub must be mitigated at a 2:1 ratio. (City of Encinitas 2001; SANDAG 2003). CDFW does not consider Deerweed Scrub a sensitive community, it has a global rarity rank of G5 and a state rarity rank of S5 (VegCAMP; CDFW 2022b).

3.3.4 Nonnative Grassland (42200)

Annual Brome Grassland (*Bromus* [*diandrus, hordeaceus*]-*Brachypodium distachyon* Semi-Natural Herbaceous Stands), an MCV classification, can be converted to Oberbauer's Nonnative Grassland. This community is only present within the offsite adjacent Preserve Area north of Sky Loft Road and was primarily dominated by rip-gut brome (*Bromus diandrus*). Other species included black mustard (*Brassica nigra*), foxtail brome (*Bromus madritensis*), and red-stemmed filaree (*Erodium cicutarium*). Nonnative Grassland is included in the Group E: Annual Grassland habitat group under the Draft SAP and MHCP (City of Encinitas 2001; SANDAG 2003). CDFW considers Annual Brome Grassland a semi-natural stand and a global and state rarity rank is not applicable (VegCAMP; CDFW 2022b).

3.3.5 Nonnative Riparian (65000)

Giant Reed Break (*Arundo donax* Semi-Natural Herbaceous Stands), an MCV classification, can be converted to Oberbauer's Nonnative Riparian community. This community is associated with a continuous canopy and usually associated with riparian areas. Within the Survey Area, this community was dominated by giant reed (*Arundo donax*) but also included castor bean (*Ricinus communis)* and hottentot fig (*Carpobrotus edulis*) within a small portion of the offsite adjacent Preserve Area north of Sky Loft Road. Nonnative Riparian is included in the Group A: Wetland/Riparian under the Draft SAP and MHCP (City of Encinitas 2001; SANDAG 2003). CDFW considers Giant Reed Break a semi-natural stand and a global and state rarity rank is not applicable (VegCAMP; CDFW 2022b).

3.3.6 Disturbed

The classification disturbed is a land cover type and not a vegetation classification. Areas mapped as disturbed were heavily altered due to human disturbance and were dominated by open areas, dirt paths, and nonnative weedy and ruderal vegetation. Dominant plant species of the disturbed areas of the Development Area were nonnative herbs including red-stemmed filaree, hottentot fig, and crystalline ice plant (*Mesembryanthemum crystallinum*). Disturbed land cover type is included in the Group F: Other group under the Draft SAP and MHCP (City of Encinitas 2001; SANDAG 2003). CDFW does not consider disturbed as a vegetation community.

3.4 Incidental Wildlife Observations

An incidental special-status wildlife species was documented during the rare plant survey effort. One California gnatcatcher (*Polioptila californica californica*), a federally-listed (endangered) species, was observed in the Diegan Coastal Sage Scrub by Caroline Garcia on April 21, 2022. The California gnatcatcher was observed foraging on the southern side of the Development Area and headed northwest. This incidental observation was reported in the *Results of the 2022 Focused Coastal California Gnatcatcher Surveys for the Piraeus Point Project* Report (ECORP 2022).

4.0 POTENTIAL PROJECT EFFECTS ON SPECIES AND HABITATS

This section discusses the potential impacts to rare plant species and vegetation communities within the Project Area. The following analysis assumes that the rare plants and vegetation communities within the

Development Area will be directly impacted as a result of the Project; however, rare plants that were documented within the FMZ will be individually avoided during vegetation reduction activities. Direct impacts entail those that destroy or displace a species or its habitat. These impacts will occur in association with Project construction due to grading, paving, and other disturbances associated with development.

4.1 Direct Impacts

Based on the Project Area boundaries, the Project could directly impact an estimated 145 California adolphia individuals, excluding nine that occur in the FMZ that will be avoided during vegetation reduction activities. In addition, Project-related impacts could occur to 0.02 acre of occupied California adolphia habitat. Table 5 presents the number of rare plant species and their occupied habitat that could be affected by the Project within the Development area (excluding the FMZ).

Table 5. Summary of Direct Project Impacts to Rare Plant Species and their Habitat

	Direct Development Area Impacts (excluding FMZ) (Acres)		
	Site	**Offsite Improvements**	**Total**
Rare Plant Species (field estimations)			
California adolphia	145	0	145
Occupied Habitat (acres)			
California adolphia	0.02	0	0.02

Based on the current Project Area boundaries and as shown by Table 4, direct impacts could occur to multiple vegetation communities and land-cover types documented within the 6.78-acre Development Area including 1.13 acres of Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral which is considered a sensitive natural community.

4.2 Indirect Impacts

The Project could result in indirect impacts to rare plants species and their habitat. These impacts could occur due to proximity of construction during the short term and due to urban edge effects over the long term. Table 6 shows the indirect impacts to rare plant species and their habitat and Table 7 shows indirect impacts to vegetation communities, within a 100-foot buffer of the Development Area and FMZ.

Table 6. Summary of Indirect Project Impacts to Rare Plant Species and their Habitat

	Indirect Project Impacts within 100 feet of Development Area	Indirect Project Impacts within FMZ
Rare Plant Species (field estimations)		
California adolphia	17	9
Engelmann oak	1	0
Wart-stemmed ceanothus	1	0
Occupied Habitat (acres)		
California adolphia	<0.01	<0.01
Engelmann oak	<0.01	0
Wart-stemmed ceanothus	<0.01	0
Total Acres:	**<0.01**	**<0.01**

Table 7. Summary of Indirect Project Impacts to Vegetation Communities

Oberbauer Vegetation Communities	MCV Vegetation Communities	Indirect Impacts within 100 feet of Development Area and FMZ (in acres)
Diegan Coastal Sage Scrub (32500)	California Sagebrush-California Buckwheat Scrub (*Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance)	<0.01
Southern Mixed Chaparral (37120)	Chamise-Mission Manzanita Chaparral (*Adenostoma fasciculatum-Xylococcus bicolor* Shrubland Alliance)[1]	0.63
Disturbed	Disturbed	0.01
	Total	**0.64**

5.0 SUMMARY

5.1 Literature Review

Multiple rare plant species occurrences in the CNDDB were found during the literature review; however, none were previously documented within the Project Area (CDFW 2022a). All records that contributed to the target plant list are less than 20 years old and/or within 5 miles of the Project Area and have profiles that match the habitat that occurs within the Project Area.

5.2 Survey Results

Of the 56 rare plant species with potential to occur within the Survey Area, a total of four rare plant species were observed and mapped within the Survey Area over the course of three surveys conducted during the 2022 season: California adolphia, Engelmann oak, wart-stemmed ceanothus, and ashy-spike moss. Based on the current Project Area, the Project could directly impact California adolphia. California adolphia is not covered under the MHCP or Draft SAP, and is not a state or federally listed species under the Endangered Species Acts, but does have a CRPR rating of 2B.1. In addition, the Project could indirectly impact California adolphia, wart-stemmed ceanothus, and Engelmann oak if mitigation measures are not employed. Both wart-stemmed ceanothus and Engelmann oak are covered by the MHCP and Draft SAP and have a CRPR rating of 2B.2 and 4.2 respectively.

A total of five Oberbauer or seven MCV vegetation communities were mapped within the Survey Area. Direct impacts could occur to three Oberbauer/MCV vegetation communities: Diegan Coastal Sage Scrub/California Sagebrush – California Buckwheat Scrub, Coastal Scrub/Deerweed Scrub, and Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral. Of these, only Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral is considered a sensitive natural community by CDFW; however, all three communities have specific mitigation ratios according to the MHCP and Draft SAP (VegCAMP; CDFW 2022b; City of Encinitas 2001; SANDAG 2003). Furthermore, the Project could indirectly impact additional acreages of Diegan Coastal Sage Scrub/California Sagebrush – California Buckwheat Scrub and Southern Mixed Chaparral/Chamise-Mission Manzanita Chaparral if mitigation measures are not employed. Both communities have specific mitigation ratios according to the MHCP and Draft SAP (City of Encinitas 2001; SANDAG 2003).

5.3 Survey Limitations

Recent climate patterns prior to the surveys were not ideal and are considered a limiting factor in the detection of plants that bloom during the spring and summer. Average annual precipitation for the Encinitas 2.7N weather station is approximately 9.76 inches, which falls as rain (NOAA 2022a). Based on the average rainfall totals for the Encinitas 2.7N weather station, the 2019-2020 rain season was above average while the 2020-2021 and the 2021-2022 rain seasons were drought years (NOAA 2022b). There is a possibility that additional rare plant species are present within the Survey Area but were either dormant or were unable to germinate, and therefore would not be detectable by the surveyors at the time of the surveys.

6.0 CERTIFICATION STATEMENT

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."

Signature:  Date: September 23, 2022

Christine Tischer

Signature:  Date: September 23, 2022

Greg Hampton

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LIST OF APPENDICES

Appendix A – Potential for Occurrence Table

Appendix B – Field Survey Data Sheets

Appendix C – Plant Species Compendium

Appendix D – Representative Site Photographs

APPENDIX A

Potential for Occurrence Table

Rare plant species available for review within the database searches were assessed for their potential to occur within the Project Area based on the following criteria guidelines:

- **Present**: The species was observed on-site during a site visit or focused survey.
- **High**: Habitat (including soils and elevation factors) for the species occurs within the Project Area and a known occurrence has recently been recorded (within the last 20 years) within 5 miles of the Project Area.
- **Moderate**: Habitat (including soils and elevation factors) for the species occurs within the Project Area and a documented observation occurs within the database search, but not within 5 miles of the Project Area; a historic documented observation (more than 20 years old) was recorded within 5 miles of the Project Area; or a recently documented observation occurs within 5 miles of the Project Area and marginal or limited amounts of habitat occurs in the Project Area.
- **Low**: Limited or marginal habitat for the species occurs within the Project Area and a recently documented observation occurs within the database search, but not within 5 miles of the Project Area; a historic documented observation (more than 20 years old) was recorded within 5 miles of the Project Area; or suitable habitat strongly associated with the species occurs within the Project Area, but no records or only historic records were found within the database search.
- **Presumed Absent**: Species was not observed during a site visit or focused surveys conducted in accordance with protocol guidelines at an appropriate time for identification; habitat (including soils and elevation factors) does not exist within the Project Area; or the known geographic range of the species does not include the Project Area.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Adolphia californica California adolphia	**USFWS:** None **CDFW:** None **CRPR:** 2B.1 **MHCP:** Not Covered	Dec-May (10-740)	Chaparral Coastal sage scrub Valley and foothill grasslands Clay soils	**Present:** This species was observed on the Project site during the 2022 and 2019 surveys and 22 recent observations occur within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Present:** 154 individuals observed in Development Area (including 9 individuals within the FMZ) and 17 individuals within its 100-ft buffer. 103 individuals within Preserve Area and 53 individuals within its 100-ft. buffer.
Acanthomintha ilicifolia San Diego thorn-mint	**USFWS:** THR **CDFW:** END **CRPR:** 1B.1 **MHCP:** Covered	Apr-Jun (10-960)	Chaparral Coastal sage scrub Valley and foothill grassland Vernal pools Clay soils; occurs in openings	**High:** The site provides suitable habitat for this species. Ten observations of this species have been made within 5 miles of the Project, with the closest being 2.5 miles north of the Project site in 2019. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Agave shawii* var. *shawii Shaw's agave	**USFWS:** None **CDFW:** None **CRPR:** 2B.1 **MHCP:** Not Covered	Sept-May (3-120)	Maritime succulent scrub Coastal bluff scrub Coastal sage scrub	**High:** The site provides suitable habitat for this species. There is one observation of this species 3.3 miles northwest of the site in 2016.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Arctostaphylos glandulosa* ssp. *crassifolia Del Mar manzanita	**USFWS:** END **CDFW:** None **CRPR:** 1B.1 **MHCP:** Covered	Dec-Jun (0-365)	Chaparral (maritime, sandy)	**High:** The site provides suitable habitat for this species. Ten recent observations of this species were within 5 miles of the Project site, with the closest being less than 1 mile away in 2020. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Bloomeria clevelandii San Diego goldenstar	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	April-May (50-465)	Chaparral Coastal scrub Valley and foothill grassland Vernal pools	**High:** The site provides suitable habitat for this species. Four recent observations of this species have occurred within 5 miles of the Project site. The nearest one was in 2021, and was 3.6 miles east of the Project site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Ceanothus verrucosus wart-stemmed ceanothus	**USFWS:** None **CDFW:** None **CRPR:** 2B.2 **MHCP:** Covered	Dec-May (1-380)	Chaparral	**High:** The site provides suitable habitat for this species. Eleven recent records of fifteen total occur within 5 miles of the Project site with the closest being from 2015, approximately 0.79 miles northeast of the site.	**Present:** One wart-stemmed ceanothus was observed in the Preserve Area and one other individual was documented within the 100-foot buffer of the Preserve Area.
Comarostaphylis diversifolia* ssp. *diversifolia summer holly	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Covered	Apr-Jun (30-790)	Chaparral Cismontane woodland	**High:** The site provides suitable habitat for this species. Thirteen recent observations and twenty five total observations of this species occur within 5 miles of the Project site. The closest observation is 1.2 miles east of the Project in 2005.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Corethrogyne filaginifolia* var. *linifolia Del Mar Mesa sand aster	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Covered	May-Sept (15-150)	Coastal bluff scrub Maritime chaparral Coastal sage scrub	**High**: The site provides suitable habitat for this species. Six recent observations of this species have been made within 5 miles of the Project site. The closest was in 2005, 1.4 miles east of the site. There is also a historical observation of an unknown year of this species on the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Cryptantha wigginsii Wiggins' cryptantha	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	Feb-June (20-275)	Coastal sage scrub Clay soils	**High:** The site provides suitable habitat for this species. Three observations of this species were made in 2013, the closest of which was 2.8 miles northeast of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Ericameria palmeri* var. *palmeri Palmer's goldenbush	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	July-Nov (30-600)	Chaparral Coastal sage scrub Mesic soils	**High:** The site provides suitable habitat for this species. One recent (2009) sighting occurred 0.59 miles northwest of the Project site. No other observations found in a 5-mile database search. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Ferocactus viridescens San Diego barrel cactus	**USFWS:** None **CDFW:** None **CRPR:** 2B.1 **MHCP:** Covered	May-June (3-450)	Chaparral Coastal sage scrub Valley and foothill grassland Vernal pools	**High:** The site provides suitable habitat for this species. Three recent and two historic observations of this species exist within a 5-mile radius of the Project site. The nearest recent observation is 3.9 miles southeast of the Project site in 2008. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Isocoma menziesii* var. *decumbens decumbent goldenbush	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	Apr-Nov (10-135)	Chaparral Coastal sage scrub	**High:** The site provides suitable habitat for this species. One recent observation of this species within 4.2 miles of the site. Three additional historic observations within a 5 mile radius of site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Leptosyne maritima sea dahlia	**USFWS:** None **CDFW:** None **CRPR:** 2B.2 **MHCP:** Not Covered	March-May (5-150)	Coastal bluff scrub Coastal sage scrub	**High:** The site provides suitable habitat for this species. Eight observations within a 5-mile radius of the Project area. The closest of which was made in 2009, and was 0.61 miles east of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Quercus dumosa Nuttall's scrub oak	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Covered	Feb-Apr (15-400)	Closed-cone coniferous forest Chaparral Coastal sage scrub Sandy, clay loam soils	**High**: The site provides suitable habitat for this species. There have been seventeen recent observations of this species within a 5 mile radius out of twenty-one total observations. The closest observation was 1.4 miles east of the site in 2013. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Baccharis vanessae Encinitas baccharis	**USFWS:** THR **CDFW:** END **CRPR:** 1B.1 **MHCP:** Covered	Aug, Oct, Nov (60-720)	Chaparral (Torrey pine forest) Cismontane woodland Sandstone	**Moderate:** The site provides limited suitable habitat for this species. Three recent observations of this species are within 5 miles of the Project site with the nearest being recorded 1.4 miles southeast of the site in 2017.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Sphenopholis interrupta* ssp. *californica prairie false oat	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	April (15)	Coastal chaparral	**Moderate:** The site provides suitable habitat for this species. One recent (2020) observation of this species has been made in a 5-mile radius of the Project site. This observation was of an individual 2.8 miles north of the Project site.	**Presumed Absent:** Not observed during focused surveys.
Acmispon prostrates Nuttall's acmispon	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	March-July (0-10)	Coastal sage scrub Coastal dunes Sandy soils	**Moderate:** The site provides marginal suitable habitat for this species and lacks sandy soils. Five total observations of this species occur within a 5-mile radius, four of which were recent. The nearest observation was 0.8 miles west of the site in 2016. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Chorizanthe orcuttiana Orcutt's spineflower	**USFWS:** END **CDFW:** END **CRPR:** 1B.1 **MHCP:** Covered	March-May (3-125)	Sandy soils Closed-cone coniferous forest Maritime Chaparral Coastal sage scrub	**Moderate:** The site provides suitable habitat for this species. One recent (2017) observation recorded within 2.8 miles of the site. Observation was a small and isolated grouping in a disturbed area.	**Presumed Absent:** Not observed during focused surveys.
Artemisia palmeri San Diego sagewort	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	May-Sep (15-915)	Chaparral Coastal sage scrub Riparian forest Riparian scrub Riparian woodland Sandy, mesic soils	**Low:** The site provides suitable habitat for this species. One historic observation of this species exists 2.3 miles northeast of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Atriplex coulteri Coulter's saltbush	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	March-Oct (3-460)	Coastal bluff scrub Coastal dunes Coastal scrub Valley and foothill grassland Alkaline and clay soils	**Low:** The site provides limited suitable habitat for this species. Alkaline and clay soils are not present on site. One recent (2004) observation of this species is 4.4 miles north of the project site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Atriplex pacifica south coast saltscale	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	March-Oct (0-140)	Coastal bluff scrub Coastal dunes Coastal scrub Playas	**Low:** The site provides limited suitable habitat for this species. Five recent observations have occurred within 5 miles of the site. The nearest was in 2014, and was 2.3 miles northwest of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Brodiaea filifolia thread-leaved brodiaea	**USFWS:** THR **CDFW:** END **CRPR:** 1B.1 **MHCP:** Not Covered	Mar-Jun (25-1120)	Chaparral Cismontane woodland Coastal sage scrub Playas Valley and foothill grassland Vernal pools Often clay soils	**Low:** The site provides limited suitable habitat for this species. Eight recent observations of this species are within 5 miles of the Project site, however, the site lacks seasonally ponded areas required for this species. The closest observation is 1.8 miles northwest of the site from 2019. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Brodiaea orcuttii Orcutt's brodiaea	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	May-Jul (30-1692)	Closed-cone coniferous forest Chaparral Cismontane woodland Meadows and seeps Valley and foothill grassland Vernal pools Mesic, clay soils	**Low:** The site provides limited suitable habitat for this species. Seven recent observations of this species are within 5 miles of the Project site; however, the site lacks seasonally ponded areas required for this species. The closest observation is 1.8 miles northwest of the site in 2018.	**Presumed Absent:** Not observed during focused surveys.
Chaenactis glabriuscula* var. *orcuttiana Orcutt's pincushion	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	Jan-Aug (0-100)	Sandy soils Coastal bluff scrub Coastal dunes	**Low:** The site provides limited suitable habitat for this species. Three recent observations of this species exist within 5 miles of the site. The closest was in 2015, and was 0.71 miles west of the site.	**Presumed Absent:** Not observed during focused surveys.
Dichondra occidentalis western dichondra	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-June (50-500)	Chaparral Cismontane woodland Coastal sage scrub Valley and foothill grassland	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Dudleya blochmaniae* ssp. *blochmaniae Blochman's dudleya	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	April-June (5-450)	Coastal bluff scrub Chaparral Coastal sage scrub Valley and foothill grassland	**Low:** The site provides limited suitable habitat for this species. One recent (2016) observation recorded 3.7 miles northeast of the Project site. This is the only recent sighting of this species within 5 miles of the site.	**Presumed Absent:** Not observed during focused surveys.
Dudleya viscida sticky dudleya	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	May-June (10-550)	Coastal bluff scrub Chaparral Cismontane woodland Coastal sage scrub Rocky soils	**Low:** The site provides limited suitable habitat for this species. The site lacks rocky soils. One recent (2015) observation of this species recorded 3.0 miles east of the Project site. This is the only recent sighting of this species within 5 miles of the site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Eryngium aristulatum* var. *parishii San Diego button-celery	**USFWS:** END **CDFW:** END **CRPR:** 1B.1 **MHCP:** Not Covered	Apr-Jun (20-620)	Coastal sage scrub Valley and foothill grassland Vernal pools Mesic soils	**Low:** The site provides limited suitable habitat for this species as the site lacks seasonally ponded areas required for this species. One record of this species has been recorded approximately 2 miles northwest of the site in 2017. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Erysimum ammophilum sand-loving wallflower	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	Feb-June (0-60)	Maritime chaparral Coastal dunes Coastal sage scrub Coastal strand	**Low:** The site provides suitable habitat for this species. One historic (unknown year) observation recorded 4.5 miles south of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Euphorbia misera cliff spurge	**USFWS:** None **CDFW:** None **CRPR:** 2B.2 **MHCP:** Covered	Dec-Oct (10-500)	Coastal bluff scrub Coastal sage scrub Mojavean desert scrub Rocky soils	**Low:** The site provides limited suitable habitat for this species. Rocky soils absent on the Project site. Four observations of this species were made within a 5-mile radius of the Project site in 2015. The closest observation was 3.3 miles northwest of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Hazardia orcuttii Orcutt's hazardia	**USFWS:** None **CDFW:** THR **CRPR:** 1B.1 **MHCP:** Covered	Aug-Oct (80-85)	Maritime Chaparral Coastal sage scrub Clay soils	**Low:** The site provides limited suitable habitat for this species. Clay soils absent on the Project site. Four recent (2010) observations of this species exist within a 5-mile radius of the Project site. The nearest is 2.9 miles northeast of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Heterotheca sessiliflora* ssp. *sessiliflora beach goldenaster	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	Mar-Dec (0-1225)	Beaches Mud flats Coastal dunes Coastal chapparal Coastal sage scrub	**Low:** The site provides marginal suitable habitat for this species. One observation of this species recorded within 5 miles of the site. This observation took place in 2007, and was seen 4.1 miles south of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Hordeum intercedens vernal barley	**USFWS:** None **CDFW:** None **CRPR:** 3.2 **MHCP:** Not Covered	Mar-Jun (5-1000)	Coastal dunes Coastal sage scrub Valley and foothill grassland (depressions, saline flats) Vernal pools	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Iva hayesiana San Diego marsh-elder	**USFWS:** None **CDFW:** None **CRPR:** 2B.2 **MHCP:** Covered	April-Oct (10-500)	Marshes and swamps Playas	**Low:** The site provides limited suitable habitat for this species. Seven recent observations of this species have been made within 5 miles of the Project site. The nearest was 0.05 miles from the site in 2005.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Lasthenia glabrata* ssp. *coulteri Coulter's goldfields	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	Feb-June (1-1220)	Coastal salt marshes and swamps Playas Vernal pools	**Low:** The site provides limited suitable habitat for this species. One recent and two historic observations of this species recorded within 5 miles of the Project site. One observation took place in 2017 and was 4.9 miles southeast of the Project site. However, one historical record from 1935 shows this species within the Project site.	**Presumed Absent:** Not observed during focused surveys.
Lepidium virginicum* var. *robinsonii Robinson's pepper-grass	**USFWS:** None **CDFW:** None **CRPR:** 4.3 **MHCP:** Not Covered	Jan-Jul (1-885)	Chaparral Coastal sage scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Lycium californicum California box-thorn	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-Aug 5-150	Coastal bluff scrub Coastal sage scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Microseris douglasii* ssp. *platycarpha small-flowered microseris	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-May (15-1070)	Cismontane woodland Coastal scrub Valley and foothill grassland Vernal pools	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Ophioglossum californicum California adder's-tongue	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Jan-Jun (60-525)	Chaparral Valley and foothill grassland Vernal pools (margins)	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Orobanche parishii* ssp. *brachyloba short-lobed broomrape	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	April-Oct (3-305)	Coastal bluff scrub Coastal dunes Coastal sage scrub	**Low:** The site provides limited suitable habitat for this species. One historic observation of this species has been recorded within a 5 mile radius of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Pinus torreyana* ssp. *torreyana Torrey pine	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Covered	- (3-160)	Closed-cone coniferous forest Chaparral	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Selaginella cinerascens ashy spike-moss	**USFWS:** None **CDFW:** None **CRPR:** 4.1 **MHCP:** Not Covered	--- (20-640)	Chaparral Coastal Scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Present:** ~500 individuals within the Preserve Area and 250 individuals within the 100-foot buffer of the Preserve Area.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Stipa diegoensis San Diego County needle grass	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Feb-Jun (10-800)	Chaparral Coastal sage scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Suaeda esteroa estuary seablite	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	May-Oct (0-5)	Coastal salt marsh Wetland-riparian	**Low:** The site does not provide suitable habitat for this species. Two recent observations of this species occurred in 2005. The nearer of these observations was 0.05 miles northwest of the Project site.	**Presumed Absent:** Not observed during focused surveys.
Viguiera laciniata San Diego County viguiera	**USFWS:** None **CDFW:** None **CRPR:** 4.3 **MHCP:** Not Covered	Feb-Jun (60-750)	Chaparral Coastal sage scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Camissoniopsis lewisii Lewis' Evening-primrose	**USFWS:** None **CDFW:** None **CRPR:** 3 **MHCP:** Not Covered	Mar-Jun (0-300)	Coastal bluff scrub Cismontane woodland Coastal dunes Coastal scrub Valley and foothill grassland Sandy or clay soils	**Low:** The site provides suitable habitat for this species. This species appeared within a CNPS quadrat database search. No records of this species are within 5 miles of the site.	**Presumed Absent:** Not observed during focused surveys.
Chorizanthe polygonoides* var. *longispina long-spined spineflower	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	April-July (30-1530)	Chaparral Coastal sage scrub Meadows Valley and foothill grassland Vernal pools Clay soils	**Low:** The site provides limited suitable habitat for this species. One historic observation (2000) occurs 2.8 miles southeast of the site.	**Presumed Absent:** Not observed during focused surveys.
Cistanthe maritima seaside cistanthe	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-Jun (<300)	Sandy soils Coastal bluff scrub Coastal scrub Valley and foothill grassland	**Low:** The site provides suitable habitat for this species. This species appeared within a CNPS quadrat database search. No records of this species are within 5 miles of the site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Harpagonella palmeri Palmer's grapplinghook	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-May (20-955)	Chaparral Coastal sage scrub Valley and foothill grassland Clay soils	**Low:** The site provides limited suitable habitat for this species. Eleven historic observations of this species recorded within 5 miles, but no recent observations. Clay soils absent in the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Convolvulus simulans small-flowered morning-glory	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-May (15-1070)	Seeps Vernal pools Cismontane woodland Coastal scrub Valley and foothill grassland	**Presumed Absent:** The site does not provide suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Erythranthe diffusa Palomar monkeyflower	**USFWS:** None **CDFW:** None **CRPR:** 4.3 **MHCP:** Not Covered	April-June (1220-1830)	Chaparral Lower montane coniferous forest	**Presumed Absent:** The Project site is outside of this species' known elevation range. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Quercus engelmannii Engelmann oak	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Covered	Mar-Jun (50-1300)	Chaparral Cismontane woodland Riparian woodland Valley and foothill grassland	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Present:** 1 individual documented in southern portion of the Preserve Area.
Myosurus minimus* ssp. *apus little mousetail	**USFWS:** None **CDFW:** None **CRPR:** 3.1 **MHCP:** Covered	Mar-Jun (20-640)	Valley and foothill grassland Vernal pools (alkaline)	**Presumed Absent:** The site does not provide suitable habitat for this species. One observation from an unknown year exists 1.8 miles northwest of the Project site.	**Presumed Absent:** Not observed during focused surveys.
Navarretia fossalis spreading navarretia	**USFWS:** THR **CDFW:** None **CRPR:** 1B.1 **MHCP:** Covered	Apr-Jun (30-655)	Chenopod scrub Marshes and swamps Playas Vernal pools	**Presumed Absent:** The site does not provide suitable habitat for this species. One historic observation of this species is within 5 miles of the Project site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Nemacaulis denudata* var. *denudata coast woolly-heads	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	April-Sept (0-100)	Coastal dunes Coastal strand	**Presumed Absent:** The site does not provide suitable habitat for this species. Three recent observations (2015) have been made within 5 miles of the site. The closest observation was 0.74 miles west of the site.	**Presumed Absent:** Not observed during focused surveys.
Orcuttia californica California Orcutt grass	**USFWS:** END **CDFW:** END **CRPR:** 1B.1 **MHCP:** Covered	April-Aug (15-660)	Vernal pools Valley grassland Wetland-riparian	**Presumed Absent:** The site does not provide suitable habitat for this species. One recorded observation of this species exists within 5 miles of the site. This observation occurred in 2005, and was 1.7 miles northwest of the site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Federal Designations (FESA, USFWS) **END:** Federally listed, endangered **THR:** Federally listed, threatened **State Designations** (CESA, CDFW) **END:** State-listed, endangered **THR:** State-listed, threatened **California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) Designations:** **1A:** Plants presumed extinct in California. **1B:** Plants rare and endangered in CA and throughout their range. **2:** Plants rare, threatened, or endangered in CA but more common elsewhere in their range. **3:** Plants about which need more information; a review list. **4:** Plants of limited distribution; a watch list. **Plants 1B, 2, 3, and 4 extension meanings:** **.1** Seriously endangered in CA (over 80% of occurrences threatened / high degree and immediacy of threat) **.2** Fairly endangered in California (20-80% occurrences threatened) **.3** Not very endangered in CA (<20% of occurrences threatened or no current threats known) **Local Designations** [Multiple Habitat Conservation Plan (MHCP)] **Covered:** Species adequately conserved through the conservation and management actions implemented through adoption of the MHCP Plan and by each Subarea Plan once finalized.					
Sources: California Natural Diversity Data Base (CDFW 2022a), California Native Plant Society Electronic Inventory (CNPS 2022), Final MHCP Plan (SANDAG 2003)					

APPENDIX B

Field Survey Data Sheets

Osmadenia tenella Acacia pycnantha

Melica imperfecta Plumbago auriculata

PIRAEUS POINT PROPERTY PLANT SPECIES OBSERVED

Scientific Name	Common Name	2017	2019	2022
VASCULAR PLANTS				
ANGIOSPERMS (DICOTYLEDONS)				
Adoxaceae	**Moschatel Family**			
Sambucus nigra ssp. *caerulea* (*Sambucus cerulea*)	black elderberry		X	X
Agavaceae	**Century Plant Family**			
*Agave americana**	American century plant		X	X
Yucca schidigera	Mojave yucca		X	X
Aizoaceae	**Iceplant Family**			
*Carpobrotus edulis**	hottentot fig		X	X
*Mesembryanthemum crystallinum**	crystalline ice plant		X	X
Anacardiaceae	**Cashew Family**			
Malosma laurina	laurel sumac		X	X
Rhus integrifolia	lemonade berry		X	X
Apiaceae	**Carrot Family**			
Daucus pusillus	American wild carrot		X	
*Foeniculum vulgare**	sweet fennel			X
Araucariaceae	**Araucaria Family**			
*Araucaria heterophylla**	Norfolk Island pine		X	
Arecaceae	**Palm Family**			
*Washingtonia robusta**	Mexican fan palm			X
Asteraceaea	**Sunflower Family**			
Ambrosia psilostachya	western ragweed			X
Artemisia californica	California sagebrush		X	X
Asteraceae sp. *	sunflower		X	
Baccharis pilularis	coyote brush		X	X
*Centaurea melitensis**	tocalote		X	X
Deinandra fasciculata	clustered tarweed		X	X
*Dimorphotheca sinuata**	African daisy			X
Encelia californica	California brittlebush		X	X
*Erigeron canadensis**	horseweed		X	
Eriophyllum confertiflorum	golden-yarrow		X	X
*Glebionis coronaria**	crown daisy		X	X
Hazardia squarrosa	saw-toothed goldenbush		X	X
*Hedypnois cretica**	crete weed		X	X
Heterotheca grandiflora	telegraphweed			X
*Hypochaeris glabra**	smooth cat's ear		X	X
Isocoma sp.	goldenbush		X	
*Lactuca serriola**	prickly lettuce		X	X
*Logfia gallica**	narrowleaf cottonrose		X	
*Osteospermum monstrosum**	one eye monster			X

Carpobrotus edulis

Mesembryanthemum crystallinum

Malosma laurina

Rhus integrifolia

Daucus pusillus

Foeniculum vulgare

Washingtonia robusta

Araucaria heterophylla

Sanicula crassicaulis

Cirsium occidentales

Chaenactis glabriuscula v. glabriuscula

Isocoma menziesii

Daucus pusillus

Dichelostemma capitatum

Radleya pulverulenta

Ely con Calystegia macro
Con mac

Pseudognaphalium biolettii	two-color rabbit-tobacco			X
Pseudognaphalium californicum	California everlasting		X	X
Pseudognaphalium stramineum	cottonbatting plant		X	
*Silybum marianum**	milk thistle			X
*Sonchus oleraceus**	common sow-thistle		X	X
*Sonchus tenerrimus**	slender sowthistle		X	
*Stephanomeria**	wire lettuce		X	
*Stephanomeria virgata**	rod wire lettuce		X	
Stylocline gnaphaloides	everlasting neststraw		X	
Boraginaceae	**Borage Family**			
Amsinckia tessellata	fiddleneck			X
Cryptantha sp.	catseyes		X	
Cryptantha intermedia	clearwater cryptantha		X	X
Eriodictyon crassifolium	thickleaf yerba santa		X	X
Pholistoma auritum	blue fiestaflower			X
Brassicacaeae	**Mustard Family**			
*Brassica nigra**	black mustard		X	X
*Brassica rapa**	field mustard			X
*Brassica tournefortii**	Saharan mustard		X	X
*Hirschfeldia incana**	short-pod mustard		X	X
Lepidium sp. *	peppergrasses		X	
*Raphanus sativus**	wild radish		X	X
*Sisymbrium orientale**	eastern rocket		X	
Cactaceae	**Cactus Family**			
Opuntia sp.	prickly pear		X	
Opuntia littoralis	coast prickly pear			X
Caryophyllaceae	**Pink Family**			
*Silene gallica**	small-flower catchfly		X	
Chenopodiaceae	**Goosefoot Family**			
*Atriplex semibaccata**	berry saltbush		X	X
*Chenopodium album**	lamb's quarters		X	
*Chenopodium murale**	nettle-leaved goosefoot		X	X
*Salsola tragus**	Russian thistle		X	X
Cleomaceae	**Spider Plant Family**			
Peritoma arborea	bladderpod			X
Crassulaceae	**Stonecrop Family**			
Crassula connata	pygmy-weed		X	X
*Crassula ovata**	jade plant		X	X
Cucurbitaceae	**Wild Cucumber Family**			
Marah macrocarpa	wild cucumber		X	X
Ericaceae	**Heath Family**			
Xylococcus bicolor	mission manzanita		X	X
Euphorbiaceae	**Spurge Family**			
*Ricinus communis**	castor bean		X	X
Fabaceae	**Legume Family**			
*Acacia obtusifolia**	wattles		X	X

Asparagus asparagoides Frangula californica Schophularia californica Cyl pro

Acmispon glaber (Lotus scoparius)	deerweed		X	X
*Medicago polymorpha**	bur clover		X	
*Melilotus indicus**	sourclover		X	X
Geraniaceae	**Geranium Family**			
Erodium sp. *	stork's-bills		X	
*Erodium botrys**	Mediterranean stork's-bills		X	X
*Erodium cicutarium**	red stemmed filaree			X
Grossulariaceae	**Currant Family**			
Ribes californicum	California gooseberry			X
Hydrophyllaceae	**Waterleaf Family**			
Eucrypta chrysanthemifolia	common eucrypta		X	
Iridaceae	**Iris Family**			
Iris missouriensis	Western blue flag			X
Iris sp. *	Irises		X	
Juglandaceae	**Walnut Family**			
Juglans sp.	walnut			X
Lamiaceae	**Mint Family**			
Salvia mellifera	black sage		X	X
Lythraceae	**Loosestrife Family**			
Lythrum hyssopifolia *	grass-poly		X	X
Malvaceae	**Mallow Family**			
Malva multiflora	Cretan tree mallow		X	
*Malva parviflora**	cheeseweed mallow			X
Montiaceae	**Miner's Lettuce Family**			
Claytonia sp.	claytonia			X
*Cistanthe grandiflora**	Rock Purslane		X	
Myrsinaceae	**Myrsine Family**			
*Lysimachia arvensis**	scarlet pimpernel		X	X
Myrtaceae	**Myrtle Family**			
*Melaleuca nesophila**	showy honey-myrtle		X	
Nyctaginaceae	**Four O'clock Family**			
*Bougainvillea spectabilis**	great bougainvillea			X
Mirabilis laevis crassifolia	wishbone bush		X	X
Onagraceae	**Evening Primrose Family**			
Camissoniopsis bistorta	California sun-cup		X	X
Camissoniopsis lewisii	Lewis' Evening-Primrose		X	
Clarkia epilobioides	canyon clarkia		X	
Oxalidaceae	**Wood Sorrel Family**			
*Oxalis pes-caprae**	Bermuda buttercup			X
Papaveraceae	**Poppy Family**			
Eschscholzia californica	California poppy			X
Phrymaceae	**Lopseed Family**			
Diplacus aurantiacus	sticky monkeyflower			X
Plantaginaceae	**Plantain Family**			
Plantago erecta	dot-seed plantain		X	X
Plumbaginaceae	**Leadwort Family**			

Asparagus asparagoides Frangula californica Schophularia californica Cyl pro

Ribes cal? Euphorbia Peplus

Diplacus brevipes

Antirrhinum nuttallianus

Malacothamnus fasciculeris

Calochortus splendens

*Plumbago auriculata**	blue plumbago		X	
Polygonaceae	**Buckwheat Family**			
*Emex spinosa**	devil's thorn		X	
Eriogonum fasciculatum	California buckwheat		X	X
*Rumex crispus**	curly dock		X	X
Rhamnaceae	**Buckthorn Family**			
Adolphia californica CNPS Rank 2B.1	California adolphia	X	X	X
Rhamnus crocea	spiny redberry			X
Rosaceae	**Rose Family**			
Adenostoma fasciculatum	chamise		X	X
Heteromeles arbutifolia	toyon			X
Rutaceae	**Citrus Family**			
*Citrus latifolia**	lime		X	
Sapindaceae	**Soapberry Family**			
*Cupaniopsis anacardioides**	tuckeroo		X	
Scrophulariaceae	**Figwort Family**			
*Myoporum laetum**	ngaio tree		X	X
Sairocarpus nuttallianus	Nuttall's snapdragon		X	
Solanaceae	**Nightshade Family**			
Datura wrightii	Jimsonweed		X	X
*Nicotiana glauca**	tree tobacco		X	X
Solanum americanum	American black nightshade		X	
Solanum parishii	Parish's nightshade		X	X
Themidaceae	**Brodiaea Family**			
Dichelostemma capitatum	blue dicks		X	X
Tropaeolaceae	**Nasturtium Family**			
*Tropaeolum majus**	nasturtium		X	X
Ulmaceae	**Elm Family**			
*Ulmus parvifolia**	Chinese elm		X	
Urticaceae	**Nettle Family**			
*Urtica urens**	dwarf nettle		X	X
ANGIOSPERMS (MONOCOTYLEDONS)				
Poaceae	**Grass Family**			
*Arundo donax**	giant reed		X	X
*Avena barbata**	slender wild oat		X	X
*Brachypodium distachyon**	purple false-brome		X	
*Bromus diandrus**	ripgut brome		X	X
*Bromus hordeaceus**	common soft-brome		X	
Bromus madritensis ssp. *rubens**	red brome		X	X
*Cortaderia selloana**	pampas grass		X	X
Distichlis spicata	salt grass		X	X
*Ehrharta erecta**	veldt grass		X	
*Hordeum murinum**	wall barley		X	X
*Festuca perennis** (*Lolium multiflorum**)	Italian ryegrass		X	X
Melica imperfecta	little Californis melica		X	

Rumex?

Lamarkia aurea goldentop

Washingtonia robusta

Stipa lepida (Nassella lepida)	foothill needle grass		X	X
*Pennisetum setaceum**	fountain grass		X	X
Phalaris sp. *	canary grass		X	
*Polypogon monspeliensis**	rabbitfoot grass		X	
*Schismus barbatus**	common Mediterranean grass		X	X
Festuca myuros (Vulpia myuros*)*	rat's-tail fescue		X	X

*Indicates plant species that is not native to California.

California Native Plant Society (CNPS) Rare Plant Ranks:
2B: Plants rare, threatened, or endangered in California; but more common elsewhere in their range.

CNPS Threat Ranks:
0.1 Seriously endangered in CA (over 80% of occurrences threatened / high degree and immediacy of threat)

Sources:
California Natural Diversity Data Base (CDFW 2022)
CNPS Rare and Endangered Plant Inventory (CNPS 2022)

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Rare Plant Survey Form

Date: 6/29/22

Project #

Project Name Piraeus RR

Surveyor Names: Greg H., Reena L

Location(s):

SURVEY CONDITIONS				
	Time	Temp (F)	Wind (mph)	% Cloud Cover
START	0750	70	0-3	25
END	1300	77	3-5	0

* - non-native **PLANT SPECIES OBSERVED**

Cent meli *	Pseu lute *	Mesem cryst *
Dein fasc	Bras nigr *	Festuca peren *
Isoc men	Aven barb *	Medicago sp.
Rum cris *	Hedy rhag *	Erigeron canaden
Poly mon *	Brom dian *	Cortaderia jubata *
Brom hord *	Datu wri	Lactuca serc *
Lyth hys *	Penn seta *	Polygonum avicu *
Sals trag *	Acacia sp. *	Frag fasc
Carpo edu *	Euph mac *	Adolph cal
Fest myo *	Son asp *	Opuntia litt
Hord mur *	Raph sat *	Artemesia cal
Atri semi *	Nic gla *	Distich spi
Acm glab	Araucaria sp. *	Encelia calif
Gleb coro *	Cupaniopsis anacar *	Malacathamnus sp.
Erod cicu *	Marah sp.	Hirsch inca *
Brom madr *	Bacc pilu	Solanum sp.
Sch bar *	Lepidium sp.	Adenos fasc

0834 - 1 male CAGN observed in Development Area

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Rare Plant Survey Form

Date: 6/29

Project # 2022

Project Name Piraeus RP

PLANT SPECIES OBSERVED		
Yucca sch	Chenop murale*	Cylindro prol
Eriodictyon crass	Ricc com *	Erioph confert
Stephanomeria virg	Plume ariculata*	Cirsium sp *
Salv mel	Crassula ovata*	Washing rob *
Mirabilis laevis	Perttoma arborea	Phoe canar *
Cryptantha sp.	Lysmachia arvensis	Euphor lathyris *
Heterotheca grand	*Quercus engel	Malva parv *
Pseudo bidle	*Ceanothus verru	Dimorph sinuata
Pseudo calif	Dudleya edulis	
Erodium botrys*	*Selag cine	
Heterom arbutif	Chaen glab v glab	
Hazardia squar	Leymus conden	
Rhus int	~~Chalk dudleya~~	
Malosma laurina	Dudleya pulvu	
Xylo bicolor	Foen vulg *	
Samb nigra	Ribes cali	
Hypochaeris glabra*	Conv arv. *	
Arundo donax*	Fraxinus und	
~~Melaleuca~~	Acnispon americanus	
Melaleuca nesoph*	Mimulus auran	
Ulmus parv *	Ambrosia psilo	
Myoporum laetum*	Melica imperfecta	

Kraemer RP Survey #3 8/18/22
G. Hampton and R. Lam
Start: 0700, 70°F, 85% cloud, 0-3 mph
End: 1230, 78°F, 10% cloud, 3-5 mph

Species observed (cont. on other side)

Carpo edulis*	Bacc pil	Lepidium sp	
Atripl semi*	Acm gk	Mes cry*	
Salso trag*	Brom hord*	Plant erec	
Isoc men*	Cent mel*	Fest peren*	
Erig fasc	Sclys barb*	Dist sp.	
Hedyp rhaga*	Erod cic*	Art cal	
Hord murin*	Steph virg	Salv mell	
Aven barb*	Pesm fascic	Opu litt	
Brom madri*	Lythr hyso*	Yucc sch	
Datura wrig*	Polypo mons*	Erio cross	
Heter grand	Rumex cris*	Marah sp.	
Lupani an acard*	Lactuca sorr*	Ricc com*	
Vico glab*	Festu myu*	Arun don*	
Globi Corona*	Penn's setac*	Het arbu	
Brom dia*	Corta jubata*	Erigero can	

Wildlife: COHA, BLPH, ANHU, MODO, MOBT, HOFI, NUWO, CASJ, WREN, CATO, RTHA

Cottontail rabbit

Scale: 1 square = _____

Rite in the Rain

Plant sp. observed (cont.)

Adolph cal
Pseud ben
Aden fasc
Hir inc *
Cryptantha sp.
Bra nig *
Pseu biol
Eric bon *
Amar albu *
Malos fauriana
Cyn dac *
Cross ova *
Rhus inte
Peritom arbo
Hazardia squa
Xyloc bicol
Ceano ver
Quer eng
Cirsium sp.
Ptero drym
Galium sp.
Erioph conf
Hypoxeum lae *
Lim aur
Dudleya sp.

Salix nig
Rhamn crot
Ely cond
Dudley pulv
Tam ram *
Ribes
Trifol terres *
Amb psil
Poen vulg *
Cyli [illegible] sp.

Scale: 1 square = _____

Scale: 1 s

APPENDIX C

Plant Species Compendium

PIRAEUS POINT PROPERTY PLANT SPECIES OBSERVED

Scientific Name	Common Name	April 2022	June 2022	Aug 2022
VASCULAR PLANTS				
ANGIOSPERMS (DICOTYLEDONS)				
Adoxaceae	**Moschatel Family**			
Sambucus nigra	black elderberry		X	X
Agavaceae	**Century Plant Family**			
Yucca schidigera	Mojave yucca	X	X	X
Aizoaceae	**Iceplant Family**			
*Aptenia cordifolia**	baby sun rose	X		
*Carpobrotus edulis**	hottentot fig	X	X	X
*Mesembryanthemum crystallinum**	crystalline ice plant	X	X	X
Amaranthaceae	**Amaranth Family**			
*Amaranthus albus**	pigweed amaranth			X
Anacardiaceae	**Cashew Family**			
Malosma laurina	laurel sumac	X	X	X
Rhus integrifolia	lemonade berry		X	X
Apiaceae	**Carrot Family**			
*Conium maculatum**	poison hemlock	X		
Daucus pusillus	American wild carrot	X		
*Foeniculum vulgare**	sweet fennel		X	X
Sanicula crassicaulis	gamble weed	X		
Araucariaceae	**Araucaria Family**			
*Araucaria heterophylla**	Norfolk Island pine		X	
Arecaceae	**Palm Family**			
*Phoenix canariensis**	Canary Island date palm		X	
*Washingtonia robusta**	Mexican fan palm	X	X	
Asparagaceae	**Asparagus Family**			
*Asparagus asparagoides**	African asparagus fern	X		
Asteraceaea	**Sunflower Family**			
Ambrosia psilostachya	western ragweed		X	X
Artemisia californica	California sagebrush		X	X
Baccharis pilularis	coyote brush	X	X	X
*Centaurea melitensis**	tocalote	X	X	X
Chaenactis glabriuscula var *glabriuscula*	common yellow chaenactis	X	X	
Cirsium sp.	thistle		X	X

Cirsium occidentale	cobweb thistle	X		
Deinandra fasciculata	clustered tarweed	X	X	X
*Dimorphotheca sinuata**	African daisy		X	
Encelia californica	California brittlebush		X	
*Erigeron bonariensis**	flax-leaved horseweed			X
Erigeron canadensis	horseweed	X	X	X
Eriophyllum confertiflorum	golden-yarrow		X	X
*Glebionis coronaria**	crown daisy	X	X	X
Hazardia squarrosa	saw-toothed goldenbush		X	X
*Hedypnois rhagadioloides**	crete weed	X	X	X
Heterotheca grandiflora	telegraph weed	X	X	X
*Hypochaeris glabra**	smooth cat's ear	X	X	
Isocoma menziesii var. *menziesii*	Menzies' goldenbush	X	X	X
*Lactuca serriola**	prickly lettuce	X	X	X
*Logfia gallica**	narrowleaf cottonrose	X		
Osmadenia tenella	false rosinweed	X		
*Osteospermum monstrosum**	one eye monster	X		
Pseudognaphalium beneolens	cudweed			X
Pseudognaphalium biolettii	two-color rabbit-tobacco	X	X	X
Pseudognaphalium californicum	California everlasting	X	X	
*Pseudognaphalium luteoalbum**	Jersey cudweed		X	
*Sonchus asper**	spiny sow-thistle		X	
*Sonchus oleraceus**	common sow-thistle	X		
*Stephanomeria virgata**	rod wire lettuce	X	X	X
Stylocline gnaphaloides	everlasting neststraw	X		
Boraginaceae	**Borage Family**			
Cryptantha sp.	catseyes		X	X
Cryptantha intermedia	clearwater cryptantha	X		
Eriodictyon crassifolium	thickleaf yerba santa	X	X	X
Brassicacaeae	**Mustard Family**			
*Brassica nigra**	black mustard	X	X	X
*Hirschfeldia incana**	short-pod mustard	X	X	X
Lepidium sp.*	peppergrasses		X	X
*Raphanus sativus**	wild radish	X	X	
*Sisymbrium orientale**	eastern rocket	X		
Cactaceae	**Cactus Family**			
Cylindropuntia prolifera	coastal cholla	X	X	X
Opuntia littoralis	coast prickly pear	X	X	X

Chenopodiaceae	**Goosefoot Family**			
*Atriplex semibaccata**	berry saltbush	X	X	X
*Chenopodium murale**	nettle-leaved goosefoot	X	X	
*Salsola tragus**	Russian thistle	X	X	X
Cleomaceae	**Spider Plant Family**			
Peritoma arborea	bladderpod		X	X
Convolvulaceae	**Morning-glory family**			
Calystegia macrostegia	island false bindweed	X		
Crassulaceae	**Stonecrop Family**			
Dudleya edulis	fingertips		X	X
Dudleya pulverulenta	chalk dudleya	X	X	X
Crassula connata	pygmy-weed	X		
*Crassula ovata**	jade plant	X	X	X
Cucurbitaceae	**Wild Cucumber Family**			
Marah sp.	cucumber		X	X
Ericaceae	**Heath Family**			
Xylococcus bicolor	mission manzanita	X	X	X
Euphorbiaceae	**Spurge Family**			
*Euphorbia lathyris**	compass plant		X	
*Euphorbia maculata**	spotted spurge		X	
*Euphorbia peplus**	petty spurge	X		
*Ricinus communis**	castor bean	X	X	X
Fabaceae	**Legume Family**			
*Acacia obtusifolia**	wattles	X	X	
*Acacia pycnantha**	golden wattle	X		
Acmispon americanus	American bird's foot trefoil		X	
Acmispon glaber	deerweed	X	X	X
*Medicago polymorpha**	bur clover	X	X	
*Melilotus indicus**	annual sweetclover	X		
Fagaceae	**Oak Family**			
Quercus engelmannii [CNPS Rank 4.2]	Engelmann oak		X	X
Geraniaceae	**Geranium Family**			
*Erodium botrys**	Mediterranean stork's-bills	X	X	
*Erodium cicutarium**	red-stemmed filaree	X	X	X
Grossulariaceae	**Currant Family**			
Ribes californicum	California gooseberry	X	X	X
Juglandaceae	**Walnut Family**			
Juglans hindsii	walnut		X	

Liliaceae	**Lily Family**			
Calochortus splendens	splendid mariposa lily	X		
Lamiaceae	**Mint Family**			
Salvia mellifera	black sage	X	X	X
Lythraceae	**Loosestrife Family**			
*Lythrum hyssopifolia**	grass-poly	X	X	X
Malvaceae	**Mallow Family**			
Malacothamnus sp.	mallow		X	
Malacothamnus fasciculatus	chaparral bush mallow	X		
*Malva parviflora**	cheeseweed mallow	X	X	
Myrsinaceae	**Myrsine Family**			
*Lysimachia arvensis**	scarlet pimpernel	X	X	
Myrtaceae	**Myrtle Family**			
*Melaleuca nesophila**	showy honey-myrtle	X	X	
Nyctaginaceae	**Four O'clock Family**			
*Bougainvillea spectabilis**	great bougainvillea	X		
Mirabilis laevis var. *crassifolia*	wishbone bush	X	X	
Oleaceae	**Olive Family**			
*Fraxinus uhdei**	Shamel ash		X	
Onagraceae	**Evening Primrose Family**			
Camissoniopsis bistorta	California sun-cup	X		
Phrymaceae	**Lopseed Family**			
Diplacus aurantiacus	sticky monkeyflower		X	X
Diplacus brevipes	wide throated yellow monkeyflower	X		
Plantaginaceae	**Plantain Family**			
Antirrhinum nuttallianum	island snapdragon	X		
Plantago erecta	California plantain			X
Plumbaginaceae	**Leadwort Family**			
*Plumbago auriculata**	blue plumbago	X		
Polygonaceae	**Buckwheat Family**			
Eriogonum fasciculatum	California buckwheat		X	X
*Polygonum aviculare**	prostrate knotweed		X	
Pterostegia drymarioides	fairy mist			X
*Rumex crispus**	curly dock	X	X	X
*Rumex spinosa**	devil's thorn	X		
Rhamnaceae	**Buckthorn Family**			
Adolphia californica [CNPS Rank 2B.1]	California adolphia	X	X	X

Ceanothus verrucosus CNPS Rank 2B.2	wart-stemmed ceanothus		X	X
Frangula californica	California coffeeberry	X		
Rhamnus crocea	redberry buckthorn		X	X
Rosaceae	**Rose Family**			
Adenostoma fasciculatum	chamise		X	X
Heteromeles arbutifolia	toyon		X	X
Rubiaceae	**Madder Family**			
Galium sp.	bedstraw			X
Sapindaceae	**Soapberry Family**			
*Cupaniopsis anacardioides**	tuckeroo		X	X
Selaginellaceae	**Spike-moss Family**			
Selaginella cinerascens CNPS Rank 4.1	ashy spike moss		X	
Scrophulariaceae	**Figwort Family**			
*Myoporum laetum**	Ngaio tree		X	X
Scrophularia californica	California bee plant	X		
Solanaceae	**Nightshade Family**			
Datura wrightii	jimsonweed	X	X	X
*Nicotiana glauca**	tree tobacco	X	X	X
Solanum sp.	nightshade		X	
Tamaricaceae	**Tamarisk Family**			
*Tamarix ramosissima**	saltcedar			X
Themidaceae	**Brodiaea Family**			
Dichelostemma capitatum	blue dicks	X		
Ulmaceae	**Elm Family**			
*Ulmus parvifolia**	Chinese elm		X	
Zygophyllaceae	**Caltrop Family**			
*Tribulus terrestris**	puncture vine			X
ANGIOSPERMS (MONOCOTYLEDONS)				
Poaceae	**Grass Family**			
*Arundo donax**	giant reed	X	X	X
*Avena barbata**	slender wild oat	X	X	X
*Brachypodium distachyon**	purple false-brome	X		
*Bromus diandrus**	ripgut brome	X	X	X
*Bromus hordeaceus**	common soft-brome	X	X	X
Bromus madritensis ssp. *rubens**	red brome	X	X	X
*Cortaderia jubata**	purple pampas grass		X	X
*Cortaderia selloana**	pampas grass	X	X	
*Cynodon dactylon**	Bermuda grass			X

Distichlis spicata	salt grass	X	X	X
Elymus condensatus	giant wild rye	X	X	X
*Festuca myuros**	rat's-tail fescue	X	X	X
*Festuca perennis**	Italian ryegrass	X	X	X
*Hordeum murinum**	wall barley	X	X	X
*Lamarckia aurea**	goldentop grass	X		
Melica imperfecta	little California melica	X	X	
*Pennisetum setaceum**	fountain grass	X	X	X
*Polypogon monspeliensis**	rabbitfoot grass	X	X	X
*Schismus barbatus**	common Mediterranean grass	X	X	X
Stipa lepida	foothill needle grass	X		

California Native Plant Society (CNPS) Rare Plant Ranks:
2B: Plants rare, threatened, or endangered in California and more common elsewhere.
4: Plants of limited distribution; a watch list.

CNPS Threat Ranks:
0.1 Seriously endangered in CA (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)

* Not native to California.
Sources:
CNPS Rare and Endangered Plant Inventory (CNPS 2022)

APPENDIX D

Representative Site Photographs



Photo 1. Diegan Coastal Sage Scrub/California Sagebrush – California Buckwheat Scrub in southern portion of Development Area.



Photo 2. Southern Mixed Chaparral/Chamise – Mission Manzanita Chaparral in northern portion of Development Area.



Photo 3. Diegan Coastal Sage Scrub/Brittle Bush Scrub (foreground) and Diegan Coastal Sage Scrub/Lemonade Berry Scrub (background) in northern portion of Preserve Area.



Photo 4. Coastal Scrub/Deerweed Scrub documented in the middle portion of the Development Area.



Photo 5. Nonnative Riparian/Giant Reed Break in middle portion of Preserve Area.



Photo 6. Nonnative Grassland/Annual Brome Grassland in northern portion of the Preserve Area.



Photo 7. California adolphia documented in the southern portion of the Development Area.



Photo 8. Wart-stemmed ceanothus documented in the southern portion of the Preserve Area.



Photo 9. Engelmann oak documented in the southern portion of the Preserve Area.

ATTACHMENT B

Coastal California Gnatcatcher Focused Survey Report

Results of the 2022 Focused Coastal California Gnatcatcher Surveys for the Piraeus Point Project

San Diego County, California

Prepared For:

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July 2022
(Revised October 2022)

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Appendix C – CNDDB Forms

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Definition
APN	Assessor's Parcel Number
CAGN	California gnatcatcher
CDFW	California Department of Fish and Wildlife
SSC	Species of Special Concern
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WL	Watch List

1.0 INTRODUCTION

Lennar Homes (Client) contracted ECORP Consulting, Inc. to conduct focused surveys for the coastal California gnatcatcher (CAGN; *Polioptila californica californica*) within the Piraeus property and 500-foot buffer (hereafter referred to as Survey Area) during the 2022 breeding season. The property consists of two parcels of land (Assessor's Parcel Numbers [APN] 254-144-01-00 and 216-110-35-00). The Development Area occurs entirely within the southern parcel (APN 254-144-01-00) and consists of a 149-home modern townhome community, offsite improvements, and the associated Fuel Modification Zone (FMZ). The northern portion of APN 254-144-01-00 and the entirety of the northern parcel (APN 216-110-35-00) will be preserved in perpetuity and left untouched (Preserve Area). Together, the Development Area and the onsite Preserve Area are the Proposed Project (Project) or Project Area. Focused surveys were conducted to identify the distribution and abundance of CAGN within and adjacent to the Survey Area. A 15-day notification letter was sent via email on February 15, 2022 to notify the U.S. Fish and Wildlife Service (USFWS) of the start of protocol surveys for the Project. This report summarizes the results of the six breeding-season focused surveys for CAGN conducted at the property.

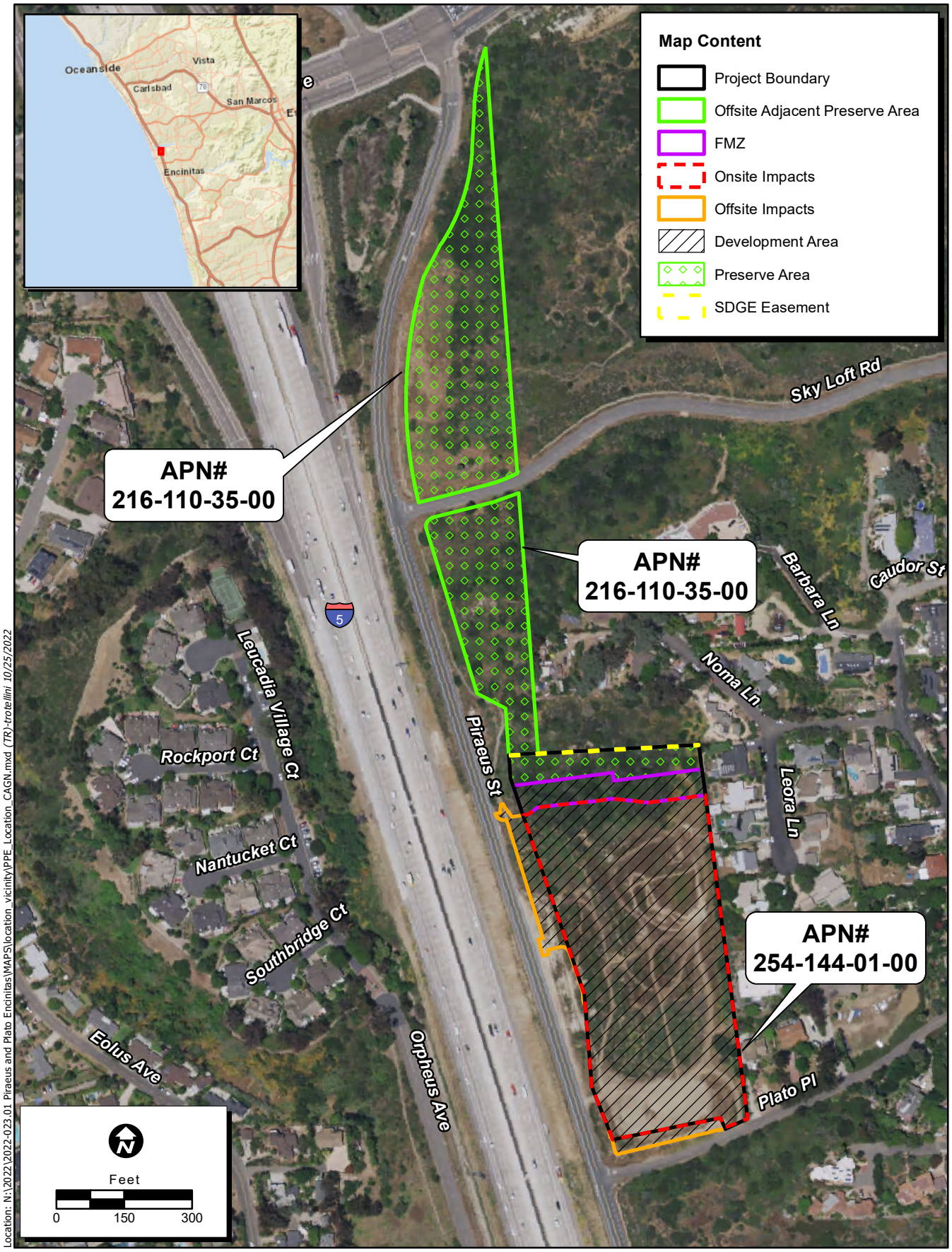
1.1 Project Location

The Proposed Project is located in San Diego County in the City of Encinitas (Figure 1). It is located directly east of U.S. Interstate 5 (I-5) between Leucadia Boulevard and La Costa Avenue. The Survey Area includes the Development Area, onsite Preserve Area within the northern portion of the southern parcel (APN 254-144-01-00), and offsite adjacent Preserve Area (APN 216-110-35-00). The property is centered at latitude 33.0804247° and longitude -117.2960667° within Sections 4 and 33, Townships 12 and 13 South, Range 4 West of the U.S. Geological Survey (USGS) Encinitas 7.5-minute topographic quadrangle (Figure 2).

2.0 COASTAL CALIFORNIA GNATCATCHER

2.1 Life History

The CAGN was listed as threatened by the federal government in March 1993 (USFWS 1993) and is also currently a California Department of Fish and Wildlife (CDFW) Species of Special Concern (SSC; CDFW 2022). This small gray-blue non-migratory bird is endemic to coastal Southern California. Its known geographic range includes portions of Ventura, Los Angeles, San Bernardino, Riverside, Orange, and San Diego counties and extends south into northwestern Baja California. This species is associated with low-growing, drought-tolerant sage scrub habitat. Dominant plant types within these communities include California sagebrush (*Artemisia californica*), buckwheats (*Eriogonum fasciculatum* and *E. cinereum*), encelias (*Encelia californica* and *E. farinosa*), and various sages (*Salvia mellifera*, *S. apiana*, and *S. leucophylla*). CAGNs have also been documented within chaparral, grassland, and riparian habitats, which occur in proximity to sage scrub, and are used for dispersal and foraging (Atwood et al. 1998; Campbell et al. 1998).



Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\location_vicinity\PPE_Location_CAGN.mxd (TR)-trotellini 10/25/2022

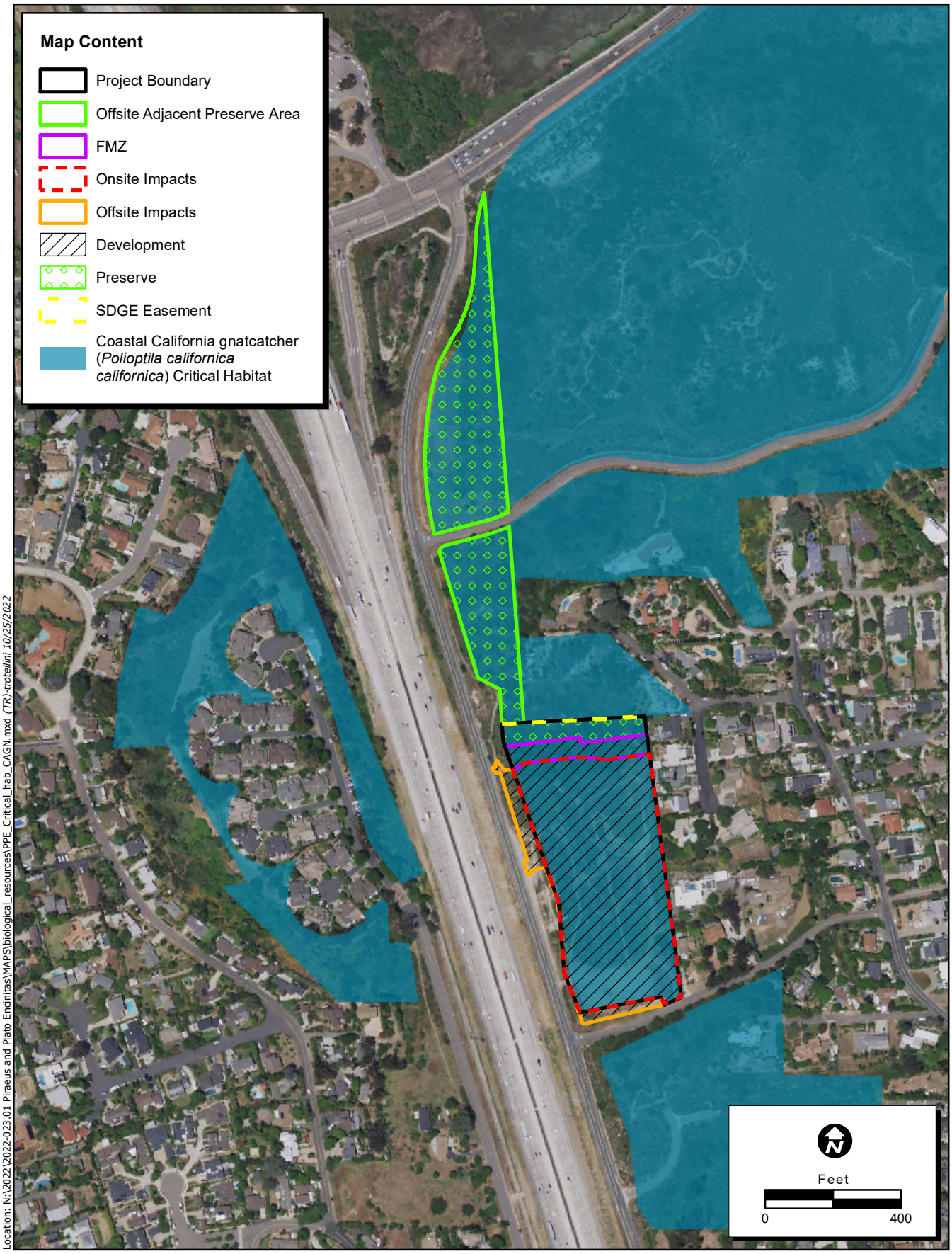
Map Date: 9/8/2022

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community Photo Source: NAIP

ECORP Consulting, Inc.
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Figure 1. Project Vicinity and Location

2022-023.01 Piraeus Point



Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\biological_resources\PPE_Critical_hab_CAGN.mxd *(TR)-trotellini 10/25/2022*

Map Date: 10/25/2022

Service Layer Credits: Photo Source: NAIP (2020)

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 2. USGS 7.5-minute Topographic Quadrangle and Critical Habitat

2022-023.01 Pireaus and Plato Encinitas

The peak breeding season of the CAGN extends from late February through July, with the peak of nest initiations occurring from mid-March through mid-May. Nests are often located in California sagebrush about 3 feet (1 meter) above the ground with an average clutch size of four eggs. The incubation and nestling periods encompass about 14 and 16 days, respectively. Both sexes participate in all phases of the nesting cycle. Contributing factors in the decline of this species include overly frequent fire cycles, nonnative plant invasions, brown-headed cowbird (*Molothrus ater*) nest parasitism, predation, and chronic reduction in habitat carrying capacity due to development (Mock 2004).

2.2 Critical Habitat

Critical habitat was designated by the USFWS in 2000 (USFWS 2000) and was re-designated in 2007 (USFWS 2007). The USFWS has designated 13 critical habitat units that are essential to the recovery of the CAGN (USFWS 2007). The entirety of the Survey Area is within Unit 3 of USFWS-designated critical habitat for the federally-listed coastal CAGN (USFWS 2007) (Figure 2).

3.0 SURVEY METHODOLOGY

3.1 Habitat Assessment

Biological studies, including a desktop literature review, biological reconnaissance field survey, and vegetation mapping were conducted in March 2022. Information collected during these studies were used to determine which portions of the Survey Area would require focused gnatcatcher surveys. Although not mapped, the same vegetation communities extended beyond the property limits and could be found within the survey buffer. With the exception of areas west of I-5 and north of La Costa Avenue, all accessible areas containing suitable breeding or foraging habitats were included in the focused surveys.

3.2 Coastal California Gnatcatcher Focused Surveys

Focused surveys were conducted throughout the Survey Area by USFWS-permitted 10(a)(1)(A) CAGN biologists. Focused gnatcatcher surveys were conducted in accordance with the *1997 Coastal California Gnatcatcher Presence/Absence Survey Guidelines* published by the USFWS (1997). Surveys were conducted between sunrise and 1200, when weather conditions were favorable (i.e., no excessive fog, wind, rain, cold [temperatures at or below 45˚F], or heat [at or exceeding 100˚F]). No more than 80 acres of suitable habitat were surveyed by each biologist per day. Surveys consisted of slowly walking various survey routes and playing a taped recording of gnatcatcher vocalizations while scanning all potential habitat with binoculars for the presence of gnatcatchers and listening for vocal responses to the recording. Inaccessible areas (i.e. fenced and private property, steep or unstable terrain) were surveyed from the public right-of-way or closest accessible area. Areas west of I-5 and north of La Costa Avenue were excluded. The locations of CAGN pairs and/or individuals within the Survey Area were recorded using a Global Positioning System-enabled smart device (i.e. smartphone, iPad) outfitted with the ArcGIS Collector© application. Field notes regarding the age, sex, behavior, and activity were recorded and maintained to determine the use area (territory) and (likely) repeat individuals associated with each territory over the course of the surveys. CAGN individuals or pairs that were detected outside of the survey area that had potential to nest or forage in the survey area, were also documented. For

each focused survey, the general weather conditions, date, and start and end times were documented on data sheets, included as Appendix A. Additionally, a list of all wildlife observed during the surveys is included as Appendix B.

4.0 RESULTS

4.1 Habitat Assessment

The habitat and vegetation communities were assessed during Survey 1. Habitats within the Project Area considered suitable for the CAGN included California Brittle Bush Scrub (*Encelia californica* Shrubland Alliance), California Sagebrush-California Buckwheat Scrub (*Artemisia californica-Eriogonum fasciculatum* Shrubland Alliance), Deerweed Scrub (*Lotus scoparius* Shrubland Alliance), as well as the edges of Chamise Chaparral (*Adenostoma fasciculatum* Shrubland Alliance) and Lemonade Berry Scrub (*Rhus integrifolia* Shrubland Alliance).

4.2 Coastal California Gnatcatcher Focused Surveys

Focused surveys were conducted by federal 10(a)(1)(A)-permitted ECORP biologists Christine Tischer (TE-053379-5) and Shannan Shaffer (TE-67555A-2) between March 17 and April 28, 2022. Surveys officially concluded at noon, however observations of gnatcatcher activity extended beyond noon during Surveys 1 and 2. ECORP biologists, Taylor Dee, Caroline Garcia, and Christina Torres provided supervised assistance. Table 1 summarizes the conditions during each of the survey days.

Table 1. Summary of CAGN Survey Conditions

Survey #	2022 Date	Surveyors *	Time		Temperature (˚F)		% Cloud Cover		Wind Speed (mph)	
			Start	End	Start	End	Start	End	Start	End
1	March 18	CLT, TD	0700	1252	48.7	72.1	0	10	1-2	1-3
2	March 24	CLT, TD	0705	1215	62.4	72.1	2	<15	1-2	1-4
3	April 7	CLT, CT	0625	1200	58	82	0/(fog)	0	0-2	0-5
4	April 14	SS, CG	0650	1200	51.6	64	0	0	0-1	3-5
5	April 21	SS, CT	0630	1200	54.1	70	0	20	0-1	4-7
6	April 28	SS	0635	1155	61.8	71.2	100	20	1-3	1-3

* CLT: Christine Tischer, SS: Shannan Shaffer, TD: Taylor Dee, CT: Christina Torres, CG: Caroline Garcia

A total of five territories (four confirmed pairs and 1 territorial male), were identified during the protocol surveys, two of which occur within the proposed Development Area (Figure 3). A summary of the CAGN observations for each territory is provided below.

Figure 3. California Gnatcatcher Survey Results



Map Content

- Project Boundary
- Offsite Adjacent Preserve Area
- FMZ
- Onsite Impacts
- Offsite Impacts
- SDGE Easement
- 500-ft Buffer
- CAGN Territory
- CAGN Nest

CAGN Detection

- Male
- Pair
- Unknown

Incidental Species Detections

- Orange-throated Whiptail

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\biological_resources\CAGN_Survey_Results.mxd (TR)-trotellini 10/25/2022

2022-023.01 Piraeus Point

Scale in Feet
0 375

Photo Source: NAIP (2020)

Map Date: 9/6/2022

4.2.1 CAGN Territory 1

During Survey 1, one male CAGN was heard and seen in the central portion of the territory and a second CAGN was heard downslope and to the west of the male's location. During that same survey, a male was heard in the Chamise Chaparral ravine to the northeast and a female was observed within the Deerweed Scrub at the top of the slope. Because the male and female did not seem to be interacting, it was unknown if this was one or two pairs. Based on detections and lack of detections during subsequent surveys, it was determined that this was one pair that primarily utilizes the Deerweed Scrub and California Sagebrush-California Buckwheat Scrub within the Development Area.

4.2.2 CAGN Territory 2

This pair was consistently observed at the east extent of the 500-foot survey buffer of the offsite adjacent Preserve Area that occurs north of Sky Loft Road. Four different nest attempts were documented over the course of the surveys, including one attempt within 25 feet of Sky Loft Road and beyond the 500-foot survey buffer. Territory 2 is completely within the 500-foot buffer and buffered from the proposed Development Area by hilly terrain that occurs within the offsite adjacent Preserve Area and onsite Preserve Area south of Sky Loft Road.

4.2.3 CAGN Territory 3

Territory 3 was not detected until the second survey (on March 24), at which time the pair was observed in the nest-building phase. At least one of the pair's individuals was easily detectable without the use of playback throughout the remainder of the surveys, and based on behavior, it appeared as though the nest was likely to successfully fledge young. Except for marginal foraging habitat and perching locations provided by the disturbed habitat (i.e. Annual Brome Grassland and Giant Reed Break) within the offsite adjacent Preserve Area north of Sky Loft Road, the bulk of Territory 3 occurs within the survey buffer.

4.2.4 CAGN Territory 4

Territory 4 was not detected until the second survey (on March 24), at which time the pair was observed in the nest building phase. This nest was likely abandoned before eggs were laid or predated based on observations during subsequent surveys, but the bulk of this pair's territory is within the California Sagebrush-California Buckwheat Scrub and Deerweed Scrub in the southern portion of the proposed Development Area. The territory extends south of Plato Place based on one long-distance flight directly observed during Survey 2, but this pair was not detected south of Plato Place at any other time.

4.2.5 CAGN Territory 5

Territory 5 had limited detections and was not detected until Survey 4 (on April 14). One male CAGN was detected during Surveys 4 and 5 and a brief vocalization was heard during the sixth and final survey. This territory occurs on the west-facing slopes east of Piraeus Street and is susceptible to loud traffic from I-5 and, to a much lesser degree, road noise from the frontage road (Piraeus Street). Due to the difficulty in detecting gnatcatcher vocalizations in this area, it is possible that a breeding pair is present, but was not detectible by the surveyors. Territory 5 is located entirely within the offsite adjacent Preserve Area south of Sky Loft Road and is buffered from the proposed Development Area by the very steep terrain that occurs within the FMZ and onsite Preserve Area.

4.3 Other Sensitive Wildlife

The target species for this survey effort was the coastal California gnatcatcher; however, two special-status wildlife species (orange-throated whiptail [*Aspidoscelis hyperythra*] and monarch butterfly [*Danaus plexippus*]) were detected during the field efforts. One orange-throated whiptail, a CDFW Watch List Species (WL, CDFW 2022), was noted within the 500-foot survey buffer north of Sky Loft Road (Figure 3). One individual monarch, a federal candidate for listing (CDFW 2022), was noted during each of Survey 1 and Survey 3, but a location is not shown for this species as it was only observed flying through the site and not egg-laying or part of an overwintering colony. Locations of special-status species were submitted to the CDFW California Natural Diversity Data Base (CNDDB) via their online field form (Appendix C).

5.0 SUMMARY

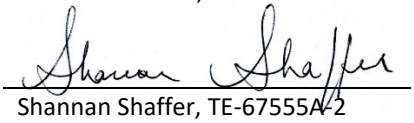
A total of five CAGN territories were mapped within the Survey Area over the course of six weekly surveys conducted during the 2022 breeding season. Two pairs of CAGN (Territories 1 and 4) are located within the proposed Development Area of the Project and one additional territorial male (Territory 5) is located within the offsite adjacent Preserve Area south of Sky Loft Road. Two CAGN territories (breeding pairs in Territories 2 and 3) occur within the 500-foot survey buffer primarily east of the offsite adjacent Preserve Area north of Sky Loft Road; the western portion of Territory 3 slightly overlaps the offsite adjacent Preserve Area. The entirety of the Survey Area is within Unit 3 of USFWS-designated critical habitat for the federally-listed coastal CAGN (USFWS 2007).

6.0 CERTIFICATION STATEMENT

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."

Signature:  Date: July 1, 2022/October 27, 2022

Christine Tischer, TE-053379-5

Signature:  Date: July 1, 2022/October 27, 2022

Shannan Shaffer, TE-67555A-2

7.0 LITERATURE CITED

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U.S. Fish and Wildlife (USFWS). 2007. Revised Designation of Critical Habitat for the Coastal California Gnatcatcher (*Polioptila californica californica*); Final Rule. December 19.

_____. 2000. Final Determination of Critical Habitat for the Coastal California Gnatcatcher; Final Rule. October 24.

_____. 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines. February 28.

_____. 1993 Endangered and Threatened Wildlife and Plants; Rule to List the Coastal California Gnatcatcher as Threatened; Final Rule. Federal Register 58:16742-16757.

LIST OF APPENDICES

Appendix A – CAGN Survey Data Sheets

Appendix B – Wildlife Species List

Appendix C – CNDDB Forms

APPENDIX A

CAGN Survey Data Sheets

General Habitat Description: coastal sage scrub, chaparral, and grassland communities

CAGN observations and notes:

0727-0730 – CAGN heard; male seen in CA buckwheat/Artemisia/Encelia scrub at top of hill (point collected in Field Maps). 1 additional CAGN individual heard (not seen) downslope and to west. Designated as Pair CAGN 1 in Field Maps.

0801-0900 – male heard making harsh calls from chamise to north and preening; female seen in tree tobacco but does not seem to be responding to male or interacting with him (possibly 2 pairs, but could just be CAGN 1 pair).

1224-1252 Pair observed east of property near 500' survey buffer. Male carrying fluff to same location near lemonadeberry with very aggressive scrub jays (marked as CAGN-2A nest in Field Maps).

ECORP Consulting, Inc
California Gnatcatcher Survey Form

Project Name: Piraeus Point

Surveyor Name: Christine Tischer (TE-053379-5) with Taylor Dee

Date: 03/17/2022 Survey # 1

	Time	Temp (°F)	Cloud Cover (%)	Wind Speed (avg. mph)
Start	0700	48.7	0	1-2
End	1200 (observed CAGN until 1252)	72.1	10	1-3

Wildlife Species Observed:

AMCR, CALT, WREN, HOFI, HOWR, MODO, BLPH, ANHU, NOMO, BEWR, BUSH, ALHU, CAKI, YRWA, CASJ, yellow-faced bumble bee, COHA, RTHA, GBHE (flyover), alligator lizard, COYE, SPTO, cabbage white, funereal duskywing, painted lady, monarch (1), silvery blue, WCSP, gull sp. (flyover), CATH, OCWA, ECDO, NUWO, CAGN

General Habitat Description: coastal sage scrub, chaparral, and grassland communities

CAGN observations and notes:

0808 New pair detected west of CAGN 3 within 500' buffer making multiple trips to same clump of shrubs at base of slope (marked as CAGN-3A nest in Field Maps).

0838 CAGN 2 pair seen in same canyon. Observed to be disassembling nest in shrub southeast of CAGN-2A nest (marked as nest CAGN-2B in Field Maps) and taking material to new nest location outside 500' buffer and only 25' north of Sky Loft Road (marked as CAGN-2C nest in Field Maps).

1045 CAGN 1 pair observed in between tree tobacco and freeway in lower bowl area. No gnatcatchers observed to north or northeast where observed last week, so assumed to be one pair using the entire area.

1115 New pair (CAGN 4) detected in southern portion of proposed development. Male observed carrying nesting material (photo) to Artemisia shrub in disturbed portion of scrub habitat. Nest is 98% complete. Pair seen making long distance flight to south side of Plato Road.

12:02 Potential new pair south of Project along Christine Place, but occurs on private property.

ECORP Consulting, Inc
California Gnatcatcher Survey Form

Project Name: Piraeus Point

Surveyor Name: Christine Tischer (TE-053379-5) with Taylor Dee

Date: 03/24/2022 Survey # 2

	Time	Temp (°F)	Cloud Cover (%)	Wind Speed (avg. mph)
Start	0705	62.4	2	1-2
End	1215	72.1	<15	1-4

Wildlife Species Observed:

CALT, BUSH, WREN, SPTO, CASJ, ALHU, SOSP, RTHA, MODO, YRWA, LEGO, WCSP, CATH, BHGR, HETH, RWBL, desert cottontail, ANHU, MALL (flyover), CAQU, NOMO, HOFI, COHA, CA ground squirrel, COYE, BHGR, RWBL, CAGN

General Habitat Description: coastal sage scrub, chaparral, and grassland communities

CAGN observations and notes:

0753 vocalization heard within CAGN 4 territory at top of slope northeast of nest. Pair observed foraging in same area at 0758. No approaches to CAGN-4A nest shrub and no nesting behavior observed.

0952 male at CAGN 3 territory responded to taped playback played from sidewalk and he came from direction of nest. Not vocal but patrolled perimeter. Female assumed to be on nest – quickly moved on from area.

1000 No activity at CAGN-2C nest shrub. Heard CAGN in canyon but not seen.

1046-1100 Potential new pair heard/seen north of CAGN 2 canyon covering a very large area within survey buffer and very territorial. Marked extent of territory in Field Maps.

ECORP Consulting, Inc
California Gnatcatcher Survey Form

Project Name: Piraeus Point

Surveyor Name: Christine Tischer (TE-053379-5) with Christina Torres

Date: 04/07/2022 Survey # 3

	Time	Temp (°F)	Cloud Cover (%)	Wind Speed (avg. mph)
Start	0625	58	0% with patchy fog	0-2
End	1200	82	0	0-5

Wildlife Species Observed:

CALT, MODO, HOFI, RTHA, ANHU, SBMU, WREN, SOSP, CORA, LEGO, WCSP, CAKI, yellow-faced bumble bee, NOMO, HOOR, OCWA, CAQU, GBHE (flyover), CASJ, ALHU, SPTO, orange-throated whiptail, BEWR, COYE, monarch, mourning cloak, Sara orangetip, CATH, AMCR, HOWR, BUSH, honey bee, COHA, NUWO, funereal duskywing, CAGN

General Habitat Description: coastal sage scrub, chaparral, and grassland communities

CAGN observations and notes:

0712 brief CAGN vocalization heard along Christine Pl at south end of survey buffer, but no observation (inaccessible).

0800 CAGN-4A nest in Artemisia californica appears to have been predated (i.e. damage to nest). No CAGN observed at or near nest site.

0808 Male CAGN heard and seen northwest of CAGN-4A nest (marked point in Field Maps).

0911 Male CAGN observed within CAGN 1 territory – no vocalization; flew south.

0950 New territory (CAGN-5). Male observed and vocalizing in response to broadcast call played on west side of middle parcel, south of Sky Loft Road; observed to have flown in from north but not seen which way he departed. High I-5 traffic noise.

ECORP Consulting, Inc
California Gnatcatcher Survey Form

Project Name: Piraeus Point

Surveyor Name: Shannan Shaffer (TE-67555A-2) with Caroline Garcia

Date: 04/14/2022 Survey # 4

	Time	Temp (°F)	Cloud Cover (%)	Wind Speed (avg. mph)
Start	0650	51.6	0	0-1
End	1200	64	0	3-5

Wildlife Species Observed:

SPTO, CATH, COYE, ANHU, NOMO, ALHU, HOFI, CALT, BUSH, RTHA, MODO, ROPI, WREN, LEGO, GREG (flyover), SOSP, CAKI, CASJ, CA ground squirrel, CAGN

General Habitat Description: coastal sage scrub, chaparral, and grassland communities

CAGN observations and notes:

0800 Briefly observed CAGN male in CAGN 4 territory in sage. No broadcast call played and CAGN did not vocalize. Point recorded in Field Maps.

0909 CAGN 5 male heard vocalizing and observed in CSS. No female observed, but very loud traffic so distant vocalizations not likely to be detected. Point recorded in Field Maps.

1011 CAGN 3 pair observed making several trips to CAGN-3A nest location with small food items.

1020 Observed male CAGN 3 and male CAGN 2 at territory edge (no new locations added).

1119 Observed CAGN 2 pair carrying nesting material to Artemisia californica; female observed adjusting material in nest (marked as CAGN-2D in Field Maps)

ECORP Consulting, Inc
California Gnatcatcher Survey Form

Project Name: Piraeus Point

Surveyor Name: Shannan Shaffer (TE-67555A-2) with Christina Torres

Date: 04/21/2022 Survey # 5

	Time	Temp (°F)	Cloud Cover (%)	Wind Speed (avg. mph)
Start	0630	54.1	0	0-1
End	1200	70	20	4-7

Wildlife Species Observed:

NOMO, HOFI, BUSH, CALT, HOOR, MODO, RUHU, ANHU, RTHA, CASJ, ALHU, CORA, WREN, SPTO, HOFI, LEGO, CAGN

General Habitat Description: coastal sage scrub, chaparral, and grassland communities

CAGN observations and notes:

0752 CAGN male observed and heard in *Artemisia californica* in within CAGN 1 before flying south southwest along upper slope (location marked in Field Maps).

0813 Male CAGN heard then observed calling/foraging in CSS in CAGN 4 territory. Female briefly observed nearby moving through low vegetation (location marked in Field Maps).

0948 CAGN heard calling from slope within CAGN 5 territory upon approach (location marked in Field Maps). Did not continue calling and was not observed.

1008 CAGN heard calling from slope near CAGN-3A nest location. Did not observed and did not approach area due to nest.

1016 Male CAGN observed sitting on nest CAGN-2D. Female observed foraging nearby.

ECORP Consulting, Inc
California Gnatcatcher Survey Form

Project Name: Piraeus Point

Surveyor Name: Shannan Shaffer (TE-67555A-2)

Date: 04/28/2022 Survey # 6

	Time	Temp (°F)	Cloud Cover (%)	Wind Speed (avg. mph)
Start	0635	61.8	100	1-3
End	1155	71.2	20	1-3

Wildlife Species Observed:

CALT, BUSH, HOFI, CASJ, ALHU, MODO, LEGO, ANHU, COYE, RTHA, NOMO, WREN, SPTO, AMCR, SBMU, HOOR, BLPH, alligator lizard, CA ground squirrel, western fence lizard, TUVU, CAGN

APPENDIX B

Wildlife Species List

Attachment B
Piraeus Point Property
Wildlife Species Observed

Scientific Name	Common Name
INSECTS	
Apidae	**Bees**
Apis mellifera	western honey bee
Bombus vosnesenskii	yellow-faced bumble bee
Pieridae	**Orange-Tips, Whites and Sulfurs**
Anthocharis sara	Sara orangetip
Pieris rapae	cabbage white
Lycaenidae	**Blues, Hairstreaks, & Gossamer Wings**
Glaucopsyche lygdamus	silvery blue
Nymphalidae	**Brush-footed Butterflies**
*Danaus plexippus****	monarch butterfly
Nymphalis antiopa	mourning cloak
Vanessa cardui	painted lady
Hesperidae	**Skippers**
Erynnis funeralis	funereal duskywing
REPTILES	
Anguidae	**Alligator Lizards**
Elgaria multicarinata	southern alligator lizard
Phrynosomatidae	**Spiny Lizards**
Sceloporus occidentalis	western fence lizard
Teiidae	**Whiptails & Relatives**
*Aspidoscelis hyperthra***	orange-throated whiptail
BIRDS	
Anatidae	**Geese, Ducks, & Swans**
Anas platyrhynchos	mallard
Ardeidae	**Herons and Egrets**
Ardea alba	great egret
Ardea herodias	great blue heron
Accipitridae	**Hawks, Kites, & Eagles**
Accipiter cooperii	Cooper's hawk
Buteo jamaicensis	red-tailed hawk
Aegithalidae	**Bushtits**

Scientific Name	Common Name
Psaltriparus minimus	bushtit
Cardinalidae	**Cardinals & Allies**
Pheucticus melanocephalus	black-headed grosbeak
Cathartidae	**Vultures**
Cathartes aura	turkey vulture
Columbidae	**Pigeons and Doves**
*Columba livia**	rock pigeon
*Streptopelia decaocto**	Eurasian collared-dove
Zenaida macroura	mourning dove
Corvidae	**Jays and Crows**
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Aphelocoma californica	California scrub-jay
Estrildidae	**Waxbills & Allies**
*Lonchura punctulate**	scaly-breasted munia
Fringillidae	**Finches**
Carpodacus mexicanus	house finch
Spinus psaltria	lesser goldfinch
Icteridae	**Blackbirds & Orioles**
Agelaius phoeniceus	red-winged blackbird
Icterus cucullatus	hooded oriole
Laridae	**Gulls, Terns, & Skimmers**
Larus sp.	gull sp.
Mimidae	**Mockingbirds and Thrashers**
Mimus polyglottos	northern mockingbird
Toxostoma redivivum	California thrasher
Odontophoridae	**New World Quail**
Callipepla californica	California quail
Parulidae	**Wood Warblers**
Geothlypis trichas	common yellowthroat
Oreothlypis celata	orange-crowned warbler
Passerellidae	**Sparrows and Towhees**
Melospiza melodia	song sparrow
Melozone crissalis	California towhee
Pipilo maculatus	spotted towhee
Zonotrichia leucophrys	white-crowned sparrow
Picidae	**Woodpeckers & Allies**
Picoides nuttallii	Nuttall's woodpecker
Polioptilidae	**Gnatcatchers**
*Polioptila californica californica****	coastal California gnatcatcher
Sylviidae (Previously Timaliidae)	**Old-World Warblers**
*Chamaea fasciata***	wrentit

Scientific Name	Common Name
Trochilidae	**Hummingbirds**
Archilochus anna	Anna's hummingbird
Selasphorus rufus	rufous hummingbird
Selasphorus sasin	Allen's hummingbird
Troglodytidae	**Wrens**
Thryomanes bewickii	Bewick's wren
Troglodytes aedon	house wren
Turdidae	**Bluebirds and Thrushes**
Catharus guttatus	hermit thrush
Tyrannidae	**Tyrant Flycatchers**
Sayornis nigricans	black phoebe
Tyrannus vociferans	Cassin's kingbird
MAMMALS	
Leporidae	**Rabbits and Hares**
Sylvilagus audubonii	desert cottontail rabbit
Sciuridae	**Squirrels**
Otospermophilus beecheyi	California ground squirrel

*nonnative species
**CDFW California Species of Special Concern/CDFW Fully Protected Species/Watch List Species
***Federally or state-listed threatened or endangered, or Candidate for federal or state listing threatened or endangered

APPENDIX C

CNDDB Forms

CNDDB Online Field Survey Form Report

California Natural Diversity Database
Department of Fish and Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: 916.324.0475
cnddb@wildlife.ca.gov
www.dfg.ca.gov/biogeodata/cnddb/

This data has been reported to the CNDDB, but may not have been evaluated by the CNDDB staff

Source code TIS22F0003
Quad code 3311713
Occ. no. _____
EO index no. _____
Map index no. _____

Scientific name: *Polioptila californica californica*

Common name: coastal California gnatcatcher

Date of field work (mm-dd-yyyy): 04-28-2022

Comment about field work date(s): 6 surveys conducted between 03/10/2022 and 04/28/2022

OBSERVER INFORMATION

Observer: Christine Tischer

Affiliation:

Address: 2861 Pullman Ave , Santa Ana, CA 92705

Email: ctischer@ecorpconsulting.com

Phone: (714) 648-0630

Other observers:

DETERMINATION

Keyed in:

Compared w/ specimen at:

Compared w/ image in:

By another person:

Other: Visual observations and vocal detections by an experienced permitted biologist

Identification explanation:

Identification confidence: Very confident

Species found: Yes **If not found, why not?**

Level of survey effort: Protocol breeding season surveys conducted

Total number of individuals: 11

Collection? **Collection number:**

Museum/Herbarium:

ANIMAL INFORMATION

How was the detection made? Heard singing then seen

Number detected in each age class:

adults	juveniles	larvae	egg mass	unknown
11				

Age class comment: 5 male/female pairs and 1 lone male, all adults

Bird site use:

☐ **Nesting** ☐ **Rookery** ☐ **Nesting colony** ☐ **Burrow site** ☐ **Lek**

☐ **Non-breeding (over-wintering)** ☐ **Communal roost** ☐ **Other**

Site use description:

What was the observed behavior? Territorial, foraging, nesting, dispersal

Describe any evidence of reproduction:

SITE INFORMATION

Habitat description: Coastal Sage Scrub

Slope: Land owner/manager: Private

Aspect:

Site condition + population viability: Good

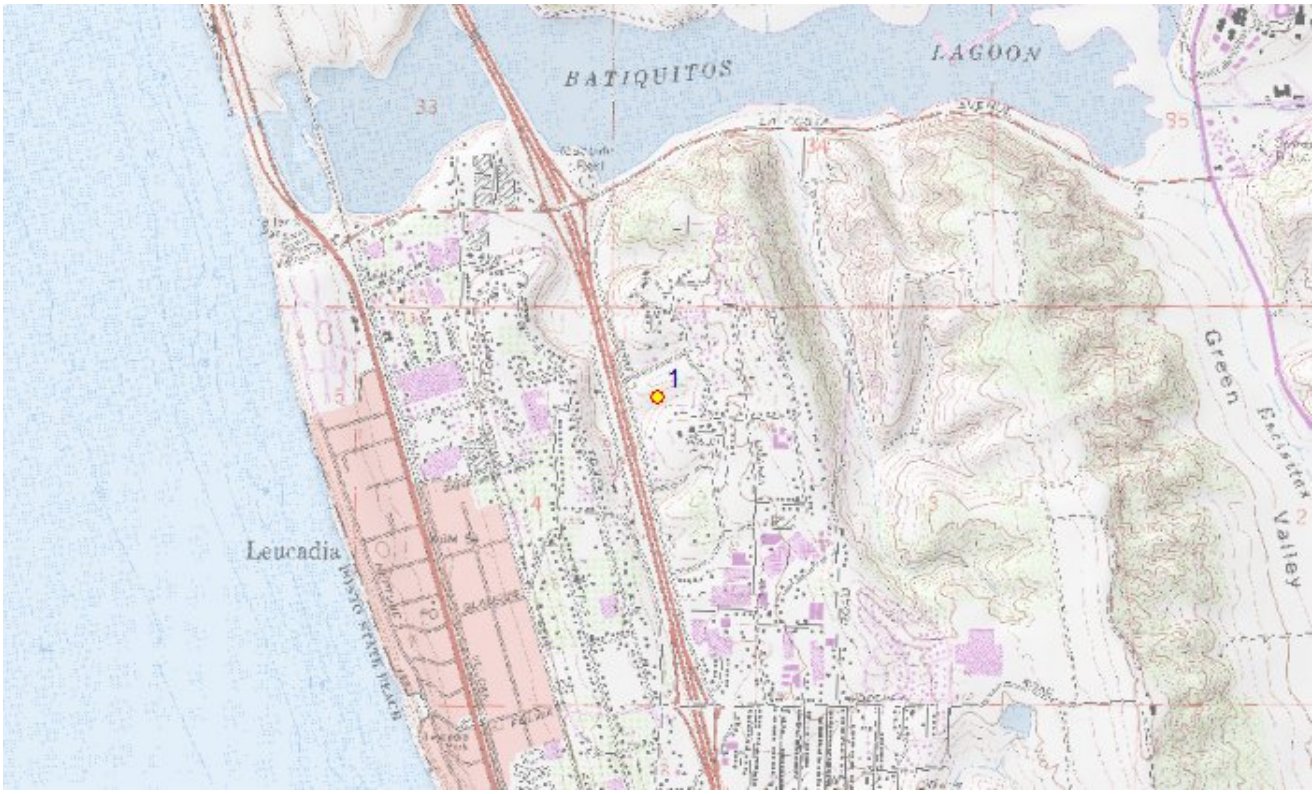
Immediate & surrounding land use: open space, recreation

Visible disturbances:

Threats:

General comments:

MAP INFORMATION



ID	County	24K Quadrangle	Elev. (ft)	Latitude NAD83	Longitude NAD83	UTM E NAD83	UTM N NAD83	UTM Zone
1	San Diego	Encinitas	132	33.07696	-117.29398	472561	3659858	11
	Public Land Survey	**Feature Comment**						
	S T13S R04W 4							

The mapped feature is accurate within: 1000 m

Source of mapped feature: CNDDB online field survey tool

Mapping notes: See attached map for detailed locations.

Location/directions comments:

Attachment(s): CAGN_Survey_Results.pdf

ATTACHMENT C

Pacific Pocket Mouse Focused Survey Report

September 22, 2022

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Ave #250,
Carlsbad, CA 92008

Subject: Results of a trapping survey for the federally endangered Pacific pocket mouse (*Perognathus longimembris pacificus*, PPM) at the Lennar-Piraeus Point project site in Encinitas, San Diego County.

Dear Ms. Love:

This report presents the results of a trapping survey for Pacific pocket mouse (PPM, *Perognathus longimembris pacificus*) at the site of the Lennar-Piraeus Point proposed residential development in Encinitas. An assessment of the suitability of habitats in the study area (Figure 1) was carried out to inform the live-trapping survey. The purpose of the trapping survey was to determine the presence/absence of PPM and whether impacts to PPM could occur as a result of the proposed project. The study area includes two parcels. Figure 1 shows the site that is proposed for development (Assessor Parcel Number [APN] 254-144-01-00) on an aerial photo, with a second parcel to the north that is not proposed for development (APN 216-110-35-00; approximately 4.95 acres). The southern parcel, inclusive of the 6.87-acre development area (proposed housing tract, fuel modification zone, and offsite improvement areas along Pireaus and Plato), covers approximately 7.37 acres, with an elevation from 100 to 160 feet above mean sea level (amsl). The northern parcel covers approximately 4.95 acres, with an elevation from 40 to 100 feet amsl. Figure 2 shows the two parcels on the USGS Encinitas 7’5 minute topographic map (proposed development site: T13S, R4W, $NE^{1/4}$ S4; additional parcel: T12S, R4W, $SE^{1/4}$ S 33, $SW^{1/4}$ S34). Site photos are found in Appendix 1. Historical aerial photos of the site are found in Appendix 2.

Pacific Pocket Mouse Background

The Pacific pocket mouse historically ranged in coastal southern California from El Segundo in Los Angeles County south to the U.S.-Mexico border in San Diego County. The species occurred in coastal strand, coastal dunes, river alluvium, and coastal sage scrub habitats growing mostly on maritime terraces (Grinnell, 1933; Meserve, 1976; U.S. Fish and Wildlife Service [USFWS], 1994, 1997). PPM occur in open coastal sage scrub and grasslands, which tend to have a diverse community of grasses and annual herbs, the seeds of which are its main diet (Meserve, 1976).



Figure 1. Project site (APN 254-144-01-00) on an aerial photo.

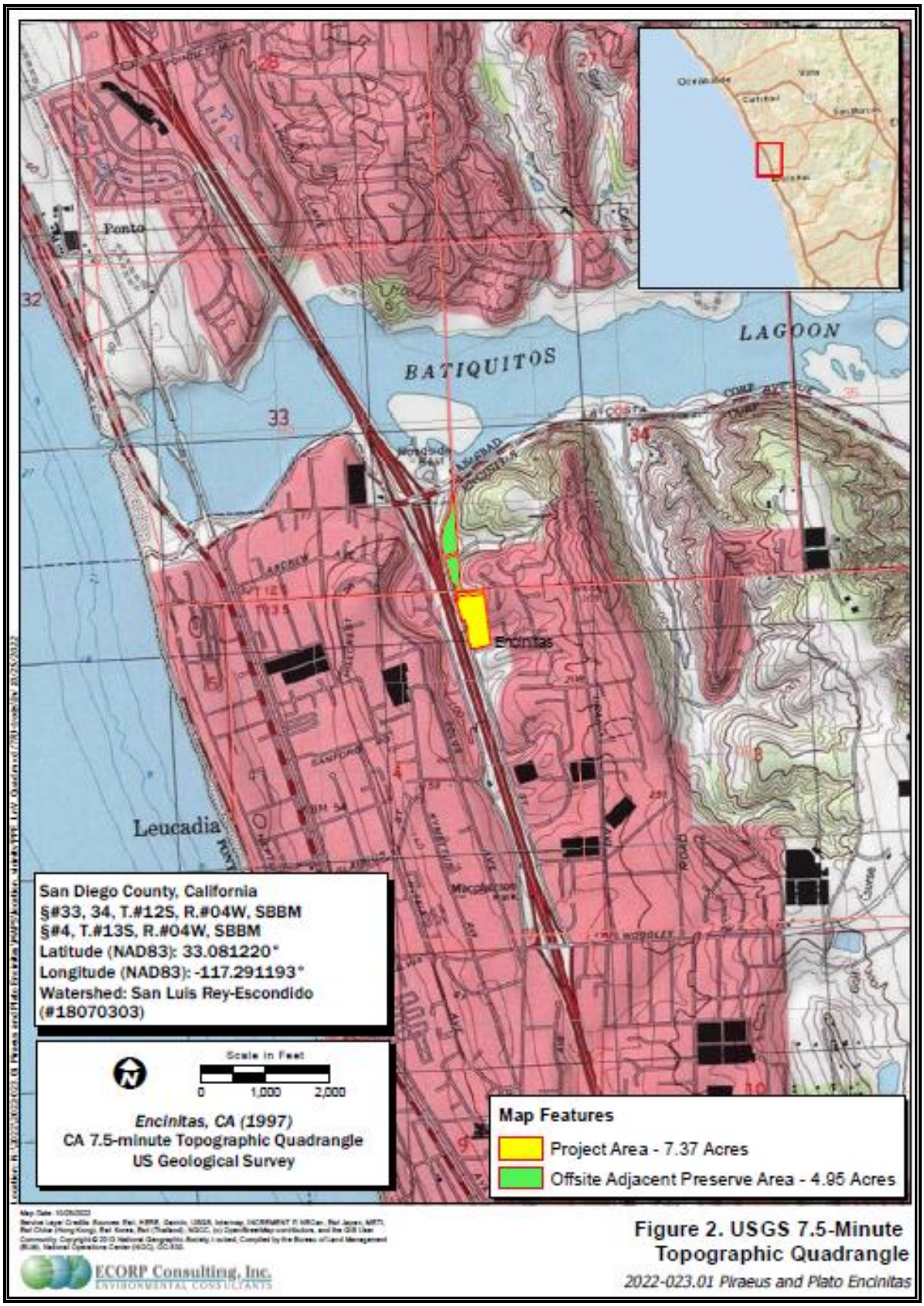


Figure 2. Project location on USGS topographic map.

Methods

A habitat assessment that examined soil, vegetation, topographic and disturbance features was carried out on the site on August 23, 2022. The habitat assessment identified potentially suitable PPM habitat that would be the focus of the live-trapping survey. The live-trapping survey consisted of 140 Sherman live traps (3 x 3.5 x 9") with doors shortened to avoid tail damage to small mammals. The survey was carried out from August 23 to 27, 2022 by Phil Brylski (USFWS permit TE148555-2 and California Department of Fish and Wildlife [CDFW] MOU). The trapping effort covered suitable habitat within the site proposed for development. Traps were not set in unsuitable habitats, including dense coastal sage scrub on steep slopes, such as in the southern and northern parts of the site, and the steep hillsides along the western side of the site.



Figure 3. Trap locations

Site Description

The project site (APN 254-144-01-00) is on a hill that slopes in three directions: from the northern end into a canyon, the southern end to the flat disturbed area, and along the western side to Piraeus Street. The southern end of the site contains a bare, compacted, flat area that is bordered by sparse to moderately dense nonnative grassland covering approximately 0.9 acres (photo 1). Plants observed in this area include red brome (*Bromus madritensis* ssp. *rubens*), common Mediterranean grass (*Schismus barbatus*), salt grass (*Distichilis spicata*), red-stemmed filaree (*Erodium cicutarium*), hottentot fig (*Carpobrotus edulis*), Menzies' goldenbush (*Isocoma menziesii* var. *menziesii*), and telegraph weed (*Heterotheca grandiflora*).

A moderately steep slope connects the flat area north to the hilltop. The slope contains dense coastal sage scrub (CSS) dominated by California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), lemonade berry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), thickleaf yerba santa (*Eriodictyon crassifolium*), black sage (*Salvia mellifera*), mulefat (*Baccharis salicifolia*), California brittlebush (*Encelia californica*), and nonnative species such as crystalline ice plant (*Mesembryanthemum crystallinum*) (photos 2-4). This CSS community is crossed by three dirt paths/roads (photo 5 shows the western path) that lead to the hilltop and a footpath outside the western border of the site (photo 6).

The hilltop area in the north-central part of the site is flat along the eastern side; on the western side slopes to the west toward Interstate 5. The plant cover on the western side is mainly deerweed scrub with scattered coyote bush (*Baccharis pilularis*), California everlasting (*Pseudognaphalium californicum*), and nonnative grasses. A bike/motorcycle track is in active use (photo 7). The eastern side is disturbed land cover with sparse ruderal plants such as Russian thistle (*Salsola tragus*) and jimsonweed (*Datura wrightii*) (photo 8).

The northern part of the site descends from relatively level terrain into a steep canyon with dense CSS cover. The dominant shrubs are California sagebrush, chamise (*Adenostoma fasciculatum),* mulefat, laurel sumac, toyon (*Heteromeles arbutifolia*), lemonade berry, and black sage.

The parcel that is not proposed for development (APN 216-110-35-00 in Figure 1) contains dense chamise chaparral and brittle bush scrub vegetation, deerweed scrub, and dense annual brome grassland (photos 9, 10).

Results

Site History

Geocon's (2022) review of the project site includes 17 historical aerial photos taken from 1926 to 2016, selected photos from which are included in Appendix 2. In 1939 (aerial photo 1 in Appendix 2), the vegetation covers most of the site and appears to be dense scrub, possibly with sparse cover or bare patches in the central and southern parts. The lowland areas around the site appear to have been cleared or plowed for agricultural use, including the southwestern corner of the project site. By 1953 (aerial photo 2), vegetation had been removed from much of the site,

which is first seen in the 1953 aerial. In this and later aerials, dense plant cover remains in the northern part of the site bordering the canyon, and the site remains cleared in most years with intermittent exceptions in the occurrence or re-occurrence of the vegetation patch on the southern hillside.

Figure 4 is an aerial view of the project site in 2003 (Google Earth, 2022) showing habitat disturbance except on the hillsides in the northern and southern parts. This reflects the pattern of disturbance on the site since 1953.



Figure 4. 2003 aerial photo of the project site (source: Google Earth, 2022)

Habitat Assessment

The soils on the project site are Gaviota fine sandy loams (about half of the project site), Marina loamy coarse sands, and "rough broken land" (NRCS 2022). The geotechnical survey of the site found that the surface soils in the flat area in the southern part of the project site are 'undocumented fill', which is an indication of previous disturbance. The historical aerial photos show that the southern part of the site had been graded starting as early as 1939.

The project site proposed for development contains potentially suitable PPM habitat in the central and north-central parts of the site. This area covers approximately 1.9 acres. Most of the remaining site is unsuitable for PPM due to the dense shrub cover, steep slopes, and compacted soils. The parcel not proposed for development (APN 216-110-35-00 in Figure 1) contains dense scrub and brome grassland habitats that are not suitable for PPM.

Small Mammal Survey Results

Weather conditions during the trapping effort were mild. Air temperatures ranged from the 65 to 71 °F, with low winds. Cloud cover ranged from 0 to 100%.

Table 1. Weather Conditions

Date (2022)	Temperature (F)	Cloud Cover (%)	Wind (mph)
8-23	68/71	100	0
8-24	65/68	5	0-1
8-25	67/70	65	0
8-26	67/70	100	1
8-27	66/70	100	0

No PPM were captured during the live-trapping survey. Four small mammal species were captured: the northwestern San Diego pocket mouse, harvest mouse, San Diego desert woodrat, and house mouse. Table 2 summarizes the captures.

Table 2. Summary of Small Mammal Captures

Date (2022)	CFAL	RMEG	NBRY	MMUS
8-23	12			
8-24	9	1		2
8-25	12	1		1
8-26	10	1	1	1
8-27	9	2		1
totals	**52**	**5**	**1**	**5**

CFAL, northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)
RMEG, harvest mouse, (*Reithrodontomys megalotis*)
NBRY, San Diego desert woodrat (*Neotoma bryanti intermedia*)
MMUS, house mouse (*Mus musculus*)

Of the four mammal species captured, none are state or federally listed and two are California Species of Special Concern, as follows:

California Mammal Species of Special Concern

- northwestern San Diego pocket mouse
- San Diego desert woodrat

Non-Status Species

- harvest mouse
- house mouse (nonnative)

The northwestern San Diego pocket mouse and San Diego desert woodrat are included on the CDFW list of Mammal Species of Concern. However, they are locally and regionally common in scrub habitats throughout their historic range.

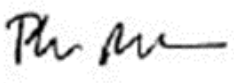
Discussion

No PPM were captured during the survey. The project site is within the historical range of PPM and contains a small area (less than two acres) of low-quality habitat for the species. This habitat occurs on the hilltop in the north-central part of the site.

The review of historical aerial photos found that the site contained native scrub vegetation in 1939 and 1947, when agricultural conversion occurred in the southwestern corner. It is not known whether the habitat elsewhere on the site would have been suitable for PPM. Since then, the site was partially cleared or plowed. The steeper slopes in the northern and southern parts of the site were typically not cleared. Currently, these are the least suitable habitats for PPM on the site and therefore would not likely be a source of re-colonizers of the disturbed habitats.

I certify that the information in this survey report and attached exhibits fully and accurately represent my work. Please contact me if you have any questions.

Sincerely,



Phil Brylski, Ph.D.
Permit 148555-2
pbrylski@gmail.com

References

Geocon, Inc. 2022. Phase 1 Environmental Assessment report, Piraeus Point, Encinitas. Prepared for Lennar, San Diego. 19 pp + appendices.

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Natural Resources Conservation Service (NRCS). 2022. Custom soil resource report for Western Riverside area, California. (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx).

U.S. Fish and Wildlife Service. 1997. Draft Recovery Plan for the Pacific Pocket Mouse (*Perognathus longimembris pacificus*). Carlsbad Field Office, Ecological Services, Carlsbad, California. 93pp.

___. 1994. Endangered and threatened wildlife and plants; determination of endangered status for the Pacific pocket mouse, final rule, Federal Register 59(188):49752-49764, September 29, 1994.

Appendix 1. Site photos



Photo 1. Disturbed habitat in southern end of the site, looking north.



Photo 2. Coastal sage scrub (CSS) and ornamental plant cover on the southwestern slope, looking north.



Photo 3. CSS on the southcentral slope, looking northeast.



Photo 4. CSS on the southeastern slope, looking north.



Photo 5. Bike path through dense CSS on the southwestern hillside, looking north.



Photo 6. Dirt path outside the western border of the project site, looking north.



Photo 7. Disturbed and deerweed habitat on the hilltop in the north-central part of site with active bike/motorcycle track, looking north.



Photo 8. Disturbed area on the hilltop in the eastern part of site, looking north.

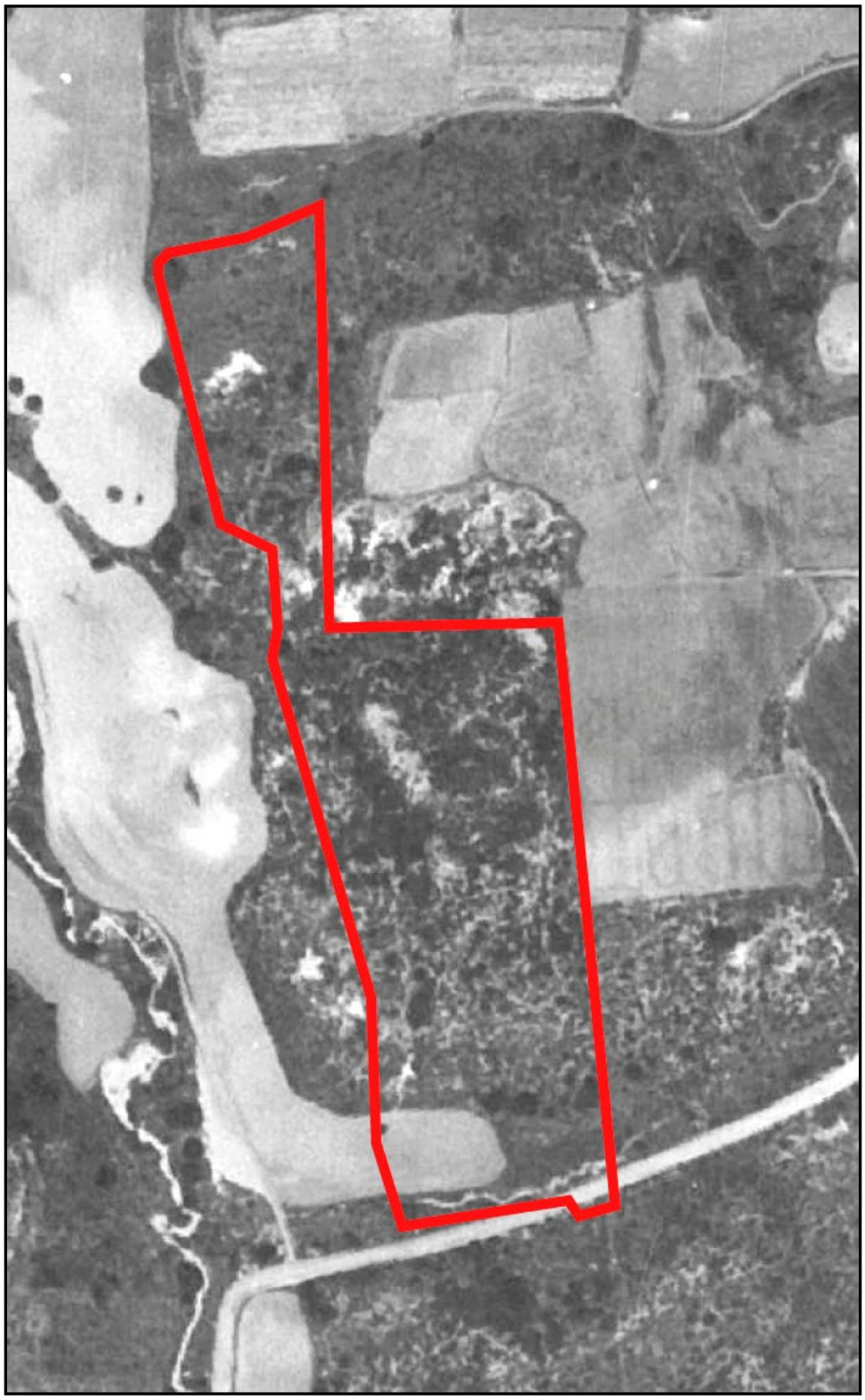


Photo 9. Dense nonnative grassland in parcel not proposed for development (APN 216-110-35-00, south of Sky Loft Road), looking east.



Photo 10. Dense nonnative grassland in parcel not proposed for development (APN 216-110-35-00, north of Sky Loft Road), looking north.

Appendix 2. Historical aerial photos



Aerial photo 1. 1939 aerial of the project site (source: Geocon 2022).



Aerial photo 2. 1953 aerial of the project site (source: Geocon 2022).



Aerial photo 3. 1985 aerial of the project site (source: Geocon 2022).



Aerial photo 4. 2002 aerial of the project site (source: Geocon 2022).

ATTACHMENT D

Representative Site Photographs



Photo 1. View of the disturbed pad at the southern end of the Development Area with coastal sage scrub in the background; photo facing north. March 10, 2022.



Photo 2. View of the coastal sage scrub within the Development Area; photo facing north. March 10, 2022.



Photo 3. View from a dirt path that bisects the coastal sage scrub in the center of the Development Area, facing the disturbed pad of the southern portion of the site; photo facing south. March 10, 2022.



Photo 4. View of a disturbed area within the center of the Development Area, showing evidence of use as a dump site; photo facing northwest. March 10, 2022.



Photo 5. Deerweed scrub within the western portion of the Development Area; photo facing south. March 10, 2022.



Photo 6. Chaparral within the northern portion of the Development Area extending into the Preserve Area; photo facing west. March 10, 2022.



Photo 7. Rare plant California adolphia (*Adolphia californica*), California Rare Plant Rank (CRPR) 2B.1, within the Development Area. March 10, 2022.



Photo 8. Coastal California gnatcatcher (*Polioptila californica californica*), federally-listed threatened, within the Development Area. March 10, 2022.



Photo 9. Chaparral within the Preserve Area, south of Sky Loft Road; photo facing south. March 10, 2022.



Photo 10. Coastal sage scrub within the Preserve Area, south of Sky Loft Road; photo facing north. March 10, 2022.



Photo 11. Annual brome grasslands within the Preserve Area, north of Sky Loft Road; photo facing north. March 10, 2022.



Photo 12. Coastal sage scrub within the Preserve Area, north of Sky Loft Road; photo facing east. March 10, 2022.

ATTACHMENT E

Plant Species Observed

PIRAEUS POINT PROPERTY PLANT SPECIES OBSERVED

Scientific Name	Common Name	2017	2019	2022
VASCULAR PLANTS				
ANGIOSPERMS (DICOTYLEDONS)				
Adoxaceae	**Moschatel Family**			
Sambucus nigra ssp. *caerulea (Sambucus cerulea)*	black elderberry		X	X
Agavaceae	**Century Plant Family**			
*Agave americana**	American century plant		X	
Yucca schidigera	Mojave yucca		X	X
Aizoaceae	**Iceplant Family**			
*Aptenia cordifolia**	baby sun rose			X
*Carpobrotus edulis**	hottentot fig		X	X
*Mesembryanthemum crystallinum**	crystalline ice plant		X	X
Amaranthaceae	**Amaranth Family**			
*Amaranthus albus**	pigweed amaranth			X
Anacardiaceae	**Cashew Family**			
Malosma laurina	laurel sumac		X	X
Rhus integrifolia	lemonade berry		X	X
Apiaceae	**Carrot Family**			
*Conium maculatum**	poison hemlock			X
Daucus pusillus	American wild carrot		X	
*Foeniculum vulgare**	sweet fennel			X
Sanicula crassicaulis	gamble weed			X
Araucariaceae	**Araucaria Family**			
*Araucaria heterophylla**	Norfolk Island pine		X	X
Arecaceae	**Palm Family**			
*Phoenix canariensis**	Canary Island date palm			X
*Washingtonia robusta**	Mexican fan palm			X
Asparagaceae	**Asparagus Family**			
*Asparagus asparagoides**	African asparagus fern			X
Asteraceaea	**Sunflower Family**			
Ambrosia psilostachya	western ragweed			X
Artemisia californica	California sagebrush		X	X
Asteraceae sp. *	sunflower		X	
Baccharis pilularis	coyote brush		X	X
*Centaurea melitensis**	tocalote		X	X
Chaenactis glabriuscula var glabriuscula	common yellow chaenactis			X
Cirsium sp.	thistle			X
Cirsium occidentale	cobweb thistle			X
Deinandra fasciculata	clustered tarweed		X	X
*Dimorphotheca sinuata**	African daisy			X
Encelia californica	California brittlebush		X	X
*Erigeron bonariensis**	flax-leaved horseweed		X	X

Scientific Name	Common Name	2017	2019	2022
*Erigeron canadensis**	horseweed		X	X
Eriophyllum confertiflorum	golden-yarrow		X	X
*Glebionis coronaria**	crown daisy		X	X
Hazardia squarrosa	saw-toothed goldenbush		X	X
*Hedypnois cretica**	crete weed		X	X
Heterotheca grandiflora	telegraphweed			X
*Hypochaeris glabra**	smooth cat's ear		X	X
Isocoma sp.	goldenbush		X	
Isocoma menziesii var. *menziesii*	Menzies' goldenbush			X
*Lactuca serriola**	prickly lettuce		X	X
*Logfia gallica**	narrowleaf cottonrose		X	X
Osmadenia tenella	false rosinweed			X
*Osteospermum monstrosum**	one eye monster			X
Pseudognaphalium beneolens	cudweed			X
Pseudognaphalium biolettii	two-color rabbit-tobacco			X
Pseudognaphalium californicum	California everlasting		X	X
*Pseudognaphalium luteoalbum**	Jersey cudweed			X
Pseudognaphalium stramineum	cottonbatting plant		X	
*Silybum marianum**	milk thistle			X
*Sonchus asper**	spiny sow-thistle			X
*Sonchus oleraceus**	common sow-thistle		X	X
*Sonchus tenerrimus**	slender sowthistle		X	
*Stephanomeria**	wire lettuce		X	
*Stephanomeria virgata**	rod wire lettuce		X	X
Stylocline gnaphaloides	everlasting neststraw		X	X
Boraginaceae	**Borage Family**			
Amsinckia tessellata	fiddleneck			X
Cryptantha sp.	catseyes		X	X
Cryptantha intermedia	clearwater cryptantha		X	X
Eriodictyon crassifolium	thickleaf yerba santa		X	X
Pholistoma auritum	blue fiestaflower			X
Brassicacaeae	**Mustard Family**			
*Brassica nigra**	black mustard		X	X
*Brassica rapa**	field mustard			X
*Brassica tournefortii**	Saharan mustard		X	X
*Hirschfeldia incana**	short-pod mustard		X	X
Lepidium sp. *	peppergrasses		X	X
*Raphanus sativus**	wild radish		X	X
*Sisymbrium orientale**	eastern rocket		X	X
Cactaceae	**Cactus Family**			
Cylindropuntia prolifera	coastal cholla			X
Opuntia sp.	prickly pear		X	
Opuntia littoralis	coast prickly pear			X
Caryophyllaceae	**Pink Family**			
*Silene gallica**	small-flower catchfly		X	

Scientific Name	Common Name	2017	2019	2022
Chenopodiaceae	**Goosefoot Family**			
*Atriplex semibaccata**	berry saltbush		X	X
*Chenopodium album**	lamb's quarters		X	
*Chenopodium murale**	nettle-leaved goosefoot		X	X
*Salsola tragus**	Russian thistle		X	X
Cleomaceae	**Spider Plant Family**			
Peritoma arborea	bladderpod			X
Convolvulaceae	**Morning-glory family**			
Calystegia macrostegia	island false bindweed			X
Crassulaceae	**Stonecrop Family**			
Crassula connata	pygmy-weed		X	X
*Crassula ovata**	jade plant		X	X
Dudleya edulis	fingertips			X
Dudleya pulverulenta	chalk dudleya			X
Cucurbitaceae	**Wild Cucumber Family**			
Marah sp.	cucumber			X
Marah macrocarpa	wild cucumber		X	X
Ericaceae	**Heath Family**			
Xylococcus bicolor	mission manzanita		X	X
Euphorbiaceae	**Spurge Family**			
*Euphorbia lathyris**	compass plant			X
*Euphorbia maculata**	spotted spurge			X
*Euphorbia peplus**	petty spurge			X
*Ricinus communis**	castor bean		X	X
Fabaceae	**Legume Family**			
*Acacia obtusifolia**	wattles		X	X
*Acacia pycnantha**	Golden wattle			X
Acmispon americanus	American bird's foot trefoil			X
Acmispon glaber (Lotus scoparius)	deerweed		X	X
*Medicago polymorpha**	bur clover		X	X
*Melilotus indicus**	sourclover		X	X
Fagaceae	**Oak Family**			
Quercus engelmannii CNPS Rank 4.2	Engelmann oak			X
Geraniaceae	**Geranium Family**			
Erodium sp. *	stork's-bills		X	
*Erodium botrys**	Mediterranean stork's-bills		X	X
*Erodium cicutarium**	red stemmed filaree			X
Grossulariaceae	**Currant Family**			
Ribes californicum	California gooseberry			X
Hydrophyllaceae	**Waterleaf Family**			
Eucrypta chrysanthemifolia	common eucrypta		X	
Iridaceae	**Iris Family**			
Iris missouriensis	western blue flag			X
Iris sp. *	iris		X	
Juglandaceae	**Walnut Family**			

Scientific Name	Common Name	2017	2019	2022
Juglans hindsii	walnut			X
Liliaceae	**Lily Family**			
Calochortus splendens	splendid mariposa lily			X
Lamiaceae	**Mint Family**			
Salvia mellifera	black sage		X	X
Lythraceae	**Loosestrife Family**			
Lythrum hyssopifolia	grass-poly		X	X
Malvaceae	**Mallow Family**			
Malacothamnus sp.	mallow			X
Malacothamnus fasciculatus	chaparral bush mallow			X
Malva multiflora	cretan tree mallow		X	
*Malva parviflora**	cheeseweed mallow			X
Montiaceae	**Miner's Lettuce Family**			
Claytonia sp.	claytonia			X
*Cistanthe grandiflora**	rock purslane		X	
Myrsinaceae	**Myrsine Family**			
*Lysimachia arvensis**	scarlet pimpernel		X	X
Myrtaceae	**Myrtle Family**			
*Melaleuca nesophila**	showy honey-myrtle		X	
Nyctaginaceae	**Four O'clock Family**			
*Bougainvillea spectabilis**	great bougainvillea			X
Mirabilis laevis crassifolia	wishbone bush		X	X
Oleaceae	**Olive Family**			
*Fraxinus uhdei**	Shamel ash			X
Onagraceae	**Evening Primrose Family**			
Camissoniopsis bistorta	California sun-cup		X	X
Camissoniopsis lewisii	Lewis' Evening-Primrose		X	
Clarkia epilobioides	canyon clarkia		X	
Oxalidaceae	**Wood Sorrel Family**			
*Oxalis pes-caprae**	Bermuda buttercup			X
Papaveraceae	**Poppy Family**			
Eschscholzia californica	California poppy			X
Phrymaceae	**Lopseed Family**			
Diplacus aurantiacus	sticky monkeyflower			X
Diplacus brevipes	wide throated yellow monkeyflower			X
Plantaginaceae	**Plantain Family**			
Antirrhinum nuttallianum	island snapdragon			X
Plantago erecta	California plantain		X	X
Plumbaginaceae	**Leadwort Family**			
*Plumbago auriculata**	blue plumbago		X	
Polygonaceae	**Buckwheat Family**			
*Emex spinosa**	devil's thorn		X	
Eriogonum fasciculatum	California buckwheat		X	X
*Polygonum aviculare**	prostrate knotweed			X
Pterostegia drymarioides	fairy mist			X

Scientific Name	Common Name	2017	2019	2022
*Rumex crispus**	curly dock		X	X
*Rumex spinosa**	devil's thorn			X
Rhamnaceae	**Buckthorn Family**			
Adolphia californica CNPS Rank 2B.1	California adolphia	X	X	X
Ceanothus verrucosus CNPS Rank 2B.2	wart-stemmed ceanothus			X
Frangula californica	California coffeeberry			X
Rhamnus crocea	redberry buckthorn			X
Rosaceae	**Rose Family**			
Adenostoma fasciculatum	chamise		X	X
Heteromeles arbutifolia	toyon			X
Rubiaceae	**Madder Family**			
Galium sp.	bedstraw			X
Rutaceae	**Citrus Family**			
*Citrus latifolia**	lime		X	
Sapindaceae	**Soapberry Family**			
*Cupaniopsis anacardioides**	tuckeroo		X	
Selaginellaceae	**Spike-moss Family**			
Selaginella cinerascens CNPS Rank 4.1	ashy spike moss			X
Scrophulariaceae	**Figwort Family**			
*Myoporum laetum**	ngaio tree		X	X
Sairocarpus nuttallianus	Nuttall's snapdragon		X	
Scrophularia californica	California bee plant			X
Solanaceae	**Nightshade Family**			
Datura wrightii	Jimsonweed		X	X
*Nicotiana glauca**	tree tobacco		X	X
Solanum americanum	American black nightshade		X	
Solanum parishii	Parish's nightshade		X	X
Solanum sp.	nightshade			X
Tamaricaceae	**Tamarisk Family**			
*Tamarix ramosissima**	saltcedar			X
Themidaceae	**Brodiaea Family**			
Dichelostemma capitatum	blue dicks		X	X
Tropaeolaceae	**Nasturtium Family**			
*Tropaeolum majus**	nasturtium		X	X
Ulmaceae	**Elm Family**			
*Ulmus parvifolia**	Chinese elm		X	
Urticaceae	**Nettle Family**			
*Urtica urens**	dwarf nettle		X	X
Zygophyllaceae	**Caltrop Family**			
*Tribulus terrestris**	puncture vine			X
ANGIOSPERMS (MONOCOTYLEDONS)				
Poaceae	**Grass Family**			
*Arundo donax**	giant reed		X	X
*Avena barbata**	slender wild oat		X	X

Scientific Name	Common Name	2017	2019	2022
*Brachypodium distachyon**	purple false-brome		X	
*Bromus diandrus**	ripgut brome		X	X
*Bromus hordeaceus**	common soft-brome		X	
Bromus madritensis ssp. *rubens**	red brome		X	X
*Cortaderia jubata**	purple pampas grass			X
*Cortaderia selloana**	pampas grass		X	X
*Cynodon dactylon**	Bermuda grass			X
Distichlis spicata	salt grass		X	X
*Ehrharta erecta**	veldt grass		X	
Elymus condensatus	giant wild rye			X
*Festuca myuros**	rat's-tail fescue			X
*Hordeum murinum**	wall barley		X	X
*Festuca perennis** *(Lolium multiflorum*)*	Italian ryegrass		X	X
*Lamarckia aurea**	goldentop grass			X
Melica imperfecta	little California melica		X	
Stipa lepida (Nassella lepida)	foothill needle grass		X	X
*Pennisetum setaceum**	fountain grass		X	X
Phalaris sp. *	canary grass		X	
*Polypogon monspeliensis**	rabbitfoot grass		X	
*Schismus barbatus**	common Mediterranean grass		X	X
Stipa lepida	foothill needle grass			X
*Festuca myuros** *(Vulpia myuros*)*	rat's-tail fescue		X	X

*Indicates plant species that is not native to California.

California Native Plant Society (CNPS) Rare Plant Ranks:
2B: Plants rare, threatened, or endangered in California; but more common elsewhere in their range.

CNPS Threat Ranks:
0.1 Seriously endangered in CA (over 80% of occurrences threatened / high degree and immediacy of threat)

Sources:
California Natural Diversity Data Base (CDFW 2022a)
CNPS Rare and Endangered Plant Inventory (CNPS 2022)

ATTACHMENT F

Wildlife Species Observed

PIRAEUS POINT PROPERTY WILDLIFE SPECIES OBSERVED

Scientific Name	Common Name	2017	2019	2022
INSECTS				
Apidae	**Bees**			
Apis mellifera	western honey bee			X
Bombus vosnesenskii	yellow-faced bumble bee			X
Lycaenidae	**Blues, Hairstreaks, & Gossamer Wings**			
Glaucopsyche lygdamus	silvery blue			X
Nymphalidae	**Brush-footed Butterflies**			
*Danaus plexippus*****	monarch butterfly			X
Nymphalis antiopa	mourning cloak			X
Vanessa cardui	painted lady			X
Pieridae	**Orange-Tips, Whites and Sulfurs**			
Anthocharis sara	Sara orangetip			X
Pieris rapae	cabbage white			X
Hesperidae	**Skippers**			
Erynnis funeralis	funereal duskywing			X
BIRDS				
Anatidae	**Geese, Ducks, & Swans**			
Anas platyrhynchos	mallard			X
Ardeidae	**Herons and Egrets**			
Ardea alba	great egret			X
Ardea herodias	great blue heron			X
Accipitridae	**Hawks, Kites, & Eagles**			
*Accipiter cooperii**	Cooper's hawk			X
Buteo jamaicensis	red-tailed hawk			X
Aegithalidae	**Bushtits**			
Psaltriparus minimus	bushtit		X	X
Cardinalidae	**Cardinals & Allies**			
Pheucticus melanocephalus	black-headed grosbeak			X
Cathartidae	**Vultures**			
Cathartes aura	turkey vulture			X
Columbidae	**Pigeons and Doves**			
Columba livia+	rock pigeon			X
Streptopelia decaocto+	Eurasian collared-dove			X
Zenaida macroura	mourning dove		X	X
Corvidae	**Jays and Crows**			
Corvus brachyrhynchos	American crow		X	X
Corvus corax	common raven			X
Aphelocoma californica	California scrub-jay		X	X
Estrildidae	**Waxbills & Allies**			
Lonchura punctulate+	scaly-breasted munia			X
Fringillidae	**Finches**			

Carpodacus mexicanus	house finch		X	X
Spinus psaltria	lesser goldfinch		X	X
Icteridae	**Blackbirds & Orioles**			
Agelaius phoeniceus	red-winged blackbird			X
Icterus cucullatus	hooded oriole			X
Laridae	**Gulls, Terns, & Skimmers**			
Larus sp.	gull sp.			X
Mimidae	**Mockingbirds and Thrashers**			
Mimus polyglottos	northern mockingbird		X	X
Toxostoma redivivum	California thrasher		X	X
Odontophoridae	**New World Quail**			
Callipepla californica	California quail			X
Parulidae	**Wood Warblers**			
Geothlypis trichas	common yellowthroat			X
Oreothlypis celata	orange-crowned warbler			X
Passerellidae	**Sparrows and Towhees**			
Melospiza melodia	song sparrow			X
Melozone crissalis	California towhee		X	X
Pipilo maculatus	spotted towhee			X
Zonotrichia leucophrys	white-crowned sparrow			X
Picidae	**Woodpeckers & Allies**			
Picoides nuttallii	Nuttall's woodpecker			X
Polioptilidae	**Gnatcatchers**			
*Polioptila californica californica****	coastal California gnatcatcher	X	X	X
Sylviidae	**Old-World Warblers**			
Chamaea fasciata	wrentit		X	X
Trochilidae	**Hummingbirds**			
Calypte anna	Anna's hummingbird		X	X
*Selasphorus rufus***	rufous hummingbird			X
Selasphorus sasin	Allen's hummingbird			X
Troglodytidae	**Wrens**			
Thryomanes bewickii	Bewick's wren			X
Troglodytes aedon	house wren			X
Turdidae	**Bluebirds & Thrushes**			
Catharus guttatus	hermit thrush			X
Tyrannidae	**Tyrant Flycatchers**			
Sayornis nigricans	black phoebe		X	X
Tyrannus vociferans	Cassin's kingbird			X
REPTILES				
Anguidae	**Alligator Lizards**			
Elgaria multicarinata	southern alligator lizard			X
Phrynosomatidae	**Spiny Lizards**			
Sceloporus occidentalis	western fence lizard		X	X
Teiidae	**Whiptails & Relatives**			
Aspidoscelis hyperthra	orange-throated whiptail			X

Viperidae	**Vipers**			
Crotalus oreganus helleri	southern Pacific rattlesnake		X	
MAMMALS				
Cricetidae	**New World Rats and Mice**			
Neotoma sp. (midden)	woodrat			X
*Neotoma lepida intermedia**	San Diego desert woodrat			X
Reithrodontomys megalotis	harvest mouse			X
Canidae	**Dogs, Wolves, and Foxes**			
Canis latrans (scat and tracks)	coyote		X	X
Geomyidae	**Gophers**			
Thomomys bottae	Botta's pocket gopher		X	
Heteromyidae	**Kangaroo Rats and Pocket Mice**			
*Chaetodipus fallax fallax**	northwestern San Diego pocket mouse			X
Leporidae	**Rabbits and Hares**			
Sylvilagus audubonii	desert cottontail rabbit		X	X
Mephitidae	**Skunks and Stink Badgers**			
Mephitis mephitis	striped skunk		X	
Muridae	**Old World Rats and Mice**			
Mus musculus+	house mouse			X
Sciuridae	**Squirrels**			
Otospermophilus beecheyi	California ground squirrel			X

+nonnative species

*CDFW California Species of Special Concern/CDFW Fully Protected Species/Watch List Species

**USFWS Birds of Conservation Concern

***Federally or state-listed threatened or endangered

****Candidate for federal or state listing threatened or endangered

ATTACHMENT G

Special-Status Plant Species Potential For Occurrence

Rare plant species available for review within the database searches were assessed for their potential to occur within the Project Area based on the following criteria guidelines:

- **Present**: The species was observed on-site during a site visit or focused survey.
- **High**: Habitat (including soils and elevation factors) for the species occurs within the Project Area and a known occurrence has recently been recorded (within the last 20 years) within 5 miles of the Project Area.
- **Moderate**: Habitat (including soils and elevation factors) for the species occurs within the Project Area and a documented observation occurs within the database search, but not within 5 miles of the Project Area; a historic documented observation (more than 20 years old) was recorded within 5 miles of the Project Area; or a recently documented observation occurs within 5 miles of the Project Area and marginal or limited amounts of habitat occurs in the Project Area.
- **Low**: Limited or marginal habitat for the species occurs within the Project Area and a recently documented observation occurs within the database search, but not within 5 miles of the Project Area; a historic documented observation (more than 20 years old) was recorded within 5 miles of the Project Area; or suitable habitat strongly associated with the species occurs within the Project Area, but no records or only historic records were found within the database search.
- **Presumed Absent**: Species was not observed during a site visit or focused surveys conducted in accordance with protocol guidelines at an appropriate time for identification; habitat (including soils and elevation factors) does not exist within the Project Area; or the known geographic range of the species does not include the Project Area.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Adolphia californica California adolphia	**USFWS:** None **CDFW:** None **CRPR:** 2B.1 **MHCP:** Not Covered	Dec-May (10-740)	Chaparral Coastal sage scrub Valley and foothill grasslands Clay soils	**Present:** This species was observed on the Project site during the 2022 and 2019 surveys and 22 recent observations occur within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Present:** 154 individuals observed in Development Area (including 9 individuals within the FMZ) and 17 individuals within its 100-ft buffer. 103 individuals within Preserve Area and 53 individuals within its 100-ft. buffer.
Acanthomintha ilicifolia San Diego thorn-mint	**USFWS:** THR **CDFW:** END **CRPR:** 1B.1 **MHCP:** Covered	Apr-Jun (10-960)	Chaparral Coastal sage scrub Valley and foothill grassland Vernal pools Clay soils; occurs in openings	**High:** The site provides suitable habitat for this species. Ten observations of this species have been made within 5 miles of the Project, with the closest being 2.5 miles north of the Project site in 2019. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Agave shawii* var. *shawii Shaw's agave	**USFWS:** None **CDFW:** None **CRPR:** 2B.1 **MHCP:** Not Covered	Sept-May (3-120)	Maritime succulent scrub Coastal bluff scrub Coastal sage scrub	**High:** The site provides suitable habitat for this species. There is one observation of this species 3.3 miles northwest of the site in 2016.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Arctostaphylos glandulosa* ssp. *crassifolia Del Mar manzanita	**USFWS:** END **CDFW:** None **CRPR:** 1B.1 **MHCP:** Covered	Dec-Jun (0-365)	Chaparral (maritime, sandy)	**High:** The site provides suitable habitat for this species. Ten recent observations of this species were within 5 miles of the Project site, with the closest being less than 1 mile away in 2020. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Bloomeria clevelandii San Diego goldenstar	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	April-May (50-465)	Chaparral Coastal scrub Valley and foothill grassland Vernal pools	**High:** The site provides suitable habitat for this species. Four recent observations of this species have occurred within 5 miles of the Project site. The nearest one was in 2021, and was 3.6 miles east of the Project site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Ceanothus verrucosus wart-stemmed ceanothus	**USFWS:** None **CDFW:** None **CRPR:** 2B.2 **MHCP:** Covered	Dec-May (1-380)	Chaparral	**High:** The site provides suitable habitat for this species. Eleven recent records of fifteen total occur within 5 miles of the Project site with the closest being from 2015, approximately 0.79 miles northeast of the site.	**Present:** One wart-stemmed ceanothus was observed in the Preserve Area and one other individual was documented within the 100-foot buffer of the Preserve Area.
Comarostaphylis diversifolia* ssp. *diversifolia summer holly	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Covered	Apr-Jun (30-790)	Chaparral Cismontane woodland	**High:** The site provides suitable habitat for this species. Thirteen recent observations and twenty five total observations of this species occur within 5 miles of the Project site. The closest observation is 1.2 miles east of the Project in 2005.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Corethrogyne filaginifolia* var. *linifolia Del Mar Mesa sand aster	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Covered	May-Sept (15-150)	Coastal bluff scrub Maritime chaparral Coastal sage scrub	**High**: The site provides suitable habitat for this species. Six recent observations of this species have been made within 5 miles of the Project site. The closest was in 2005, 1.4 miles east of the site. There is also a historical observation of an unknown year of this species on the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Cryptantha wigginsii Wiggins' cryptantha	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	Feb-June (20-275)	Coastal sage scrub Clay soils	**High:** The site provides suitable habitat for this species. Three observations of this species were made in 2013, the closest of which was 2.8 miles northeast of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Ericameria palmeri* var. *palmeri Palmer's goldenbush	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	July-Nov (30-600)	Chaparral Coastal sage scrub Mesic soils	**High:** The site provides suitable habitat for this species. One recent (2009) sighting occurred 0.59 miles northwest of the Project site. No other observations found in a 5-mile database search. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Ferocactus viridescens San Diego barrel cactus	**USFWS:** None **CDFW:** None **CRPR:** 2B.1 **MHCP:** Covered	May-June (3-450)	Chaparral Coastal sage scrub Valley and foothill grassland Vernal pools	**High:** The site provides suitable habitat for this species. Three recent and two historic observations of this species exist within a 5-mile radius of the Project site. The nearest recent observation is 3.9 miles southeast of the Project site in 2008. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Isocoma menziesii* var. *decumbens decumbent goldenbush	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	Apr-Nov (10-135)	Chaparral Coastal sage scrub	**High:** The site provides suitable habitat for this species. One recent observation of this species within 4.2 miles of the site. Three additional historic observations within a 5 mile radius of site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Leptosyne maritima sea dahlia	**USFWS:** None **CDFW:** None **CRPR:** 2B.2 **MHCP:** Not Covered	March-May (5-150)	Coastal bluff scrub Coastal sage scrub	**High:** The site provides suitable habitat for this species. Eight observations within a 5-mile radius of the Project area. The closest of which was made in 2009, and was 0.61 miles east of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Quercus dumosa Nuttall's scrub oak	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Covered	Feb-Apr (15-400)	Closed-cone coniferous forest Chaparral Coastal sage scrub Sandy, clay loam soils	**High**: The site provides suitable habitat for this species. There have been seventeen recent observations of this species within a 5 mile radius out of twenty-one total observations. The closest observation was 1.4 miles east of the site in 2013. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Baccharis vanessae Encinitas baccharis	**USFWS:** THR **CDFW:** END **CRPR:** 1B.1 **MHCP:** Covered	Aug, Oct, Nov (60-720)	Chaparral (Torrey pine forest) Cismontane woodland Sandstone	**Moderate:** The site provides limited suitable habitat for this species. Three recent observations of this species are within 5 miles of the Project site with the nearest being recorded 1.4 miles southeast of the site in 2017.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Sphenopholis interrupta* ssp. *californica prairie false oat	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	April (15)	Coastal chaparral	**Moderate:** The site provides suitable habitat for this species. One recent (2020) observation of this species has been made in a 5-mile radius of the Project site. This observation was of an individual 2.8 miles north of the Project site.	**Presumed Absent:** Not observed during focused surveys.
Acmispon prostrates Nuttall's acmispon	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	March-July (0-10)	Coastal sage scrub Coastal dunes Sandy soils	**Moderate:** The site provides marginal suitable habitat for this species and lacks sandy soils. Five total observations of this species occur within a 5-mile radius, four of which were recent. The nearest observation was 0.8 miles west of the site in 2016. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Chorizanthe orcuttiana Orcutt's spineflower	**USFWS:** END **CDFW:** END **CRPR:** 1B.1 **MHCP:** Covered	March-May (3-125)	Sandy soils Closed-cone coniferous forest Maritime Chaparral Coastal sage scrub	**Moderate:** The site provides suitable habitat for this species. One recent (2017) observation recorded within 2.8 miles of the site. Observation was a small and isolated grouping in a disturbed area.	**Presumed Absent:** Not observed during focused surveys.
Artemisia palmeri San Diego sagewort	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	May-Sep (15-915)	Chaparral Coastal sage scrub Riparian forest Riparian scrub Riparian woodland Sandy, mesic soils	**Low:** The site provides suitable habitat for this species. One historic observation of this species exists 2.3 miles northeast of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Atriplex coulteri Coulter's saltbush	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	March-Oct (3-460)	Coastal bluff scrub Coastal dunes Coastal scrub Valley and foothill grassland Alkaline and clay soils	**Low:** The site provides limited suitable habitat for this species. Alkaline and clay soils are not present on site. One recent (2004) observation of this species is 4.4 miles north of the project site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Atriplex pacifica south coast saltscale	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	March-Oct (0-140)	Coastal bluff scrub Coastal dunes Coastal scrub Playas	**Low:** The site provides limited suitable habitat for this species. Five recent observations have occurred within 5 miles of the site. The nearest was in 2014, and was 2.3 miles northwest of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Brodiaea filifolia thread-leaved brodiaea	**USFWS:** THR **CDFW:** END **CRPR:** 1B.1 **MHCP:** Not Covered	Mar-Jun (25-1120)	Chaparral Cismontane woodland Coastal sage scrub Playas Valley and foothill grassland Vernal pools Often clay soils	**Low:** The site provides limited suitable habitat for this species. Eight recent observations of this species are within 5 miles of the Project site, however, the site lacks seasonally ponded areas required for this species. The closest observation is 1.8 miles northwest of the site from 2019. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Brodiaea orcuttii Orcutt's brodiaea	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	May-Jul (30-1692)	Closed-cone coniferous forest Chaparral Cismontane woodland Meadows and seeps Valley and foothill grassland Vernal pools Mesic, clay soils	**Low:** The site provides limited suitable habitat for this species. Seven recent observations of this species are within 5 miles of the Project site; however, the site lacks seasonally ponded areas required for this species. The closest observation is 1.8 miles northwest of the site in 2018.	**Presumed Absent:** Not observed during focused surveys.
Chaenactis glabriuscula* var. *orcuttiana Orcutt's pincushion	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	Jan-Aug (0-100)	Sandy soils Coastal bluff scrub Coastal dunes	**Low:** The site provides limited suitable habitat for this species. Three recent observations of this species exist within 5 miles of the site. The closest was in 2015, and was 0.71 miles west of the site.	**Presumed Absent:** Not observed during focused surveys.
Dichondra occidentalis western dichondra	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-June (50-500)	Chaparral Cismontane woodland Coastal sage scrub Valley and foothill grassland	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Dudleya blochmaniae* ssp. *blochmaniae Blochman's dudleya	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	April-June (5-450)	Coastal bluff scrub Chaparral Coastal sage scrub Valley and foothill grassland	**Low:** The site provides limited suitable habitat for this species. One recent (2016) observation recorded 3.7 miles northeast of the Project site. This is the only recent sighting of this species within 5 miles of the site.	**Presumed Absent:** Not observed during focused surveys.
Dudleya viscida sticky dudleya	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	May-June (10-550)	Coastal bluff scrub Chaparral Cismontane woodland Coastal sage scrub Rocky soils	**Low:** The site provides limited suitable habitat for this species. The site lacks rocky soils. One recent (2015) observation of this species recorded 3.0 miles east of the Project site. This is the only recent sighting of this species within 5 miles of the site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Eryngium aristulatum* var. *parishii San Diego button-celery	**USFWS:** END **CDFW:** END **CRPR:** 1B.1 **MHCP:** Not Covered	Apr-Jun (20-620)	Coastal sage scrub Valley and foothill grassland Vernal pools Mesic soils	**Low:** The site provides limited suitable habitat for this species as the site lacks seasonally ponded areas required for this species. One record of this species has been recorded approximately 2 miles northwest of the site in 2017. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Erysimum ammophilum sand-loving wallflower	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	Feb-June (0-60)	Maritime chaparral Coastal dunes Coastal sage scrub Coastal strand	**Low:** The site provides suitable habitat for this species. One historic (unknown year) observation recorded 4.5 miles south of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Euphorbia misera cliff spurge	**USFWS:** None **CDFW:** None **CRPR:** 2B.2 **MHCP:** Covered	Dec-Oct (10-500)	Coastal bluff scrub Coastal sage scrub Mojavean desert scrub Rocky soils	**Low:** The site provides limited suitable habitat for this species. Rocky soils absent on the Project site. Four observations of this species were made within a 5-mile radius of the Project site in 2015. The closest observation was 3.3 miles northwest of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Hazardia orcuttii Orcutt's hazardia	**USFWS:** None **CDFW:** THR **CRPR:** 1B.1 **MHCP:** Covered	Aug-Oct (80-85)	Maritime Chaparral Coastal sage scrub Clay soils	**Low:** The site provides limited suitable habitat for this species. Clay soils absent on the Project site. Four recent (2010) observations of this species exist within a 5-mile radius of the Project site. The nearest is 2.9 miles northeast of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Heterotheca sessiliflora* ssp. *sessiliflora beach goldenaster	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	Mar-Dec (0-1225)	Beaches Mud flats Coastal dunes Coastal chapparal Coastal sage scrub	**Low:** The site provides marginal suitable habitat for this species. One observation of this species recorded within 5 miles of the site. This observation took place in 2007, and was seen 4.1 miles south of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Hordeum intercedens vernal barley	**USFWS:** None **CDFW:** None **CRPR:** 3.2 **MHCP:** Not Covered	Mar-Jun (5-1000)	Coastal dunes Coastal sage scrub Valley and foothill grassland (depressions, saline flats) Vernal pools	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Iva hayesiana San Diego marsh-elder	**USFWS:** None **CDFW:** None **CRPR:** 2B.2 **MHCP:** Covered	April-Oct (10-500)	Marshes and swamps Playas	**Low:** The site provides limited suitable habitat for this species. Seven recent observations of this species have been made within 5 miles of the Project site. The nearest was 0.05 miles from the site in 2005.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Lasthenia glabrata* ssp. *coulteri Coulter's goldfields	**USFWS:** None **CDFW:** None **CRPR:** 1B.1 **MHCP:** Not Covered	Feb-June (1-1220)	Coastal salt marshes and swamps Playas Vernal pools	**Low:** The site provides limited suitable habitat for this species. One recent and two historic observations of this species recorded within 5 miles of the Project site. One observation took place in 2017 and was 4.9 miles southeast of the Project site. However, one historical record from 1935 shows this species within the Project site.	**Presumed Absent:** Not observed during focused surveys.
Lepidium virginicum* var. *robinsonii Robinson's pepper-grass	**USFWS:** None **CDFW:** None **CRPR:** 4.3 **MHCP:** Not Covered	Jan-Jul (1-885)	Chaparral Coastal sage scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Lycium californicum California box-thorn	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-Aug 5-150	Coastal bluff scrub Coastal sage scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Microseris douglasii* ssp. *platycarpha small-flowered microseris	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-May (15-1070)	Cismontane woodland Coastal scrub Valley and foothill grassland Vernal pools	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Ophioglossum californicum California adder's-tongue	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Jan-Jun (60-525)	Chaparral Valley and foothill grassland Vernal pools (margins)	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Orobanche parishii* ssp. *brachyloba short-lobed broomrape	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	April-Oct (3-305)	Coastal bluff scrub Coastal dunes Coastal sage scrub	**Low:** The site provides limited suitable habitat for this species. One historic observation of this species has been recorded within a 5 mile radius of the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Pinus torreyana* ssp. *torreyana Torrey pine	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Covered	- (3-160)	Closed-cone coniferous forest Chaparral	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Selaginella cinerascens ashy spike-moss	**USFWS:** None **CDFW:** None **CRPR:** 4.1 **MHCP:** Not Covered	--- (20-640)	Chaparral Coastal Scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Present:** ~500 individuals within the Preserve Area and 250 individuals within the 100-foot buffer of the Preserve Area.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Stipa diegoensis San Diego County needle grass	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Feb-Jun (10-800)	Chaparral Coastal sage scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Suaeda esteroa estuary seablite	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	May-Oct (0-5)	Coastal salt marsh Wetland-riparian	**Low:** The site does not provide suitable habitat for this species. Two recent observations of this species occurred in 2005. The nearer of these observations was 0.05 miles northwest of the Project site.	**Presumed Absent:** Not observed during focused surveys.
Viguiera laciniata San Diego County viguiera	**USFWS:** None **CDFW:** None **CRPR:** 4.3 **MHCP:** Not Covered	Feb-Jun (60-750)	Chaparral Coastal sage scrub	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Camissoniopsis lewisii Lewis' Evening-primrose	**USFWS:** None **CDFW:** None **CRPR:** 3 **MHCP:** Not Covered	Mar-Jun (0-300)	Coastal bluff scrub Cismontane woodland Coastal dunes Coastal scrub Valley and foothill grassland Sandy or clay soils	**Low:** The site provides suitable habitat for this species. This species appeared within a CNPS quadrat database search. No records of this species are within 5 miles of the site.	**Presumed Absent:** Not observed during focused surveys.
Chorizanthe polygonoides* var. *longispina long-spined spineflower	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	April-July (30-1530)	Chaparral Coastal sage scrub Meadows Valley and foothill grassland Vernal pools Clay soils	**Low:** The site provides limited suitable habitat for this species. One historic observation (2000) occurs 2.8 miles southeast of the site.	**Presumed Absent:** Not observed during focused surveys.
Cistanthe maritima seaside cistanthe	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-Jun (<300)	Sandy soils Coastal bluff scrub Coastal scrub Valley and foothill grassland	**Low:** The site provides suitable habitat for this species. This species appeared within a CNPS quadrat database search. No records of this species are within 5 miles of the site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Harpagonella palmeri Palmer's grapplinghook	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-May (20-955)	Chaparral Coastal sage scrub Valley and foothill grassland Clay soils	**Low:** The site provides limited suitable habitat for this species. Eleven historic observations of this species recorded within 5 miles, but no recent observations. Clay soils absent in the Project site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Convolvulus simulans small-flowered morning-glory	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Not Covered	Mar-May (15-1070)	Seeps Vernal pools Cismontane woodland Coastal scrub Valley and foothill grassland	**Presumed Absent:** The site does not provide suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.
Erythranthe diffusa Palomar monkeyflower	**USFWS:** None **CDFW:** None **CRPR:** 4.3 **MHCP:** Not Covered	April-June (1220-1830)	Chaparral Lower montane coniferous forest	**Presumed Absent:** The Project site is outside of this species' known elevation range. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Quercus engelmannii Engelmann oak	**USFWS:** None **CDFW:** None **CRPR:** 4.2 **MHCP:** Covered	Mar-Jun (50-1300)	Chaparral Cismontane woodland Riparian woodland Valley and foothill grassland	**Low:** The site provides suitable habitat for this species. No records of this species are within 5 miles of the site. This species appeared within a CNPS quadrat database search.	**Present:** 1 individual documented in southern portion of the Preserve Area.
Myosurus minimus* ssp. *apus little mousetail	**USFWS:** None **CDFW:** None **CRPR:** 3.1 **MHCP:** Covered	Mar-Jun (20-640)	Valley and foothill grassland Vernal pools (alkaline)	**Presumed Absent:** The site does not provide suitable habitat for this species. One observation from an unknown year exists 1.8 miles northwest of the Project site.	**Presumed Absent:** Not observed during focused surveys.
Navarretia fossalis spreading navarretia	**USFWS:** THR **CDFW:** None **CRPR:** 1B.1 **MHCP:** Covered	Apr-Jun (30-655)	Chenopod scrub Marshes and swamps Playas Vernal pools	**Presumed Absent:** The site does not provide suitable habitat for this species. One historic observation of this species is within 5 miles of the Project site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**
Nemacaulis denudata* var. *denudata coast woolly-heads	**USFWS:** None **CDFW:** None **CRPR:** 1B.2 **MHCP:** Not Covered	April-Sept (0-100)	Coastal dunes Coastal strand	**Presumed Absent:** The site does not provide suitable habitat for this species. Three recent observations (2015) have been made within 5 miles of the site. The closest observation was 0.74 miles west of the site.	**Presumed Absent:** Not observed during focused surveys.
Orcuttia californica California Orcutt grass	**USFWS:** END **CDFW:** END **CRPR:** 1B.1 **MHCP:** Covered	April-Aug (15-660)	Vernal pools Valley grassland Wetland-riparian	**Presumed Absent:** The site does not provide suitable habitat for this species. One recorded observation of this species exists within 5 miles of the site. This observation occurred in 2005, and was 1.7 miles northwest of the site.	**Presumed Absent:** Not observed during focused surveys.

Special-Status Plant Species with Potential to Occur on the Proposed Project					
Scientific Name Common Name	**Status**	**Flowering Period / Elevation Range (meters)**	**Habitat**	**Potential to Occur Based on Literature Review and Bio Recon**	**Potential to Occur After 2022 Focused Surveys**

Federal Designations
(FESA, USFWS)
END: Federally listed, endangered
THR: Federally listed, threatened

State Designations
(CESA, CDFW)
END: State-listed, endangered
THR: State-listed, threatened

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) Designations:
- **1A:** Plants presumed extinct in California.
- **1B:** Plants rare and endangered in CA and throughout their range.
- **2:** Plants rare, threatened, or endangered in CA but more common elsewhere in their range.
- **3:** Plants about which need more information; a review list.
- **4:** Plants of limited distribution; a watch list.

Plants 1B, 2, 3, and 4 extension meanings:
- **.1** Seriously endangered in CA (over 80% of occurrences threatened / high degree and immediacy of threat)
- **.2** Fairly endangered in California (20-80% occurrences threatened)
- **.3** Not very endangered in CA (<20% of occurrences threatened or no current threats known)

Local Designations
[Multiple Habitat Conservation Plan (MHCP)]
Covered: Species adequately conserved through the conservation and management actions implemented through adoption of the MHCP Plan and by each Subarea Plan once finalized.

Sources: California Natural Diversity Data Base (CDFW 2022a), California Native Plant Society Electronic Inventory (CNPS 2022), Final MHCP Plan (SANDAG 2003)

ATTACHMENT H

Special-Status Wildlife Species Potential for Occurrence

Special-Status Wildlife Species with Potential to Occur on the Proposed Project			
Scientific Name Common Name	**Status**	**Habitat Preferences**	**Potential for Occurrence**
INSECTS			
Danaus plexippus monarch - California overwintering population	**USFWS:** CAN **CDFW:** None **MHCP:** Not Covered	Roosts in wind-protected tree groves (Coastal California conifer, Eucalyptus) from Northern Mendocino to Baja California.	**Present**: No suitable overwintering or breeding habitat is present in the Development Area. Suitable nectaring habitat is present throughout and this species was observed. Two recent records occur, with the closest being 1.6 miles southeast of the site from 2014.
Lycaena hermes Hermes copper butterfly	**USFWS:** THR **CDFW:** None **MHCP:** Not Covered	Dependent on its larval host plant, spiny redberry/redberry buckthorn (*Rhamnus crocea*), and its primary nectar source, California buckwheat (*Eriogonum fasciculatum),* both common in California coastal sage scrub.	**Low:** No suitable habitat is present within the Development Area. There is suitable larval and adult habitat within the vegetation of the Preserve Area. Spiny redberry and California buckwheat must occur within 15 feet of each other. No records occur within five miles of the Project Area.
CRUSTACEANS			
Branchinecta sandiegonensis San Diego fairy shrimp	**USFWS:** END **CDFW:** None **MHCP:** Not Covered	Restricted to vernal and shallow ephemeral basins in Orange and San Diego Counties.	**Presumed Absent:** No suitable habitat present within the Project Area due to lack of vernal pools. Three recent records occur, with the closest record of the species is 1.5 miles northwest of the site from 2010.
Streptocephalus woottoni Riverside fairy shrimp	**USFWS:** END **CDFW:** None **MHCP:** Covered	Restricted to deep, long lasting vernal pools.	**Presumed Absent:** No suitable habitat present within the Project Area due to lack of vernal pools. One recent record occurs 1.7 miles northwest of the site from 2010.

Special-Status Wildlife Species with Potential to Occur on the Proposed Project			
Scientific Name Common Name	**Status**	**Habitat Preferences**	**Potential for Occurrence**
Eucyclogobius newberryi tidewater goby	**USFWS:** END **CDFW:** None **MHCP:** Not Covered	Inhabits lagoons, estuaries, marches, and coastal streams.	**Presumed Absent:** No suitable habitat is present within the Project Area. One historic record occurs within five miles of the site.
AMPHIBIANS			
Spea hammondii western spadefoot	**USFWS:** None **CDFW:** SSC **MHCP:** Covered	Prefers open areas with sandy or gravelly soils, requires rain pools free of bullfrogs and crayfish for breeding.	**Presumed Absent:** No suitable habitat is present within the Project Area. One recent record (2003) of four occurs 3.7 miles east of the site.
REPTILES			
Anniella stebbinsi southern California legless lizard	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Moist, loose soil is essential. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**Moderate:** Limited suitable habitat is present within the Project Area. Two recent records of three occur within five miles of the site, with the closest being 0.2 miles southwest of the site from 2018.
Arizona elegans occidentalis California glossy snake	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Loose soils preferred. Arid scrub, rocky washes, grasslands, and chaparral habitats.	**Low:** Limited suitable habitat is present within the Project Area. Two historic records occur within five miles of the site.

Special-Status Wildlife Species with Potential to Occur on the Proposed Project			
Scientific Name Common Name	**Status**	**Habitat Preferences**	**Potential for Occurrence**
Aspidoscelis hyperythra orange-throated whiptail	**USFWS:** None **CDFW:** WL **MHCP:** Covered	Semi-arid brushy areas typically with loose soil and rocks, including washes, stream sides and coastal chaparral.	**High/Present:** Suitable habitat for foraging, reproduction and cover are present. The Project Area occurs within the known range. One recent and eight historic records occur within 5 miles of the site with the closest being 4.1 miles north of the site from 2017. This species was observed adjacent to the site during the focused coastal California gnatcatcher surveys.
Aspidoscelis tigris stejnegeri coastal whiptail	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Inhabits hot and dry open areas with sparse foliage, including chaparral, and riparian areas.	**Moderate:** Suitable habitat is present and the Project Area occurs within known range of the species. One recent record occurs 4.1 miles south of the site from 2002.
Phrynosoma blainvillii coast horned lizard	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Inhabits open areas with sandy soils and low vegetation.	**Low:** Soils and low vegetation are not present within the Project Area. Five historic records occur within five miles of the site.
Salvadora hexalepis virgultea coast patch-nosed snake	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides and plains.	**Moderate:** Suitable habitat is present within the Project Area. One historic record occurs within five miles of the site.
Thamnophis hammondii two-striped gartersnake	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Found near water sources, such as pools, creeks, and riparian areas. Associated with oak woodland, willow, coastal sage scrub, scrub oak, sparse pine, chaparral, and brushland.	**Presumed Absent:** No suitable habitat is present within the Project Area. Two historic records occur within five miles of the site.

Special-Status Wildlife Species with Potential to Occur on the Proposed Project			
Scientific Name Common Name	**Status**	**Habitat Preferences**	**Potential for Occurrence**
BIRDS			
Accipiter cooperii Cooper's hawk	**USFWS:** None **CDFW:** WL **MHCP:** Covered	Inhabits wooded areas, from deep forests to leafy subdivisions.	**Present:** One individual was observed in the buffer of the Project Area during the reconnaissance survey. No breeding habitat occurs within the Project Area but the area could be used for foraging. No records occur within five miles of the site.
Aimophila ruficeps canescens southern California rufous-crowned sparrow	**USFWS:** None **CDFW:** WL **MHCP:** Covered	Breeds in sparsely vegetated scrubland on hillsides and canyons, can also be found in chaparral. This species thrives in areas that have been recently burned and will stay in such habitats for years.	**High:** Breeding habitat exists in the form of chaparral. One recent record of eight total occurred 4.4 miles southeast from 2002.
Artemisiospiza belli belli Bell's sage sparrow	**USFWS:** None **CDFW:** WL **MHCP:** Covered	Occurs in chaparral habitat dominated by chamise and/or California sagebrush.	**Moderate:** Foraging, breeding and cover habitat occur within the Project Area. Project Area occurs within known range. No records occur within five miles of the site.
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	**USFWS:** BCC **CDFW:** SSC **MHCP:** Not Covered	Inhabits coastal sage scrub and scrubby desert habitats. In coastal California, patches of prickly pear and cholla cacti within coastal sage scrub provides habitat.	**Presumed Absent:** No suitable habitat present in the Development Area. Limited suitable habitat present in the Preserve Area. Three historic records within five miles of the site. Project Area is outside of known range for the species.
Charadrius nivosus nivosus western snowy plover	**USFWS:** THR **CDFW:** SSC **MHCP:** Covered	Beaches, coastal dunes, coastal strand.	**Presumed Absent:** Suitable habitat is not present within the Project Area. Three historic records occur within five miles of the site.

Special-Status Wildlife Species with Potential to Occur on the Proposed Project			
Scientific Name Common Name	**Status**	**Habitat Preferences**	**Potential for Occurrence**
Laterallus jamaicensis coturniculus California black rail	**USFWS:** None **CDFW:** THR **MHCP:** Not Covered	Inhabits marshes along the coast and inland.	**Presumed Absent:** No suitable habitat is present within the Project Area. One historic record occurs within five miles of the site within San Elijo Lagoon.
Passerculus sandwichensis beldingi Belding's savannah sparrow	**USFWS:** None **CDFW:** END **MHCP:** Not Covered	Inhabits grasslands, meadows, tidal saltmarshes, estuaries.	**Low:** Limited suitable habitat within the Preserve Area. One recent record occurs 4.3 miles south of the site in the San Elijo Lagoon from 2002.
Polioptila californica californica coastal California gnatcatcher	**USFWS:** THR **CDFW:** SSC **MHCP:** Covered	Inhabits coastal sage scrub habitat less than 3000' in elevation along the coast.	**Present:** This species was observed within the Development Area and the Preserve Area during the reconnaissance survey. It was also observed during previous studies conducted for the site triggering focused surveys for the 2022 breeding season. Suitable coastal sage scrub habitat for this species occurs within the Project Area. Six recent records of twenty-six total occur within five miles of the site with the closest recent record occurring 0.8 miles southeast of the site, with two adults being observed in 2005. Focused surveys for this species confirmed presence of this species within the Proposed Project with two pairs occupying the Development Area, 1 territorial male in the Preserve Area south of Sky Loft, and 2 pairs east of the Preserve Area and north of Sky Loft (1 of these territories slightly overlaps the Preserve Area).

Special-Status Wildlife Species with Potential to Occur on the Proposed Project			
Scientific Name Common Name	**Status**	**Habitat Preferences**	**Potential for Occurrence**
Rallus longirostris levipes light-footed Ridgway's rail	**USFWS:** END **CDFW:** END **MHCP:** Covered	Inhabits salt and brackish marshes.	**Presumed Absent:** No suitable marsh habitat is present within the Project Area. Four recent records within five miles of the site occur, with the closest being 0.03 miles northwest of the Project Area in the Batiquitos Lagoon from 2007.
Sternula antillarum browni California least tern	**USFWS:** END **CDFW:** END **MHCP:** Covered	Inhabits beaches, mudflats, and sand dunes, typically near lagoons or shallow estuaries near the ocean. They roost on the ground in unprotected areas of the coastal environment.	**Presumed Absent:** No suitable habitat is present within the Project Area. Three historic records occur within five miles of the site.
Vireo bellii pusillus least Bell's vireo	**USFWS:** END **CDFW:** END **MHCP:** Covered	Inhabits dense, low shrubby vegetation, generally early successional stages in riparian areas, often near water in arid regions.	**Presumed Absent:** No riparian vegetation exists within the Project Area. Nine recent records occur within five miles of the site, with the closest occurrence being 1.8 miles east of the site from 2011.
MAMMALS			
Chaetodipus californicus femoralis Dulzura pocket mouse	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Occurs in a variety of habitats, especially where grassland and chaparral occur in close proximity.	**Low:** Limited suitable habitat is present within the Project Area. One historic record occurs within five miles of the site.

Special-Status Wildlife Species with Potential to Occur on the Proposed Project			
Scientific Name Common Name	**Status**	**Habitat Preferences**	**Potential for Occurrence**
Chaetodipus fallax fallax northwestern San Diego pocket mouse	**USFWS:** None **CDFW:** SSC **MHCP:** Covered	Inhabits a wide range of habitats including chaparral, annual grassland, and coastal sage scrub in association with rocks or coarse gravel.	**Moderate/Present:** Suitable habitat is present within the Project Area. Two recent records and three historic records of this species have occurred within five miles of the Project Area. The nearest was 4.3 miles southeast of the site from 2002. This species was incidentally captured and confirmed during focused 2022 Pacific pocket mouse trapping surveys.
Choeronycteris mexicana Mexican long-tongued bat	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Typically roosts in caves, can additionally be found in attics, under bridges, and in abandoned buildings.	**Low:** No suitable habitat is present within the Project Area. One historic record occurs within five miles of the site.
Lasiurus xanthinus western yellow bat	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Prefers regions dominated by pasture or croplands, often roosts in trees with an affinity for roosting under palm tree fronds.	**Low:** No suitable habitat is present within the Project Area. Potential roosting habitat is present within the buffer. No records occur within five miles of the site.
Lepus californicus bennettii San Diego black-tailed jackrabbit	**USFWS:** None **CDFW:** SSC **MHCP:** Covered	Inhabits many different types of habitats, diet is dependent on availability of vegetation.	**Moderate:** Suitable habitat is present within the Project Area. One recent record from 2003 occurs within five miles of the site.

Special-Status Wildlife Species with Potential to Occur on the Proposed Project			
Scientific Name Common Name	**Status**	**Habitat Preferences**	**Potential for Occurrence**
Neotoma lepida intermedia San Diego desert woodrat	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	Prefers chaparral and sagebrush scrub habitats.	**High/Present:** Suitable habitat for this species is present within the Project Area. Several woodrat middens were observed within the Development Area. Four historic records occur within five miles of the site. This species was incidentally captured and confirmed during focused 2022 Pacific pocket mouse trapping surveys.
Nyctinomops femorosaccus pocketed free-tailed bat	**USFWS:** None **CDFW:** SSC **MHCP:** Not Covered	During dry season, utilizes water sources with large available surfaces. Roosts in caves, rock crevices and cliff faces.	**Presumed Absent:** No suitable habitat is present within the Project Area. One historic record occurs within five miles of the site.
Perognathus longimembris pacificus Pacific pocket mouse	**USFWS:** END **CDFW:** SSC **MHCP:** Not Covered	Inhabits sandy substrates of coastal sage scrub, coastal dunes, and alluvial plains of marine terraces.	**Low/Presumed Absent:** Limited suitable habitat is present within the Project Area. This is a narrow endemic species with a limited range. The Project Area is within the historical range of the species. One recent record from 2002 occurs 3.8 southeast of the site in the San Elijio Lagoon. Focused surveys were conducted for this species with negative results.

Special-Status Wildlife Species with Potential to Occur on the Proposed Project			
Scientific Name Common Name	**Status**	**Habitat Preferences**	**Potential for Occurrence**
Federal Designations (FESA, USFWS) **END:** Federally listed, endangered **THR:** Federally listed, threatened **CAN:** Federal candidate for listing **BCC:** Bird of Conservation Concern **State Designations** (CESA, CDFW) **END:** State-listed, endangered **THR:** State-listed, threatened **SSC:** California Species of Special Concern **CAN:** State candidate for listing **FP:** Fully Protected **WL:** Watch List **Local Designations** [Multiple Habitat Conservation Plan (MHCP)] **Covered:** Species adequately conserved through the conservation and management actions implemented through adoption of the MHCP Plan and by each Subarea Plan once finalized.			
Sources: California Natural Diversity Data Base (CDFW 2022a), State and Federally Listed Endangered and Threatened Animals of California (CDFW 2022b), Special Animals List (CDFW 2022c), Final MHCP (SANDAG 2003), IPAC Trust Resources List (USFWS 2022a)			

APPENDIX E.
ARCHAEOLOGICAL INVENTORY AND EVALUATION REPORT

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Archaeological Inventory and Evaluation Report for the Piraeus Point Project

City of Encinitas, San Diego County, California

Prepared For:

Lennar Homes of California, LLC
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Prepared By:

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November 2022

MANAGEMENT SUMMARY

In 2021, ECORP Consulting, Inc. was retained to conduct an archaeological inventory for the proposed Piraeus Point Project in the City of Encinitas, San Diego County, California. Lennar Homes of California, Inc. proposes to develop the existing undeveloped property into a housing community.

The inventory included a records search, literature review, and field survey. A records search of the California Historical Resources Information System at the South Coastal Information Center revealed that 97 cultural resources investigations had previously been conducted in or within one mile of the Study Area. Thirteen of these previously conducted investigations overlap a portion of the Study Area. Thirty-five cultural resources were previously recorded within one mile of the Study Area as a result of these investigations. One cultural resource has been previously identified within the Study Area itself: archaeological site P-37-012130, a precontact shell midden and lithic scatter.

A search of the Sacred Lands File was completed by the California Native American Heritage Commission and resulted in a negative finding, indicating that no Native American Sacred Lands have been recorded in the Study Area.

ECORP revisited and recorded portions of site P-37-012130 during the field survey. No other newly identified cultural resources were recorded as a result of the cultural resources inventory. The portion of site P-37-012130 that overlaps with the Project Area's development footprint was tested via 20 auger sample locations and evaluated based on archaeological information as not eligible for listing under Criterion D/4 for the National Register of Historic Places and the California Register of Historical Resources. Tribal consultation under Assembly Bill 52 with the City of Encinitas, Rincon Band of Luiseño Indians, the San Luis Rey Band of Mission Indians, and San Pasqual Band of Mission Indians resulted in the recommendation for tribal monitoring during construction and pre-designation of a reburial area, in the event of an unanticipated discovery during construction, and whether or not the site is potentially significant as a tribal cultural resource will be determined by the City in consultation with the tribes. Recommendations for the management of unanticipated discoveries are provided.

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LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APE	Area of Potential Effects
APN	Assessor Parcel Number
BLM	Bureau of Land Management
BP	Before present
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of Encinitas
CRHR	California Register of Historical Resources
CHRIS	California Historical Resources Information System
GLO	General Land Office
Ma	Million Years Ago
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
Project	Piraeus Point Project
PRC	Public Resources Code
RPA	Registered Professional Archaeologist
SCCIC	South Coastal Information Center
USC	U.S. Code
USGS	U.S. Geological Survey

1.0 INTRODUCTION

In 2021, ECORP Consulting, Inc. was retained by Lennar Homes of California, LLC., to conduct an archaeological inventory of the proposed Piraeus Point Project Area located east of Piraeus Street in the City of Encinitas, San Diego County, California. A survey of the property was required to identify potentially eligible cultural resources (archaeological sites and historic buildings, structures, and objects) that could be affected by the Project. The City is the Lead Agency for the Project.

1.1 Project Location and Description

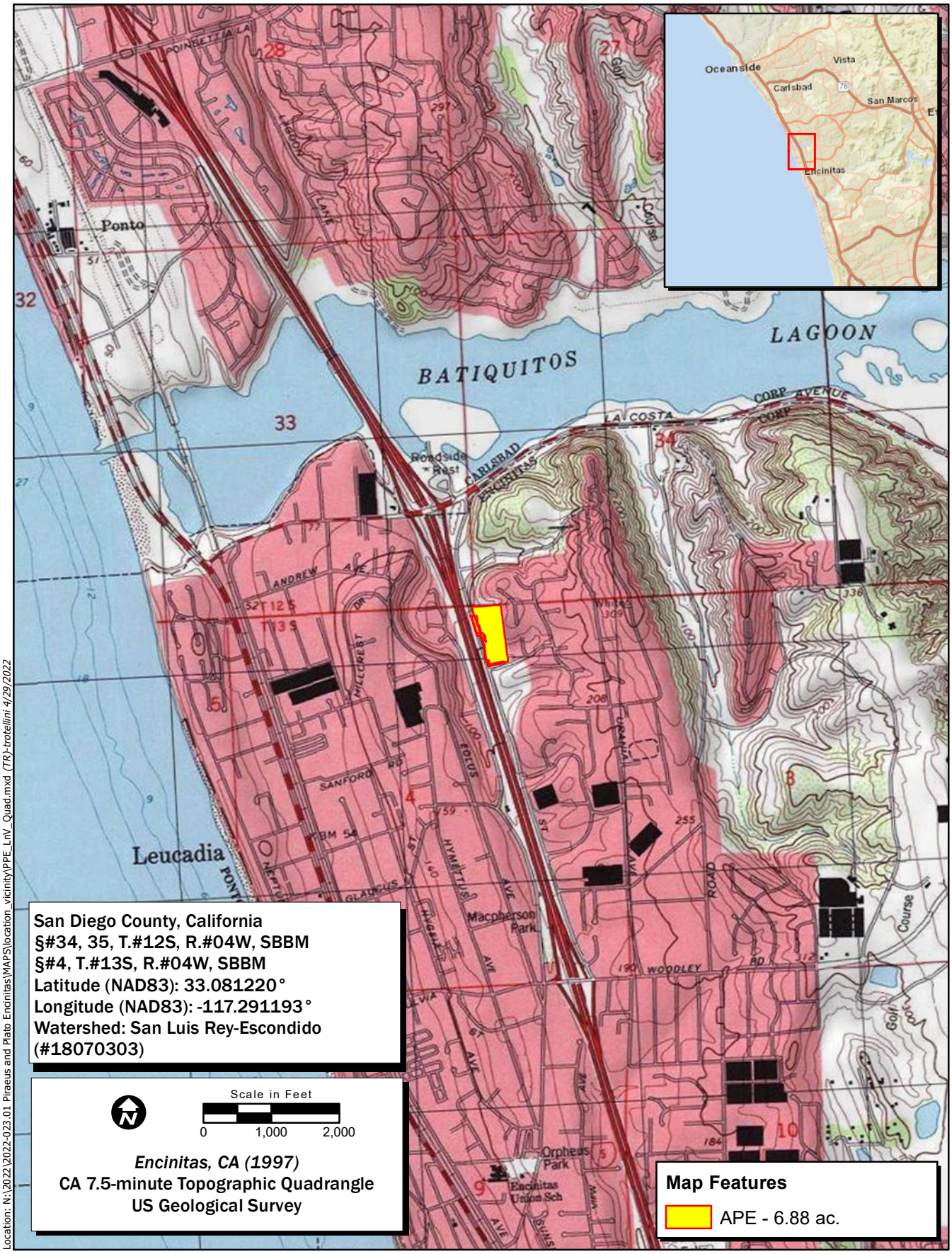
The Project Area, as set forth in the City of Encinitas Notice of Preparation for a Draft Environmental Impact Report (2022) consists of approximately 6.88 acres of property located in Section 4 of Township 13 South, Range 4 West and Section 33 of Township 12 South, Range 4 West, San Bernardino Base and Meridian as depicted on the 1997 Encinitas, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 1). It is also known as Assessor Parcel Numbers (APNs) 254-144-01-00 (southernmost) and 216-110-35-00 (central and northern). The Project Area is located south of La Costa Avenue, east of Piraeus Street, and north of Plato Place in Encinitas, California, and is currently undeveloped.

The proposed Project, when completed, will replace the existing undeveloped land with the residential Piraeus Point planned community, which will incorporate housing and recreational development. The remainder of the property will be set aside for conservation of sensitive resources.

1.2 Area of Potential Effects and Study Area

The Area of Potential Effects (APE) consists of the horizontal and vertical limits of the project and includes the area within which significant impacts or adverse effects to Historical Resources or Historic Properties could occur as a result of the project. The APE is defined for projects subject to regulations implementing Section 106 (federal law and regulations). For projects subject to the California Environmental Quality Act (CEQA), the term Project Area is used rather than APE. For the purpose of this document, the terms Project Area and APE are interchangeable.

The horizontal APE consists of all areas where activities associated with the Project are proposed and in the case of the current project, equals the Project Area subject to environmental review under the National Environmental Policy Act and CEQA. This includes areas proposed for construction, vegetation removal, grading, trenching, stockpiling, staging, paving, and other elements described in the official Project description. The horizontal APE is illustrated in Figure 1 and also represents the survey coverage area. The project APE is 6.88 acres in size, but ECORP surveyed a slightly larger area that measures 12.365 acres.



Location: N:\2022\2022-023.01 Piraeus and Plato Encinitas\MAPS\location_vicinity\PPE_LnV_Quad.mxd (TR)-trotellini 4/29/2022

Map Date: 2/3/2022
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1. Project Location and Vicinity

2022-023.01 Piraeus and Plato Encinitas

The vertical APE is described as the maximum depth below the surface to which excavations for project foundations and facilities will extend. Therefore, the vertical APE includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the project, depending on the depth of the grading or trenching for installation of facilities. This study assumes it could extend as deep as 15 feet below the current surface; therefore, review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface.

The vertical APE also is described as the maximum height of structures that could impact the physical integrity and integrity of setting of cultural resources, including districts and traditional cultural properties. The current study assumes the above-surface vertical APE is up to 35 feet above the surface.

1.3 Regulatory Context

To meet the regulatory requirements of this Project, this archaeological investigation was conducted pursuant to the provisions for the treatment of cultural resources contained within Section 106 of the National Historic Preservation Act (NHPA) and in CEQA (Public Resources Code [PRC] § 21000 et seq.) The goal of NHPA and CEQA is to develop and maintain a high-quality environment that serves to identify the significant environmental effects of the actions of a proposed project and to either avoid or mitigate those significant effects where feasible. CEQA pertains to all proposed projects that require state or local government agency approval, including the enactment of zoning ordinances, the issuance of conditional use permits, and the approval of development project maps. The NHPA pertains to projects that entail some degree of federal funding or permit approval.

The NHPA and CEQA (Title 14, California Code of Regulations [CCR], Article 5, § 15064.5) apply to cultural resources of the historical and precontact (prehistoric) periods. Any project with an effect that may cause a substantial adverse change in the significance of a cultural resource, either directly or indirectly, is a project that may have a significant effect on the environment. As a result, such a project would require avoidance or mitigation of impacts to those affected resources. Significant cultural resources must meet at least one of four criteria that define eligibility for listing on either the CRHR (PRC § 5024.1, Title 14 CCR, § 4852) or the National Register of Historic Places (NRHP) (36 Code of Federal Regulations [CFR] 60.4). Cultural resources eligible for listing on the NRHP are considered Historic Properties under CFR 36 Part 800 and are automatically eligible for the CRHR. Resources listed on or eligible for inclusion in the CRHR are considered Historical Resources under CEQA.

Tribal cultural resources are defined in Section 21074 of the California PRC as sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either included in or determined to be eligible for inclusion in the CRHR, or are included in a local register of historical resources as defined in subdivision (k) of Section 5020.1, or are a resource determined by the Lead Agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. Section 1(b)(4) of Assembly Bill (AB) 52 established that only California Native American tribes, as defined in Section 21073 of the California PRC, are experts in the identification of tribal cultural resources and impacts thereto. Because ECORP does not meet the definition of a California Native

American tribe, this report only addresses information for which ECORP is qualified to identify and evaluate, and that which is needed to inform the cultural resources section of CEQA documents. This report, therefore, does not identify or evaluate tribal cultural resources. Should California Native American tribes ascribe additional importance to, or interpretation of, archaeological resources described herein, or provide information about non-archeological tribal cultural resources, that information is documented separately in the AB 52 tribal consultation record between the tribe(s) and Lead Agency and summarized in the tribal cultural resources section of the CEQA document, if applicable.

1.4 Report Organization

The following report documents the study and its findings and was prepared in conformance with the California Office of Historic Preservation's (OHP) *Archaeological Resource Management Reports: Recommended Contents and Format.* Appendix A includes a confirmation of the records search with the California Historical Resources Information System (CHRIS). Appendix B contains documentation of a search of the Sacred Lands File. Appendix C presents photographs of the Study Area. Appendix D contains confidential cultural resources California Department of Parks and Recreation 523 site record forms and is only available to qualified professional archaeologists.

Sections 6253, 6254, and 6254.10 of the California Code authorize state agencies to exclude archaeological site information from public disclosure under the Public Records Act. In addition, the California Public Records Act (Government Code § 6250 et seq.) and California's open meeting laws (The Brown Act, Government Code § 54950 et seq.) protect the confidentiality of Native American cultural place information. Under Exemption 3 of the federal Freedom of Information Act (5 U.S. Code [USC] 5), because the disclosure of cultural resources location information is prohibited by the Archaeological Resources Protection Act of 1979 (16 USC 470hh) and Section 307103 of the NHPA, it is also exempted from disclosure under the Freedom of Information Act. Likewise, the Information Centers of the CHRIS maintained by the OHP prohibit public dissemination of records search information. In compliance with these requirements, confidential information about the locations of archaeological sites have been redacted from this document.

2.0 SETTING

2.1 Environmental Setting

The Project Area is located in the City of Encinitas, on the eastern side of a drainage that empties into Batiquitos Lagoon to the north, at the western edge of a developed suburban neighborhood setting, and adjacent to the northbound Interstate 5 freeway. The Project Area is 0.89 mile east of the Pacific Ocean and 0.2 mile south of Batiquitos Lagoon. The Project Area is bordered by La Costa Avenue to the north, Plato Place to the south, and Piraeus Street to the west. Batiquitos Lagoon is located immediately to the north of the Project Area, and undeveloped land is within and to the east of the northern portion of the Project Area, providing a coastal sage scrub habitat. Interstate 5 was constructed over a natural drainage to the west of the Project Area.

2.2 Geology and Soils

Kennedy et al. (2007) have mapped the underlying geology of the Study Area as Santiago Formation that are dated to the Middle Eocene (47.8 - 38 Ma). They further describe the native geology as of three main divisions. The base division is arkosic sandstone and conglomerate. There is an occasional overlaying layer of gray and brownish gray arkosic sandstone, and an upper layer of gray arkosic sandstone and grit. Lenses of fossil-bearing claystone and siltstone are found near lagoons.

According to the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) Web Soil Survey website (NRCS 2022), six soil types are located within the Study Area: Cieneba coarse sandy loam, 5 to 15 percent slopes, eroded; Corralitos loamy sand, 9 to 15 percent slopes; Gaviota fine sandy loam, 9 to 30 percent slopes; Gaviota fine sandy loam, 30 to 50 percent slopes; Marina loamy coarse sand, 9 to 30 percent slopes; and rough broken land. Cieneba, Gaviota, and Corralitos soils reach bedrock in less than 20 inches below surface; Marina sands extend down to 60 inches; and broken land reaches bedrock in less than 2 inches below surface.

There exists the potential for buried precontact archaeological sites in the Study Area due to its proximity to the Pacific Ocean, Batiquitos Lagoon, and presence in a region that is recognized to have been in regular use by Native Americans for thousands of years. The drainage that the Study Area is within contributes to this potential because of the likelihood of precontact archaeological sites located along perennial and intermittent waterways in the region.

3.0 CULTURAL CONTEXT

3.1 Regional Precontact History

The archaeological history of southern California is remarkably complex, with a great deal of variation and the overlapping of specific technological and cultural traditions from the onset of documented human habitation in the terminal Pleistocene to the period of European contact in the Late Holocene. Today, archaeology and culture history are typically described according to geological epoch, with delineations in years before present (BP) between the Pleistocene (>10,000 BP), Early Holocene (10,000-6,500 BP), Middle Holocene (6,500 BP-3,500 BP) and the Late Holocene (3,500 BP to present). This approach places human history squarely in the realm of greater ecology and geological history in a way that allows discussion of human activity through time without limitations imposed by provincial labels. In California, this distinct use of geological terminology is not entirely arbitrary, as elements of technological change and diversification in cultural practices are observable at the transition of temporal periods (Erlandson and Colten 1991). However, terminology that is generally accepted by California archaeologists and the California OHP is still helpful in describing ancient patterns of human activity. The predominant archaeological patterns through time in San Diego County in relation to behavioral traditions and temporal periods, and in specific reference to the Study Area, are discussed below.

3.1.1 San Dieguito Complex – 10,000 to 8,500 BP

Terminal Pleistocene archaeological deposits are notably present on the California Channel Islands, but the onset of human activity in coastal areas of the Southern Bight appear after 10,000 BP (Erlandson et al.

2007). Early Holocene warming temperatures, rising sea levels, and megafaunal extinction resulted in landscape and resource changes that contributed to alternative subsistence strategies in local populations, with an emphasis on hunting smaller game and increasing reliance on plant gathering. Early Holocene archaeological sites in San Diego County occur around bays, sloughs, and coastal valleys that allowed early peoples continued access to aquatic resources. These coastal sites contain large amounts of marine faunal remains along with worked tools, such as lithic bifaces, milling tools, and bone tools from which archaeologists may reconstruct the human past in southern California (Gallegos 1991).

The San Dieguito Complex is a cultural tradition originating in the Early Holocene and defined by material found at the Harris archaeological site (CA-SDI-149) on the San Dieguito River near Lake Hodges in San Diego County (Warren 1968). Diagnostic artifacts associated with the San Dieguito Complex include lithic manufacturing implements and a variety of chipped stone tools, including projectile points, knives, scrapers, engraving tools, and stone crescents (Knell and Becker 2017; Koerper et al. 1991). Particular interest has been paid to the stone crescents that appear in Terminal Pleistocene and Early Holocene deposits throughout the region. Though only a single specimen was found at CA-SDI-149, this class of artifacts has come to define human-environmental interactions of the period due to association with paleoshorelines and wetland habitats that existed on the Channel Islands, along the California coast, in interior areas of California and the Great Basin, and further east in what is today Wyoming and Colorado between approximately 12,000-8,000 cal BP (Moss and Erlandson 2013). The majority of these crescents appear to be utilitarian implements for the hunting of birds (Erlandson and Braje 2008; Moss and Erlandson 2013). Sanchez et al. (2017) have confirmed a strong spatial association between stone crescents and reconstructed wetland habitats, supporting the argument that these artifacts were predominantly used for the harvesting of aquatic species and avifaunal resources that once existed along Terminal Pleistocene-Early Holocene paleoshorelines.

The San Dieguito Complex at CA-SDI-149 dates to between 9,030 ±350 BP and 8,490 ±400 BP (Gallegos 1991; Knell and Becker 2017). The presence of comparable artifacts and archaeological deposits are seen specifically throughout Southern California and northwestern Mexico between 9,000 and 7,000 BP. However, it is important to note the scarcity of San Dieguito materials and radiocarbon age determinations as well as the substantial spatiotemporal overlap with artifacts and faunal assemblages typically associated with later cultural traditions (Scharlotta 2015). The established use of groundstone technologies during the Early Holocene provides support for the continuation of certain subsistence practices during the Middle Holocene concurrent with decreases in wetland associated flaked-stone lithic assemblages. Early Holocene sites in coastal San Diego County have yielded artifacts and subsistence remains characteristic of succeeding technological traditions, including manos, metates, core-cobble tools, and species of marine shell more closely associated with the lagoon ecosystems, hotter and drier environmental contexts, and variable behavioral practices of the Middle Holocene (Gallegos 1991; Koerper et al. 1991).

3.1.2 La Jolla Complex – 8,500 to 1,300 BP

Sea levels continued to rise during the Early to Middle Holocene transition, eventually stabilizing around 6,000 BP and filling low-lying coastal areas and canyons in what became a relatively dense concentration of highly productive estuaries and coastal ecosystems (Masters and Gallegos 1997). The relationship of

human populations to coastal resources consequently changed through time. Rocky reefs and kelp beds were more extensive during the earlier part of the Holocene and exploited by humans settling on the coast. Early Holocene coastal populations tended to aggregate around estuaries and areas of dense intertidal and littoral sustenance resources, but a greater focus on lagoon resources can be seen in later archaeological deposits. As sea level rose, a transition in species of exploited shellfish and vertebrates is seen, from rocky reef species to sandy beach species that reflects the changes in shoreline during the Middle Holocene. Western North America experienced a period of increased warmth and aridity during the Middle Holocene that likely impacted migrations and settlement patterns from the continental interior to the coast (Kennett et al. 2007). Increasingly, human populations in California began to process plant foods with the manos (pestles) and metates (mortars) in an observable shift in technology and subsistence practices that effectively replaced the San Dieguito Complex with a lengthy tradition of cultural behaviors alternately termed the La Jolla Complex (Warren et al. 1961; Byrd and Raab 2007), Encinitas Tradition (Warren 1968), and Milling Stone Period (Wallace 1955). The term "La Jolla Complex" is used here.

The La Jolla Complex is most identified with the manos and metates found along the San Diego County coast beginning about 8,500 BP (Sutton and Gardner 2010), but La Jolla tool kits included a wide array of lithic and bone tools. Most La Jolla Complex sites are located around Middle Holocene coastal lagoons, which continued filling with sea water due to the sustained retreat of ice caps and global influx of liquid water following the last glacial maximum (approximately 20,000 BP). Shellfish from these lagoons were an important part of the diet, and most La Jolla sites are classified as shell middens. Both rocky shores shellfish, such as *Mytilus* sp. (mussels), and bay/estuary shellfish, such as *Argopecten* sp. (scallops), *Chione* sp. (cockles), and *Ostrea lurida* (oyster) are found in La Jolla sites. Rocky shores species are much reduced in quantity and almost disappear from the middens in the Late Holocene. This has been attributed to increased sediment deposition around the mouths of the lagoons along the northern and central San Diego coast, which covered the rocky habitats. Fewer sites were occupied in these areas during the Late Holocene. However, the larger bays to the south (Mission and San Diego bays) never silted in, and there are numerous La Jolla Complex sites in this area (Masters and Gallegos 1997).

The Pauma Complex is a term to describe an inland cultural pattern beginning around 7,500 BP in San Diego County and occurring up to approximately 1,000 BP (Sutton and Gardner 2010; True 1958, 1970). Pauma archaeological deposits have numerous manos and metates similar to coastal sites of the same period but lack the marine subsistence remains seen in La Jolla sites. Other Pauma Complex artifacts include core and cobble tools, scraper planes, unifacial scrapers, and infrequent cogged stones and discoidals. In most Pauma Pattern sites, the mano-metate tool kit predominates, which suggests the collection and processing of seeds and other plant materials. Pauma sites are located on older high-elevation alluvial terraces in valleys and canyons. Some Pauma sites may be buried in shallow alluvium. Shared similarities between the inland Pauma Complex and the coastal La Jolla Complex may reflect extended cultural ties or different seasonal manifestations of the same people, with the La Jolla Complex emphasizing marine resources (shellfish and fish) and the Pauma Complex emphasizing hard seeds. There are more planing and scraping tools in the La Jolla Complex and more grinding tools (i.e., manos and metates) in the Pauma Complex, which undoubtedly correspond to differential resource procurement and processing throughout this time period (Waugh 1986).

The San Diego coastline began to resemble its current appearance after about 3,500 BP, with estuaries silting in and a consequential decline in lagoon resources due to increased sedimentation along the San Diego coastline (Gallegos 2002). A warming climate, combined with the loss of estuarine resources during the Middle Holocene, resulted in an observable transition in settlement patterns during the Late Holocene as many people moved away from the coasts to more fully exploit inland habitats, though San Diego Bay remained due to freshwater runoff and tidal flushing. Additionally, coastal sedimentation and infilling events coincided with the development of the sandy beaches seen today that eliminated majority rocky coastal environments and gave way to a shift in the kinds of subsistence resources available at these locations (Byrd and Reddy 2002). This increased reliance on sandy shore species and the dominance of small terrestrial taxa in archaeological contexts, such as lagomorphs and waterfowl, is reflective of the unique coastal environment of much of San Diego in the Late Holocene.

3.1.3 Late Period (Kumeyaay) – 1,300 BP to Contact

The Late Period (Kumeyaay) in San Diego archaeology is determined to have begun with substantial cultural and technological changes occurring around 1,300 BP. The Late Holocene exemplified major cultural shifts with the entrance of Shoshonean language speakers, now known as the Cahuilla, Cupeño, and Luiseño, into the northern part of San Diego County sometime between and 3,500 and 1,300 BP. This coincided with the establishment of definitive Ipai and Tipai (Kumeyaay peoples, Yuman language speakers) societal structures throughout the central and southern parts of the County. An abrupt decrease in coastal deposits appears to have occurred after 3,300 BP (Gallegos 2002), though increases in coastal occupation beginning around 1,600 to 1,200 BP appear to mirror sustained population increases throughout San Diego County during the Late Holocene to the present day (Byrd and Reddy 2002). Late Period settlement patterns are characterized by the establishment of permanent, sometimes seasonal, villages and ephemeral satellite sites dedicated to specific tasks, such as tool production, food processing, or resource acquisition (Byrd and Raab 2007). A focus on reliable water sources and intensified subsistence practices is evident in the location and nature of regional Late Period archaeological sites.

The Kumeyaay Period has been associated with population increases, particularly in coastal areas, and changes in settlement patterns (Scharlotta 2015). The Late Holocene was a time of technological change. Choices regarding technology and subsistence practices influenced the nature of human-environmental interactions with an expansion of diet breadth, the establishment of permanent villages, and changes in hunting and gathering processes that also affected social structure during the Kumeyaay period (Bettinger 2013; Gamble and Mattingly 2012). Transition to more sedentary settlement patterns can be witnessed in aspects of technological variation such as the greater use of bedrock mortars in addition to portable milling stones (Byrd and Raab 2007). The Late Period is primarily characterized by use of the bow and arrow, which was introduced to the western United States sometime between 2,300 and 1,300 BP (Bettinger 2013). Bettinger argues that the adoption of bow hunting effected an expansion in the utilization of once peripheral subsistence resources (i.e., intensification of plant resource harvesting and processing) due to the increased efficacy of hunting among small groups and a shift to more localized resource harvesting among smaller family bands. Decreases in time spent hunting are thought to encourage greater time spent collecting foodstuffs once perceived as too costly.

In San Diego, principal foods for inland populations included acorns, grasses, other seeds, and lagomorphs, in addition to continued hunting of deer. However, people had returned to the coasts during the Kumeyaay Period and were exploiting a wide variety of marine resources in addition to the extensive trade networks along the southern California coast and that of Baja California (Byrd and Raab 2007). Gamble and Mattingly (2012) document more than 200 fire-affected rock features at Torrey Pines State Natural Reserve, positing the use of these features in the processing of Torrey pine nuts (*Pinus torreyana*) by Kumeyaay peoples on the coast over the last two millennia. The introduction of the bow and arrow to Southern California was followed by other archaeologically observable shifts prior to European contact, such as distinguishable changes in projectile point morphology, a switch from Coso (Sierra Nevada source) to Obsidian Butte (Salton Sea) as a source for volcanic glass, and even a transition from burial to cremation for the dead (Gallegos 2002). Ceramics appear in the archaeological record after 1,300 BP, with the distribution of reddish-brown sherds across San Diego County from the Peninsular Ranges to the Coast that differs from a lighter-colored buff pottery found in the deserts to the east (Quinn et al. 2013). Common ceramic forms include round-bottomed jars with restricted necks, bowls, scoops, plates, and other vessels used for cooking and storage. Ceramic pipes were also made (Gallegos 2002). Recovered ceramic specimens exhibit chemical signatures derived from similar geological contexts in the Laguna and Cuyamaca mountains, suggesting the transfer of materials from mountain to coast within the extensive trade networks that undoubtedly existed at this time (Quinn et al. 2013).

3.2 Ethnohistory (Kumeyaay and Luiseño)

The Kumeyaay (also known as Ipai and Tipai) are the Yuman-speaking native people of central and southern San Diego County and the northern Baja Peninsula in Mexico. Spanish missionaries and settlers used the collective term Diegueño for these people, which referred to people living near the presidio and mission of San Diego de Alcalá. Today, these people refer to themselves as Kumeyaay or as Ipai and Tipai, which are northern and southern subgroups of Kumeyaay language speakers, respectively (Luomala 1978). The ancestral lands of the Kumeyaay extend north from Todos Santos Bay near Ensenada, Mexico to Agua Hedionda Lagoon in north San Diego County, and east to the west side of the Imperial Valley.

The primary source of Kumeyaay subsistence was vegetal food. Seasonal travel followed the ripening of plants from the lowlands to higher elevations of the mountain slopes. Acorns, grass and sage seeds, cactus fruits, wild plums, pinyon nuts, and agave stalks were the principal plant foods. Women sometimes transplanted wild onion and tobacco plants to convenient locations and sowed wild tobacco seeds. Deer, rabbits, small rodents, and birds provided meat. Village locations were selected for seasonal use and were occupied by exogamous, patrilineal clans or bands. Three or four clans might winter together, then disperse into smaller bands during the spring and summer (Luomala 1978).

The Kumeyaay were loosely organized into exogamous patrilineal groups termed sibs, clans, gens, and tribelets by ethnographers. The Kumeyaay term was cimul. The cimul used certain areas for hunting and gathering, but apparently did not control a bounded and defended territory, as did the Luiseño and Cahuilla. In addition, members of several different cimul usually lived in the same residential base, unlike the Luiseño, where a single party or clan controlled a village and its territory. Kumeyaay lived in residential bases during the winter and subsisted on stored resources. No permanent houses were built. Brush shelters were temporary and were not reused the next year. Ceremonies, including rites of passage and

ceremonies to ensure an abundance of food, were held in the winter residential bases. The cimul leader directed the ceremonies and settled disputes (Christenson 1990). One of the most important ceremonies was the mourning ceremony. Upon death, the Kumeyaay cremated the body of the deceased. Ashes were placed in a ceramic urn and buried or hidden in a cluster of rocks. The family customarily held a mourning ceremony one year after the death of a family member. During this ceremony, the clothes of the deceased individual were burned to ensure that the spirit would not return for his or her possessions (Gifford 1931; Luomala 1978).

The Kumeyaay were geographically and linguistically divided into western and eastern Kumeyaay. The western and eastern Kumeyaay spoke two different dialects (Christenson 1990). The western Kumeyaay lived along the coast and in the valleys along the drainages west of the mountains. The eastern Kumeyaay lived in the canyons and desert east of the mountains. The western Kumeyaay spent the winter in residential bases in the lowland valleys and then broke into smaller cimul groups that moved gradually eastward toward the mountains, following ripening plants and occupying temporary residential bases along the way. Thus, each group occupied several different residential bases during the course of a year (Christenson 1990). The eastern Kumeyaay spent the winter in villages on the desert margin where water was available from springs at canyon mouths. They moved up the canyons toward the mountains during spring and summer. The eastern and western Kumeyaay met in the mountains in the fall where they gathered black oak acorns, traded, and held ceremonies (Christenson 1990). The large residential bases in the mountains appear archaeologically to be village sites (Gross and Sampson 1990).

The Kumeyaay population was estimated to be between 10,000 and 20,000 at the time of European contact, based on Spanish accounts and ethnographies (Gallegos 2002). Beginning in 1775, the semi-nomadic life of the Kumeyaay began to change as a result of contact with Euro-Americans, particularly from the influence of the Spanish missions. Through successive Spanish, Mexican, and Anglo-American control, the Kumeyaay were forced to adopt a sedentary lifestyle and accept Christianity (Luomala 1978).

The Study Area is located to the south of Batiquitos Lagoon in what is generally accepted as traditional Kumeyaay territory. However, boundaries between ancestral territories are often fluid or loosely defined due to movement and interaction among precontact and post-contact populations. Luiseño communities are posited to have extended as far south as the north side of Batiquitos Lagoon. The Luiseño are one of the Takic-speaking groups that were present in southern California prior to the arrival of Euro-Americans. Luiseño occupied most of the area drained by the San Luis Rey and Santa Margarita rivers.

The Luiseño lived in sedentary and autonomous village groups, each with specific subsistence territories encompassing hunting, collecting, and fishing areas. Villages were typically located in valley bottoms, along streams, or along coastal strands near mountain ranges where water was available and village defense was possible. Inland populations had access to fishing and gathering sites on the coast, which they used during the winter months (Bean and Shipek 1978).

Luiseño subsistence was based on the gathering of acorns, seeds, greens, bulbs, roots, berries, and other vegetal foods. This was supplemented by hunting mammals such as deer, antelope, rabbit, woodrat, ground squirrels, and mice, as well as birds including quail, doves, and ducks. Bands along the coast also

exploited marine resources, such as sea mammals, fish, crustaceans, and mollusks. Inland, trout and other fish were taken from mountain streams (Bean and Shipek 1978).

Hunting was done both individually and by organized groups. Tool technology for food acquisition, storage, and preparation reflects the size and quantity of items procured. Small game was hunted with the use of curved throwing sticks, nets, slings, or traps. Bows and arrows were used for hunting larger game. Dugout canoes, basketry fish traps, and shell hooks were used for near-shore ocean fishing. Coiled and twined baskets were made for food gathering, preparation, storing, and serving. Other items used for food processing included large shallow trays for winnowing chaff from grain, ceramic and basketry storage containers, manos and metates for grinding seeds, and ceramic jars for cooking (Bean and Shipek 1978).

Luiseño social organization was based on patrilineal and patrilocal lineages. Exogamy rules required that a man could not marry a woman related to them within five generations. Women moved to their husband's village but kept their identity as a member of their natal lineage (Cultural Systems Research 2005). The Luiseño corporate group was a "party" composed of one major lineage with a ceremonial leader (chief), a ceremonial bundle, and a ceremonial house or enclosure. Members of other lineages within the party could live in the same village as the major lineage or within other villages within the party territory. The ceremonial chief was also the hereditary chief of the party who organized religious, economic, and military activities (Goldberg 2001). An advisory council of ritual specialists and shamans was consulted for their specialized knowledge. Resources within the party territory were owned by the party. The party territory was marked by boundary markers and was defended against trespassers (Waugh 1986).

Houses were circular with conical roofs and were made of a framework of logs covered by tules, sedge, or bark and a layer of earth. The floors of the houses were about two feet below the ground surface. Houses had a central fireplace, but most cooking was done outside. Round earth-covered semi-subterranean sweathouses with an interior fire pit were primarily used by men and were located next to a stream or pond. Ramadas, flat-roofed open structures, provided shade for work areas (Cultural Systems Research 2005). Women's work areas often consisted of a circular windbreak made of arrow weed or tule. They had a hard-packed earth floor that was swept to remove debris. Earth ovens consisted of a pit with a ring of rocks. Granaries for storing acorns, seeds, and nuts were made of woven arrow weed or willow, sealed with mud. They were built on platforms, on top of houses, or on boulders to keep burrowing animals out. Caves and rock shelters in or near villages were used for activity areas, as caches, and for ceremonies. Rock shelters away from the village could be used as temporary camps. Other temporary camps had lean-tos made of willows with an adjacent fire pit (Cultural Systems Research 2005).

When the Spanish arrived in southern California in 1769, it is estimated that there were 50 Luiseño villages with a population of about 200 each, suggesting a total population of about 10,000 (White 1963).

3.3 Regional History

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. Cabrillo was sent north by the Viceroy of New Spain (Mexico) to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake's Bay or Bodega Bay in 1579.

Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port (Castillo 1978). Vizcaíno also named San Diego Bay to commemorate Saint Didacus. San Diego began to appear on European maps of the New World by 1624 (Gudde 1998).

In 1769, the Gaspar de Portolá Spanish land expedition arrived in the San Diego area from New Spain (Mexico), and Mission San Diego de Alcalá was founded by Father Junipero Serra as the first of 21 Spanish missions in Alta California. A presidio (military facility for Spanish soldiers) was built near the mission. The purpose of the missions and presidios was to establish Spanish economic, military, political, and religious control over the Alta California territory. The missions sustained themselves through cattle ranching and traded hides and tallow for supplies brought by ship. Mission San Diego was established to convert the Native Americans that lived in the area, known as the Kumeyaay or Diegueño. The presidio and mission were located on a hill on the south side of the San Diego River about three miles inland from the coast. After being destroyed by attacking Kumeyaay in 1775 during an attempt to drive out the Spanish (Robinson 1948; Castillo 1978), Mission San Diego was rebuilt in its present location on the north side of the river about 5.5 miles upstream from the presidio. However, the presidio remained in its original location and a small town or pueblo developed around it (Caughey 1933).

Mexico became independent from Spain in 1821, and what is now California became the Mexican province of Alta California. The Mexican government closed the missions in the 1830s and former mission lands were granted to retired soldiers and other Mexican citizens for use as cattle ranches. Much of the land along the coast and in the interior valleys became part of Mexican land grants or "ranchos" (Robinson 1948). During the Mexican period there were small towns at San Diego (near the presidio), San Juan Capistrano (around the mission), and Los Angeles. The rancho owners lived in one of the towns or in an adobe house on the rancho. The Mexican Period includes the years 1821 to 1848.

The American period began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the United States in 1848. Alta California became part of the United States as the territory of California, officially becoming the State of California in 1850. Most Mexican land grants were confirmed to the grantees by U.S. courts, but usually with more restricted boundaries which were surveyed by the U.S. Surveyor General's office. Land that was not part of a land grant was owned by the U.S. government until it was acquired by individuals through purchase or homesteading. Floods and drought in the 1860s greatly reduced the cattle herds on the ranchos, making it difficult to pay the new American taxes on the thousands of acres they owned. At the same time, the Homestead Act of 1862 brought American settlers to southern California in search of land to claim. Many Mexican-American cattle ranchers borrowed money at usurious rates from newly arrived Anglo-Americans. The resulting foreclosures and land sales transferred most of the land grants into the hands of Anglo-Americans (Cleland 1941).

3.4 Local History

The Project Area is located in San Diego County, which was created in 1850 as one of the first counties within the new state of California (Coy 1973; Marschner 2000). At that time, the area designated as San Diego County included nearly all of present-day San Diego, Imperial, Riverside, and San Bernardino counties, as well as a small portion of present-day Inyo County (Coy 1973; Marschner 2000). The City of San Diego continued as a small settlement around the presidio until a new town was platted south of the

old town by Alonzo Horton, a San Francisco furniture dealer. He sold lots beginning in 1867 and built a 700-foot wharf in 1869. By 1870 San Diego had 800 buildings and a population of 3,000 (Dumke 1944). The completion of the California Southern Railroad from National City and San Diego to San Bernardino via Oceanside in 1883 and the completion of the Santa Fe line from Los Angeles to Oceanside (connecting to San Diego via the California Southern track) in 1888 resulted in a real estate boom and the economic development of the San Diego area (Dumke 1944). The population continued to increase throughout the earlier part of the twentieth century, with continued growth in the City of San Diego as well as the gradual growth and eventual incorporation of various rural communities throughout San Diego County.

The Project Area is located within the City of Encinitas, approximately 25 miles north of downtown San Diego. Encinitas is a coastal beach community of northern San Diego County that was incorporated in 1986 from several smaller beachside and rural communities. Today, the city is an upscale community of 60,000 people. The area has become a locus for the beaches and outdoor activities, with a focus on arts and a local business district that exists along North Coast and South Coast Highway 101.

4.0 METHODS

4.1 Personnel Qualifications

All phases of the cultural resources investigation were conducted or supervised by Registered Professional Archaeologist (RPA) John O'Connor, Ph.D., RPA, who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. Dr. O'Connor and Michael M. DeGiovine, RPA conducted the field survey and testing and wrote the report. Lisa Westwood, RPA provided technical report review and quality assurance.

Dr. O'Connor has over 13 years of archaeological experience in North America and the Pacific Islands, experience that includes cultural resources management, academic research, museum collections management, and university teaching. Dr. O'Connor meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. He is well versed in the evaluation of impacts to cultural resources for CEQA and NHPA projects, and he has written or otherwise contributed to numerous environmental compliance documents. Dr. O'Connor served as the Southern Californian archaeological Manager for ECORP at the time of fieldwork.

Mr. DeGiovine is a Staff Archaeologist with over 15 years of experience in cultural resources management. He meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology. Mr. DeGiovine holds an M.A. in Anthropology from California State University, Fullerton in addition to a B.A in Anthropology from the University of California, San Diego. He has prepared or contributed to environmental documents, such as Environmental Impact Reports/Environmental Impact Statements or Cultural Resource studies that deal with CEQA and NHPA Sections 106 and 110. Mr. DeGiovine has coordinated and cooperated with primary contractors, clients, and other environmental stakeholders to ensure that projects meet environmental compliance and are completed expeditiously.

Lisa Westwood, RPA meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology with 27 years of experience. She holds a B.A. in Anthropology and an M.A. in Anthropology (Archaeology). She is the Director of Cultural Resources for ECORP.

4.2 Records Search Methods

ECORP requested a records search for the property at the South Coastal Information Center (SCIC) of the CHRIS at San Diego State University on February 7, 2022 (Appendix A). The purpose of the records search was to determine the extent of previous surveys within a one-mile (1600-meter) radius of the Proposed Project location, and whether previously documented precontact or historic-period archaeological sites, architectural resources, or traditional cultural properties exist within this area.

In addition to the official records and maps for archaeological sites and surveys in San Diego County, the following historic references were also reviewed: Historic Property Data File for San Diego County (OHP 2012); The National Register Information System (National Park Service [NPS] 2022); Office of Historic Preservation, California Historical Landmarks (OHP 2022); California Historical Landmarks (OHP 1996 and updates); California Points of Historical Interest (OHP 1992 and updates); Directory of Properties in the Historical Resources Inventory (1999); Caltrans Local Bridge Survey (California Department of Transportation [Caltrans] 2019); Caltrans State Bridge Survey (Caltrans 2018); and *Historic Spots in California* (Kyle 2002).

Other references examined include a RealQuest Property Search and historic General Land Office (GLO) land patent records (Bureau of Land Management [BLM] 2022). Historic maps reviewed include:

- the 1893 USGS Oceanside Sheet, California topographic map (1:250,000 scale);
- the 1901 Oceanside, California topographic map (1:62,500 scale);
- the 1942 Oceanside, California topographic map (1:62,500 scale);
- the 1948 Encinitas, California topographic map (1:24,000 scale);
- the 1968 Encinitas, California topographic map (1:24,000 scale); and
- the 1968 Encinitas, California topographic map (1:24,000 scale; photorevised 1975).

Historic aerial photographs taken in 1939, 1947, 1953, 1964, 1967, 1978, 1988, 1989, and 1990 to present were reviewed for any indications of property usage and built environment (NETROnline 2022; UCSB 2022). Topographic maps from 1893, 1901, 1942, 1948, 1968, and 1968 (photorevised 1975) were also reviewed for information.

4.3 Sacred Lands File Coordination Methods

In addition to the record search, ECORP contacted the California NAHC on February 3, 2022, to request a search of the Sacred Lands File for the APE (Appendix B). This search will determine whether Sacred Lands have been recorded by California Native American tribes within the APE, because the Sacred Lands File is populated by members of the Native American community who have knowledge about the locations of tribal resources. In requesting a search of the Sacred Lands File, ECORP solicited information from the

Native American community regarding tribal cultural resources, but the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal law. The lead agencies do not delegate government-to-government authority to any private entity to conduct tribal consultation; however, ECORP assisted the City in fulfilling its obligations to consult with tribes under AB 52. On October 21, 2022, ECORP attended a field meeting with representatives of the Rincon Band of Luiseño Indians. On November 15, 2022, the project proponent attended a field meeting with representatives of the San Luis Rey Band of Mission Indians.

4.4 Field Methods

On March 2, 2022, ECORP subjected the 12.365-acre Study Area to a pedestrian survey under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (NPS 1983). ECORP expended 6 person-hours in the field. At that time, developed and exposed ground surfaces were examined for indications of surface or subsurface cultural resources. The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances were examined for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

Following the survey, testing was conducted to determine the subsurface nature of archaeological resources in the Project Area and to assess the potential for previously recorded archaeological sites (e.g., P-37-012130) to extend into the Project Area. The method chosen to perform this activity was intentionally as minimal as possible. Hand auger sampling was completed at 20 locations throughout the Project Area using a 4-inch bucket hand auger (Appendix D). Sixteen locations were sampled to a depth of 1 meter (39.5 inches), and four locations were sampled to a depth of 50 centimeters, 70 centimeters, 80 centimeters, and 95 centimeters based on the ability to recover soils with the auger (such as encountering cobble layers or all sand that was not recoverable). All sampled locations were recorded using Collector for ArcGIS and assigned temporary identification numbers AU-01 through AU-20. In the event that a reviewing agency requests more extensive archaeological testing and excavation, ECORP recommends that culturally affiliated tribes be invited to participate in the planning and implementation of that testing.

4.5 Evaluation Criteria

4.5.1 State Evaluation Criteria

Under state law (CEQA) cultural resources are evaluated using CRHR eligibility criteria in order to determine whether any of the sites are historical resources, as defined by CEQA. CEQA requires that impacts to historical resources be identified and, if the impacts would be significant, that mitigation measures to reduce the impacts be applied.

An historical resource is a resource that:

1. is listed in or has been determined eligible for listing in the CRHR by the State Historical Resources Commission;

2. is included in a local register of historical resources, as defined in PRC 5020.1(k);

3. has been identified as significant in an historical resources survey, as defined in PRC 5024.1(g); or

4. is determined to be historically significant by the CEQA lead agency [CCR Title 14, § 15064.5(a)]. In making this determination, the CEQA lead agency usually applies the CRHR eligibility criteria.

In making this determination, the CEQA lead agency usually applies the CRHR eligibility criteria. The eligibility criteria for the CRHR are as follows [CCR Title 14, § 4852(b)]:

1. It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2. it is associated with the lives of persons important to local, California, or national history;

3. it embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

4. it has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, § 4852(c)].

Impacts to an historical resource (as defined by CEQA) are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, § 15064.5(a)].

4.5.2 Federal Evaluation Criteria

Under federal regulations implementing Section 106 of the NHPA (36 CFR 800), cultural resources identified in a Project APE are evaluated using NRHP and eligibility criteria. The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

> "The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and
>
> a) is associated with events that have made a significant contribution to the broad patterns of our history;
>
> b) is associated with the lives of a person or persons significance in our past;
>
> c) embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction; or
>
> d) has yielded or may be likely to yield information important in prehistory or history.

In addition, the resource must be at least 50 years old, except in exceptional circumstances (36 CFR 60.4)".

Effects to NRHP-eligible resources (historic properties) are adverse if the project may alter, directly or indirectly, any of the characteristics of an historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

5.0 RESULTS

5.1 Records Search

The results of the CHRIS records search were received by ECORP on February 14, 2022 (Appendix A). The records search consisted of a review of previous research and literature, records on file with the SCIC for previously recorded resources, and historical aerial photographs and maps of the vicinity.

5.1.1 Previous Research

Ninety-seven previous cultural resource investigations have been conducted within one mile of the Study Area between 1989 and 2021. The CHRIS records search indicates that the entire Study Area was previously surveyed through a combination of overlapping investigations. Though the records search revealed cultural resources investigations overlapped portions of the Study Area between 1986 and 2013, some of these studies were carried out over 35 years ago and are considered obsolete under current standards and protocols. An updated pedestrian survey was warranted. A list of previous cultural resource investigations identified during this records search may be found in Appendix A.

The CHRIS records search also determined that 35 previously recorded cultural resources are located within one mile of the Study Area. Previously recorded resources are comprised of 29 precontact resources, four historic-period resources, and two unknown resource due to a missing site record at the SCIC and one incomplete site record. Precontact resources are composed of a mix of habitation/camp sites, shell middens, shell and lithic scatters, lithic and bone tools, and burials. Historic-period resources include a former flower nursery, a log house, a trash pit and building remains, and commercial buildings. One previously recorded resource, precontact site P-37-012130, overlaps the Study Area. Previously recorded site P-37-012130 is comprised of shell middens, lithic scatters, hearth features, and stone tools. Details of all 35 previously recorded resources are included in Appendix A.

5.1.2 Records

The National Register Information System (NPS 2022) did not list any eligible or listed properties within the Study Area. The nearest National Register properties are located eight miles northwest of the Study Area in Carlsbad.

Resources listed as *California Historical Landmarks* (OHP 1996) and by the OHP (OHP 2022) were reviewed on February 7, 2022. The nearest listed landmark is #940: Rancho Guajome, located 12 miles north of the Study Area.

A search of historic GLO land patent records from the BLM's patent information database (BLM 2022) revealed that Nathan A. Eaton was granted the eastern three-quarters of the southern quarter of Section 33 and the northwest quarter of the northeast quarter of Section 4, encompassing the Study Area, in 1892, as part of a 160-acre homestead grant. Mr. Eaton had built a hotel in Merle in 1889, which N.A.E. had described as "a good hotel, which is nearly finished" (N.A.E. 1889). He was installed as the Postmaster of Merle when it was formed in early 1892 (San Diego Union 1892), and a N.A. Eaton was elected as a school trustee for the community of Merle (San Diego Union 1899).

A RealQuest online property search for Assessor Parcel Numbers (APNs) 254-144-01-00 and 216-110-35-00 revealed the property was transferred from the Cannon Family Trust to Piraeus Investors, LLC. No other property history information was on record with RealQuest.

The Caltrans Bridge Local and State Inventories (Caltrans 2018, 2019) does not list any historic bridges in the Study Area.

5.1.3 Map Review and Aerial Photographs

The review of historic aerial photographs and maps of the Study Area provide information on the past land uses of the property and potential for buried archaeological sites. Based on this information, the majority of the property was partially developed for agriculture in the 1930s, and occasionally used as such until sometime in the 1950s. Following is a summary of the review of historical maps and photographs.

- The 1893 USGS Oceanside Sheet, California topographic map (1:250,000 scale) shows that the Study Area is undeveloped.
- The 1901 Oceanside, California topographic map (1:62,500 scale) shows that the Study Area is undeveloped.
- The 1942 Oceanside, California topographic map (1:62,500 scale) shows that the Study Area is undeveloped.
- The 1948 Encinitas, California topographic map (1:24,000 scale) shows that the Study Area is undeveloped.
- The 1968 Encinitas, California topographic map (1:24,000 scale) shows that the Study Area is undeveloped.
- The 1968 Encinitas, California topographic map (1:24,000 scale; photorevised 1975) shows that the Study Area is undeveloped.
- Aerial photographs from 1939 show the southern lowland portion of the Study Area as agricultural. The area near current Sky Loft Road is shown for agricultural use.
- Aerial photographs from 1947 show the property as mostly undeveloped. The area around the current Sky Loft Road is used for agriculture. Plato Place is visible in the photograph.

- Aerial photographs from 1953 show the upland portion of the southern parcel of the Project Area as graded, likely for agriculture, and a north-south unimproved road is visible through the Project Area.
- Aerial photographs from 1964 show the construction of Interstate 5 from the north, but the Study Area appears unchanged from 1953.
- Aerial photographs from 1967 show completion of Interstate 5 adjacent to the Project Area, and Piraeus Street as constructed. The agricultural area appears to be fallow.
- Aerial photographs from 1978 show development of the Study Area as unchanged. The fallow agricultural area in the south shows recreational trails/tracks.
- Aerial photographs from 1988 show Sky Loft Road as constructed, which was not present in the 1987 aerial photographs.
- Aerial photographs from 1989 show the Project Area north of Sky Loft Road adjacent to Piraeus Street as graded.
- Aerial photographs from 1990 to present show no additional development within the Study Area.

In summary, the property has been agricultural and undeveloped and agricultural land located approximately 0.9 mile east of the Pacific Ocean since at least the 1930s. There are no formal roads or residences within the Study Area.

5.2 Sacred Lands File Results

The results of the Sacred Lands File search by the NAHC were received on March 24, 2022. The search of the Sacred Lands File failed to indicate the presence of Native American sacred lands in the Study Area. A record of all correspondence is provided in Appendix B.

Separately, on October 21, 2022, ECORP participated in a field meeting with Cheryl Madrigal, Tribal Historic Preservation Officer for the Rincon Band of Luiseño Indians, and the project proponent. THPO Madrigal recommended monitoring by a Luiseño tribe during construction due to the overall sensitivity of the area and agreed to a need to pre-designate a reburial location in the event of an unanticipated discovery.

On November 1, 2022, the project proponent participated in a field meeting with PJ Stoneburner of San Luis Rey Band of Mission Indians. Mr. Stoneburner indicated that at least some tribal monitoring would be recommended, and deferred to Cami Mojado from the tribe to relay her recommendations to the City directly.

5.3 Field Results

ECORP surveyed the 12.365-acre Study Area on March 2, 2022, and performed auger testing on April 5 and 7, 2022. The survey was conducted as an intensive systematic pedestrian survey, and the Study Area was examined for the presence of precontact and historic-period cultural artifacts and features by walking the entire 12.365-acre parcel, using north-south transects in 15-meter intervals. In areas of vegetation so

dense or slope so great that maintaining a transect was not feasible or safe, the maximum amount of accessible areas were examined. The Study Area consists of two main areas: APN 216-110-35-00, the north and central parts of the Project Area, which will be set aside as conservation for sensitive species; and APN 254-144-01-00, the southern part of the Project Area, which is planned to be developed. Adjacent areas of study to the south and west of the Project Area were included in this study. The former parcel is entirely within resource P-37-012310, while approximately western two-thirds of the latter is within resource P-37-012310.

Vegetation along the terrace slope included manzanita, oak, *Opuntia*, chapparal, and wild cucumber. Vegetation along the lower terrace included grasses and fennel. Ice plant was present on the upper terrace in APN 254-144-01-00.

5.3.1 APN 216-110-35-00

In this parcel, located south of La Costa Avenue and south of Sky Loft Road, the Project Area can be characterized as a terrace slope and portions of a lower terrace, bisected by Sky Loft Road. Vegetation on the terrace slope is very dense, often precluding the ability to survey in 15-meter transects; instead, survey was conducted in an opportunistic manner, in which accessible areas were entered and exposed portions of ground were inspected for resources. Along the slope, ground visibility was less than 5 percent; in the lower terrace area, ground visibility ranged between 50 and 95 percent. Modern refuse was noted throughout the parcel, refuse that included substantial quantities of discarded food and beverage containers. A modern encampment just to the west of the Project Area along Piraeus Street is also a contributor to refuse in this part of the Project Area.



Figure 2. Overview of Project Area from La Costa Avenue (view south). March 2, 2022.

In the upper terrace edge and lower terrace, shell fragments of *Chione, Pecten,* and *Ostrea* were observed. Fire-affected rock was also observed in the upper terrace edge of this parcel. A modern temporary encampment was also observed along the upper terrace edge at the south end of this parcel.



Figure 3. Overview from northern corner with vegetation (view south). March 2, 2022.



Figure 4. Lower terrace overview (view south-southeast). March 2, 2022.



Figure 5. Overview of parcel 216-110-35-00 (view north). March 2, 2022.

5.3.2 APN 254-144-01-00

In this parcel, located north of Plato Place, the Project Area can be characterized as a southerly-sloping terrace and the southern bank of an east-west drainage. The drainage bank was inaccessible due to the steep slope and dense vegetation. Modern refuse and construction debris (tarpaper shingles, etc.) is scattered throughout the parcel. Overall ground surface visibility ranged from 50 to 100 percent within this parcel.

The upper terrace portion of this parcel slopes to the south and appears to have been previously graded. An improvised bicycle track was dug out in the center of the pad, and modern refuse and construction debris is scattered throughout the pad. Separating the upper and lower pad is a steeper slope that is overgrown with *Opuntia*, Spanish bayonet, and chapparal. A cobble layer is visible on the surface but appears natural. A north-south graded area to the west of the terrace pads is lower in elevation. The southern pad is heavily graded and little vegetation is present on it. Distributed throughout the pad are fragments of *Chione* and *Pecten*.

5.3.3 Adjacent Areas

Additional areas outside of the City's Project Area were studied for potential impacts. These areas are to the west and south of APN 254-144-01-00. These areas consist of steep slopes and covered with dense vegetation. A portion of a concrete-lined runoff channel is within the northern end of the western study area.



Figure 6. Overview from northeastern corner of APN 254-144-01-00 (view south-southwest). March 2, 2022.



Figure 7. Bike track (view south). March 2, 2022.



Figure 8. South pad overview from upper pad (view south-southwest). March 2, 2022.



Figure 9. Overview from southwestern corner of Project Area (view east). March 2, 2022.

5.3.4 P-37-012130 (CA-SDI-12130): Precontact Site

The original site record for P-37-012130 was not available. The first available site record update was prepared by RECON in 1977 and describes the site as having scattered shell, discolored soil, fire-affected rock, and lithic artifacts located on a hilltop. Much of the area had been plowed by 1977 as noted in the site update form. The most recent site update (Murillo 2019) only addressed a portion of the site that is on the adjacent parcel to the east but mentions the potential for buried cultural deposits. In Van Bueren's (1988) and earlier site records, it is commented that the site may have been a La Jollan campsite, and that shell middens are consistent with that description.

During the current survey, one piece of fire-affected rock and a low-density distribution of *Chione*, *Pecten*, and one fragment of *Ostrea* were observed. The observed distribution of deposits is consistent with Van Bueren's sketch map of the site. The shell fragments north of Sky Loft Road are located in the area which Van Bueren notes "widely scattered marine shell and debitage" in an area covered in fill material, and the shell concentration indicated at the southern end of the site (just north of Plato Place) continues to exhibit a surface scatter of shell.

5.3.5 Testing of P-37-012130

Following utilities clearance, the auger testing program was implemented on April 5 and 7, 2022 (Appendix D). The majority of auger samples (75%, n=16) returned no evidence of subsurface cultural materials. However, four auger samples returned positive identifications for possible archaeological materials: AU-02, AU-06, AU-17, and AU-20. Recovered materials included eight marine shell specimens (five *Chione* cf. *californiensis* at locations AU-02, AU-17, and AU-20; two *Pecten* spp. at locations AU-02 and AU-06; one unidentified fragment at AU-02), and modern glass at AU-17 and AU-20. Glass fragments at AU-17 were in the approximate level of recovered shell, but glass at AU-20 was noticeably deeper in the auger sample than the recovered shell. No midden was encountered, and these materials were observed within otherwise culturally sterile soil. All recovered materials were redeposited in the ground at the respective sample locations prior to backfilling of the auger samples.



Figure 10. Mano fragment. April 7, 2022.

While in transit from AU-15 to AU-18, ECORP recorded a unifacial granitic mano fragment eroding from the edge of a terrace face (Figure 10), approximately 50 cm below the terrace surface. It measured 7.5 cm long, 3.9 cm wide, and 3.5 cm tall. This was the only lithic artifact observed during testing and evaluation phases. Its location coincided with an area indicated on Van Bueren's sketch map as a shell concentration.

During the testing phase, a local resident mentioned that the Study Area has been prone to slope failures in the past, resulting in Piraeus Street being covered in debris, which was then redeposited on the property. The only other mention of this that was found was in a comment to the Encinitas City Council on August 8, 2018, giving the dates of June 13, 2001; August 2, 2001; December 20, 2002; and October 22, 2003 (Kaden 2018).

5.4 Evaluation of P-37-012130

Precontact archaeological site P-37-012130 (CA-SDI-12130) has not been previously evaluated for the NRHP or the CRHR. The archaeological materials identified during the auger testing program have been determined to be an extension of P-37-012130 in the current Project Area. However, the materials identified during the auger testing program lack context and do not appear representative of intact deposits. Examination of the soil in the auger buckets upon excavation in controlled levels suggests that the cultural material observed in two of the four auger locations was highly disturbed and not associated with any intact archaeological strata. Marine shell is a common occurrence in the area, and its presence alone would not ordinarily suggest an archaeological site. However, the presence of several precontact archaeological sites nearby suggests that these observances may be residue from site P-37-012130 that have been relocated and moved out of context. Had site P-37-012130 extended, intact, into the proposed project area, ECORP would have expected a much greater variety of artifacts and cultural deposits both on the surface and within the auger locations.

The presence of the newly identified materials has likely been caused by decades of prior ground disturbance on the Project parcel and in the surrounding landscape. Massive earthwork associated with construction of I-5 as well as previously recorded slope failures/landslides have undoubtedly impacted site P-37-012130 in the past. Grading and earthwork within the Project Area likely caused any artifacts to no longer remain in their primary (original) context, and therefore, their ability to provide information important to prehistory is limited. Therefore, while these materials have been determined as an extension of historical resource P-37-012130, these cultural materials lack integrity and are not eligible for inclusion in the CRHR or NRHP under Criteria 4/D. Further, because the auger locations were specifically selected to coincide with planned excavation for the proposed project, the results of the auguring program reflect the potential impact (or lack thereof) to the eligible site. No information exists within any of the sources sought for this study to indicate that the site is eligible under any of the criteria for the NRHP or CRHR. Based on the current evidence, no significant impact will occur to P-37-012130 as a result of the proposed Project.

6.0 MANAGEMENT CONSIDERATIONS

6.1 Conclusions

ECORP evaluated the portion of precontact cultural resource P-37-012130 that is within the Project Area's area of proposed development and found it not eligible for inclusion on the NRHP or CRHR under any criteria based on archaeological information. Tribal consultation between the City and culturally affiliated tribes is ongoing. The determination about impacts to tribal cultural resources is being addressed separately by the City. No ground disturbance should occur until the lead agencies concur with this finding.

6.2 Likelihood for Subsurface Cultural Resources

The CHRIS records search results revealed that 29 precontact resources, four historic-period resources, and two unknown resources are located within one mile of the Study Area. One of these resources, P-37-012130, overlaps with the Study Area. Surface sediments along the eastern edge of the Study Area consist of Holocene surficial sediments atop earlier geological formations, and it is in these strata that precontact archaeological deposits have been previously identified and documented. Due to the presence of sediments contemporaneous with human occupation of the region and the presence of previously recorded precontact resources in the surrounding area and within the Study Area, the potential for subsurface resources in previously undisturbed soils is considered moderate to high. ECORP recommends archaeological and Native American monitoring for any ground disturbance in native soils that may occur as part of the proposed Project so that any discoveries can be managed in accordance with state law as quickly as possible and without undue damage. In addition, the Lead Agency will require that any unanticipated (or post-review) discoveries found during Project construction be managed through a procedure designed to assess and treat the find as quickly as possible and in accordance with applicable state and federal law.

6.3 Recommended Mitigation Measures

6.3.1 Prior to Construction

Prior to the start of construction activities, the Project Proponent shall submit a letter of engagement or a copy of a monitoring contract to the City to show that archaeological and culturally affiliated Native American monitors have been retained for the Project.

A qualified professional archaeologist, meeting or working under the direction of someone meeting the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historic archaeology should be retained to monitor all ground-disturbing activities associated with Project construction, including vegetation removal, clearing, grading, trenching, excavation, or other activities that will disturb original (pre-project) ground.

A Native American monitor from a tribe that is traditionally and culturally affiliated with the Project Area should be retained to monitor all ground-disturbing activities associated with Project construction,

including vegetation removal, clearing, grading, trenching, excavation, or other activities that will disturb original (pre-project) ground.

A reburial location shall be identified as an "environmentally sensitive area" on project plans and communicated to the consulting tribes. If cultural materials are reburied in this location as a result of the procedures in Section 6.6.3, then the landowner shall record a deed restriction over the reburial area within 30 days of the completion of ground disturbing activities. If the location is not used for reburial of materials, then recording a deed restriction on this location is not required.

6.3.2 During Construction

The archaeology monitor shall have the authority to temporarily pause activity at the location in the event of an unanticipated discovery, so that they can direct the procedures in section 6.3.3.

The Native American monitor shall have the authority to temporarily pause activity at the location in the event of an unanticipated discovery, so that they can coordinate with the Project archaeologist on the identification of a potential cultural resource and the Project archaeologist can direct the procedures in the following section.

6.3.3 Post-Review Discovery Procedures

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for precontact and historic archaeologist, shall evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, they shall immediately notify the City and the applicable landowner. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines, or a Historic Property, as defined in 36 CFR 60.4. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or Section 106; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the San Diego County Medical Examiner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California PRC, and AB 2641 will be implemented. If the Medical Examiner determines the remains are Native American and not the result of a crime scene, the Medical Examiner will notify

the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (§ 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC may mediate (§ 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§ 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

6.3.4 After Construction

After the completion of all ground-disturbing activities have been completed, documentation related to the in-field archaeological and Native American monitoring will be submitted to the City.

The lead agency is responsible for ensuring compliance with these mitigation measures. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, *Mitigation Monitoring or Reporting*, "the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

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LIST OF APPENDICES

Appendix A – Records Search Confirmation

Appendix B – Sacred Lands File Coordination

Appendix C – Study Area Photographs

Appendix D – ***CONFIDENTIAL*** Cultural Resource Site Locations and Site Records (Redacted)

APPENDIX A

Records Search Confirmation

South Coastal Information Center
San Diego State University
5500 Campanile Drive
San Diego, CA 92182-5320
Office: (619) 594-5682
www.scic.org
nick@scic.org

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM RECORDS SEARCH

Company: ECORP Consulting INC

Company Representative: Michael DeGiovine

Date Processed: 2/14/2022

Project Identification: Piraeus Townhomes Project (2022-023.07)

Search Radius: 1 mile

Historical Resources: JL

Trinomial and Primary site maps have been reviewed. All sites within the project boundaries and the specified radius of the project area have been plotted. Copies of the site record forms have been included for all recorded sites.

Previous Survey Report Boundaries: JL

Project boundary maps have been reviewed. National Archaeological Database (NADB) citations for reports within the project boundaries and within the specified radius of the project area have been included.

Historic Addresses: JL

A map and database of historic properties (formerly Geofinder) has been included.

Historic Maps: N/A

The historic maps on file at the South Coastal Information Center have been reviewed, and copies have been included.

Summary of SHRC Approved CHRIS IC Records Search Elements	
RSID:	3051
RUSH:	no
Hours:	1.5
Spatial Features:	147
Address-Mapped Shapes:	yes
Digital Database Records:	3
Quads:	1
Aerial Photos:	0
PDFs:	Yes
PDF Pages:	4536

This is not an invoice. Please pay from the monthly billing statement

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-00010	NADB-R - 1120010; Voided - DAVIS 03	1989	Davis, McMillan and Susan M. Hector	A Cultural Resources Assessment of the Community Bank Project, La Costa, San Diego County	RECON	37-006825, 37-006868, 37-011589
SD-00014	NADB-R - 1120014; Other - 11520-910075-5957005; Voided - DECOSTA07	1983	DECOSTA, JOAN M.	AN ARCHAEOLOGICAL SURVEY OF THE BATIQUITOS MATERIAL SITE, 11-SD-5, 44.7-45.2, 11520-910075-5957005	Caltrans	37-000211
SD-00020	NADB-R - 1120020; Voided - DAVIS 08	1990	Davis, McMillan and Dayle Cheever	A Cultural Resource Survey of the Southern Pacific Hotel Property, Encinitas, California	RECON	
SD-00148	NADB-R - 1120148; Voided - BERRYS 17	1976	Berryman, Stanley R.	Archaeological Investigation: Quail Gardens.	Stanley R. Berryman	37-004388
SD-00671	NADB-R - 1120671; Voided - GALLEGOS52	1986	Gallegos, Dennis, Dayle Cheever, and Stephan Van Wormer	A Cultural Resource Overview for the Encinitas Planning Area, Enicinitas, California.	WESTEC Services, Inc.	
SD-00707	NADB-R - 1120707; Voided - CHEEVER27	1989	Cheever, Dayle	Cultural Resources Significance Testing at SDi-6753, SDi-6754, SDi-6819, and SDi-2046: Four Prehistoric Sites Within the Aviaro Development Carlsbad, California	RECON	37-002046, 37-006753, 37-006754, 37-006819
SD-00729	NADB-R - 1120729; Voided - KALDENBER1	1975	Kaldenberg, Russell L. and M. Jay Hatley	An Archaeological Impact Report on the Lee G. Brown Tramway	RECON	
SD-00758	NADB-R - 1120758; Voided - CHEEVER25	1989	Cheever, Dayle	Cultural Resource Significance of Savage-1	RECON	37-000600, 37-000601, 37-000693
SD-00879	NADB-R - 1120879; Voided - FINK 54	1973	Fink, Gary R.	Archaeological Survey of the Proposed Sea Bluffe Beach Access	San Diego County Engineer Department	
SD-00886	NADB-R - 1120886; Voided - FINK 46	1973	Fink, Gary R.	Archaeological Survey of the Batiquitos Ocean Beach Access	San Diego County Engineer Department	
SD-00981	NADB-R - 1120981; Voided - GROSS 12	1973	Gross, Tim	An Archaeological Survey of Vallecitos Development Area	San Diego State University	
SD-01009	NADB-R - 1121009; Voided - GALLEGOS36	1987	Gallegos, Dennis	Cultural Resource Testing Program for Archaeological Sites SDi-607, SDi-612, SDi-212, SDi-6825 and W-105 Carlsbad, California	WESTEC Services, Inc.	37-000212, 37-000607, 37-000612, 37-006825
SD-01011	NADB-R - 1121011; Voided - GALLEGO 38	1986	Gallegos, Dennis and Dayle Cheever	Cultural Resource Survey La Costa Avenue, Carlsbad, California	WESTEC Services, Inc.	37-000212, 37-000603, 37-000607, 37-000612, 37-006825

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-01012	NADB-R - 1121012; Voided - GALLEGO39	1988	GALLEGOS, DENNIS and CAROLYN KYLE	CULTURAL RESOURCE SURVEY FOR THE COSTA BRAVA RESORT HOTEL CITY OF ENCINITAS, CALIFORNIA	WESTEC Services, Inc.	
SD-01051	NADB-R - 1121051; Voided - GALLEGO02	1983	GALLEGOS, DENNIS R. and RICHARD CARRICO	ARCHAEOLOGICAL SURVEY OF THE BATIQUITOS LAGOON PROPERTY	WESTEC Services, Inc.	
SD-01083	NADB-R - 1121083; Voided - FIR 15	1979	Flower, Douglas, Darcy Ike, Linda Roth, and Susan Sapone	Archaeologjical Reconnaissance of the Wilderness Estates Project 17.5 Acres-Leucadia, California.	Flower, Ike & Roth Archaeological Consultants	37-000105, 37-000212
SD-01163	NADB-R - 1121163; Voided - HECTOR 36A	1986	Hector, Susan	Resources Studies on the Ecke Ranch, Encinitas.	RECON	37-010646
SD-01287	NADB-R - 1121287; Voided - NORWOOD 20	1977	Norwood, Richard H.	An Archaeological Suvey of the Greer Property.	RECON	
SD-01474	NADB-R - 1121474; Voided - SRS 18	1982	Scientific Resource Surveys, Inc.	Cultural Resources Report on the Rancho La Costa Properties Located in the County of San Diego	Scientific Resource Surveys, Inc.	
SD-01638	NADB-R - 1121638; Voided - WOODWARD04	1985	Woodward, Jim and George Stammerjohan	Resource Inventory Cultural Resources San Diego Coast State Beaches	Department of Parks and Recreation	37-004612, 37-006854, 37-009586, 37-009587, 37-009588, 37-009589, 37-009590, 37-009598
SD-01922	NADB-R - 1121922; Voided - HANNA 07	1977	Hanna, David Jr	Saxony Road Lot Splits: An Archaeological Reconnaissance Near Leucadia, California	Archaeological Systems Management	
SD-01958	NADB-R - 1121958; Voided - SMITHB 83	1990	Smith, Brian F.	The Results of an Archaeological Study of Site SDi-11,953 for the Batiquitos Lagoon Enhancement Project An Evaluation of Archaeological Resources at a Sites SDi-11,953 and SDi-600 and their Interrelatedness	Brian F. Smith and Associates	37-000600, 37-011953
SD-01981	NADB-R - 1121981; Voided - SMITHB 44	1985	Smith, Brian F. and James R. Moriarty III	The Archaeological Excavations of Cultural Resources at the Batiquitos Pointe and Batiquitos Bluffs Projects, Sites W-84, W-88, W-95, W-97, and W-2551	Archaeological/Historical Consultants	

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-01984	NADB-R - 1121984; Voided - WESTEC 07	1980	WESTEC Services, Inc.	Regional Historic Preservation Study	WESTEC Services,Inc.	37-000209, 37-000210, 37-000211, 37-000212, 37-000600, 37-000601, 37-000602, 37-000603, 37-000608, 37-000610, 37-000626, 37-000627, 37-000628, 37-000629, 37-000630, 37-000690, 37-000691, 37-000692, 37-000693, 37-000694, 37-000695, 37-000696, 37-000760, 37-001014, 37-004358, 37-005077, 37-005213, 37-005214, 37-005353
SD-02012	NADB-R - 1122012; Voided - ENGLEHOR02	1980	Englehorn, Curtis Scott	Draft Focused Environmental Impact Report for the House of Mazada Property	Curtis Scott Englehorn	
SD-02167	NADB-R - 1122167; Voided - MLA 21	1983	MOONEY-LETTIERI AND ASSOCICATES,INC	DRAFT ENVIRONMENTAL IMPACT REPORT FOR PACIFIC VIEW PRD TM 4359,P82-48,LOG# 82-7-32	MOONEY-LETTIERI AND ASSOCIATES,INC	37-000762
SD-02173	NADB-R - 1122173; Voided - MLA 15	1985	MOONEY-LETTIERI AND ASSOCIATES,INC	DRAFT ENVIRONMENTAL IMPACT REPORT FOR MONTE MIRA TENTATIVE MAP AND PRD TM4563 P85-082 LOG#85-7-30	MOONEY-LETTIERI AND ASSOCIATES,INC	37-000612
SD-02349	NADB-R - 1122349; Voided - SMITHB 149	1992	SMITH, BRIAN F.	AN ARCHAEOLOGICAL SURVEY OF THE SAXONY ROAD LOT SPLIT PROJECT	BRIAN F. SMITH AND ASSOCIATES	
SD-02446	NADB-R - 1122446; Other - R-1745A; Voided - CHEEVER42	1991	CHEEVER, DAYLE	DATA RECOVERY PROJECT FOR NINE CULTURAL RESOURCE SITES: AVIARA DEVELOPMENT	RECON	37-000600, 37-000601, 37-000691, 37-000692, 37-000693, 37-000694, 37-006826, 37-010439
SD-02585	NADB-R - 1122585; Voided - CHEEVER44	1992	CHEEVER, DAYLE M.	RESULTS OF THE PREGRADE MECHANICAL EXCAVATION AND MITIGATION AT SDI-691 AVIARA DEVELOPMENT, CARLSBAD	RECON	
SD-02753	NADB-R - 1122753; Other - 1020; Voided - SRS 55	1993	SCIENTIFIC RESOURCE SURVEYS, INC	SUBSURFACE TESTING AND HISTORICAL ASSESSMENT OF THE 836 ACRE ENCINITAS RANCH, ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	SCIENTIFIC RESOURCE SURVEYS, INC	37-010646, 37-010647
SD-02908	NADB-R - 1122908; Other - 863; Voided - SRS 62	1989	SCIENTIFIC RESOURCE SURVEYS, INC.	CULTURAL AND PALEONTOLOGICAL RESOURCE INVESTIGATIONS OF THE ENCINITAS HOMESPROPERTY, SAN DIEGO, CALIFORNIA	SCIENTIFIC RESOURCE SURVEYS, INC.	

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-03028	NADB-R - 1123028; Voided - SMITHB 252	1995	SMITH, BRIAN	RESULTS OF AN ARCHAEOLOGICAL EVALUATION OF CULTURAL RESOURCES WITHIN THE PROPOSED CORRIDOR FOR THE SAN ELIJO WATER RECLAMATION SYSTEM (PROJECT NO. C-06-4155-110)	BRIAN F. SMITH AND ASSOCIATES	37-013925, 37-013926
SD-03173	NADB-R - 1123173; Voided - KYLE 66	1996	KYLE, CAROLYN AND DENNIS R GALLEGOS	CULTURAL RESOURCE SURVEY REPORT FOR THE INTERSTATE 5/LEUCADIA BOULDEVARD INTERCHANGE PROJECT, LEUCADIA, CALIFORNIA (INCLUDES CONFIDENTIAL APPENDIX	GALLEGO AND ASSOCIATES	
SD-03309	NADB-R - 1123309; Voided - SCHAEFER12	1998	SCHAEFER, JERRY	SAXONY PUMP STATION SURVEY AND REPORT OF NEGATIVE RESULTS	ASM AFFILIATES	
SD-03678	NADB-R - 1123678; Other - CASE NO. 95-205 TPM; Voided - WADE 59	1996	WADE, SUE A	CULTURAL RESOURCE SURVEY AND SIGNIFICANCE EVALUATION FOR THE CHARRETTE SUBDIVISION (95-205 TENTATIVE PARCEL MAP), ENCINITAS, CALIFORNIA	MR ORMAN BLACKWELL	37-015583
SD-03819	NADB-R - 1123819; Voided - KYLE83	2000	KYLE, CAROLYN	CULTURAL RESOURCE MONITORING FOR CONSTRUCTION GRADING OF THE SANTALINA COMMUNITY PROJECT CITY OF CARLSBAD, CALIFORNIA	KYLE CONSULTING	37-000211
SD-03851	NADB-R - 1123851; Voided - EIGHMEY12	2000	JAMES D. EIGHMEY, CHERYL BOWDEN-RENNA	ARCHAEOLOGICAL SURVEY FOR THE CITY OF ENCINITAS SEGMENT OF THE MULTIPLE HABITAT CONSERVATION PROGRAM ACQUISITION PROJECT (ER 2000-14) ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	KEA ENVIRONMENTAL, INC.	
SD-04111	NADB-R - 1124111; Voided - SEEMAN01	1982	Larry Seeman	Draft Environmental Impact Report Revised Parks and Recreation Element, Carlsbad, California	Larry Seeman	
SD-04226	NADB-R - 1124226; Voided - MCCORKLE18	1994	MCCORKLE-APPLE, REBECCA	HISTORIC PROPERTY SURVEY REPORT FOR WIDENING LA COSTA AVENUE OVERCROSSING	KEA ENVIRONMENTAL	
SD-04364	NADB-R - 1124364; Voided - GALLEGO216	1986	GALLEGOS, DENNIS AND RICHARD CARRICO	CULTURAL RESOURCE TESTING PROGRAM FOR ARCHAEOLOGICAL SITES SDI-607, SDI-612, SDI-212, SDI-6825, AND W-105, CARLSBAD, CA	WESTEC SERVICES, INC	
SD-04439	NADB-R - 1124439; Voided - MLA27	1982	MOONEY-LETTIERI ASSOCIATES	ARCHAEOLOGICAL SURVEY REPORT FOR THE PACIFIC VIEW PRD	MOONEY-LETTIERI AND ASSOCIATES, INC	37-000762

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Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-04629	NADB-R - 1124629; Voided - TOUPS11	1979	PRC TOUPS CORPORATION	DRAFT ENVIRONMENTAL IMPACT REPORT APPENDICES WILDERNESS ESTATES PLANNED RESIDENTIAL DEVELOPMENT SAN DIEGO COUNTY, CALIFORNIA	PRC TOUPS CORPORTATION	37-000212
SD-04640	NADB-R - 1124640; Voided - WESTEC29	1981	WESTEC	QUAIL GARDENS UNIT 1 DRAFT ENVIRONMENTAL IMPACT REPORT	WESTEC SERVICES,INC.	37-004380
SD-04711	NADB-R - 1124711; Other - SRS JOB# 1003; Voided - BOXT 01	1992	BOXT, MATTHEW A. and CHRISTINE BARRETTA	A PALEONTOLOGICAL AND CULTURAL RESOURCE INVESTIGATION OF THE ENCINITAS RANCH, SAN DIEGO COUNTY, CALIFORNIA	SCIENTIFIC RESOURCE SURVEY	37-000212, 37-000604, 37-000605, 37-000607, 37-000608, 37-000612, 37-000688, 37-000762, 37-000764, 37-001015, 37-004391, 37-004555, 37-005227, 37-006146, 37-006147, 37-006148, 37-010646, 37-010647, 37-011027, 37-011589, 37-012598
SD-04745	NADB-R - 1124745; Voided - VANBUEREN2	1988	Van Bueren, Thad	Arch. Assessment For The Batiquitos Loagoon Enhancement Project. San Diego County.	Van Bueren, Thad.	
SD-04747	NADB-R - 1124747; Voided - SMITH 354	1990	Smith, Brian	The Results of an Archaeological Study of Site SDI-11953 for the Batiquitos Lagoon Enhancement Project	Brian F. Smith & Associates	37-000600, 37-011953
SD-04891	NADB-R - 1124891; Voided - RECONEIR01	1975	RECON	DRAFT EIR FOR PREZONE AND ANEXATION	RECON	
SD-04952	NADB-R - 1124952; Other - R-1488; Voided - RECON98	1985	RECON	DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE BATIQUITOS LAGOON EDUCATIONAL PARK MASTER PLAN EIR 84-3	RECON	
SD-05167	NADB-R - 1125167; Voided - SMITH362	1996	Smith, Brian	Results of Archaeological Monitoring of the Poinsettia Shores Project City of Carlsbad San Diego County, California	Brian F. Smith and Associates	
SD-06089	NADB-R - 1126089; Voided - SMITHD 11	1973	SMITH, DAVID	ARCHAEOLOGICAL SALVAGE OF THE FOX POINT SITE	DAVID D. SMITH & ASSOC.	
SD-06643	NADB-R - 1126643; Voided - KYLE 129	1996	KYLE, CAROLYN and DENNIS GALLEGOS	NEGATIVE ARCHAEOLOGICAL SURVEY INTERSTATE 5 & LEUCADIA BLVD	GALLEGOS & ASSOC.	
SD-07730	NADB-R - 1127730; Voided - CARRICO260	1983	CARRICO, RICHARD	ARCHAEOLOGICAL SURVEY OF THE BATIQUITOS LAGOON PROPERTY	WESTEC	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-07853	NADB-R - 1127853; Voided - BUYSSEJ 25	2000	BUYSSE, JOHNNA L. and BRIAN F. SMITH	SALVAGE EXCAVATIONS AT SITE SDM-W-95 (CA-SDI-211) FOR THE POINSETTIA SHORES SANTALINA DEVELOPMENT PROJECT CARLSBAD, CA	BRIAN SMITH ASSOC.	37-000211
SD-08567	NADB-R - 1128567; Voided - WESTEC83	1986	WESTE C SERVICES, INC.	PACIFIC RIM COUNTRY CLUB AND RESORT DRAFT ENVIRONMENTAL IMPACT REPORT	WESTEC SREVICES, INC.	37-000692, 37-000694, 37-006822, 37-006826, 37-006828, 37-010440
SD-08923	NADB-R - 1128923; Voided - PLETKA14	2003	PLETKA, NICOLE	Cultural Resource Assessment for AT&T Wireless Services Facility No. 20119A Jamul, San Diego County, California	LSA Associates, Inc.	
SD-09361	NADB-R - 1129361; Other - 11A0398; Voided - BYRD15	2002	Byrd, Brian F. and Collin O'Neill	Archaeological Survey Report for the Phase I Archaeological Survey along Interstate 5 San Diego County, CA.	ASM, Inc	37-000606, 37-004552, 37-004553, 37-006851, 37-007296, 37-012120, 37-013484
SD-09362	NADB-R - 1129362; Other - 11A0398, 11A0742; Voided - LAYLAND50	2004	Laylander, Don and Mark Becker	Archaeological Testing at Twelve Prehistoric Sites (SDI-603, -628, -4553, -6831, -6882, 10965, -12670, 13484, 15678, 15679, 15680) on the Central San Diego Coast, San Diego County, CA.	ASM	37-000603, 37-000628, 37-004553, 37-006831, 37-006882, 37-010965, 37-012120, 37-012670, 37-013484, 37-018804, 37-018805, 37-018806
SD-09571	NADB-R - 1129571; Other - 12-03; Voided - GUERREM 20	2003	GUERRERO, MONICA C and DENNIS R. GALLEGOS	CITY OF CARLSBAD WATER AND SEWER MASTER PLANS CULTURAL RESOURCE BACKGROUND STUDY CITY OF CARLSBAD, CALIFORNIA	GALLEGOS & ASSOCIATES	37-000628, 37-000694, 37-005353, 37-006826
SD-09977	NADB-R - 1129977; Voided - MAYR78	1973	MAY, RONALD	ARCHAEOLOGICAL SURVEY OF THE PROPOSED FOX POINT DEVELOPMENT TM3251	DAVID D. SMITH AND ASSOCIATES	
SD-10004	NADB-R - 1130004; Voided - AISLIM24	2004	Aislin-Kay, Marnie	Cultural Resource Reacord Search and Site Visit Results for Cingular Communications Facility Candidate (Cabo Grill), 1950 North Coast Highway, Encinitas, San Diego County, California.	Michael Brandman and Associates	
SD-10372	NADB-R - 1130372; Voided - HERIT02	2006	HERITAGE ARCHITECTURE & PLANNING	THE DOLMAN HOUSE, 1657 VOLCAN AVENUE, ENCINITAS, CALIFORNIA, HISTORIC AMERICAN BUILDINGS SURVEY LEVEL III DOCUMENTATION	HERITAGE ARCHITECTURE & PLANNING	
SD-10659	NADB-R - 1130659; Voided - SMITHB539	2006	ROSENBERG, SETH A. and BRIAN F. SMITH	AN ARCHAEOLOGICAL SURVEY FOR THE PONTO BEACHFRONT VILLAGE VISION PLAN PROJECT, CITY OF CARLSBAD, CALIFORNIA (GPA 05-04/LCPA 05-01/DI05-01)	BRIAN F. SMITH AND ASSOCIATES	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-11761	NADB-R - 1131761; Voided - DOMINICI67	2007	DOMINICI, DEB	HISTORIC PROPERTY SURVEY REPORT, I-5 NORTH COAST WIDENING PROJECT	CALTRANS	
SD-11774	NADB-R - 1131774; Voided - ROBBINS245	2006	ROBBINS-WADE, MARY	ARCHAEOLOGICAL SURVEY REPORT, ENCINITAS GRADE-SEPARATED PEDESTRIAN CROSSINGS, ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	AFFINIS	
SD-12017	NADB-R - 1132017; Voided - GALLEGO319	2004	GALLEGOS, DENNIS R., MONICA GUERRERO, STEVEN VAN WORMER, and SUSAN WALTER	CULTURAL RESOURCE SURVEY AND EVALUATION FOR THE ASTOR GARDENS PROJECT ENCINITAS, CALIFORNIA	GALLEGOS & ASSOCIATES	
SD-12401	NADB-R - 1132401; Voided - PIERSON203	2008	PIERSON, LARRY J.	HISTORICAL ARCHITECTURAL EVALUATION OF THE STRUCTURE AT 1521 NEPTUNE AVENUE IN ENCINITAS, CALIFORNIA 92024	BRIAN F. SMITH & ASSOCIATES	
SD-12543	NADB-R - 1132543; Voided - BONNEW251	2008	BONNER, WAYNE and SARAH WILLIAMS	CULTURAL RESOURCE RECORDS SEARCH RESULTS AND SITE VISIT FOR T-MOBILE USA CANDIDATE SD07108A (CABO GRILL R.O.W.) AT 1967-1/2 NORTH HIGHWAY 101, ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	MICHAEL BRANDMAN ASSOCIATES	
SD-12753	NADB-R - 1132753; Voided - LAYLAD74	2009	LAYLANDER, DON, ARLEEN GARCIA-HERBST, and ELIZABETH POTTER	ARCHAEOLOGICAL SURVEY FOR THE CALTRANS I-5 NORTH COAST CORRIDOR PROJECT BIOLOGICAL MIITGATION PARCELS SOUTH OF BATIQIITOS LAGOON, SAN DIEGO COUNTY, CALIFORNIA	ASM AFFILIATES	37-000607, 37-000612, 37-000762, 37-012130
SD-12762	NADB-R - 1132762; Voided - DOMINICI70	2010	DOMINICI, DEBORAH	HISTORIC PROPERTY SURVEY REPORT FOR THE INTERSTATE 5 NORTH COAST CORRIDOR PROJECT	DOMINICI, DEBORAH	
SD-13488	NADB-R - 1133488; Voided - YORKAND13	2011	YORK, ANDREW L. and JOHN HILDEBRAND	CULTURAL RESOURCES INVESTIGATION IN SUPPORT OF CONSULTATION FOR THE REGIONAL BEACH SAND II PROJECT SAN DIEGO COUNTY, CALIFORNIA	AECOM	37-000215, 37-000760, 37-004641, 37-004658, 37-006850, 37-006854, 37-007979, 37-009589, 37-010220, 37-010940, 37-013212, 37-013506, 37-013507, 37-013729, 37-013730, 37-013731, 37-014007, 37-014008, 37-017027, 37-018804, 37-026506, 37-026512, 37-026517, 37-026518, 37-027178

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-13797	NADB-R - 1133797; Voided - LORWEB01	2012	LOREN-WEBB, BARBARA	NEGATIVE FINDINGS LETTER REPORT REGARDING APNS 254-351-30-00, 254-351-31-00, AND 254-351-32-00, AN APPROXIMATE 9.09 ACRE PROPERTY IN THE CITY OF ENCINITAS, COUNTY OF SAN DIEGO, CALIFORNIA	L&L ENVIRONMENTAL, INC.	
SD-13798	NADB-R - 1133798; Voided - LORWEB02	2012	LOREN-WEBB, BARBARA	FINAL REPORT PALEONTOLOGICAL MITIGATION MONITORING ON APNS 254-351-30-00, 254-351-31-00, AND 254-351-32-00 AN APPROXIMATE 9.09 ACRE PROPERTY IN THE CITY OF ENCINITAS, COUNTY OF SAN DIEGO, CALIFORNIA	L&L ENVIRONMENTAL, INC.	
SD-13916	NADB-R - 1133916; Voided - CALTRANS88	2012	CALTRANS	INTERSTATE 5 NORTH COAST CORRIDOR PROJECT SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONEMENTAL IMPACT STATEMENT	CALTRANS	
SD-14361	NADB-R - 1134361; Voided - STILLWL06	2012	STILLWELL, LARRY N.	LOW RESIDENCE 880297, 1748 NOMA LANE, ENCINITAS, SAN DIEGO CO., CALIFORNIA	ARCHAEOLOGICAL CONSULTANTS OF OSSIAN	
SD-14495	NADB-R - 1134495; Voided - CALTRANS89	2013	CALTRANS	INTERSTATE 5 NORTH COAST CORRIDOR PROJECT FINAL ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL IMPACT STATEMENT AND SECTION 4(F) EVALUATION	CALTRANS	
SD-14615	NADB-R - 1134615; Voided - CALTRANS90	2007	CALTRANS	INTERSTATE 5 CORRIDOR PROJECT HISTORIC PROPERTY SURVEY REPORT AND SUPPLEMENTALS	CALTRANS	
SD-15018	NADB-R - 1135018	2014	ANDREW R. PIGNIOLO	CULTURAL RESOURCES SURVEY REPORT FOR THE LEUCADIA WASTEWATER DISTRICT B2 FORCE MAIN REPLACEMENT PROJECT, CITY OF CARLSBAD, CALIFORNIA	LAGUNA MOUNTAIN ENVIRONMENTAL, INC.	37-033595
SD-15451	NADB-R - 1135451	2015	Andrew R. Pigniolo	CULTURAL RESOURCES MONITORING REPORT FOR THE LEUCADIA WASTEWATER DISTRICTB2 FORCE MAIN REPLACEMENT PROJECT, CITY OF CARLSBAD, CALIFORNIA	Laguna Mountain Environmental	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-15664	NADB-R - 1135664	2014	Shannon L. Loftus	CULTURAL RESOURCE RECORDS SEARCH AND SITE SURVEY, AT&T SITE SD0752, 101 LEUCADIA BOULEVARD, ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA 92024, CASPR# 3601000554	ACE Environmental	
SD-16127	NADB-R - 1136127	2008	Deb Dominici and Don Laylander	2007 CULTURAL RESOURCES TREATMENT PLAN NORTH COAST INTERSTATE 5 CORRIDOR	CALTRANS	
SD-16131	NADB-R - 1136131	2013	Michelle Blake	SIXTH SUPPLEMENTAL HISTORIC PROPERTY SURVEY REPORT (HPSR): REVISED AREA OF POTENTIAL EFFECTS (APE) I-5 NORTH COAST CORRIDOR	Caltrans	
SD-16271	NADB-R - 1136271	2014	Phil Fulton	CULTURAL RESOURCE ASSESSMENT CLASS III INVENTORY VERIZON WIRELESS SERVICES 101 LA COSTA FACILITY CITY OF ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	LSA Associates	
SD-16769	NADB-R - 1136769	2016	Smith, Brian F.	PRELIMINARY RESULTS: A CULTURAL RESOURCES SURVEY FOR THE LA COSTA 45 PROJECT CITY OF ENCINITAS, CALIFORNIA	Brian F. Smith and Associates	
SD-17104	NADB-R - 1137104	2017	FOGLIA, SHANNON E., Rachel Droessler, and Theodore Cooley	CULTURAL RESOURCES PHASE I SURVEY REPORT FOR THE LA COSTA AVENUE STORM DRAIN OUTFALL MAINTENANCE PROJECT, CARLSBAD, CALIFORNIA	AECOM	37-000607, 37-006868, 37-027635
SD-17106	NADB-R - 1137106	2017	DROESSLER, RACHEL, Shannon E. Foglia, and Theodore Cooley	CULTURAL REOURCES PHASE I SURVEY REPORT FOR THE NEW STORM DRAIN, LA COSTA AVENUE PROJECT, CARLSBAD, CALIFORNIA	AECOM	37-000607
SD-17205	NADB-R - 1137205	2016	ROBBINS-WADE, MARY, Kristina Davison, and Nicole Falvey	CULTURAL RESOURCES SURVEY AND ASSESSMENT 964 URANIA AVENUE, ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	HELIX Environmental Planning, Inc.	37-035494

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-17562	NADB-R - 1137562	2018	SMITH, BRIAN F., JENNIFER R.K. STROPES, ELENA C. GORALOGIA, COURTNEY J. ACCARDY, CAITLIN A.M. FOOTE, and RYAN B. ANDERSON	BUILDING DOCUMENTATION 305 HILLCREST DRIVE, ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	BRIAN F. SMITH AND ASSOCIATES, INC.	
SD-17571	NADB-R - 1137571	2018	SMITH, BRIAN F. and J.R.K. STROPES	HISTORIC STRUCTURE ASSESSMENT FOR 305 HILLCREST DRIVE, ENCINITAS, CALIFORNIA (APN 216-082-63)	BRIAN F. SMITH AND ASSOCIATES, INC.	
SD-17634	NADB-R - 1137634	2017	DAVIS, NICHOLE JORDAN	ARCHAEOLOGICAL TESTING AND RESEARCH DESIGN FOR THE WESTON SUBDIVISION PROJECT, CITY OF ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	MICHAEL BAKER INTERNATIONAL	37-027519, 37-037812
SD-17635	NADB-R - 1137635	2017	ZINN, TIMOTHY G.	FINDINGS OF NATIONAL REGISTER ELIGIBILITY AND ASSESSMENT OF INTEGRITY OF THE WESTON FARM FOR THE WESTON SUBDIVISION PROJECT, ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	MICHAEL BAKER INTERNATIONAL	37-029964
SD-18146	NADB-R - 1138146	2019	O'CONNOR, JOHN T.	CULTURAL RESOURCES INVENTORY AND EVALUATION, LA COSTA HOTEL PROJECT, CITY OF ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	ECORP CONSULTING, INC.	37-000603
SD-18575	NADB-R - 1138575; Other - COGSTONE PROJECT NUMBER: 2661	2014	KEELER, DUSTIN and SHERRI GUST	CULTURAL CONSTRAINTS FOR THE BATIQUITOS LAGOON DOUBLE-TRACK PROJECT, CITIES OF CARLSBAD AND ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	COGSTONE	37-011026
SD-18872	NADB-R - 1138872	2019	PIGNIOLO, ANDREW	CULTURAL RESOURCE SURVEY REPORT FOR THE MACKEY RESIDENCE PROJECT, CITY OF ENCINITAS, CALIFORNIA (MULTI-3258-2019, CDPNF-2360-2019, DR-3259-2019)	LAGUNA MOUNTAIN ENVIRONMENTAL, INC.	
SD-18931	NADB-R - 1138931; Other - LEAD AGENCY IDENTIFIER: SCSB 18/19-SD-06	2020	STROPES, TRACY A.	CULTURAL RESOURCES MONITORING REPORT FOR THE ENCINITAS BEACH HOTEL PROJECT, ENCINITAS, CALIFORNIA	BRIAN F. SMITH AND ASSOCIATES, INC.	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SD-19046	NADB-R - 1139046	2020	O'CONNOR, JOHN, JEREMY ADAMS, MICHAEL DEGIOVINE, LAUREL ZICKLER-MARTIN, and LISA WESTWOOD	CULTURAL RESOURCES INVENTORY AND EVALUATION REPORT 1967 NORTH VULCAN AVENUE, SAN DIEGO COUNTY, CALIFORNIA	ECORP CONSULTING, INC.	
SD-19338	NADB-R - 1139338; Other - SUBMITTED WITH SIITE FORMS; RNID-4926	2021	HEARTH, NICHOLAS F. and CHRIS WENDT	CULTURAL RESOURCES IDENTIFICATION MEMO REPORT FOR THE FENWAY 101 EIR PROJECT, CITY OF ENCINITAS, SAN DIEGO COUNTY, CALIFORNIA	MICHAEL BAKER INTERNATIONAL	,

APPENDIX B

Sacred Lands File Coordination

NATIVE AMERICAN HERITAGE COMMISSION

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Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

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NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

March 24, 2022

John O'Connor
ECORP Consulting, Inc.

Via Email to: joconnor@ecorpconsulting.com

Re: 2022-023.01 Piraeus Townhomes Project, San Diego County

Dear Mr. O'Connor:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Diego County
3/24/2022

Barona Group of the Capitan Grande
Edwin Romero, Chairperson
1095 Barona Road — Diegueno
Lakeside, CA, 92040
Phone: (619) 443 - 6612
Fax: (619) 443-0681
cloyd@barona-nsn.gov

Campo Band of Diegueno Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Diegueno
Campo, CA, 91906
Phone: (619) 478 - 9046
Fax: (619) 478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Band of Kumeyaay Indians
Michael Garcia, Vice Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 933 - 2200
Fax: (619) 445-9126
michaelg@leaningrock.net

Ewiiaapaayp Band of Kumeyaay Indians
Robert Pinto, Chairperson
4054 Willows Road — Diegueno
Alpine, CA, 91901
Phone: (619) 368 - 4382
Fax: (619) 445-9126
ceo@ebki-nsn.gov

Iipay Nation of Santa Ysabel
Virgil Perez, Chairperson
P.O. Box 130 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 765 - 0845
Fax: (760) 765-0320

Iipay Nation of Santa Ysabel
Clint Linton, Director of Cultural Resources
P.O. Box 507 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 803 - 5694
cjlinton73@aol.com

Inaja-Cosmit Band of Indians
Rebecca Osuna, Chairperson
2005 S. Escondido Blvd. — Diegueno
Escondido, CA, 92025
Phone: (760) 737 - 7628
Fax: (760) 747-8568

Jamul Indian Village
Lisa Cumper, Tribal Historic Preservation Officer
P.O. Box 612 — Diegueno
Jamul, CA, 91935
Phone: (619) 669 - 4855
lcumper@jiv-nsn.gov

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Diegueno
Jamul, CA, 91935
Phone: (619) 669 - 4785
Fax: (619) 669-4817
epinto@jiv-nsn.gov

Kwaaymii Laguna Band of Mission Indians
Carmen Lucas,
P.O. Box 775 — Kwaaymii
Pine Valley, CA, 91962 — Diegueno
Phone: (619) 709 - 4207

La Jolla Band of Luiseno Indians
Norma Contreras, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 3771

La Posta Band of Diegueno Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
LP13boots@aol.com

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 2022-023.01 Piraeus Townhomes Project, San Diego County.

La Posta Band of Diegueno Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Diegueno
Boulevard, CA, 91905
Phone: (619) 478 - 2113
Fax: (619) 478-2125
jmiller@LPtribe.net

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Diegueno
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

Mesa Grande Band of Diegueno Mission Indians
Michael Linton, Chairperson
P.O Box 270 — Diegueno
Santa Ysabel, CA, 92070
Phone: (760) 782 - 3818
Fax: (760) 782-9092
mesagrandeband@msn.com

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pauma Band of Luiseno Indians
Temet Aguilar, Chairperson
P.O. Box 369 — Luiseno
Pauma Valley, CA, 92061
Phone: (760) 742 - 1289
Fax: (760) 742-3422
bennaecalac@aol.com

Pechanga Band of Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
epreston@pechanga-nsn.gov

Pechanga Band of Indians
Paul Macarro, Cultural Resources Coordinator
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6306
Fax: (951) 506-9491
pmacarro@pechanga-nsn.gov

Rincon Band of Luiseno Indians
Bo Mazzetti, Chairperson
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 749 - 1051
Fax: (760) 749-5144
bomazzetti@aol.com

Rincon Band of Luiseno Indians
Cheryl Madrigal, Tribal Historic Preservation Officer
One Government Center Lane — Luiseno
Valley Center, CA, 92082
Phone: (760) 297 - 2635
crd@rincon-nsn.gov

San Luis Rey Band of Mission Indians
1889 Sunset Drive — Luiseno
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive — Luiseno
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed 2022-023.01 Piraeus Townhomes Project, San Diego County.

Native American Heritage Commission
Native American Contact List
San Diego County
3/24/2022

San Pasqual Band of Diegueno Mission Indians
Allen Lawson, Chairperson
P.O. Box 365 — Diegueno
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
allenl@sanpasqualtribe.org

San Pasqual Band of Diegueno Mission Indians
John Flores, Environmental Coordinator
P. O. Box 365 — Diegueno
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

Soboba Band of Luiseno Indians
Isaiah Vivanco, Chairperson
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 654 - 5544
Fax: (951) 654-4198
ivivanco@soboba-nsn.gov

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951) 663 - 5279
Fax: (951) 654-4198
jontiveros@soboba-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 2613
Fax: (619) 445-1927
ssilva@sycuan-nsn.gov

Sycuan Band of the Kumeyaay Nation
Kristie Orosco, Kumeyaay Resource Specialist
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 6917

Viejas Band of Kumeyaay Indians
Ernest Pingleton, Tribal Historic Officer, Resource Management
1 Viejas Grade Road — Diegueno
Alpine, CA, 91901
Phone: (619) 659 - 2314
epingleton@viejas-nsn.gov

Viejas Band of Kumeyaay Indians
John Christman, Chairperson
1 Viejas Grade Road — Diegueno
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337

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APPENDIX C

Study Area Photographs

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PHOTOGRAPH RECORD

Primary#
HRI#
Trinomial

Page 1 **of** 1 **Project Name:** 2022-023.01 Piraeus and Plato Encinitas **Year:** 2022
Camera Format: Digital Lens Size: Digital Film Type and Speed: Digital
Negatives Kept at: ECORP Consulting, Inc. 3838 Camino del Rio North, Suite 370 San Diego, CA 92108

Mo.	Day	Time	Exp./Frame	Subject/Description	View Toward	Accession #
3	2	0719	1	Overview from La Costa Ave east of Piraeus	SSE	20220302_071906
3	2	0724	2	Overview from start at north end of Piraeus	S	20220302_072418
3	2	0751	3	Overview from west APE edge north of Sky Loft	S	20220302_075127
3	2	0754	4	Chione shell side one	Closeup	20220302_075446
3	2	0754	5	Chione shell side 2	Closeup	20220302_075453
3	2	0805	6	Pecten shell fragments	Closeup	20220302_080504
3	2	0823	7	Overview from south edge of mitigation bank area (Sky Loft Drive is visible)	N	20220302_082348
3	2	0829	8	FAR fragment	Closeup	20220302_082932
3	2	0841	9	Modern Encampment	NE	20220302_084143
3	2	0914	10	Overview from NE corner of southern parcel	NW	20220302_091438
3	2	0915	11	Overview from NE corner of southern parcel	SSW	20220302_091535
3	2	0918	12	Bike Track	SSE	20220302_091819
3	2	0931	13	Southernmost graded pad	SW	20220302_093128
3	2	0949	14	Overview from SE Corner of APE	N	20220302_094919
3	2	0949	15	Overview from SE Corner of APE	NW	20220302_094927
3	2	0950	16	Overview from SE Corner of pad	NW	20220302_095034
3	2	0954	17	Overview from SW corner of APE	E	20220302_095454
3	2	0955	18	Overview from SW corner of APE	NE	20220302_095508


20220302_071906


20220302_072418


20220302_075127


20220302_075446


20220302_075453


20220302_080504


20220302_082348


20220302_082932


20220302_084143


20220302_091438


20220302_091535


20220302_091819


20220302_093128


20220302_094919


20220302_094927

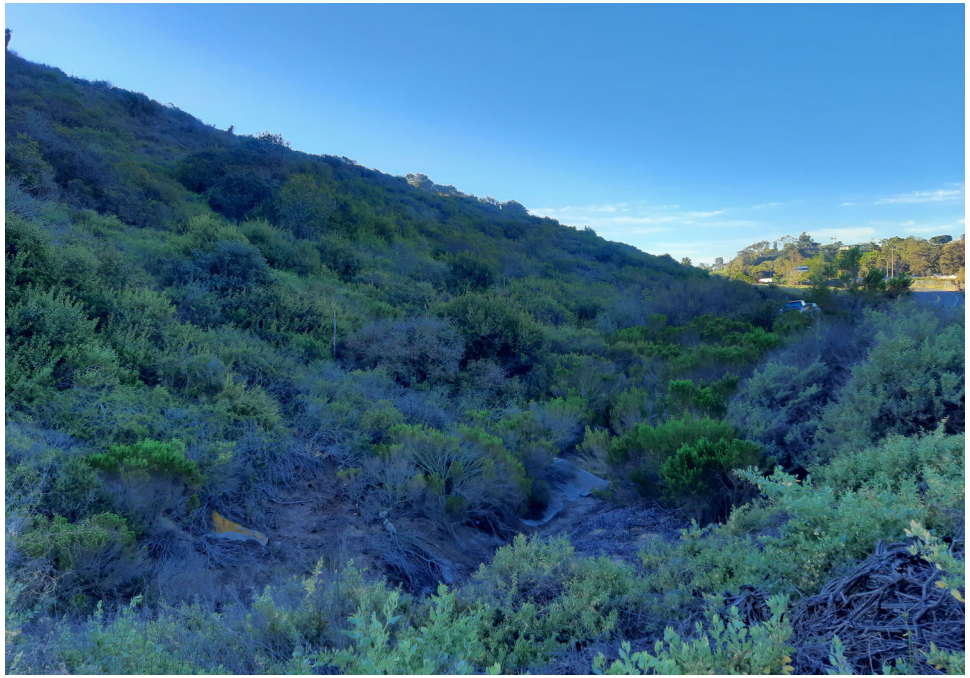

20220302_095034


20220302_095454


20220302_095508




1 cm
2
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4
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8






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1 cm 2 3 4 5 6 7 8
cm


1 cm 2 3 4 5 6 7 8























PHOTOLOG

Project Name: Piraeus
Project Number: 2022-023.01
Camera: Digital cell **Year:** 2022

Month	Day	Time	Frame #	Description	View	Initials
APR	05	0850	085044	Auger 01 Backfilled	CU	MMD
		0851		Auger 01 overview	N	
		0853		Auger 02 0-10 cm	CU	
		0855		0-10 cm Echinoid	CU	
		0900		30-40 / pecten	CU	
		0910		60-70 / misc shell	CU	
		0918		70-80 / pecten	CU	
		0926		80-90 / echinoid	CU	
		0923		AU-02 End	CU	
		0923		AU 02 closeup of end	CU	
		0937		AU 03 Start	NE	
		0952		End	N	
		0952		End Closeup	CU	
		0957		AU 04 Start	N	
		1038		END	N	
		1038		END closeup	CU	
		1045		AU 05 Start	N	
		1107		END	N	
		1107		END Closeup	CU	
		1125		AU 08 Start	N	
		1145		END	N	
		1145		END Closeup	CU	
		1219		AU 07 Start	N	
		1229		END	N	
		1229		END closeup	CU	
				AU 06 Start	N	
		1240		20-30cm Pecten	CU	
		1255		40-50 misc shell	CU	
		1257		END	N	
		1257		END Closeup	CU	
		1312		AU 11 Start	N	
		1333		End	N	
		1333		END Closeup	CU	
		1340		AU 10 Start	E	
		1407		END	N	
		1407		End Closeup	CU	
		1406		AU 09 Start	N	
		1422		END	N	
		1423		END CU	CU	


20220405_085044


20220405_085143


20220405_085338


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20220405_091626


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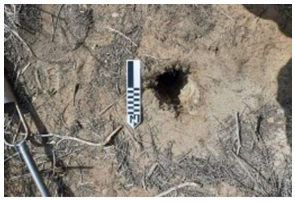

20220405_092312


20220405_093658


20220405_095246


20220405_095253


20220405_095741


20220405_103820


20220405_103840


20220405_104519


20220405_110649


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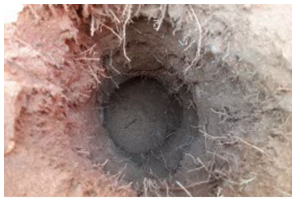

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20220405_133300


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20220405_140633



20220405_142238



20220405_142307

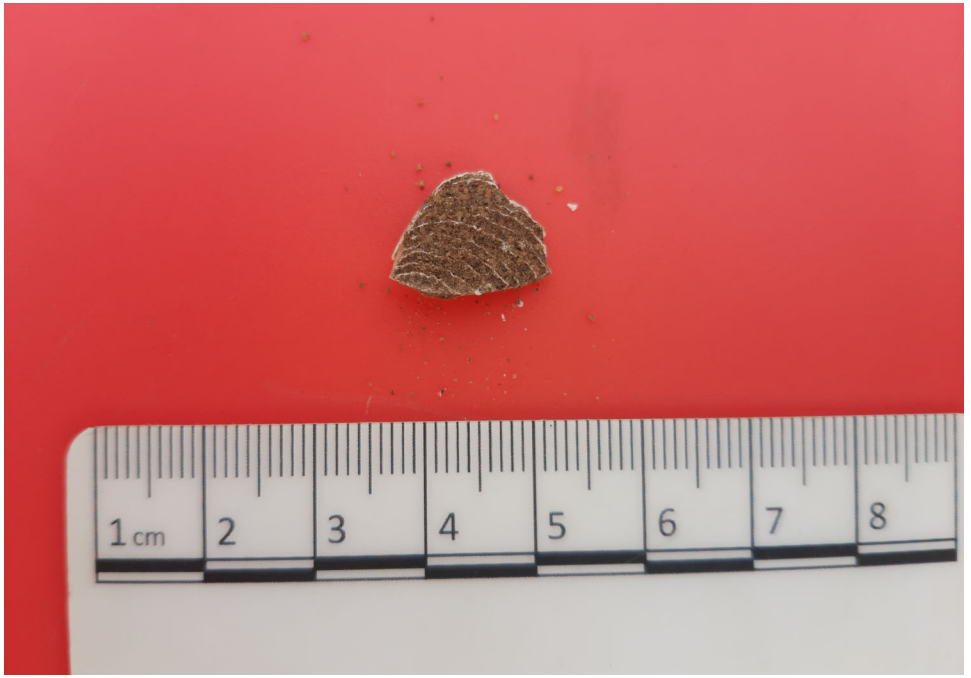



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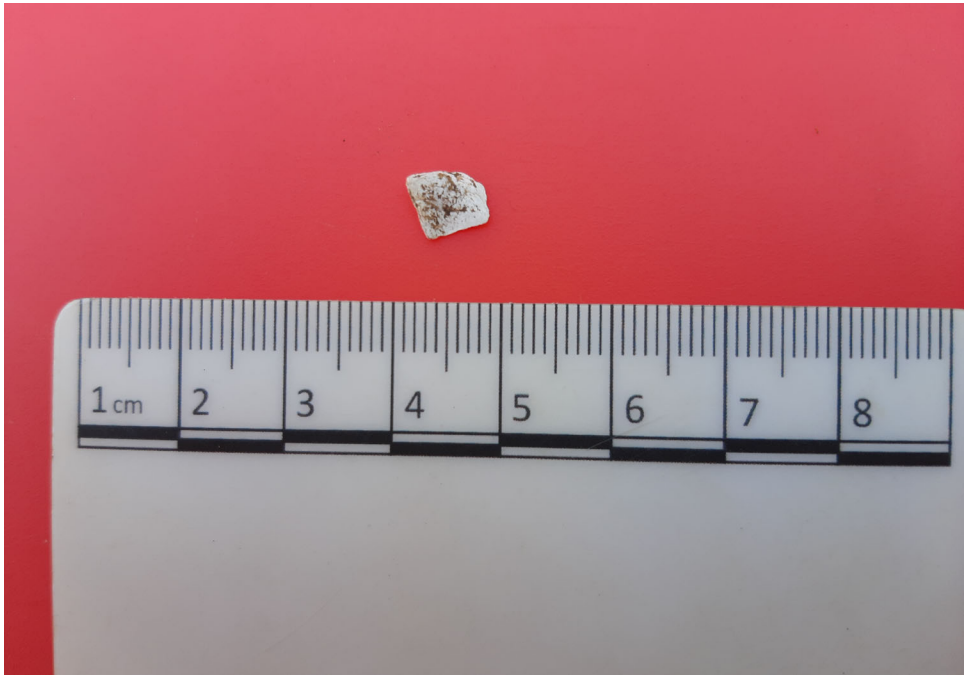











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PHOTOLOG

Project Name: Pireaus (Testing)
Project Number: 2022-023.01
Camera: DeGiorgio Cell **Year:** 2022

Month	Day	Time	Frame #	Description	View	Initials
4	7	0813		AU 14 Start	N	MMD
		0834		END	N	
		0834		END Closeup	CU	
		0839		AU 13 Start	N	
		0906		END	N	
		0906		END Closeup	CU	
		0910		AU 12 Start	N	
		0936		END	N	
		0936		END Closeup	CU	
		0949		Modern disturbance near AU 15 - poss pet grave?	N	
		0951		Skippy jar and Munchies bag	CU	
		0952		Face masks (2) and condoms (3)	CU	
		0953		Footprints (2 types)	CU	
		0954		Footprints	CU	
		1039		AU 15 Start	N	
		1048		END	N	
		1049		END CU	CU	
		1056		PIR-GS-01 Map Prov location (Flag)	NE	
		1058			NE	
		1059		Ground Surface	CU	
		1059		Interior surface	CU	
		1107		AU 16 Start	~~E~~ N	
		1138		END	N	
		1139		END Closeup	CU	
		1233		AU 18 Start	NE	
		1245		END	N	
		1245		END - CLOSE UP	CU	
		1250		AU 19 Start	N	
		1312		END	N	
		1312		END Closeup	CU	
		1315		AU 20 Start	N	
		1325		Chore 0-30cm	CU	
		1325		Chore 0-30cm	CU	
		1335		END	N	
		1335		END Closeup	CU	
		1345		AU 17 Start	N	
		1357		Ichiere Iglesy 0-40cm	CU	
		1404		END	N	
		1404		END Closeup	CU	

Possible burial - modern, unknown species. Police NOTified.


20220407_081309


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20220407_083935


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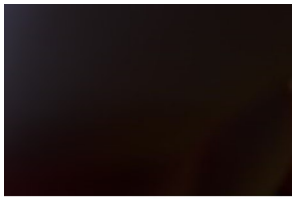

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20220407_131210

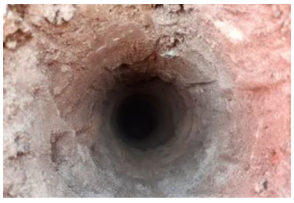

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20220407_140409


20220407_140419


































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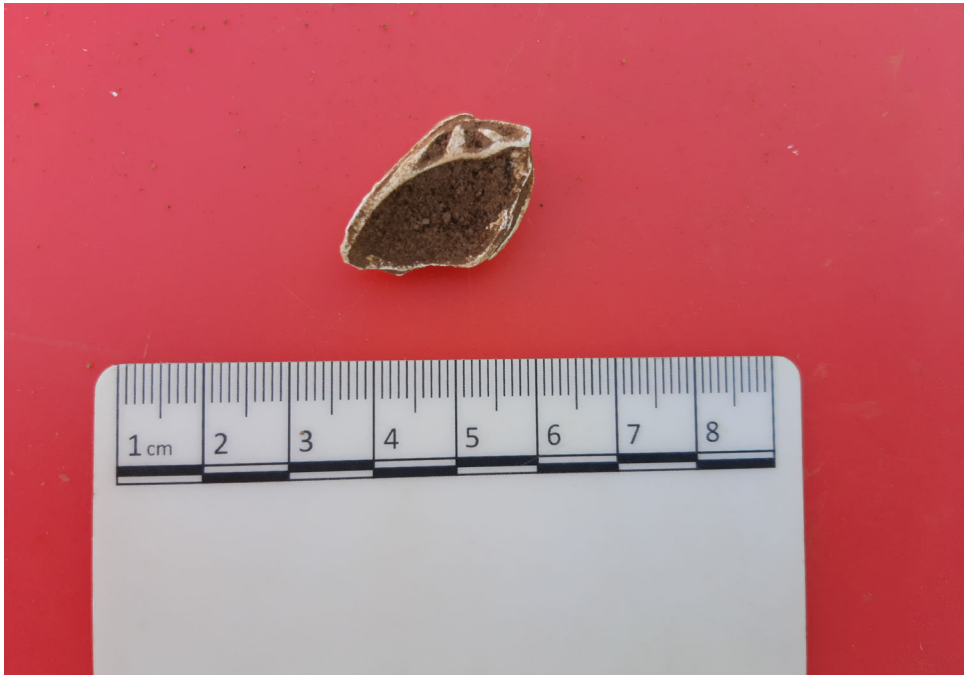











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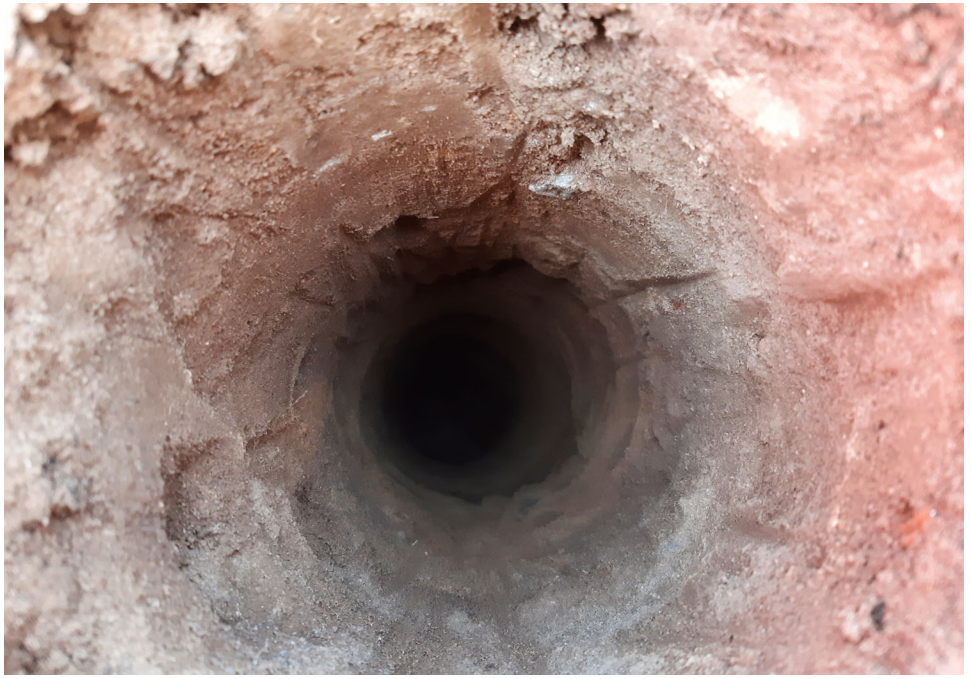









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APPENDIX D

Confidential Cultural Resource Site Locations and Site Records (Redacted)

APPENDIX F.
GREENHOUSE GAS ASSESSMENT

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GREENHOUSE GAS ASSESSMENT

Piraeus Point
City of Encinitas, CA

Project Proponent:

Lennar Homes
16465 Via Esprillo, Suite 150
San Diego, CA 92127

Prepared By:

Ldn Consulting, Inc.
42428 Chisolm Trail
Murrieta, CA 92562

November 15, 2022

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CALEEMOD 2020.4.0 (149 UNITS) 31
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CALEEMOD (149 KW SOLAR) 90

COMMON ACRONYMS

Assembly Bill 32 (AB32)

Business as Usual (BAU)

California Air Pollution Control Officers Association's (CAPCOA)

California Air Resource Board (CARB)

California Climate Action Registry General Reporting Protocol Version 3.1 (CCARGRPV3.1)

Carbon Dioxide (CO2)

Cubic Yards (CY)

Environmental Protection Agency (EPA)

Green House Gas (GHG)

International Residential Code (IRC)

Low Carbon Fuel Standard (LCFS)

Methane (CH4)

Nitrous Oxide (N2O)

San Diego Air Basin (SDAB)

San Diego Air Pollution Control District (SDAPCD)

South Coast Air Quality Management District (SCAQMD)

Senate Bill 97 (SB97)

Vehicle Miles Traveled (VMT)

1.0 INTRODUCTION

1.1 Project Location

The proposed Piraeus Point project is located on a 6.9-acre project site on the northeast corner of Piraeus Street and Plato Place in the Leucadia community of the City of Encinitas, California. The project is located east of Interstate 5 (I-5) between La Costa Avenue and Leucadia Boulevard. The project site is bordered by Piraeus Street to the west, Plato Place to the south, and existing single-family homes to the east and undeveloped land to the north. A general project vicinity map is shown in Figure 1-A.

1.2 Project Description

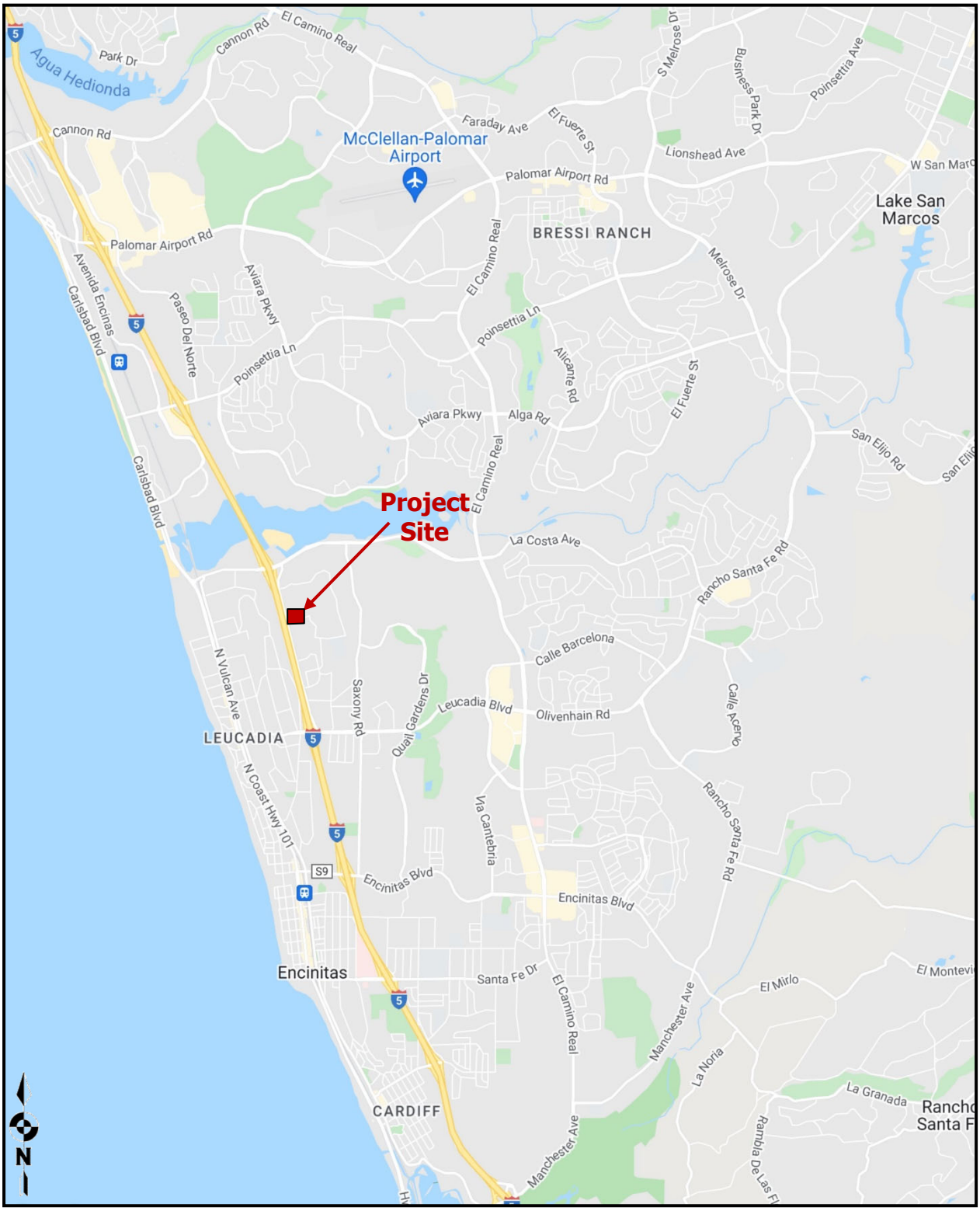
The community would be situated on a 6.88-acre site and would consist of 149 residential homes including 134 market-rate homes and 15 would be "very low" income affordable residential homes. The Project would provide 246 garage spaces and 26 open outdoor guest spaces. The proposed project site configuration is shown in Figure 1-B.

1.3 Project Design Features

Project design features (PDFs) have been incorporated into the Project to reduce emissions associated with operations of this Project and are required by the City of Encinitas per the City's Climate Action Plan (CAP). This report will define specifically which design features were included within the GHG estimation software and it should be expected that whenever a design feature is included within greenhouse gas modeling that those particular design features would be required for the Project to implement such that the City of Encinitas can recommend approval. A list of Project PDFs as analyzed within this report is provided below.

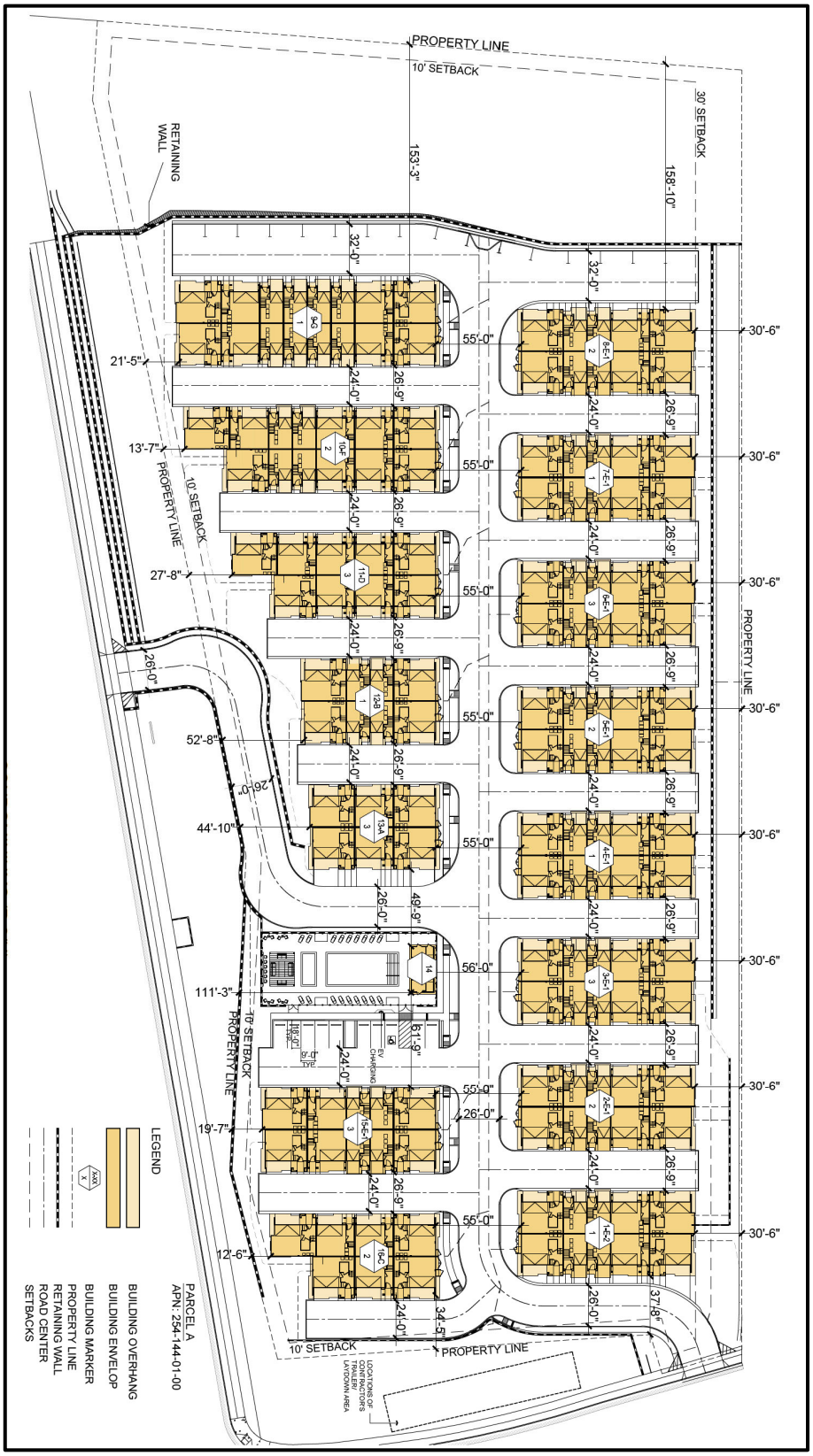
1. *The project would install Low Flow water fixtures in all the units.*
2. *All lights will be designed use LED technology and would be for both indoor and outdoor areas.*
3. *The Project would provide separate waste containers to allow for simpler material separations or the Project would pay for a waste collection service that recycles the materials in accordance with AB 341 to achieve a 75% waste diversion. All green waste will be diverted from landfills and recycled as mulch.*
4. *The project would not install hearth options.*
5. *The Project will be 100 percent electric.*
6. *The project would be required to utilize Tier 4 construction Equipment with Diesel Particulate Filters (DPF).*
7. *The Project would install 149 kilowatt (KW) of solar*
8. *The Project would install 4 Electric Vehicle (EV) Charging Stations*
9. *The Project would include construction BMPs which would include wetting soil during construction and installing a dust barrier between existing residences.*

Figure 1-A: Project Vicinity Map



Source: (Google, 2022)

Figure 1-B: Proposed Project Site Plan



Source: (Schmidt Design Group, 2022)

2.0 EXISTING ENVIRONMENTAL SETTING

2.1 Understanding Greenhouse Gases

GHGs, such as water vapor and carbon dioxide, are abundant in the earth's atmosphere. These gases are called "Greenhouse Gases" because they absorb and emit thermal infrared radiation, which acts like an insulator to the planet. Without these gases, the earth's ambient temperature would either be extremely hot during the day or blistering cold at night.

Over the years, scientists have measured a rise in carbon dioxide and the consensus is that human activities contribute to the heating of the planet. Other GHGs, such as methane and nitrous oxide, also contribute to global warming.

GHGs of concern, as analyzed in this study, are CO_2, CH_4, and N_2O. Both CH_4 and N_2O are converted to an equivalent amount of CO_2, referred to as CO_2e. CO_2e is calculated by multiplying the calculated levels of CH_4 and N_2O by a Global Warming Potential (GWP). The latest California Emissions Estimator Model (CalEEMod 2016.3.2) developed by Breeze Software uses the Intergovernmental Panel on Climate Change (IPCC) 2007 report as source data for GWP factors for both CH_4 and N_2O (CAPCOA, September 2016), using the 100-year periods of 25 and 298, respectively (IPCC, 2007).

2.2 Existing Setting

The site is zoned RR-1 and RR-2 with a R-30 overlay covering a portion of the project site as part of the City's Housing Element and allows for the construction of up to 149 homes (City of Encinitas, 2019). Site topography onsite generally slopes with elevations ranging from approximately 110 to 175 feet above mean sea level (AMSL).

2.3 Climate (Encinitas)

Climate within the San Diego Air Basin (SDAB) area varies dramatically over short geographical distances due to size and topography. Most of southern California is dominated by high-pressure systems for much of the year, which keeps the high desert mostly sunny and warm. Prevailing winds are generally westerly flowing towards the east for most of the year; however, during the autumn and winter, it is common for strong warm dry winds originating in the desert having a more easterly flow characteristic. Meteorological trends within the City of Encinitas are typically cooler given the close vicinity to the ocean. Median temperatures range from approximately 55ºF in the winter to approximately 72ºF in the summer (City-Data, 2020).

3.0 CLIMATE CHANGE REGULATORY ENVIRONMENT

3.1 Federal

Massachusetts v. EPA

On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the federal Clean Air Act. On December 7, 2009, the EPA Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs— Carbon Dioxide CO_2, CH_4, N_2O, Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur hexafluoride (SF_6)— in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

3.2 State

State Greenhouse Gas Targets

Executive Order S-3-05

EO S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, 1990 levels by 2020, and 80 percent below 1990 levels by 2050.

AB 32 and CARB's Climate Change Scoping Plan

In furtherance of the goals established in EO S-3-05, the Legislature enacted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, the California Air Resources Board (CARB) is responsible for and is recognized as having the expertise to carry out and develop the programs and regulations necessary to achieve the GHG emissions reduction mandate of AB 32. Therefore, in furtherance of AB 32, CARB adopted regulations requiring the reporting and verification of GHG emissions from specified sources, such as industrial facilities, fuel suppliers and electricity importers (see Health & Safety Code Section 35830; Cal. Code Regs., tit. 17, §§95100 et seq.). CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for year 2020 consistent with the determined 1990 baseline (427 million metric tons (MMT) CO_2e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (*Scoping Plan*) in accordance with Health and Safety Code Section 38561. The *Scoping Plan* established an overall framework for the measures that will be implemented to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The 2008 *Scoping Plan* evaluated opportunities for sector-specific reductions, integrated all CARB and Climate Action Team[1] early actions and additional GHG reduction features by both entities, identified additional measures to be pursued as regulations, and outlined the role of a cap-and-trade program. The key elements of the 2008 *Scoping Plan* include the following (CARB, 2008):

1. Expanding and strengthening existing energy efficiency programs as well as building and appliance standards
2. Achieving a statewide renewable energy mix of 33 percent
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard

[1] The Climate Action Team is comprised of state agency secretaries and heads of state agencies, boards and departments; these members work to coordinate statewide efforts to implement GHG emissions reduction programs and adaptation programs.

6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation

In the 2008 *Scoping Plan*, CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as "Business-As-Usual" [BAU]). For purposes of calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, no further regulatory action would impact vehicle fuel efficiency, and building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the *Scoping Plan's* Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations (CARB, 2011). Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. When the 2020 emissions level projection was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (12 percent to 20 percent), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (*First Update*). The stated purpose of the *First Update* was to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050." The *First Update* found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the *First Update*, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050." Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and, (6) natural and working lands. The *First Update* identified key

recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

Based on CARB's research efforts presented in the *First Update*, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050." Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies.

As part of the *First Update*, CARB recalculated the state's 1990 emissions level using more recent global warming potentials identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2e) and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

In November 2017, CARB released *California's 2017 Climate Change Scoping Plan* (*Second Update*) for public review and comment (CARB, 2017). This update proposes CARB's strategy for achieving the state's 2030 GHG target as established in Senate Bill (SB) 32 (discussed below). The strategy includes continuing the Cap-and-Trade Program through 2030,[2] inclusive policies and broad support for clean technologies, enhanced industrial efficiency and competitiveness, prioritization of transportation sustainability, continued leadership on clean energy, putting waste resources to beneficial use, supporting resilient agricultural and rural economics and natural and working lands, securing California's water supplies, and cleaning the air and public health. When discussing project-level GHG emissions reduction actions and thresholds, the *Second Update* states "[a]chieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development." However, the *Second Update* also recognizes that such an achievement "may not be feasible or appropriate for every project … and the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change." CARB's Governing Board adopted the *Second Update* in December 2017.

EO B-30-15

EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under S-3-05 and AB 32. EO B-30-15 set an interim goal of reducing statewide GHG emissions to 40 percent below 1990 levels by 2030 to keep California on its

[2] In July 2017, AB 398 was enacted into law, thereby extending the legislatively-authorized lifetime of the Cap-and-Trade Program to December 31, 2030.

trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050 as set forth in S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's *Scoping Plan* to express the 2030 target in terms of MMT CO_2e. The EO also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. Sector-specific agencies in transportation, energy, water, and forestry were required to prepare GHG reduction plans by September 2015, followed by a report on action taken in relation to these plans in June 2016.

SB 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction target; make changes to CARB's membership, and increase legislative oversight of CARB's climate change-based activities; and expand dissemination of GHG and other air quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members. The legislation further requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and TACs from reporting facilities; and identify specific information for GHG emissions reduction measures when updating the scoping plan, including information regarding the range of projected GHG emissions and air pollution reductions that result from each measure and the cost-effectiveness (including avoided social costs) of each measure (see Health & Safety Code Section 38562.7).

<u>Building Energy</u>

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new buildings and alterations or additions to existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy efficient technologies and

construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2013 Title 24 standards went into effect on July 1, 2014 and were estimated to reduce energy uses between 3.8% to 36.4%, depending on the energy source and land (Architectural Energy Corporation (AEC), 2013).

The 2016 Title 24 standards, which went into effect on January 1, 2017, are the currently applicable standards. When comparing the 2013 and 2016 standards for electrical consumption, it is expected that low-rise, single-family detached homes and multi-family homes would use 12% and 15% less electricity under the 2016 standards, respectively. Similarly, implementation of the 2016 standards is expected to reduce natural gas consumption by 21% in single-family homes and 31% in multi-family homes. Newly constructed non-residential buildings are estimated to achieve a 5% reduction in electricity consumption under the 2016 standards and no significant change relative to natural gas consumption (California Energy Commission, 2015). The current version of CalEEMod used in this analysis employs, as a default parameter, the 2016 Title 24 standards to estimate GHG emissions.

The Project would be required, at a minimum, to comply with the latest version of Title 24 standards at the time the Project seeks building permits. This will likely be the 2019 standards, as those standards will go into effect on January 1, 2020. The 2019 standards continue to improve upon the 2016 standards for residential and nonresidential buildings. One of the most notable changes in the 2019 standards is the requirement for the installation of rooftop solar on residential buildings (California Energy Commission, 2017). It should be noted that the State updates these regulations every three years. Thus, throughout Project construction, buildings will need comply with the most recently adopted standards.

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial,

low-rise residential and state-owned buildings and schools and hospitals. The CALGreen 2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- Sixty-five (65) percent of construction and demolition waste must be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15 percent improvement in energy requirements; stricter water conservation, 10 percent recycled content in building materials, 20 percent permeable paving, 20 percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30 percent improvement in energy requirements, stricter water conservation, 75 percent diversion of construction and demolition waste, 15 percent recycled content in building materials, 30 percent permeable paving, 25 percent cement reduction, and cool/solar-reflective roofs.

The newest CALGreen Standards were updated in 2019 and will become effective on January 1, 2020. The updated Code includes modifications to current codes under Division 5.1 (Planning and Design), Division 5.3 (Water Efficiency and Conservation), Division 5.4 and 5.5 (Material Conservation and Resource Efficiency) and (Environmental Quality). (California Title 24, Part 11, 2019). Should building permits be required after January 2020, CALGreen standards would be applicable.

Zero Net Energy Design Goals

As recognized in the *First Update* to the *Scoping Plan*, the California Public Utilities Commission, CEC, and CARB also have a shared, established goal of achieving zero net energy (ZNE) for new construction in California. As background, the California Public Utilities Commission first set forth its zero net energy goals in the 2008 Energy Efficiency Strategic

Plan and the 2011 Big Bold Energy Efficiency Strategies. The key policy timelines include: (1) all new residential construction in California will be zero net energy by 2020, and (2) all new commercial construction in California will be zero net energy by 2030. As most recently defined by the CEC in its 2015 *Integrated Energy Policy Report*, a zero net energy code building is one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building using the CEC's Time Dependent Valuation metric. It should be noted that Title 24 (2019) which will be effective in 2020 requires rooftop solar for all new residential units.

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include: refrigerators, refrigerator-freezers and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

<u>Mobile Sources</u>

AB 1493

In response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by CARB to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. When fully phased in, the near-term (2009–2012) standards will result in a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards will result in a reduction of about 30 percent (CARB, 2017).

EO S-1-07

Issued in January 2007, EO S-1-07 sets a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. The carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste.

In 2018, CARB extended and expanded the Low Carbon Fuel Standard regulations to include a 20 percent target for reduction in carbon intensity by 2030.

SB 375

SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations (MPOs) are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan. The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible and if implemented, the GHG reduction targets. If a SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), a SCS does not: (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In 2010, CARB adopted the SB 375 targets for the regional metropolitan planning organizations. The targets for SANDAG adopted in 2010 are a 7 percent reduction in emissions per capita by 2020 and a 13 percent reduction by 2035; the targets are expressed as a percent change in per capita passenger vehicle GHG emissions relative to 2005.

In October 2015, SANDAG adopted *San Diego Forward: The Regional Plan*, which contains the region's current SCS. In December 2015, CARB, by resolution, accepted SANDAG's GHG emissions quantification analysis and determination that, if implemented, the SCS would achieve CARB's 2020 and 2035 GHG emissions reduction targets for the region. More specifically, as set forth in CARB Executive Order G-15-075, CARB determined that SANDAG's SCS would achieve a 15 percent per capita reduction by 2020 and a 21 percent per capita reduction by 2035.

In 2018, CARB updated the SB 375 targets. For purposes of SANDAG, the updated targets include a 15 percent reduction in emissions per capita by 2020 and a 19 percent reduction by 2035. SANDAG is in the process of preparing its next SCS, which will consider whether and how the region could attain these reduction targets.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB, 2017). To improve air quality, CARB has implemented new emission standards to reduce smog-forming emissions beginning with 2015 model year vehicles. It is estimated that in 2025 cars will emit 75 percent less smog-forming pollution than the average new car sold today. To reduce GHG emissions, CARB, in conjunction with the EPA and the NHTSA, has adopted new GHG standards for model year 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent in 2025 (CARB, 2012).

EO B-16-12

EO B-16-12 (March 2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution of ZEVs. This EO also sets a long-term target of reaching 1.5 million zero-emission vehicles on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on Zero-Emission Vehicles that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet. As of January 2018, the Governor has called for as many as 1.5 million EV by 2025 and up to five million EV by 2030 (Office of Governor Edmund G. Brown Jr., 2018).

SB 350

In 2015, SB 350 – the Clean Energy and Pollution Reduction Act – was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see Public Utilities Code Section 740.12).

Renewable Energy Procurement

SB 1078

SB 1078 (2002) established the Renewables Portfolio Standard (RPS) program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010.

SB X1 2

SB X1 2 (2011) expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350

SB 350 (2015) further expanded the RPS by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030 be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency.

SB 100

SB 100 (2018) has further accelerated and expanded the RPS, requiring achievement of a 50 percent RPS by December 31, 2026 and a 60 percent RPS by December 31, 2030. SB 100 also established a new statewide policy goal that calls for eligible renewable energy resources and zero-carbon resources to supply 100 percent of electricity retail sales and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

Water

EO B-29-15

In response to drought-related concerns, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources has modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Solid Waste

AB 939 and AB 341

In 1989, AB 939, known as the Integrated Waste Management Act (Public Resources Code Sections 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority

strategies that CalRecycle believes would assist the state in reaching the 75 percent goal by 2020.

Increasing the amount of commercial solid waste that is recycled, reused, or composted will reduce GHG emissions primarily by 1) reducing the energy requirements associated with the extraction, harvest, and processing of raw materials and 2) using recyclable materials that require less energy than raw materials to manufacture finished products (CalRecycle, 2018). Increased diversion of organic materials (green and food waste) will also reduce GHG emissions (CO_2 and CH_4) resulting from decomposition in landfills by redirecting this material to processes that use the solid waste material to produce vehicle fuels, heat, electricity, or compost.

3.3 Project Specific Guidelines

City of Encinitas General Plan

A project's adherence to the City's General Plan can be determined through demonstrating consistency with General Plan assumptions and policies. If a project would generate GHG emissions consistent with the maximum allowable buildout as defined by the General Plan, the Project would be consistent with the estimated GHG emissions for that site.

Per the City's latest Climate Action Plan (City of Encinitas, 2020), Encinitas' CAP serves as a guiding document and outlines a course of action for community and municipal operations to reduce greenhouse gas emissions and the potential impacts of climate change within the jurisdiction. The CAP benchmarks GHG emissions in 2012 and identifies what reductions are required to meet GHG reduction targets based on State goals embodied in AB 32, SB 32, and EOs B-30-15 and S-3-05. The CAP aims to achieve the following local community-wide GHG reduction targets:

- 13 percent below 2012 levels by 2020
- 44 percent below 2012 levels by 2030

Given this, if a project is consistent with the projections in the CAP which are directly related to the consistency with the General Plan, its associated growth in terms of GHG emissions was accounted for in the CAP's projections and would not increase emissions beyond what is anticipated in the CAP or inhibit the City from meeting its reduction targets. If a land use and/or zoning designation amendment results in a more GHG-intensive project, the project would be required to demonstrate consistency with applicable CAP measures and offset the increase in emissions.

As explained in the CAP, an implementation strategy was prepared which includes an implementation strategy matrix with 20 City actions or requirements which the city will implement directly through policy as well as require both private and municipal projects to include features such as low flow water fixtures, solar and electric vehicle (EV) charging stations, and even carbon sequestration.

If a project is consistent with the projections in the CAP, then its associated growth in terms of GHG emissions was accounted for in the CAP's projections and would not increase emissions beyond what is anticipated in the CAP or inhibit the County from reaching its reduction targets. If a project is consistent with the projections in the CAP, its GHG emissions would not conflict with an applicable plan adopted for the purpose of reducing the emissions of greenhouse gases. Additionally, if a project is consistent with the CAP, the project would be consistent with reduction targets CARB's Scoping Plan Update's recommended community targets, as well as the State's 2014 GHG emissions inventory and the targets established by AB 32, SB 32, and EOs B-30-15 and S-3-05.

Project-Specific Efficiency Threshold

An alternative analysis to the CAP is also provided and is based on GHG analysis which have evolved to look at efficiency metrics or service population (SP) thresholds. These types of analysis have been adopted in a number of air districts in the State of California for analyzing cumulative GHG emissions and significance of impacts. This project's SP refers to a project's residents and employment living and working within the Project site. This efficiency metric is expressed as MT CO_2e per SP per year (MT CO_2e/year/SP) and is determined by taking the Project emissions and dividing them by the sum of the number of residents and number of employees working in the project area. Based on SANDAG Series 13 Data, approximately 2.51 residents per home in 2020 and 2.52 residents per home in 2035 (SANDAG, 2020). The conservative 2.51 residents per home was used within this analysis. Based on this, the development would have a population of 374 people or 2.51*149 homes. Employment within the apartment development would likely be a building manager, and one maintenance worker or roughly two (2) full time employees. Given this, the Project's SP is 376.

With the release of the 2017 Climate Change Scoping Plan Update, CARB recognized the need to balance population growth with emissions reductions and in doing so, provided a new local plan level methodology for target setting that provides consistency with state GHG reduction goals using per capita efficiency targets. These statewide per capita targets account for all emissions sectors in the State, statewide population forecasts, and the statewide reductions necessary to achieve the 2030 statewide target under SB 32. The targets are generated by dividing the statewide 2030 GHG emissions targets by the statewide 2030 SP.

As discussed, at this time, the State has codified a target or reducing emissions to 40 percent below 1990 emissions levels by 2030 (SB 32) and has developed a Scoping Plan to demonstrate how the State will achieve the 2030 target and make substantial progress toward the 2050 goal of 80% reduction in 1990 GHG emissions levels set by EO S-3-05. In the recently signed EO B-55-18, which identifies a new goal of carbon neutrality by 2045 and supersedes the goal established by EO S-3-05, CARB has been tasked with including a pathway toward EO B-55-18 goals in the next Scoping Plan update. While state and regional regulatory of energy and transportation systems, along with the State's CAP and Trade Program, are designed to be set at limits to achieve most of the reductions needed to hit the State's long term targets, local government can do their fair share toward meeting the State's targets by siting and approving projects that accommodate population growth with project that are GHG-efficient.

The Association of Environmental Professionals (AEP) Climate Change Committee recommends that GHG analysis evaluate project emission in light of the trajectory of state climate change legislation and assess their "substantial progress" toward achieving long-term reduction targets identified in available plans, legislation or EOs (AEP, 2016). Consistent with AEP Climate Change Committee recommendations. horizon year projects of 2021 or later, such as this project, are analyzed in terms of whether the project would impede "substantial progress" toward meeting the reduction goal identified in SB 32 and now EO B-55-18. As SB 32 is considered an interim target toward meeting the 2045 State goal, consistency with SB 32 would be considered contributing substantial progress toward meeting the State's long-term State targets is important as these targets have been set at levels that reduce California's fair share of emissions toward international targets that will stabilize global climate change effects and avoid the adverse environmental consequences described herein (Executive Order B-55-18).

In the Scoping Plan Update, CARB suggested substantial progress could be made if a regional or County-wide GHG reduction plan targeted reducing emissions to 6 MT CO_2e per capita by 2030 and 2 MTCO_2e per capita by 2050, but do not necessarily need to be project-specific targets. We note that considering the overall statewide emissions in 1990 and 2014 and the projected statewide population in 2030 and 2050, these per-capita goals would be equivalent to reducing 2014 emissions by 40 percent by 2030[3]. The per-capita targets were determined

[3] Setting a target with respect to a baseline year, such as 2014, is standard industry practice in climate action planning. The original 2008 Scoping Plan developed by CARB recommended a reduction below baseline levels as a valid reduction target, in recognition of the challenges in developing a 1990 inventory for a local jurisdiction. Data used for developing the 2014 inventory represent the best available data, based on improved inventory methodologies and data collection procedures. The same level of rigor cannot be applied to a 1990 inventory and any attempts to extrapolate activity data (e.g., vehicle miles traveled, energy consumption) for 1990 would introduce a large margin of error and provide an inaccurate accounting of county emissions. Therefore, reliance on State data to determine relative

to be applicable to the City of Encinitas because the City seeks to achieve State goals and CARB's per-capita metrics provide the means to accomplish that. However, following court guidance in (Golden Door Properties, LLC v. County of San Diego., 2018) and (Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Ranch, 2015) to make the Project-specific efficiency threshold locally appropriate, one must use local data to establish an analytical path between the threshold and a project providing its fair share contribution towards meeting State targets using the project population's efficient generation of GHG.

Local Data

During preparation of the City's baseline emissions inventory, the University of San Diego's Energy Policy Initiatives Center (EPIC) calculated GHG emissions for the City for both community-wide sectors and County government operations for the year 2012, with emissions projections for 2020 and 2030. EPIC concluded that total emissions in the City of Encinitas in 2012 comprised approximately 483,773 MT CO_2e

In order to consistent with SB 32, The City's goal is to have a 44% reduction with the baseline or a reduction to a target of 254,575 MT CO_2e/year in 2030. The population used in this analysis is the City population, which in 2030 is 64,938 persons and 27,958 employees (EPIC, 2017). Thus, in order to achieve a City emission level of 254,575 MT CO_2e based on the reductions needed per SB 32, the required per PC efficiency target in 2030 would be approximately 2.74 MT CO_2e (254,575/92,896) per SP.

reduction levels that can be applied to local 2014 emissions levels is a valid methodology to determine reduction targets.

4.0 METHODOLOGY

4.1 Construction CO_2e Emissions Calculation Methodology

The Project construction dates were estimated based on a construction start date in 2023 with construction projected to end in 2025 CalEEMod was utilized for all construction calculations and has been manually updated to reflect SDAPCD Rule 67 VOC paint standards and to include Tier 4 construction equipment with DPF per the Project description. It should be noted that building construction assumes all homes are built in progression within a 230 workday progression though intensity may decrease pending market conditions pushing individual home construction through 2027. It should be expected that the shorter duration would yield higher daily emissions and is therefore worst case. Table 4.1 shows the modeled worst-case timeframes for the construction of all Project infrastructure, facilities, and improvements at the site, as well as the expected number of pieces of equipment which have been verified by the applicant's Project Engineer. Also, it should be noted that the below would be conservative in the event construction began/ended at a later date.

Table 4.1: Expected Construction Equipment

Equipment Identification	Proposed Start	Proposed Complete	Quantity
Site Preparation	11/01/2023	11/14/2023	
Rubber Tired Dozers			3
Tractors/Loaders/Backhoes			4
Grading	11/15/2023	06/30/2024	
Excavators			1
Graders			1
Rubber Tired Dozers			1
Tractors/Loaders/Backhoes			3
Building Construction	07/01/2024	05/16/2025	
Cranes			1
Forklifts			3
Generator Sets			1
Tractors/Loaders/Backhoes			3
Welders			1
Architectural Coating	4/5/2025	5/16/2025	
Air Compressors			1
Paving	05/17/2025	06/13/2025	
Pavers			2
Paving Equipment			2
Rollers			2
This equipment list is based upon equipment inventory within CalEEMod. The quantity and types are based upon assumptions provided by the project applicant.			

GHG impacts related to construction will be calculated using the latest CalEEMod 2020.4.0 model which was developed by BREEZE Software for South Coast Air Quality Management District (SCAQMD). CalEEMod incorporates emission factors from the EMFAC2017 model for on-road vehicle emissions and the OFFROAD2011 model for off-road vehicle emissions and are shown in ***Attachment A*** to this report. Additionally, it should be noted that default vehicle miles traveled (VMT) were updated to reflect EMFACs average miles driven per trip within the County for 2025 is shown in ***Attachment B*** to this report.

Because impacts from construction activities occur over a relatively short-term period of time, they contribute a relatively minimal portion of the overall lifetime project GHG emissions. To adequately include GHG emission from construction in the lifetime/operational GHG estimates, construction emissions are amortized over a 30-year project lifetime (SCAQMD, 2008).

4.2 Operational Emissions Calculation Methodology

Once construction is completed the proposed Project would generate air pollutants and GHG emissions from daily operations which would include sources such as area, energy, mobile, solid waste and water uses, which are calculated within CalEEMod. Area Sources include landscaping, consumer products, and architectural coatings as part of regular maintenance. Energy sources would be from electricity only. Solid waste generated in the form of trash is also considered as decomposition of organic material breaks down to form GHGs. Water and wastewater emissions from the project generate emissions from offsite water conveyance and wastewater treatment facilities. Finally, the project would also generate GHG through the use of carbon fuel burning vehicles for transportation. The Project specific traffic study estimated that Project would generate 894 average daily trips (IM Intersecting Metrics, 2022) .

Energy Intensities as recommended by CalEEMod inputs were assumed within this report and are based on Title 24 (2019) as default. It should be noted however, the project will need to comply with the latest Title 24 when project plans are submitted to the City which would likely further improve upon building efficiency requirements.

Electrical energy-intensity factors were updated within CalEEMod to reflect San Diego Gas and Electric's (SDG&E) emissions rate variations from 2009 which is the default rate data used by CalEEMod. In 2009, SDG&E achieved 10.5 percent procurement of renewable energy (California Public Utilities Commission, 2016) and in 2020 will have up to 46% in place. For purposes of analysis however the State's 33% requirement was assumed. After 2020, in 2030, an additional 27% reduction would be required or 2.7% per year. Given this, SDG&E energy-intensity factors for 2025 were calculated and were modeled as such within CalEEMod as shown in Table 4.3 and are shown in ***Attachment C*** to this report.

Table 4.3: SDG&E Energy Intensity Factors

GHG	2009 Factors (lbs/MWh) w/10.5% RPS	2025 Factors – 46.5% Renewables (lbs/MWh)
Carbon Dioxide (CO_2)	720.49	430.68
Methane (CH_4)	0.029	0.0173
Nitrous Oxide (N_2O)	0.006	0.0036

The CalEEMod model for the Project has been updated to implement design features identified in Section 1.3 of this analysis. For reduction calculations associated with the PV design feature, annual energy estimates were provided by the National Renewable Energy Laboratory (NREL, 2020) and shown as ***Attachment D*** to this report. Based on this, the Project solar 149 kW) would be estimated to generate 245,206 kWh of annual electrical energy. It should be noted that the more solar produced by the Project reduces the amount of non-renewable energy added to the grid by offsite utilities. Given this, offsite generation from renewables would not be offset from onsite renewables. Instead, it's assumed that non-renewable generation is offset at 100%. Therefore, default GHG intensities or those assumed within CalEEMod are used to determine GHG reductions and are shown in ***Attachment E*** to this report. Finally, the Project would be fully consistent with the City's CAP with respect to solar which calls for up to 1W per SF for new multifamily homes under City Action RE-2.

The City's CAP estimated that in the year 2020, 185 MT CO_2e will be reduced from Electric Vehicles EV from City requirements for projects to install EV charging stations. The CAP indicated that in 2030, 1,357 MT CO_2e will be reduced. Per CET-4, estimates that each EV will reduce GHG emissions by 2.84 MT CO_2e in 2020 and 3.62 MT CO_2e in 2030. Given this, the Project would reduce GHG emissions through the use of EV and would be Consistent with the CAP. Based on the addition of 4 EV Charging Stations, a reduction of between 11.36 and 14.48 MT CO_2e could be expected between 2020 and 2030 from the Project EV usage. In 2025 it's expected to be the average or 12.92 MT CO_2e.

5.0 FINDINGS

5.1 Project Related Construction Emissions

Utilizing the CalEEMod inputs for the model as shown in Table 4.1 above, we find that grading and construction of the project will produce approximately 880.72 MT CO_2e over the construction life of the Project. Based on SQAQMD methodology, it is recommended to average the construction emissions over the Project life which is assumed to be 30 years. Given this, the annual construction emission would be 29.36 MT CO_2e per year. A summary of the construction emissions is shown in Table 5.1 below. The analysis of GHG emissions generated during construction activities includes the application of the design features to include the application of Tier 4 Diesel Equipment with DPF.

Table 5.1: Expected Construction CO_2e Emissions Summary MT/Year

Year	Bio-CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
2023	0.00	105.63	105.63	0.02	0.01	108.26
2024	0.00	567.55	567.55	0.10	0.03	579.55
2025	0.00	191.02	191.02	0.03	0.00	192.90
Total						**880.72**
Yearly Average Construction Emissions (Metric Tons/year over 30 years)						**29.36**
Expected Construction emissions are based upon CalEEMod modeling assumptions for equipment and durations listed in Table 4.1 above.						

5.2 Project-Related Operational Emissions

As previously discussed, emissions generated from area, energy, mobile, solid waste and water uses are calculated within CalEEMod. These settings which are automatically populated throughout the model are based on the inputted land use and intensities expected at the Project site. Unless stated within this report, default values generated within CalEEMod were used. The calculated operational emissions for 2025 are identified in Table 5.2 on the following page. Specific reduction from PDF 7 and 8 require separate modeling and calculations.

PDF 7 will reduce annual operational emissions through the addition of 149 kW of PV which would generate 245,206 kWh annually. PV is considered 100 percent renewable and once installed would offset GHG emissions generated from non-renewable energy sources. To calculate GHG emission reductions from the PV panels, a separate CalEEMod file excluding

RPS reductions was prepared and is shown in ***Attachment E*** to this report. Based on this, the GHG emission reductions from solar are expected to be 80.41 MT CO_2e annually.

PDF 8 above would enable Project drivers to utilize EV and would reduce GHG emissions by as much as 12.92 MT CO_2e annually in 2025. It should be noted that all garages will have electrical infrastructure installed for EV chargers. Reductions from these sources was not taken into account.

Based on the CalEEMod analysis, the proposed Project buildout would generate 1,090.80 MT CO_2e annually with construction which is shown in Table 5.2. These emissions include PDFs 1-6 shown above. PDFs 7 and -8 reduce emissions a further 93.34 MT reducing project emissions to 997.46 MT CO_2e after all PDFs have been implemented.

The Project would be consistent with the City's General Plan (Pending approval by the City) and is therefore consistent with the City's CAP assuming CAP measures are implemented on the Project. It should be noted that the design features identified above have been included to address the requirements of the CAP and will be a requirement of this project. Based on this, a less than significant GHG impact is expected.

Table 5.2: Proposed Project Operational GHG emissions (MT/Year)

Source	Bio-CO_2	NBio-CO_2	Total CO_2	CH_4	N_2O	CO_2e (MT/Yr)
Area	0.00	1.81	1.81	0.00	0.00	1.85
Electrical Usage	0.00	141.87	141.87	0.01	0.00	142.38
Mobile	0.00	819.13	819.13	0.06	0.04	831.37
Waste	13.91	0.00	13.91	0.82	0.00	34.47
Water	3.08	38.02	41.10	0.32	0.01	51.37
Total includes reductions from PDFs 1-6						1,061.44
Amortized Construction Emissions						29.36
PDF 7 – 149 kWh of PV						-80.42
PDF 8 EV 4 EV Chargers – EV Vehicle Usage						-12.92
Project Total GHG Emissions						**997.46**
Residents (374 persons) + Employment (2 persons): SP						**376**
MT/SP						**2.65**
Data is presented in decimal format and may have rounding errors.						

The Project was also analyzed using an alternative approach for consistency with SB 32 using a Project-specific locally appropriate efficiency-based threshold based on forecasted population and the allowable emissions which the City must achieve in 2030 to be compliant

with SB 32. Based on this approach, the Project would be required to generate fewer service population emission than 2.74 MT CO_2e. The Project was found to generate 997.46 MT CO_2e with both annualized construction and annual operation GHG emissions averaged over a Project population of 376 persons. Given this, the Project would have a projected GHG emission rate of 2.65 MT CO_2e per SP or (997.46 MT CO_2e/376 persons). Based on this, the proposed Project would generate fewer emissions than a City-specific localized efficiency metric of 2.74 MT CO_2e per SP. Given this, the Project would be found to generate a less than significant impact.

5.3 General Plan GHG Impacts

The Project will comply with the City of Encinitas' CAP and all applicable measures. The City adopted it's fifth cycle of HEU in March 2019. In accordance with mitigation measures GHG-2 of the HEU's Environmental Assessment, the City of Encinitas committed to updating the 2018 CAP within 20 months of the effective date of the HEU to reflect the impact of additional projected HEU housing units on GHG emissions. The additional housing units affect population, employment, and vehicle miles trave forecasts. In November 2020, the City updated its CAP to accommodate the adopted HEU maximum realistic yield of 2,494 additional dwelling units of 17 candidate sites within the City under build-out conditions. These additional dwelling units are based upon the HEU's permitted maximum density of 30 dwelling units per net acre on the candidate sites. Therefore, the impact will be less than significant.

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7.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the projected CO_2e emissions from the project development based upon the best available information at the time of preparation.



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Date November 15, 2022

ATTACHMENT A

CalEEMod 2020.4.0 (149 Units)

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Piraeus Point 149 Unit MF

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	26.00	Space	0.23	10,400.00	0
Condo/Townhouse	149.00	Dwelling Unit	6.65	149,000.00	426

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	431.18	**CH4 Intensity (lb/MWhr)**	0.026	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2025 46.5%

Land Use - Area is 6.88 acres

Construction Phase - schedule provided by applicant

Trips and VMT -

Grading -

Architectural Coating - Rule 67 Paint

Vehicle Trips - Updated based on Project Traffic Trip Generation

Woodstoves - No hearth

Area Coating - Rule 67 Paint

Energy Use - Project will be 100% electric

Water And Wastewater -

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Solid Waste -

Construction Off-road Equipment Mitigation - T4

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Parking	250.00	100.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	100.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	100.00
tblAreaCoating	Area_EF_Parking	250	100
tblAreaCoating	Area_EF_Residential_Exterior	250	100
tblAreaCoating	Area_EF_Residential_Interior	250	100
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	163.00
tblConstructionPhase	NumDays	20.00	30.00
tblEnergyUse	NT24NG	4,180.00	0.00
tblEnergyUse	T24NG	9,243.79	0.00
tblFireplaces	NumberGas	81.95	0.00
tblFireplaces	NumberNoFireplace	14.90	149.00
tblFireplaces	NumberWood	52.15	0.00
tblGrading	MaterialExported	0.00	57,600.00
tblLandUse	LotAcreage	9.31	6.65
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.026
tblProjectCharacteristics	CO2IntensityFactor	539.98	431.18
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.003

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	8.14	6.00
tblVehicleTrips	SU_TR	6.28	6.00
tblVehicleTrips	WD_TR	7.32	6.00
tblWoodstoves	NumberCatalytic	7.45	0.00
tblWoodstoves	NumberNoncatalytic	7.45	0.00

2.0 Emissions Summary

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0441	0.5331	0.3686	1.1400e-003	0.3033	0.0199	0.3233	0.1192	0.0184	0.1376	0.0000	105.6345	105.6345	0.0216	7.0200e-003	108.2647
2024	0.2340	2.4471	2.3286	6.1900e-003	0.6061	0.0914	0.6975	0.2587	0.0851	0.3438	0.0000	567.5486	567.5486	0.1021	0.0317	579.5528
2025	1.0281	0.7616	1.0942	2.1500e-003	0.0537	0.0313	0.0850	0.0144	0.0294	0.0438	0.0000	191.0180	191.0180	0.0349	3.4000e-003	192.9024
Maximum	**1.0281**	**2.4471**	**2.3286**	**6.1900e-003**	**0.6061**	**0.0914**	**0.6975**	**0.2587**	**0.0851**	**0.3438**	**0.0000**	**567.5486**	**567.5486**	**0.1021**	**0.0317**	**579.5528**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0108	0.1356	0.4313	1.1400e-003	0.3033	9.9000e-004	0.3043	0.1192	9.5000e-004	0.1202	0.0000	105.6344	105.6344	0.0216	7.0200e-003	108.2647
2024	0.0741	0.7025	2.6085	6.1900e-003	0.6061	4.7500e-003	0.6108	0.2587	4.5700e-003	0.2633	0.0000	567.5482	567.5482	0.1021	0.0317	579.5524
2025	0.9687	0.1712	1.1891	2.1500e-003	0.0537	8.4000e-004	0.0546	0.0144	8.1000e-004	0.0152	0.0000	191.0178	191.0178	0.0349	3.4000e-003	192.9023
Maximum	**0.9687**	**0.7025**	**2.6085**	**6.1900e-003**	**0.6061**	**4.7500e-003**	**0.6108**	**0.2587**	**4.5700e-003**	**0.2633**	**0.0000**	**567.5482**	**567.5482**	**0.1021**	**0.0317**	**579.5524**

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**19.33**	**73.03**	**-11.54**	**0.00**	**0.00**	**95.39**	**12.31**	**0.00**	**95.24**	**24.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**11-1-2023**	**1-31-2024**	0.8596	0.2383
2	**2-1-2024**	**4-30-2024**	0.7951	0.2565
3	**5-1-2024**	**7-31-2024**	0.7144	0.2126
4	**8-1-2024**	**10-31-2024**	0.5319	0.1260
5	**11-1-2024**	**1-31-2025**	0.5211	0.1272
6	**2-1-2025**	**4-30-2025**	1.0708	0.7016
7	**5-1-2025**	**7-31-2025**	0.5455	0.3945
		Highest	1.0708	0.7016

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7092	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	141.8680	141.8680	8.5500e-003	9.9000e-004	142.3760
Mobile	0.4325	0.4811	4.0676	8.6400e-003	0.9549	6.7300e-003	0.9616	0.2548	6.2800e-003	0.2611	0.0000	819.1321	819.1321	0.0571	0.0363	831.3664
Waste						0.0000	0.0000		0.0000	0.0000	13.9130	0.0000	13.9130	0.8222	0.0000	34.4689
Water						0.0000	0.0000		0.0000	0.0000	3.0799	38.0213	41.1012	0.3186	7.7300e-003	51.3716
Total	**1.1417**	**0.4938**	**5.1732**	**8.7000e-003**	**0.9549**	**0.0129**	**0.9677**	**0.2548**	**0.0124**	**0.2672**	**16.9929**	**1,000.8291**	**1,017.8220**	**1.2082**	**0.0450**	**1,061.4337**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7092	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	141.8680	141.8680	8.5500e-003	9.9000e-004	142.3760
Mobile	0.4325	0.4811	4.0676	8.6400e-003	0.9549	6.7300e-003	0.9616	0.2548	6.2800e-003	0.2611	0.0000	819.1321	819.1321	0.0571	0.0363	831.3664
Waste						0.0000	0.0000		0.0000	0.0000	13.9130	0.0000	13.9130	0.8222	0.0000	34.4689
Water						0.0000	0.0000		0.0000	0.0000	3.0799	38.0213	41.1012	0.3186	7.7300e-003	51.3716
Total	**1.1417**	**0.4938**	**5.1732**	**8.7000e-003**	**0.9549**	**0.0129**	**0.9677**	**0.2548**	**0.0124**	**0.2672**	**16.9929**	**1,000.8291**	**1,017.8220**	**1.2082**	**0.0450**	**1,061.4337**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	11/1/2023	11/14/2023	5	10	
2	Grading	Grading	11/15/2023	6/30/2024	5	163	
3	Building Construction	Building Construction	7/1/2024	5/16/2025	5	230	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Architectural Coating	Architectural Coating	4/5/2025	5/16/2025	5	30	
5	Paving	Paving	5/17/2025	6/13/2025	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 163

Acres of Paving: 0.23

Residential Indoor: 301,725; Residential Outdoor: 100,575; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 624 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	7,200.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	112.00	18.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	22.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.1376	0.0912	1.9000e-004		6.3300e-003	6.3300e-003		5.8200e-003	5.8200e-003	0.0000	16.7254	16.7254	5.4100e-003	0.0000	16.8606
Total	**0.0133**	**0.1376**	**0.0912**	**1.9000e-004**	**0.0983**	**6.3300e-003**	**0.1046**	**0.0505**	**5.8200e-003**	**0.0563**	**0.0000**	**16.7254**	**16.7254**	**5.4100e-003**	**0.0000**	**16.8606**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.7000e-004	2.0600e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5783	0.5783	2.0000e-005	2.0000e-005	0.5834
Total	**2.4000e-004**	**1.7000e-004**	**2.0600e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5783**	**0.5783**	**2.0000e-005**	**2.0000e-005**	**0.5834**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3300e-003	0.0101	0.1043	1.9000e-004		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	16.7253	16.7253	5.4100e-003	0.0000	16.8606
Total	**2.3300e-003**	**0.0101**	**0.1043**	**1.9000e-004**	**0.0983**	**5.0000e-005**	**0.0983**	**0.0505**	**5.0000e-005**	**0.0506**	**0.0000**	**16.7253**	**16.7253**	**5.4100e-003**	**0.0000**	**16.8606**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	1.7000e-004	2.0600e-003	1.0000e-005	7.2000e-004	0.0000	7.3000e-004	1.9000e-004	0.0000	2.0000e-004	0.0000	0.5783	0.5783	2.0000e-005	2.0000e-005	0.5834
Total	**2.4000e-004**	**1.7000e-004**	**2.0600e-003**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**7.3000e-004**	**1.9000e-004**	**0.0000**	**2.0000e-004**	**0.0000**	**0.5783**	**0.5783**	**2.0000e-005**	**2.0000e-005**	**0.5834**

3.3 Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1898	0.0000	0.1898	0.0646	0.0000	0.0646	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0282	0.2959	0.2434	4.9000e-004		0.0128	0.0128		0.0118	0.0118	0.0000	43.0000	43.0000	0.0139	0.0000	43.3477
Total	**0.0282**	**0.2959**	**0.2434**	**4.9000e-004**	**0.1898**	**0.0128**	**0.2026**	**0.0646**	**0.0118**	**0.0763**	**0.0000**	**43.0000**	**43.0000**	**0.0139**	**0.0000**	**43.3477**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6100e-003	0.0989	0.0263	4.4000e-004	0.0125	8.1000e-004	0.0133	3.4300e-003	7.7000e-004	4.2000e-003	0.0000	43.7407	43.7407	2.2000e-003	6.9600e-003	45.8686
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.6000e-004	5.6600e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.5902	1.5902	5.0000e-005	4.0000e-005	1.6044
Total	**2.2800e-003**	**0.0994**	**0.0320**	**4.6000e-004**	**0.0145**	**8.2000e-004**	**0.0153**	**3.9600e-003**	**7.8000e-004**	**4.7400e-003**	**0.0000**	**45.3309**	**45.3309**	**2.2500e-003**	**7.0000e-003**	**47.4730**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1898	0.0000	0.1898	0.0646	0.0000	0.0646	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.9900e-003	0.0260	0.2929	4.9000e-004		1.2000e-004	1.2000e-004		1.2000e-004	1.2000e-004	0.0000	43.0000	43.0000	0.0139	0.0000	43.3476
Total	**5.9900e-003**	**0.0260**	**0.2929**	**4.9000e-004**	**0.1898**	**1.2000e-004**	**0.1900**	**0.0646**	**1.2000e-004**	**0.0647**	**0.0000**	**43.0000**	**43.0000**	**0.0139**	**0.0000**	**43.3476**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.6100e-003	0.0989	0.0263	4.4000e-004	0.0125	8.1000e-004	0.0133	3.4300e-003	7.7000e-004	4.2000e-003	0.0000	43.7407	43.7407	2.2000e-003	6.9600e-003	45.8686
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7000e-004	4.6000e-004	5.6600e-003	2.0000e-005	1.9800e-003	1.0000e-005	2.0000e-003	5.3000e-004	1.0000e-005	5.4000e-004	0.0000	1.5902	1.5902	5.0000e-005	4.0000e-005	1.6044
Total	**2.2800e-003**	**0.0994**	**0.0320**	**4.6000e-004**	**0.0145**	**8.2000e-004**	**0.0153**	**3.9600e-003**	**7.8000e-004**	**4.7400e-003**	**0.0000**	**45.3309**	**45.3309**	**2.2500e-003**	**7.0000e-003**	**47.4730**

3.3 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4819	0.0000	0.4819	0.2251	0.0000	0.2251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1080	1.1070	0.9594	1.9300e-003		0.0471	0.0471		0.0433	0.0433	0.0000	169.4154	169.4154	0.0548	0.0000	170.7852
Total	**0.1080**	**1.1070**	**0.9594**	**1.9300e-003**	**0.4819**	**0.0471**	**0.5290**	**0.2251**	**0.0433**	**0.2684**	**0.0000**	**169.4154**	**169.4154**	**0.0548**	**0.0000**	**170.7852**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2600e-003	0.3863	0.1051	1.6800e-003	0.0492	3.2100e-003	0.0524	0.0135	3.0700e-003	0.0166	0.0000	169.2795	169.2795	8.9400e-003	0.0269	177.5314
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4800e-003	1.6400e-003	0.0209	7.0000e-005	7.8200e-003	4.0000e-005	7.8600e-003	2.0800e-003	4.0000e-005	2.1200e-003	0.0000	6.1074	6.1074	1.7000e-004	1.6000e-004	6.1597
Total	**8.7400e-003**	**0.3879**	**0.1260**	**1.7500e-003**	**0.0570**	**3.2500e-003**	**0.0603**	**0.0156**	**3.1100e-003**	**0.0187**	**0.0000**	**175.3870**	**175.3870**	**9.1100e-003**	**0.0271**	**183.6910**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.4819	0.0000	0.4819	0.2251	0.0000	0.2251	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0236	0.1023	1.1539	1.9300e-003		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	169.4152	169.4152	0.0548	0.0000	170.7850
Total	**0.0236**	**0.1023**	**1.1539**	**1.9300e-003**	**0.4819**	**4.7000e-004**	**0.4824**	**0.2251**	**4.7000e-004**	**0.2256**	**0.0000**	**169.4152**	**169.4152**	**0.0548**	**0.0000**	**170.7850**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.2600e-003	0.3863	0.1051	1.6800e-003	0.0492	3.2100e-003	0.0524	0.0135	3.0700e-003	0.0166	0.0000	169.2795	169.2795	8.9400e-003	0.0269	177.5314
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4800e-003	1.6400e-003	0.0209	7.0000e-005	7.8200e-003	4.0000e-005	7.8600e-003	2.0800e-003	4.0000e-005	2.1200e-003	0.0000	6.1074	6.1074	1.7000e-004	1.6000e-004	6.1597
Total	**8.7400e-003**	**0.3879**	**0.1260**	**1.7500e-003**	**0.0570**	**3.2500e-003**	**0.0603**	**0.0156**	**3.1100e-003**	**0.0187**	**0.0000**	**175.3870**	**175.3870**	**9.1100e-003**	**0.0271**	**183.6910**

3.4 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0971	0.8873	1.0670	1.7800e-003		0.0405	0.0405		0.0381	0.0381	0.0000	153.0204	153.0204	0.0362	0.0000	153.9250
Total	**0.0971**	**0.8873**	**1.0670**	**1.7800e-003**		**0.0405**	**0.0405**		**0.0381**	**0.0381**	**0.0000**	**153.0204**	**153.0204**	**0.0362**	**0.0000**	**153.9250**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3400e-003	0.0524	0.0182	2.4000e-004	7.8900e-003	3.1000e-004	8.2000e-003	2.2800e-003	3.0000e-004	2.5800e-003	0.0000	23.4221	23.4221	7.4000e-004	3.3900e-003	24.4517
Worker	0.0188	0.0125	0.1581	4.9000e-004	0.0593	3.1000e-004	0.0596	0.0158	2.9000e-004	0.0160	0.0000	46.3037	46.3037	1.2700e-003	1.2200e-003	46.6998
Total	**0.0201**	**0.0648**	**0.1763**	**7.3000e-004**	**0.0672**	**6.2000e-004**	**0.0678**	**0.0180**	**5.9000e-004**	**0.0186**	**0.0000**	**69.7258**	**69.7258**	**2.0100e-003**	**4.6100e-003**	**71.1515**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0216	0.1475	1.1524	1.7800e-003		4.0000e-004	4.0000e-004		4.0000e-004	4.0000e-004	0.0000	153.0202	153.0202	0.0362	0.0000	153.9249
Total	**0.0216**	**0.1475**	**1.1524**	**1.7800e-003**		**4.0000e-004**	**4.0000e-004**		**4.0000e-004**	**4.0000e-004**	**0.0000**	**153.0202**	**153.0202**	**0.0362**	**0.0000**	**153.9249**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3400e-003	0.0524	0.0182	2.4000e-004	7.8900e-003	3.1000e-004	8.2000e-003	2.2800e-003	3.0000e-004	2.5800e-003	0.0000	23.4221	23.4221	7.4000e-004	3.3900e-003	24.4517
Worker	0.0188	0.0125	0.1581	4.9000e-004	0.0593	3.1000e-004	0.0596	0.0158	2.9000e-004	0.0160	0.0000	46.3037	46.3037	1.2700e-003	1.2200e-003	46.6998
Total	**0.0201**	**0.0648**	**0.1763**	**7.3000e-004**	**0.0672**	**6.2000e-004**	**0.0678**	**0.0180**	**5.9000e-004**	**0.0186**	**0.0000**	**69.7258**	**69.7258**	**2.0100e-003**	**4.6100e-003**	**71.1515**

3.4 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0670	0.6110	0.7882	1.3200e-003		0.0259	0.0259		0.0243	0.0243	0.0000	113.6405	113.6405	0.0267	0.0000	114.3084
Total	**0.0670**	**0.6110**	**0.7882**	**1.3200e-003**		**0.0259**	**0.0259**		**0.0243**	**0.0243**	**0.0000**	**113.6405**	**113.6405**	**0.0267**	**0.0000**	**114.3084**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6000e-004	0.0385	0.0133	1.7000e-004	5.8600e-003	2.3000e-004	6.0900e-003	1.6900e-003	2.2000e-004	1.9100e-003	0.0000	17.0577	17.0577	5.6000e-004	2.4700e-003	17.8077
Worker	0.0132	8.3700e-003	0.1102	3.5000e-004	0.0440	2.2000e-004	0.0442	0.0117	2.0000e-004	0.0119	0.0000	33.5374	33.5374	8.6000e-004	8.5000e-004	33.8127
Total	**0.0141**	**0.0469**	**0.1235**	**5.2000e-004**	**0.0499**	**4.5000e-004**	**0.0503**	**0.0134**	**4.2000e-004**	**0.0138**	**0.0000**	**50.5950**	**50.5950**	**1.4200e-003**	**3.3200e-003**	**51.6205**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0161	0.1095	0.8556	1.3200e-003		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	113.6404	113.6404	0.0267	0.0000	114.3082
Total	**0.0161**	**0.1095**	**0.8556**	**1.3200e-003**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**113.6404**	**113.6404**	**0.0267**	**0.0000**	**114.3082**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.6000e-004	0.0385	0.0133	1.7000e-004	5.8600e-003	2.3000e-004	6.0900e-003	1.6900e-003	2.2000e-004	1.9100e-003	0.0000	17.0577	17.0577	5.6000e-004	2.4700e-003	17.8077
Worker	0.0132	8.3700e-003	0.1102	3.5000e-004	0.0440	2.2000e-004	0.0442	0.0117	2.0000e-004	0.0119	0.0000	33.5374	33.5374	8.6000e-004	8.5000e-004	33.8127
Total	**0.0141**	**0.0469**	**0.1235**	**5.2000e-004**	**0.0499**	**4.5000e-004**	**0.0503**	**0.0134**	**4.2000e-004**	**0.0138**	**0.0000**	**50.5950**	**50.5950**	**1.4200e-003**	**3.3200e-003**	**51.6205**

3.5 Architectural Coating - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5600e-003	0.0172	0.0271	4.0000e-005		7.7000e-004	7.7000e-004		7.7000e-004	7.7000e-004	0.0000	3.8299	3.8299	2.1000e-004	0.0000	3.8351
Total	**0.9363**	**0.0172**	**0.0271**	**4.0000e-005**		**7.7000e-004**	**7.7000e-004**		**7.7000e-004**	**7.7000e-004**	**0.0000**	**3.8299**	**3.8299**	**2.1000e-004**	**0.0000**	**3.8351**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.0000e-004	6.6300e-003	2.0000e-005	2.6500e-003	1.0000e-005	2.6600e-003	7.0000e-004	1.0000e-005	7.2000e-004	0.0000	2.0166	2.0166	5.0000e-005	5.0000e-005	2.0332
Total	**7.9000e-004**	**5.0000e-004**	**6.6300e-003**	**2.0000e-005**	**2.6500e-003**	**1.0000e-005**	**2.6600e-003**	**7.0000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**2.0166**	**2.0166**	**5.0000e-005**	**5.0000e-005**	**2.0332**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.9338					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	1.9300e-003	0.0275	4.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.8299	3.8299	2.1000e-004	0.0000	3.8351
Total	**0.9342**	**1.9300e-003**	**0.0275**	**4.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.8299**	**3.8299**	**2.1000e-004**	**0.0000**	**3.8351**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Architectural Coating - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.9000e-004	5.0000e-004	6.6300e-003	2.0000e-005	2.6500e-003	1.0000e-005	2.6600e-003	7.0000e-004	1.0000e-005	7.2000e-004	0.0000	2.0166	2.0166	5.0000e-005	5.0000e-005	2.0332
Total	**7.9000e-004**	**5.0000e-004**	**6.6300e-003**	**2.0000e-005**	**2.6500e-003**	**1.0000e-005**	**2.6600e-003**	**7.0000e-004**	**1.0000e-005**	**7.2000e-004**	**0.0000**	**2.0166**	**2.0166**	**5.0000e-005**	**5.0000e-005**	**2.0332**

3.6 Paving - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1500e-003	0.0858	0.1458	2.3000e-004		4.1900e-003	4.1900e-003		3.8500e-003	3.8500e-003	0.0000	20.0193	20.0193	6.4700e-003	0.0000	20.1811
Paving	3.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.4500e-003**	**0.0858**	**0.1458**	**2.3000e-004**		**4.1900e-003**	**4.1900e-003**		**3.8500e-003**	**3.8500e-003**	**0.0000**	**20.0193**	**20.0193**	**6.4700e-003**	**0.0000**	**20.1811**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.3000e-004	3.0100e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9167	0.9167	2.0000e-005	2.0000e-005	0.9242
Total	**3.6000e-004**	**2.3000e-004**	**3.0100e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9167**	**0.9167**	**2.0000e-005**	**2.0000e-005**	**0.9242**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8000e-003	0.0122	0.1730	2.3000e-004		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	20.0192	20.0192	6.4700e-003	0.0000	20.1811
Paving	3.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.1000e-003**	**0.0122**	**0.1730**	**2.3000e-004**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**20.0192**	**20.0192**	**6.4700e-003**	**0.0000**	**20.1811**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6000e-004	2.3000e-004	3.0100e-003	1.0000e-005	1.2000e-003	1.0000e-005	1.2100e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	0.9167	0.9167	2.0000e-005	2.0000e-005	0.9242
Total	**3.6000e-004**	**2.3000e-004**	**3.0100e-003**	**1.0000e-005**	**1.2000e-003**	**1.0000e-005**	**1.2100e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**0.9167**	**0.9167**	**2.0000e-005**	**2.0000e-005**	**0.9242**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4325	0.4811	4.0676	8.6400e-003	0.9549	6.7300e-003	0.9616	0.2548	6.2800e-003	0.2611	0.0000	819.1321	819.1321	0.0571	0.0363	831.3664
Unmitigated	0.4325	0.4811	4.0676	8.6400e-003	0.9549	6.7300e-003	0.9616	0.2548	6.2800e-003	0.2611	0.0000	819.1321	819.1321	0.0571	0.0363	831.3664

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	894.00	894.00	894.00	2,552,641	2,552,641
Parking Lot	0.00	0.00	0.00		
Total	894.00	894.00	894.00	2,552,641	2,552,641

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Condo/Townhouse	10.80	7.30	7.50	41.60	18.80	39.60	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Condo/Townhouse	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751
Parking Lot	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

5.0 Energy Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	141.8680	141.8680	8.5500e-003	9.9000e-004	142.3760
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	141.8680	141.8680	8.5500e-003	9.9000e-004	142.3760
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	721731	141.1561	8.5100e-003	9.8000e-004	141.6615
Parking Lot	3640	0.7119	4.0000e-005	0.0000	0.7145
Total		**141.8680**	**8.5500e-003**	**9.8000e-004**	**142.3760**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	721731	141.1561	8.5100e-003	9.8000e-004	141.6615
Parking Lot	3640	0.7119	4.0000e-005	0.0000	0.7145
Total		**141.8680**	**8.5500e-003**	**9.8000e-004**	**142.3760**

6.0 Area Detail

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7092	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Unmitigated	0.7092	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510

Piraeus Point 149 Unit MF - San Diego County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0934					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0332	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Total	**0.7092**	**0.0127**	**1.1055**	**6.0000e-005**		**6.1300e-003**	**6.1300e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**1.8077**	**1.8077**	**1.7300e-003**	**0.0000**	**1.8510**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0934					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5826					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0332	0.0127	1.1055	6.0000e-005		6.1300e-003	6.1300e-003		6.1300e-003	6.1300e-003	0.0000	1.8077	1.8077	1.7300e-003	0.0000	1.8510
Total	**0.7092**	**0.0127**	**1.1055**	**6.0000e-005**		**6.1300e-003**	**6.1300e-003**		**6.1300e-003**	**6.1300e-003**	**0.0000**	**1.8077**	**1.8077**	**1.7300e-003**	**0.0000**	**1.8510**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	41.1012	0.3186	7.7300e-003	51.3716
Unmitigated	41.1012	0.3186	7.7300e-003	51.3716

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	9.70795 / 6.12023	41.1012	0.3186	7.7300e-003	51.3716
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**41.1012**	**0.3186**	**7.7300e-003**	**51.3716**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	9.70795 / 6.12023	41.1012	0.3186	7.7300e-003	51.3716
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**41.1012**	**0.3186**	**7.7300e-003**	**51.3716**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	13.9130	0.8222	0.0000	34.4689
Unmitigated	13.9130	0.8222	0.0000	34.4689

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	68.54	13.9130	0.8222	0.0000	34.4689
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**13.9130**	**0.8222**	**0.0000**	**34.4689**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	68.54	13.9130	0.8222	0.0000	34.4689
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**13.9130**	**0.8222**	**0.0000**	**34.4689**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

EMFAC 2017 (VMT per Trip Calculations)

EMFAC2017 (v1.0.2) Emissions Inventory
Region Type: County
Region: SAN DIEGO
Calendar Year: 2025
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption. Note 'day' in the unit is operation day.

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	VMT	Trips
SAN DIEGC	2025	HHDT	Aggregatec	Aggregatec	GAS	16.62122221	2160.811939	332.5574139
SAN DIEGC	2025	HHDT	Aggregatec	Aggregatec	DSL	16598.3373	2003179.862	175728.9665
SAN DIEGC	2025	HHDT	Aggregatec	Aggregatec	NG	1151.00669	46869.15421	4488.926092
SAN DIEGC	2025	LDA	Aggregatec	Aggregatec	GAS	1519467.966	56754206.9	7177849.803
SAN DIEGC	2025	LDA	Aggregatec	Aggregatec	DSL	18671.09045	690321.6682	87491.64666
SAN DIEGC	2025	LDA	Aggregatec	Aggregatec	ELEC	46846.2012	2068368.302	231742.7734
SAN DIEGC	2025	LDT1	Aggregatec	Aggregatec	GAS	173946.4981	5960108.863	792515.1534
SAN DIEGC	2025	LDT1	Aggregatec	Aggregatec	DSL	88.98633906	1609.123945	290.8164719
SAN DIEGC	2025	LDT1	Aggregatec	Aggregatec	ELEC	2074.792295	96350.24747	10426.80834
SAN DIEGC	2025	LDT2	Aggregatec	Aggregatec	GAS	487846.2103	17314400.12	2266966.955
SAN DIEGC	2025	LDT2	Aggregatec	Aggregatec	DSL	3717.387288	145971.1301	17997.14738
SAN DIEGC	2025	LDT2	Aggregatec	Aggregatec	ELEC	7882.174997	251820.3477	39576.16286
SAN DIEGC	2025	LHDT1	Aggregatec	Aggregatec	GAS	33781.5608	1211073.799	503294.9214
SAN DIEGC	2025	LHDT1	Aggregatec	Aggregatec	DSL	33448.59921	1237477.078	420741.2997
SAN DIEGC	2025	LHDT2	Aggregatec	Aggregatec	GAS	5525.568531	197013.8476	82322.73801
SAN DIEGC	2025	LHDT2	Aggregatec	Aggregatec	DSL	12294.59157	458167.0327	154650.4954
SAN DIEGC	2025	MCY	Aggregatec	Aggregatec	GAS	81028.57501	619719.7885	162057.15
SAN DIEGC	2025	MDV	Aggregatec	Aggregatec	GAS	317946.1921	11174917.09	1463572.656
SAN DIEGC	2025	MDV	Aggregatec	Aggregatec	DSL	8729.716022	345420.9236	41931.27104
SAN DIEGC	2025	MDV	Aggregatec	Aggregatec	ELEC	4973.835827	162831.9841	25175.9628
SAN DIEGC	2025	MH	Aggregatec	Aggregatec	GAS	9512.058939	82862.93297	951.5863762
SAN DIEGC	2025	MH	Aggregatec	Aggregatec	DSL	3889.548074	33693.78742	388.9548074
SAN DIEGC	2025	MHDT	Aggregatec	Aggregatec	GAS	3848.928068	223952.1122	77009.35279
SAN DIEGC	2025	MHDT	Aggregatec	Aggregatec	DSL	21396.9528	1290825.445	205355.7976
SAN DIEGC	2025	OBUS	Aggregatec	Aggregatec	GAS	1227.727046	60038.83634	24564.36274
SAN DIEGC	2025	OBUS	Aggregatec	Aggregatec	DSL	760.5320306	56501.90488	7611.281128
SAN DIEGC	2025	SBUS	Aggregatec	Aggregatec	GAS	338.3875584	17301.8374	1353.550234
SAN DIEGC	2025	SBUS	Aggregatec	Aggregatec	DSL	2355.631184	73642.28935	27183.65726
SAN DIEGC	2025	UBUS	Aggregatec	Aggregatec	GAS	441.5686833	46393.9065	1766.274733
SAN DIEGC	2025	UBUS	Aggregatec	Aggregatec	DSL	0	0	0
SAN DIEGC	2025	UBUS	Aggregatec	Aggregatec	NG	1184.772312	133157.9791	4739.089249

Total Trips		14010078.12
Total VMT	102760359.1	
VMT/Trip	7.334745619	

ATTACHMENT C

RPS Calculations for CalEEMod

SDG&E GHG Energy Emission Factors with RPS

Year	RPS Achieved	Co2 Intensity	CH4 Intensity	N2O Intensity	
2020 Base Year	33.00%	539.98	0.0330	0.0040	
Any Year No RPS Included	0.0%	805.94	0.0493	0.0060	
2009	10.5%	721.32	0.0441	0.0053	
2020	33.0%	539.98	0.0330	0.0040	33% Required by Law
2021	35.7%	518.22	0.0317	0.0038	
2022	38.4%	496.46	0.0303	0.0037	
2023	41.1%	474.70	0.0290	0.0035	
2024	43.8%	452.94	0.0277	0.0034	
2025	46.5%	431.18	0.0264	0.0032	
2026	49.2%	409.42	0.0250	0.0030	
2027	51.9%	387.66	0.0237	0.0029	
2028	54.6%	365.90	0.0224	0.0027	
2029	57.3%	344.14	0.0210	0.0025	
2030	60.0%	322.38	0.0197	0.0024	60% Required by Law

ATTACHMENT D

NREL PV Watts Energy Calculations

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at https://sam.nrel.gov) that allow for more precise and complex modeling of PV systems.

The expected range is based on 30 years of actual weather data at the given location and is intended to provide an indication of the variation you might see. For more information, please refer to this NREL report: The Error Report.

Disclaimer: The PVWatts® Model ("Model") is provided by the National Renewable Energy Laboratory ("NREL"), which is operated by the Alliance for Sustainable Energy, LLC ("Alliance") for the U.S. Department Of Energy ("DOE") and may be used for any purpose whatsoever.

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The energy output range is based on analysis of 30 years of historical weather data for nearby, and is intended to provide an indication of the possible interannual variability in generation for a Fixed (open rack) PV system at this location.

RESULTS

245,206 kWh/Year*

System output may range from 235,692 to 246,751 kWh per year near this location.

Month	Solar Radiation (kWh / m^2 / day)	AC Energy (kWh)	Value ($)
January	4.51	16,300	2,665
February	5.21	17,157	2,805
March	6.03	21,767	3,559
April	6.81	23,563	3,853
May	6.53	23,524	3,846
June	6.54	22,689	3,710
July	6.63	23,249	3,801
August	6.74	23,700	3,875
September	6.29	21,341	3,489
October	5.40	18,982	3,104
November	4.93	17,201	2,812
December	4.30	15,733	2,572
Annual	**5.83**	**245,206**	**$ 40,091**

Location and Station Identification

Requested Location	encinitas ca
Weather Data Source	Lat, Lon: 33.05, -117.3 0.6 mi
Latitude	33.05° N
Longitude	117.30° W

PV System Specifications *(Residential)*

DC System Size	149 kW
Module Type	Premium
Array Type	Fixed (open rack)
Array Tilt	20°
Array Azimuth	180°
System Losses	14.08%
Inverter Efficiency	96%
DC to AC Size Ratio	1.2

Economics

Average Retail Electricity Rate	0.164 $/kWh

Performance Metrics

Capacity Factor	18.8%

ATTACHMENT E

CalEEMod (149 kW Solar)

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Piraeus Solar

San Diego County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Industrial	1.00	User Defined Unit	1.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2025
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Project would install 149kw solar

Land Use - Rooftop Solar

Construction Phase -

Off-road Equipment -

Off-road Equipment - zero hours

Trips and VMT - zero

Grading -

Architectural Coating -

Vehicle Trips -

Woodstoves - o

Area Coating -

Landscape Equipment - zero

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Energy Use -

Water And Wastewater -

Construction Off-road Equipment Mitigation -

Energy Mitigation - Based on PVWatts, 149 kw of solar would generate 245206 kWh per year.

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Fleet Mix -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	250	0
tblAreaMitigation	UseLowVOCPaintParkingValue	0	250
tblLandUse	LotAcreage	0.00	1.00
tblOffRoadEquipment	HorsePower	187.00	174.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	CH4IntensityFactor	0.033	0.029
tblProjectCharacteristics	CO2IntensityFactor	539.98	720.49
tblProjectCharacteristics	N2OIntensityFactor	0.004	0.006
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblTripsAndVMT	WorkerTripNumber	3.00	0.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	-80.1355	-80.1355	-0.0032	-0.0007	-80.4150
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**-80.1355**	**-80.1355**	**-0.0032**	**-0.0007**	**-80.4150**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**400,677,350.00**	**400,677,350.00**	**0.00**	**0.00**	**402,074,900.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2024	1/1/2024	5	1	

Acres of Grading (Site Preparation Phase): 0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	0.00	174	0.41

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	1	0.00	0.00	0.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Industrial	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Industrial	0.561854	0.062428	0.177046	0.117565	0.023832	0.006317	0.008949	0.006298	0.000705	0.000577	0.028723	0.000955	0.004751

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Kilowatt Hours of Renewable Electricity Generated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	-80.1355	-80.1355	-0.0032	-0.0007	-80.4150
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Industrial	-245206	-80.1355	-0.0032	-0.0007	-80.4150
Total		**-80.1355**	**-0.0032**	**-0.0007**	**-80.4150**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Industrial	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Industrial	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX G-1.
GEOTECHNICAL INVESTIGATION

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GEOTECHNICAL INVESTIGATION

PIRAEUS POINT
ENCINITAS, CALIFORNIA

GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

LENNAR
SAN DIEGO, CALIFORNIA

JANUARY 31, 2022
PROJECT NO. G2307-32-05

Project No. G2307-32-05
January 31, 2022

Lennar
16465 Via Esprillo, Suite 150
San Diego, California 92127

Attention: Mr. David Shepherd

Subject: GEOTECHNICAL INVESTIGATION
PIRAEUS POINT
ENCINITAS, CALIFORNIA

Dear Mr. Shepherd:

In accordance with your request, we have performed a geotechnical investigation on the subject property located in Encinitas, California. The accompanying report presents our findings, conclusions and recommendations relative to the geotechnical aspects of developing the property as presently proposed.

The results of our study indicate that the site can be developed as planned, provided the recommendations of this report are incorporated into the design and construction of the project. If there are any questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

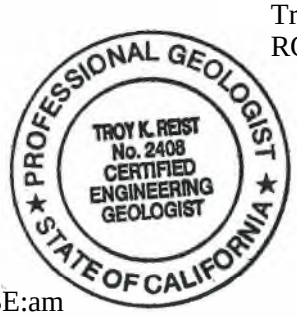
Very truly yours,

GEOCON INCORPORATED

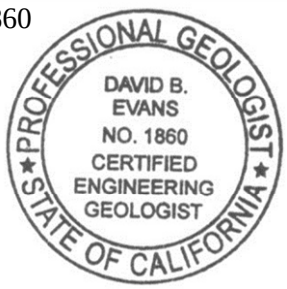
Troy K. Reist
CEG 2408

Trevor E. Myers
RCE 63773

David B. Evans
CEG 1860







TKR:TEM:DBE:am

(e-mail) Addressee
(e-mail) Pasco Laret Suiter & Associates
Attention: Mr. Tadd Dolfo

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GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

The purpose of this study was to evaluate the proposed grading for a residential development in Encinitas, California (see *Vicinity Map,* Figure 1). This report provides recommendations relative to the geotechnical engineering aspects of developing the property as presently proposed based on the conditions encountered during two field investigations.

The scope of our previous and recent studies consisted of the following:

- Reviewing aerial photographs and readily available published and unpublished geologic literature.
- Reviewing the digital plans prepared by Pasco Laret Suiter & Associates.
- Down-hole logging and sampling of four large-diameter borings (see Appendix A).
- Logging and sampling of six hollow-stem auger borings (see Appendix A).
- Performing laboratory tests on selected soil samples to evaluate their physical characteristics for engineering analysis (see Appendix B).
- Performing slope stability analyses along representative geologic cross sections (see Appendix C).
- Performing liquefaction analyses (see Appendix D).
- Preparing this report, geologic cross sections and a geologic map presenting our exploratory information and our conclusions and recommendations regarding the geotechnical aspects of developing the property as presently proposed.

The approximate locations of the exploratory borings are shown on the *Geologic Map,* Figure 2. *Geologic Cross-Sections* A-A′ through G-G′ (Figures 3 through 5) represent our interpretation of the geologic conditions across the site and served as the basis for our slope stability analysis.

2. SITE AND PROJECT DESCRIPTION

The roughly 7-acre property is primarily in a natural condition and consists of a rectangular-shaped parcel that slopes westward with elevations ranging from 180 feet Mean Sea Level (MSL) along the northeast property boundary to 80 feet MSL at the northwest corner of the site. A generally west-flowing drainage is located along the northern portion of the property and has created localized steep topography. A residential development is located to the east, Plato Place to the south and Piraeus Street to the west.

The site is essentially undeveloped other than a slope excavation along the western property margin presumed to be associated with grading of Piraeus Street. In 2001, a landslide occurred on the site that closed adjacent Piraeus Street. We understand that the City of Encinitas removed portions of the slide and installed two groundwater observation wells and two horizontal drains. The excavated soil was placed within a depression on the southern portion of the property. The western property margin currently contains the landslide remnant with an upper scarp area that has down dropped approximately 5 to 10 feet. The lower portion of the slope face adjacent to Piraeus Street was track walked with a bull dozer during repair operations.

It is our understanding that the property will be developed to create a residential development with approximately 15 building pads to support 149, 3-story condominium homes with parking garages, including 15 affordable homes, a pool house and swimming pool. In addition, associated infrastructure improvements consisting of wet and dry utilities, roadways, off-street parking, retaining walls and sidewalks are planned throughout the project.

Maximum cut and fill thicknesses not considering remedial grading will be on the order of 30 feet. Fill slopes are designed at 2:1 (horizontal:vertical) or flatter, with maximum heights of approximately 20 feet. Retaining walls are planned with a maximum height of approximately 30 feet. We understand cantilevered micropile and soil nail walls are proposed along the eastern property boundary with mechanically-stabilized earth (MSE) retaining walls along the western and northern property lines.

The site location, descriptions, and proposed development discussed above are based on site investigations, review of the project plans, and our discussions with you. Once project grading plans are prepared, Geocon Incorporated should be contacted to update this geotechnical report.

3. SOIL AND GEOLOGIC CONDITIONS

During our field investigations, we encountered three surficial soil deposits (previously-placed fill, landslide debris and alluvium) and two geologic units (Quaternary-age Very Old Paralic Deposits and Eocene-age Santiago Formation). The estimated lateral extent of these units is shown on the Geologic Map, Figure 2. Figures 3 through 5 present Geologic Cross-Sections providing our interpretation of the subsurface geologic conditions. The descriptions of the soil and geologic conditions are presented on the boring logs located in Appendix A and described herein in order of increasing age.

3.1 Previously-Placed Fill (Qpf)

Previously-placed fill exists within the southern portion of the site. This material was likely placed during construction of Plato Place and during the landslide removal in 2001. We encountered approximately 15 feet of previously placed fill in our borings. The material generally consists of loose to very dense, moist, yellowish to grayish brown, clayey, fine to coarse sand with trace gravel and

some organics. The upper approximately 5 feet of this soil has a variable moisture content and density, and is considered unsuitable for support of additional fill and/or structural loads in its present condition and will require remedial grading. The lower portion of the fill was evaluated for its density, moisture content, and compression characteristics, and was found to be generally suitable for support of additional fill and/or structural loads in its present condition.

3.2 Landslide Debris (Qls)

Landslide debris is present on the western approximately one-third of the site as shown on Figure 2. During our review of the 1953 stereo photographs of the property, the landslide was not distinguishable. Later aerial photographs suggest the first movement of the landslide occurred in 2001. The landslide extends from Piraeus Street at its toe roughly 140 feet into the property to the east. The landslide debris is unsuitable to be left in place and complete removal will be required during remedial grading operations. The complete removal will result in a buttress fill which will mitigate potential future instabilities.

3.3 Alluvium (Qal)

Alluvium exists below the previously-placed fill on the southern portion of the site to depths up to 55 feet below existing grades. The alluvium is generally composed of medium dense, damp to wet, dark yellowish brown, clayey to silty, fine to coarse sand. Perched groundwater was encountered within the alluvium at depths varying from 38 to 49 feet below the ground surface. The alluvium is considered generally suitable in its current condition for support of additional fill and/or structural loads based on laboratory analysis, as discussed herein.

3.4 Very Old Paralic Deposits ($Qvop_{13}$)

Very Old Paralic Deposits are exposed across the majority of the site above elevations of approximately 138 feet MSL. These deposits lie unconformably on the older Santiago Formation with a slightly undulating contact. The Very Old Paralic Deposits consist of medium dense to dense, damp to moist, reddish to yellowish brown, silty, fine to coarse sand with some cobble layers and cohesionless sand layers. The Very Old Paralic Deposits have adequate strength characteristics for support of the proposed improvements.

3.5 Santiago Formation (Tsa)

We encountered the Santiago Formation in our large diameter borings at depths ranging from approximately 14 feet to 32 feet below existing grades; and in our small diameter borings below the alluvium at depths ranging from 50 feet to 55 feet below existing ground. In addition, the Santiago Formation is exposed in the natural slopes within the drainage to the north of proposed development and in the adjacent to Piraeus Street. The Santiago Formation consists of dense to very dense, moist,

olive to yellowish brown, massive to weakly laminated, silty, fine to coarse sandstone. In addition, the Santiago Formation contains interbeds of hard, moist, grayish olive, claystone. Discrete seepage zones were encountered within this unit as shown on the boring logs.

Our study revealed a continuous 1- to 1.5-foot-thick bedding plane shear zone (BPS) at a depth varying from 43 to 63 feet below the existing ground. The orientation of this zone appears to be westerly dipping with elevations varying from 110 feet to 117 feet MSL. A second BPS zone was encountered roughly 15 feet above the lower BPS. The sheared material consists of soft, remolded plastic clay gouge. The lower BPS was appears to be the causative feature that resulted in landsliding in the western portion of the site.

4. GROUNDWATER/SEEPAGE

We encountered seepage within the alluvial soils located below the previously placed fill in the southern portion of the site. The seepage elevations varied from approximately 38 to 49 feet below the existing ground surface and the seepage appeared to be perched within the lower 12 feet of the alluvium. Some perched seepage was also observed within the Santiago Formation. Groundwater/seepage conditions are dependent on seasonal precipitation, irrigation, and land use, among other factors, and vary as a result. Proper surface drainage will be important for future performance of the project.

A static groundwater table was not observed in the excavations performed during this study. The existing seepage elevations in buried alluvial areas, however, may fluctuate seasonally. It should be noted that areas where perched water or seepage was not encountered may exhibit groundwater during rainy periods.

5. SLOPE STABILITY EVALUATION

Six geologic cross-sections, A-A′ through C-C’ and E-E’ through G-G′ (Figures 3 through 5), were prepared to aid in evaluating the stability of the proposed slopes and retaining walls. Shear strength parameters for the soil and geologic materials encountered were determined from laboratory direct shear tests. Residual shear strengths were used for bedding plane shear features determined from laboratory test results, using the *Journal of Geotechnical and Geoenvironmental Engineering, Drained Shear Strength Parameters for Analysis of Landslides (Stark, Choi, McCone, 2005)* and engineering judgment.

Table 5.1 presents the soil strength parameters that were utilized in the slope stability analyses. The values were derived from laboratory test results and experience with similar soil and geologic conditions.

TABLE 5.1
SOIL STRENGTH PARAMETERS

Soil Condition	Angle of Internal Friction ϕ (degrees)	Cohesion c (psf)
Compacted Fill	28	300
Very Old Paralic Deposits	28	350
Santiago Formation (ML/CL)	23	500
Santiago Formation (SM/SP)	33	750
Alluvium	28	200
Bedding Plane Shear (BPS)	8	100

In accordance with Special Publication 117 guidelines, site-specific seismic slope stability analyses are required for sites located within mapped hazard zones. Seismic Hazard Zone maps published by CDMG, including landslide hazard zones, have not been published for San Diego County due to the relatively low seismic risk compared with other jurisdictions in Southern California. Therefore, it is our opinion that seismic slope stability analyses are not required in San Diego County. However, to satisfy City of Encinitas requirements, seismic slope stability analyses on the most critical failure surfaces have been performed in accordance with *Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Landslide Hazards in California*, prepared by the Southern California Earthquake Center (SCEC), dated June 2002.

The seismic slope stability analysis was performed using an acceleration of 0.23g, corresponding to a 10 percent probability of exceedance in 50 years, based on a deaggregation analysis for the site. A modal magnitude and modal distance of 6.9 and 6.3 kilometers, respectively, was used in the analysis. A plot of the hazard contribution from the deaggregation analysis is presented as Figure C-42.

Using the parameters discussed herein, an equivalent site acceleration, k_{EQ}, of 0.132g was calculated to perform the screening analysis. The screening analysis was performed using an acceleration of 0.132g resulting in factors of safety ranging between 1.0 and 2.7. A slope is considered acceptable by the screening analysis if the calculated factor of safety is greater than 1.0 using k_{EQ}; therefore, the most critical failure surfaces depicted on Cross-sections A-A′ through C-C′ and E-E’ through G-G’, pass the screening analysis for the seismic slope stability, as shown on Figure C-43.

The output files and calculated factor of safety for the cross sections used for the stability analyses are presented in Appendix C and summarized in Table 5.2.

TABLE 5.2
SLOPE STABILITY SUMMARY

Cross Section	Figure Number	Condition Analyzed	Factor of Safety	
			Static	Pseudo-Static
A-A'	C-1/C-2	Block type failure on BPS thru fill (west portion)	4.4	2.7
	C-3/C-4	Circular type failure behind MSE wall	1.7	1.5
	C-5/C-6	Block type failure on BPS (east portion)	2.2	1.2
	C-7/C-8	Circular type failure behind shoring wall	1.5	1.2
	C-9/C-10	Circular type failure behind soil nail wall	3.0	2.2
B-B'	C-11/C-12	Circular type failure behind MSE wall	2.0	1.7
	C-13/C-14	Block type failure on upper BPS	1.5	1.0
	C-15/C-16	Circular type failure behind shoring walls	1.5	1.2
	C-17/C-18	Block type failure on lower BPS	1.8	1.0
	C-19/C-20	Block type failure on upper BPS	1.6	1.0
C-C'	C-21/C-22	Circular type failure behind MSE wall	3.1	2.3
	C-23/C-24	Block type failure on lower BPS	2.7	1.1
	C-25/C-26	Block type failure on upper BPS	1.8	1.5
	C-27/C-28	Circular type failure behind shoring walls	1.8	1.3
E-E'	C-29/C-30	Block type failure on BPS	1.6	1.2
	C-31/C-32	Circular type failure behind MSE wall	1.5	1.2
F-F'	C-33/C-34	Block type failure on BPS	2.0	1.3
	C-35/C-36	Circular type failure behind MSE wall	1.8	1.4
G-G'	C-37/C-38	Block type failure on BPS	2.3	1.4
	C-39/C-40	Circular type failure behind MSE wall	1.6	1.2

Note – Groundwater was incorporated into the analysis and generally placed at the first occurrence of seepage as encountered in our borings.

The results of the analyses indicate that full removal of the existing landslide and replacement with compacted fill will result in a static factor of safety of at least 1.5. The approximate limits of remedial grading are shown on the *Geologic Map* and depicted on the *Geologic Cross-Sections* (red landslide area). The depth and extent of remedial grading of these areas may need to be modified depending on the conditions observed during grading.

6. GEOLOGIC HAZARDS

6.1 Faulting and Seismicity

Based on our recent exploratory borings and a review of published geologic maps and reports, the site is not located on any known "active," "potentially active" or "inactive" fault traces as defined by the California Geological Survey (CGS).

The Newport-Inglewood Fault and Rose Canyon Fault Zone, located approximately 13 miles west of the site, are the closest known active faults. The CGS considers a fault seismically active when evidence suggests seismic activity within roughly the last 11,000 years. The CGS has included portions of the Rose Canyon Fault zone within an Alquist-Priolo Earthquake Fault Zone. Based upon a review of available geologic data and published reports, the site is not located within a State of California Earthquake Fault Zone.

6.2 Seismicity

Considerations important in seismic design include the frequency and duration of motion and the soil conditions underlying the site. Seismic design of structures should be evaluated in accordance with the California Building Code (CBC) guidelines currently adopted by the local agency. The risk associated with strong ground motion due to earthquake at the site is high; however, the risk is no greater than that for the region.

6.3 Liquefaction and Seismically Induced Settlement

Liquefaction typically occurs when a site is located in a zone with seismic activity, onsite soils are cohesionless, groundwater is encountered within 50 feet of the surface, and soil densities are less than about 70 percent of the maximum dry densities. If the four previous criteria are met, a seismic event could result in a rapid pore water pressure increase from the earthquake-generated ground accelerations. We performed liquefaction analyses and the results indicate a low potential for liquefaction and seismically-induced settlement. Our analysis assumed that the first occurrence of perched seepage in the borings represents a "water table". The results of the analyses are presented in Appendix D.

The site is not located within a state-designated liquefaction hazard zone. The County of San Diego Hazard Mitigation Plan (2017) maps the site within a zone with a low liquefiable risk. The current standard of practice, as outlined in the *Recommended Procedures for Implementation of DMG Special Publication 117A, Guidelines for Analyzing and Mitigating Liquefaction in California* requires liquefaction analysis to a depth of 50 feet below the lowest portion of the proposed structures. We analyzed our recent Borings B-1 through B-3 located within the southern area of the site where deep alluvium and perched seepage was encountered. We explored to a maximum depth of approximately 52-1/2 feet in this area. We do not expect there is a liquefaction potential within areas of the site

mapped as Very Old Paralic Deposits or Santiago Formation due to the dense nature of the materials and lack of groundwater.

We used the methods following the methodology of NCEER (2001 and 2008) to perform a liquefaction evaluation. We used a computed site acceleration of 0.56g (based on ASCE 7-16) and a modal magnitude of 6.9 as evaluated from the NSHM 2014 Dynamic edition using a recurrence interval of 2,475 years (2% in 50 years) on the United States Geological Survey web site.

We used the blow counts for the liquefaction analysis based on the driven samplers in the field. In addition, we adjusted blow counts using a California sampler by two-thirds to obtain equivalent Standard Penetration Test (SPT) values. The blow counts were also adjusted for boring diameter, sampling method, rod length, overburden pressure, and energy delivered to the sampler corresponding to a driving-energy of 60 percent ($N_{1|60}$). We further adjusted the blow counts for estimated fines content and calculated a factor of safety. A site is considered to be susceptible to liquefaction when the computed factor of safety is less than 1.0. The results of our liquefaction analysis indicate factors of safety greater than 1.0 within the alluvial soil below the assumed groundwater table and the liquefaction potential is considered low.

6.4 Landslides

A landslide was encountered on the site as described in Section 2. This deposit will be completely removed during remedial grading for the proposed development.

6.5 Settlement Considerations

Estimates of potential settlement are generally based on the thickness of alluvium left-in-place, the thickness of additional fill to achieve finish grade, and the compressibility characteristics of the alluvial materials. The rate of settlement is generally based on the drainage path that would allow for pore water pressure dissipation.

The alluvial deposits beneath the southern portion of the site were found to be slightly to moderately compressible when subjected to increased vertical stress. Laboratory consolidation tests were performed on samples of the alluvium to aid in evaluating the magnitude and time rate of settlement that could occur from the proposed fill and building loads presently planned. We have conservatively assumed a groundwater elevation at first occurrence of seepage for the analysis. Based on the test results and analysis, it is estimated that approximately 4 to 5 inches of settlement could occur and take approximately 2 months without geotechnical mitigation. Construction of improvements in the area where alluvium is left in place should be delayed until primary consolidation is essentially complete. It should be noted that the magnitude of the total settlement and the associated time rate of consolidation may not be uniform throughout the site. Settlement monitoring during grading will verify when primary compression has occurred, and improvement construction may commence.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 General

7.1.1 From a geotechnical engineering standpoint, it is our opinion that the site is suitable for development provided the recommendations presented herein are implemented in design and construction of the project.

7.1.2 The site is underlain by surficial soil consisting of previously-placed fill, landslide debris, and alluvium. Two geologic units consisting of Very Old Paralic Deposits and the Santiago Formation are also present on the site. Remedial grading of the upper portion of previously-placed fill and complete removal of the landslide debris will be required. The Very Old Paralic Deposits and the Santiago Formation are considered adequate for the support of compacted fill and/or structural loads.

7.1.3 Removal of the landslide in the western approximately one-third of the property will provide adequate slope stability for the central portion of the site. A buttress will be necessary along the northwest development margin to mitigate naturally occurring bedrock shear zones and provide acceptable slope stability. Details of these mitigation features are provided in Sections 7.4 and 7.8 and on Figures 2 through 5. This information should be updated once detailed grading plans are prepared.

7.1.4 The alluvium encountered beneath the previously placed fill in the southern portion of the site is considered slightly to moderately compressible when subjected to increased vertical stress due to fill or structural loads. Our settlement analysis indicates approximately 4 to 5 inches of settlement may occur as a result of placing approximately 10 feet of additional fill. As a consequence, construction of the proposed improvements, including underground utilities should be delayed until the primary consolidation of the alluvial deposits is essentially complete. Surcharge loading of this area may be considered to reduce the amount of time to achieve primary consolidation.

7.1.5 We encountered seepage within the alluvium in the southern portion of the site at depths ranging from approximately 38 to 49 feet below the existing ground surface. We also encountered seepage conditions within the formational materials in large-diameter Borings LB-1, 2 and 4 at depths of approximately 40½, 44 and 40 feet below existing grade, respectively.

7.1.6 We expect the proposed structures in areas underlain by Very Old Paralic Deposits, Santiago Formation, or properly compacted fill overlying these formations can be founded on conventional shallow foundations. The proposed structures in areas underlain by

significant differential fill thickness or previously placed fill and alluvium left in place should be founded on mat slabs or post-tensioned foundations designed to accommodate the anticipated settlement. Any proposed buildings within the influence of the reinforced zones of MSE retaining walls should be supported on deep foundations.

7.1.7 Soil nail wall construction may encounter flowing cohesionless sand within the Very Old Paralic Deposits. This condition was encountered in Boring LB-2 from 22.5 to 28 feet. Special drilling/construction techniques may be necessary if these conditions are encountered during project development.

7.2 Excavation and Soil Characteristics

7.2.1 Excavation of the surficial soil should generally be possible with moderate to heavy effort using conventional, heavy-duty equipment during grading and trenching operations. Excavation of the Very Old Paralic Deposits and the Santiago Formation should generally be possible with heavy to very heavy effort using conventional, heavy-duty equipment during grading and trenching operations.

7.2.2 We performed laboratory tests on samples of the site materials to evaluate the expansion potential of the site soils. Appendix B presents results of the laboratory expansion index tests. The soil encountered in the field investigation is considered to be "non-expansive" and "expansive" (expansion index [EI] of 20 or less and greater than 20, respectively) as defined by 2019 California Building Code [CBC] Section 1803.5.3. Table 7.2.1 presents soil classifications based on the expansion index. We expect a majority of the soil encountered possess a "very low" to "low" expansion potential (EI of 50 or less) in accordance with ASTM D 4829. However, the claystone and siltstone layers within the Santiago Formation would likely consist of "medium" to "high" expansive soils EI of 51 to 130).

TABLE 7.2.1
EXPANSION CLASSIFICATION BASED ON EXPANSION INDEX

Expansion Index (EI)	ASTM D 4829 Expansion Classification	2019 CBC Expansion Classification
0 – 20	Very Low	Non-Expansive
21 – 50	Low	Expansive
51 – 90	Medium	
91 – 130	High	
Greater Than 130	Very High	

7.2.3 The laboratory test results indicate that the near-surface on-site materials at the locations tested possess *Not Applicable* sulfate severity and *S0* exposure to concrete structures as defined by 2019 CBC Section 1904 and ACI 318-14 Chapter 19. Table 7.2.2 presents a summary of concrete requirements set forth by 2019 CBC Section 1904 and ACI 318. ACI guidelines should be followed when determining the type of concrete to be used. The presence of water-soluble sulfates is not a visually discernible characteristic; therefore, other soil samples from the site could yield different concentrations. Additionally, over time landscaping activities (i.e., addition of fertilizers and other soil nutrients) may affect the concentration.

TABLE 7.2.2
REQUIREMENTS FOR CONCRETE EXPOSED TO SULFATE-CONTAINING SOLUTIONS

Exposure Class		Water-Soluble Sulfate (SO_4) Percent by Weight	Cement Type (ASTM C 150)	Maximum Water to Cement Ratio by Weight[1]	Minimum Compressive Strength (psi)
S0		SO_4<0.10	No Type Restriction	n/a	2,500
S1		0.10≤SO_4<0.20	II	0.50	4,000
S2		0.20≤SO_4≤2.00	V	0.45	4,500
S3	Option 1	SO_4>2.00	V+Pozzolan or Slag	0.45	4,500
	Option 2		V	0.40	5,000

[1] Maximum water to cement ratio limits do not apply to lightweight concrete

7.2.4 Geocon Incorporated does not practice in the field of corrosion engineering; therefore, further evaluation by a corrosion engineer may be needed to incorporate the necessary precautions to avoid premature corrosion of underground pipes and buried metal in direct contact with the soils.

7.3 Soil Nail Wall

7.3.1 In general, ground conditions are moderately suited to soil nail wall construction techniques. However, relatively cohesionless sands were encountered in Boring LB-2 indicating the potential for raveling or caving of the unsupported excavation. Casing or specialized drilling techniques may be required where low cohesion sands are encountered.

7.3.2 Testing of the soil nails should be performed in accordance with the guidelines of the Federal Highway Administration or similar guidelines. At least two verification tests should be performed to confirm design assumptions for each soil/rock type encountered. Verification tests nails should be sacrificial and should not be used to support the proposed wall. The bond length should be adjusted to allow for pullout testing of the verification nails

to evaluate the ultimate bond stress. A minimum of 5 percent of the production nails should also be proof tested and a minimum of 4 sacrificial nails should be tested at the discretion of Geocon Incorporated. Consideration should be given to testing sacrificial nails with an adjusted bond length rather than testing production nails. Geocon Incorporated should observe the nail installation and perform the nail testing.

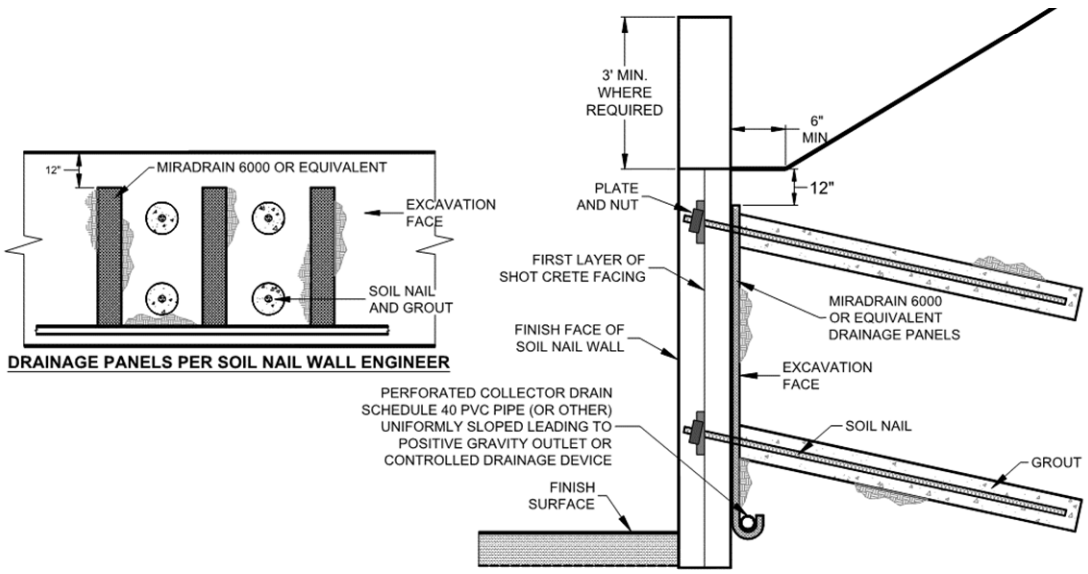
7.3.3 The soil strength parameters listed in Table 7.3.1 can be used in design of the soil nails. The bond stress is dependent on drilling method, diameter, and construction method. Therefore, the designer should evaluate the bond stress based on the existing soil conditions and the construction method.

TABLE 7.3.1
SOIL STRENGTH PARAMETERS FOR SOIL NAIL WALLS

Description	Cohesion (psf)	Friction Angle (degrees)	Estimated Ultimate Bond Stress (psi)*
Previously Placed Fill	300	28	10
Very Old Paralic Deposits	350	28	10
Santiago Formation	750	33	20

*Assuming gravity fed, open hole drilling techniques.

7.3.4 A drain system should be incorporated into the design of the soil nail wall as shown herein. Corrosion protection should also be provided if the wall is intended to be a permanent structure.



7.4 Buttresses

7.4.1 A drained buttress will be required on the north and northwest portion of the property to provide an acceptable factor of safety for the proposed MSE wall and slope. In addition, removal of the landslide debris in the western approximately one-third of the property will effectively provide adequate buttressing of the hillside in this area.

7.4.2 A typical buttress detail is shown on Figure 6. *Section 7* in Appendix E provides cut off wall and headwall details for the heel drains. Depending on the geologic conditions exposed, deeper and/or wider keyways may be necessary. The actual recommended keyway dimensions, as well as backdrain geometry and drain connection points should be determined as grading plans progress.

7.5 Grading

7.5.1 All grading should be performed in accordance with the attached *Recommended Grading Specifications* (Appendix E). Where the recommendations of this section conflict with Appendix E, the recommendations of this section take precedence. All earthwork should be observed and all fills tested for proper compaction by Geocon Incorporated.

7.5.2 Site preparation should begin with the removal of all deleterious material and vegetation. The depth of removal should be such that material exposed in cut areas or soils to be used as fill are relatively free of organic matter. Material generated during stripping and/or site demolition should be exported from the site.

7.5.3 All potentially compressible surficial soils within areas where structural improvements are planned, or where discussed herein, should be removed to firm natural ground and properly compacted prior to placing additional fill and/or structural load (i.e. the upper 5 feet of previously-placed fill, landslide debris, and other surficial deposits). Deeper than normal benching and/or stripping operations for sloping ground surfaces will be required where the thickness of potentially compressible surficial deposits exceeds 3 feet. The actual extent of unsuitable soil removals will be determined in the field during grading by the engineering geologist and/or geotechnical engineer.

7.5.4 A pre-construction meeting with a city inspector, owner, grading contractor, civil engineer, and a representative of Geocon Incorporated should be held prior to the beginning of grading and development operations. Grading requirements and construction methods can be discussed at that time.

7.5.5 Grading of the site should commence with the removal of vegetation and debris within the limits of development. Existing underground improvements should be removed and the resulting depressions properly backfilled in accordance with the procedures described herein.

7.5.6 To reduce the potential for differential settlement, it is recommended that the cut portion of cut/fill transition building pads be undercut at least 3 feet and replaced with properly compacted "very low" to "low" expansive fill soils. Where the thickness of the fill below the building pad exceeds 15 feet, the depth of the undercut should be increased to one-fifth of the maximum fill thickness.

7.5.7 Sharp fill differentials may result from removal of the landslide. Where these conditions occur beneath proposed buildings, additional undercutting or special foundation design considerations may be necessary.

7.5.8 The site should be brought to final subgrade elevations with structural fill compacted in layers. In general, soil native to the site is suitable for use as fill if relatively free from vegetation, debris and other deleterious material. Layers of fill should be no thicker than will allow for adequate bonding and compaction. Fill, including backfill and scarified ground surfaces, should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content, as determined in accordance with ASTM D 1557. Fill materials placed below optimum moisture content may require additional moisture conditioning prior to placing additional fill.

7.5.9 Import fill, if necessary, should consist of granular materials with a "very low" to "low" expansion potential (EI of 50 or less) free of deleterious material or rock larger than 3 inches and should be compacted as recommended above. Geocon Incorporated should be notified of the import soil source and should perform laboratory testing of import soil prior to its arrival at the site to determine its suitability as fill material.

7.5.10 It is the responsibility of the contractor and their competent person to ensure that all excavations, temporary slopes and trenches are properly constructed and maintained in accordance with applicable OSHA regulations in order to maintain safety and the stability of adjacent existing improvements.

7.6 Settlement Monitoring

7.6.1 The proposed structural areas underlain by previously-placed fill and alluvium should be monitored for settlement after the additional fill is placed to achieve finish grades. In general,

surface settlement plates should be placed at several locations within the southern development footprint and read periodically until primary consolidation has essentially ceased. Survey readings should be performed regularly following placement of the proposed fill. Specific details regarding the location and type of monitoring device as well as monitoring frequency will be provided once the development plans have been finalized. The possibility of surcharge loading to accelerate the magnitude of settlement should be considered as grading plans progress.

7.7 Seismic Design Criteria

7.7.1 Table 7.7.1 summarizes site-specific design criteria obtained from the 2019 California Building Code (CBC; Based on the 2018 International Building Code [IBC] and ASCE 7-16), Chapter 16 Structural Design, Section 1613 Earthquake Loads. We used the computer program *U.S. Seismic Design Maps*, provided by the Structural Engineers Association (SEA) to calculate the seismic design parameters. The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.2.2 of the 2019 CBC and Table 20.3-1 of ASCE 7-16. The values presented herein are for the risk-targeted maximum considered earthquake (MCE_R). Sites designated as Site Class D, E and F may require additional analyses if requested by the project structural engineer and client.

TABLE 7.7.1
2019 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2019 CBC Reference
Site Class	D	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	1.134g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.406g	Figure 1613.2.1(2)
Site Coefficient, F_A	1.046	Table 1613.2.3(1)
Site Coefficient, F_V	1.894	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	1.187g	Section 1613.2.3 (Eqn 16-36)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	0.769g	Section 1613.2.3 (Eqn 16-37)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	0.791g	Section 1613.2.4 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.512g	Section 1613.2.4 (Eqn 16-39)

***Note:** Using the code-based values presented in this table, in lieu of a performing a ground motion hazard analysis, requires the exceptions outlined in ASCE 7-16 Section 11.4.8 be followed by the project structural engineer. Per Section 11.4.8 of ASCE/SEI 7-16, a ground motion hazard analysis should be performed for projects for Site Class "E" sites with Ss greater than or equal to 1.0g and for Site Class "D" and "E" sites with S1 greater than 0.2g. Section 11.4.8 also provides exceptions which indicates that the ground motion hazard analysis may be waived provided the exceptions are followed.

7.7.2 Table 7.7.2 presents the mapped maximum considered geometric mean (MCE_G) seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with ASCE 7-16.

TABLE 7.7.2
ASCE 7-16 PEAK GROUND ACCELERATION

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.505g	Figure 22-9
Site Coefficient, F_{PGA}	1.1	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.556g	Section 11.8.3 (Eqn 11.8-1)

7.7.3 Conformance to the criteria in Tables 7.7.1 and 7.7.2 for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur in the event of a large earthquake. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

7.7.4 The project structural engineer and architect should evaluate the appropriate Risk Category and Seismic Design Category for the planned structures. The values presented herein assume a Risk Category of I and resulting in a Seismic Design Category D. Table 7.7.3 presents a summary of the risk categories in accordance with ASCE 7-16.

TABLE 7.7.3
ASCE 7-16 RISK CATEGORIES

Risk Category	Building Use	Examples
I	Low risk to Human Life at Failure	Barn, Storage Shelter
II	Nominal Risk to Human Life at Failure (Buildings Not Designated as I, III or IV)	Residential, Commercial and Industrial Buildings
III	Substantial Risk to Human Life at Failure	Theaters, Lecture Halls, Dining Halls, Schools, Prisons, Small Healthcare Facilities, Infrastructure Plants, Storage for Explosives/Toxins
IV	Essential Facilities	Hazardous Material Facilities, Hospitals, Fire and Rescue, Emergency Shelters, Police Stations, Power Stations, Aviation Control Facilities, National Defense, Water Storage

7.8 Slope Stability

7.8.1 We performed slope stability analyses using the two-dimensional computer program GeoStudio 2018 created by Geo-Slope International Ltd. We calculated the factor of safety for the planned slopes for rotational-mode and block-mode analyses using the Spencer's method. Output of the computer program including the calculated factor of safety and the failure surfaces are presented in Appendix C.

7.8.2 We used average drained direct shear strength parameters based on laboratory tests and our experience with similar soil types in nearby areas for the slope stability analyses. Our calculations indicate the proposed slopes, constructed of on-site materials, should have calculated factors of safety (FOS) of at least 1.5 and 1.0 under static and pseudo-static conditions, respectively, for deep-seated failure when the recommendations of this report are followed.

7.8.3 We selected Cross-Sections A-A' through C-C' and E-E' through G-G' to perform the slope stability analyses.

7.8.4 The results of the slope stability analyses are presented as Figures C-1 through C-43. The results of the surficial slope stability analyses are presented in Figure C-41. A plot of the seismic deaggregation hazard contribution is shown as Figure C-42. The seismic slope stability screening analysis results are presented as Figure C-43.

7.8.5 Based on the compression characteristics of the landslide debris and results of the slope stability analyses, complete removal of landslide materials is required. In addition, a buttress will be required within the Bedding Plane Shear (BPS) zone shown on Cross-Sections E-E' through G-G' is recommended. A buttress with an approximately 15-foot wide keyway is required to achieve an acceptable factor of safety. The buttress design has assumed a 1:1 (horizontal to vertical) backcut extending down to intercept the critical bedding plane shear zones. Figure 6 provides a general buttress detail for use in design and construction.

7.8.6 The planned buttress keyway and heel drains should be surveyed during construction. We based the buttress width and depth presented on the Geologic Map on the results of the slope stability analysis. The buttress and landslide removal will require drains located at the heel of the excavations as shown on Figure 6 and should be as-built and surveyed by the project civil engineer. Prior to outletting, the final 20-foot segment of the buttress subdrain should consist of non-perforated drainpipe. At the non-perforated/perforated interface, a seepage cutoff wall should be constructed on the downslope side of the junction. Subdrains that

discharge into a natural drainage course or open space area should be provided with a permanent headwall structure, as presented in Appendix E.

7.8.7 Excavations, including buttress fills, should be observed during grading by an engineering geologist with Geocon to evaluate whether soil and geologic conditions do not differ significantly from those expected or identified in this report.

7.8.8 We performed the slope stability analyses based on the interpretation of geologic conditions encountered during our field investigation. We should evaluate the geologic conditions during the grading operations to check if the conditions observed during grading are consistent with our interpretations. Additional slope stability analyses and modifications to the proposed buttress may be required during the grading operations as conditions warrant.

7.8.9 Slopes should be landscaped with drought-tolerant vegetation having variable root depths and requiring minimal landscape irrigation. In addition, slopes should be drained and properly maintained to reduce erosion.

7.9 Foundation Recommendations - General

7.9.1 Proposed structures supported on compacted fill over Very Old Paralic Deposits or Santiago Formation may be designed using conventional shallow foundations. Proposed structures supported on compacted fill over previously-placed fill and alluvium, should be designed using mat slabs or post-tensioned slabs with 2-inches of total settlement or drilled pier foundations. Proposed structures supported on MSE retaining wall backfill should be designed using drilled pier foundations.

7.10 Shallow Foundation and Concrete Slabs-On-Grade Recommendations

7.10.1 Proposed structures supported on compacted fill over Very Old Paralic Deposits or Santiago Formation may be designed using conventional shallow foundations. Proposed structures supported on compacted fill over previously-placed fill and alluvium, should be designed using mat slabs or post-tensioned slabs with 2-inches of total settlement or drilled pier foundations. Proposed structures supported on MSE retaining wall backfill should be design using drilled pier foundations.

7.10.2 The foundation recommendations herein are for proposed one- to three-story residential structures. The foundation recommendations have been separated into three categories based on either the maximum and differential fill thickness or Expansion Index. The foundation category criteria are presented in Table 7.10.1.

TABLE 7.10.1
FOUNDATION CATEGORY CRITERIA

Foundation Category	Maximum Fill Thickness, T (Feet)	Differential Fill Thickness, D (Feet)	Expansion Index (EI)
I	T<20	--	EI≤50
II	20≤T<50	10≤D<20	50<EI≤90
III	T≥50	D≥20	90<EI≤130

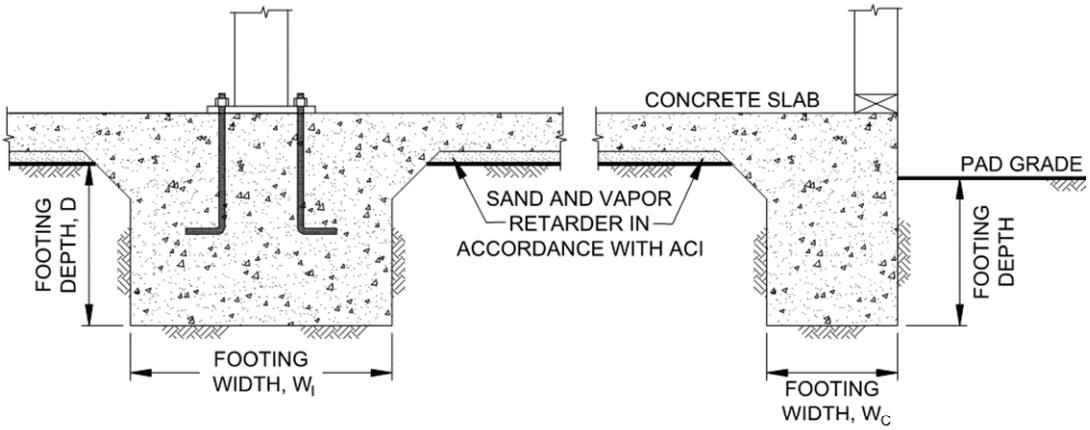
7.10.3 We will provide final foundation categories for each building or lot after finish pad grades have been achieved, the underlying underlying fill-bedrock geometry is evaluated and we perform laboratory testing of the subgrade soil. However, any structures supported on previously-placed fill and alluvium should be designed using Foundation Category III parameters and consider the total settlement due to additional structural loads and additional settlement due to the potential for hydrocollapse.

7.10.4 Table 7.10.2 presents minimum foundation and interior concrete slab design criteria for conventional foundation systems.

TABLE 7.10.2
CONVENTIONAL FOUNDATION RECOMMENDATIONS BY CATEGORY

Foundation Category	Minimum Footing Embedment Depth, D (inches)	Minimum Continuous Footing Reinforcement	Minimum Footing Width (Inches)
I	12	Two No. 4 bars, one top and one bottom	12 – Continuous, W_C 24 – Isolated, W_I
II	18	Four No. 4 bars, two top and two bottom	
III	24	Four No. 5 bars, two top and two bottom	

7.10.5 The foundations should be embedded in accordance with the recommendations herein and the Wall/Column Footing Dimension Detail. The embedment depths should be measured from the lowest adjacent pad grade for both interior and exterior footings. Footings should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope (unless designed with a post-tensioned foundation system as discussed herein).



Wall/Column Footing Dimension Detail

7.10.6 The proposed structures can be supported on a shallow foundation system founded in the compacted fill/formational materials. Table 7.10.3 provides a summary of the foundation design recommendations.

TABLE 7.10.3
SUMMARY OF FOUNDATION RECOMMENDATIONS

Parameter	Value
Allowable Bearing Capacity	2,000 psf
Bearing Capacity Increase	500 psf per Foot of Depth
	300 psf per Foot of Width
Maximum Allowable Bearing Capacity	3,500 psf
Estimated Total Settlement*	1 Inch
Estimated Differential Settlement	½ Inch in 40 Feet

(*) The estimated total settlement is 2-inches with 1-inch differential in 40 feet beneath structures supported by previously-placed fill and alluvium

7.10.7 The bearing capacity values presented herein are for dead plus live loads and may be increased by one-third when considering transient loads due to wind or seismic forces.

7.10.8 The concrete slab-on-grades should be a designed in accordance with Table 7.10.4.

TABLE 7.10.4
CONVENTIONAL SLAB-ON-GRADE RECOMMENDATIONS BY CATEGORY

Foundation Category	Minimum Concrete Slab Thickness (inches)	Interior Slab Reinforcement	Typical Slab Underlayment
I	4	6 x 6 - 10/10 welded wire mesh at slab mid-point	3 to 4 Inches of Sand/Gravel/Base
II	4	No. 3 bars at 24 inches on center, both directions	
III	5	No. 3 bars at 18 inches on center, both directions	

7.10.9 Slabs that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder. The vapor retarder design should be consistent with the guidelines presented in the American Concrete Institute's (ACI) *Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials* (ACI 302.2R-06). The vapor retarder used should be specified by the project architect or developer based on the type of floor covering that will be installed and if the structure will possess a humidity controlled environment.

7.10.10 The bedding sand thickness should be determined by the project foundation engineer, architect, and/or developer. However, we should be contacted to provide recommendations if the bedding sand is thicker than 6 inches. It is common to see 3 inches and 4 inches of sand below the concrete slab-on-grade for 5-inch and 4-inch thick slabs, respectively, in the southern California area. The foundation design engineer should provide appropriate concrete mix design criteria and curing measures to assure proper curing of the slab by reducing the potential for rapid moisture loss and subsequent cracking and/or slab curl. We suggest that the foundation design engineer present the concrete mix design and proper curing methods on the foundation plans. It is critical that the foundation contractor understands and follows the recommendations presented on the foundation plans.

7.10.11 As an alternative to the conventional foundation recommendations, consideration should be given to the use of post-tensioned concrete slab and foundation systems for the support of the proposed structures. The post-tensioned systems (foundation dimensions and embedment depths, slab thickness and steel placement) should be designed by a structural engineer experienced in post-tensioned slab design and design criteria of the Post-Tensioning Institute (PTI) DC 10.5-12 *Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils* or *WRI/CRSI Design of Slab-on-Ground Foundations*, as required by the 2019 California Building Code (CBC Section 1808.6.2). Although this procedure was developed for expansive soil conditions, it can

also be used to reduce the potential for foundation distress due to differential fill settlement. The post-tensioned design should incorporate the geotechnical parameters presented in Table 7.10.5 for the particular Foundation Category designated. The parameters presented in Table 7.10.5 are based on the guidelines presented in the PTI DC 10.5 design manual.

TABLE 7.10.5
POST-TENSIONED FOUNDATION SYSTEM DESIGN PARAMETERS

Post-Tensioning Institute (PTI) DC10.5 Design Parameters	Foundation Category		
	I	II	III
Thornthwaite Index	-20	-20	-20
Equilibrium Suction	3.9	3.9	3.9
Edge Lift Moisture Variation Distance, e_M (Feet)	5.3	5.1	4.9
Edge Lift, y_M (Inches)	0.61	1.10	1.58
Center Lift Moisture Variation Distance, e_M (Feet)	9.0	9.0	9.0
Center Lift, y_M (Inches)	0.30	0.47	0.66

7.10.12 The foundations for the post-tensioned slabs should be embedded in accordance with the recommendations of the structural engineer. If a post-tensioned mat foundation system is planned, the slab should possess a thickened edge with a minimum width of 12 inches and extend below the clean sand or crushed rock layer.

7.10.13 If the structural engineer proposes a post-tensioned foundation design method other than PTI, DC 10.5:

- The deflection criteria presented in Table 7.10.5 are still applicable.
- Interior stiffener beams should be used for Foundation Categories II and III.
- The width of the perimeter foundations should be at least 12 inches.
- The perimeter footing embedment depths should be at least 12 inches, 18 inches and 24 inches for foundation categories I, II, and III, respectively. The embedment depths should be measured from the lowest adjacent pad grade.

7.10.14 Foundation systems for the lots that possess a foundation Category I and a “very low” expansion potential (expansion index of 20 or less) can be designed using the method described in Section 1808 of the 2019 CBC. If post-tensioned foundations are planned, an alternative, commonly accepted design method (other than PTI) can be used. However, the post-tensioned foundation system should be designed with a total and differential deflection of 1 inch. Geocon Incorporated should be contacted to review the plans and provide additional information, if necessary.

7.10.15 If an alternate design method is contemplated, Geocon Incorporated should be contacted to evaluate if additional expansion index testing should be performed to identify the lots that possess a “very low” expansion potential (expansion index of 20 or less).

7.10.16 Our experience indicates post-tensioned slabs may be susceptible to excessive edge lift from tensioning, regardless of the underlying soil conditions. Placing reinforcing steel at the bottom of the perimeter footings and the interior stiffener beams may mitigate this potential. The structural engineer should design the foundation system to reduce the potential of edge lift occurring for the proposed structures.

7.10.17 During the construction of the post-tension foundation system, the concrete should be placed monolithically. Under no circumstances should cold joints form between the footings/grade beams and the slab during the construction of the post-tension foundation system unless designed by the structural engineer.

7.10.18 Isolated footings outside of the slab area, if present, should have the minimum embedment depth and width recommended for conventional foundations for a particular Foundation Category. The use of isolated footings, which are located beyond the perimeter of the building and support structural elements connected to the building, are not recommended for Category III. Where this condition cannot be avoided, the isolated footings should be connected to the building foundation system with grade beams in both directions. In addition, consideration should be given to connecting patio slabs, which exceed 5 feet in width, to the building foundation to reduce the potential for future separation to occur.

7.10.19 Interior stiffening beams should be incorporated into the design of the foundation system in accordance with the PTI design procedures.

7.10.20 Special subgrade presaturation is not deemed necessary prior to placing concrete; however, the exposed foundation and slab subgrade soil should be moisture conditioned, as necessary, to maintain a moist condition as would be expected in any such concrete placement.

7.10.21 Where buildings or other improvements are planned near the top of a slope 3:1 (horizontal:vertical) or steeper, special foundation and/or design considerations are recommended due to the tendency for lateral soil movement to occur.

- For fill slopes less than 20 feet high or cut slopes regardless of height, footings should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.

- When located next to a descending 3:1 (horizontal:vertical) fill slope or steeper, the foundations should be extended to a depth where the minimum horizontal distance is equal to H/3 (where H equals the vertical distance from the top of the fill slope to the base of the fill soil) with a minimum of 7 feet but need not exceed 40 feet. The horizontal distance is measured from the outer, deepest edge of the footing to the face of the slope. A post-tensioned slab and foundation system or mat foundation system can be used to reduce the potential for distress in the structures associated with strain softening and lateral fill extension. Specific design parameters or recommendations for either of these alternatives can be provided once the building location and fill slope geometry have been determined.

- If swimming pools are planned, Geocon Incorporated should be contacted for a review of specific site conditions.

- Swimming pools located within 7 feet of the top of cut or fill slopes are not recommended. Where such a condition cannot be avoided, the portion of the swimming pool wall within 7 feet of the slope face be designed assuming that the adjacent soil provides no lateral support. This recommendation applies to fill slopes up to 30 feet in height, and cut slopes regardless of height. For swimming pools located near the top of fill slopes greater than 30 feet in height, additional recommendations may be required and Geocon Incorporated should be contacted for a review of specific site conditions.

- Although other improvements, which are relatively rigid or brittle, such as concrete flatwork or masonry walls, may experience some distress if located near the top of a slope, it is generally not economical to mitigate this potential. It may be possible, however, to incorporate design measures which would permit some lateral soil movement without causing extensive distress. Geocon Incorporated should be consulted for specific recommendations.

7.10.22 The recommendations of this report are intended to reduce the potential for cracking of slabs and foundations due to expansive soil (if present), differential settlement of fill soil with varying thicknesses. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade placed on such conditions may still exhibit some cracking due to soil movement and/or shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

7.10.23 Concrete slabs should be provided with adequate crack-control joints, construction joints and/or expansion joints to reduce unsightly shrinkage cracking. The design of joints should consider criteria of the American Concrete Institute when establishing crack-control spacing. Additional steel reinforcing, concrete admixtures and/or closer crack control joint spacing should be considered where concrete-exposed finished floors are planned.

7.10.24 Geocon Incorporated should be consulted to provide additional design parameters as required by the structural engineer.

7.10.25 We should observe the foundation excavations prior to the placement of reinforcing steel to check that the exposed soil conditions are similar to those expected and that they have been extended to the appropriate bearing strata. If unexpected soil conditions are encountered, foundation modifications may be required.

7.11 Mat Foundation

7.11.1 We understand the proposed structures underlain by compacted fill over previously-placed fill and alluvium may be supported on a mat foundation. A mat foundation consists of a thick, rigid concrete mat that allows the entire footprint of the structure to carry building loads. In addition, the mat can tolerate significantly greater differential movements such as those associated with expansive soils or differential settlement. In this case, the mat foundation may be used below the water table if adequately waterproofed to reduce the potential for seepage. Table 7.11 provides a summary of the foundation design recommendations.

TABLE 7.11
SUMMARY OF MAT FOUNDATION RECOMMENDATIONS

Parameter	Value
Design Perimeter Foundation Width	12 inches
Minimum Foundation Depth	Extend Below Slab Underlayment
Minimum Steel Reinforcement	Per Structural Engineer
Bearing Capacity	500 psf
Estimated Total Settlement	2 Inches
Estimated Differential Settlement	1 Inch in 40 Feet
Modulus of Subgrade Reaction	125 pci
Design Expansion Index	50 or less

7.11.2 The modulus of subgrade reaction values should be modified as necessary using standard equations for mat size as required by the structural engineer. This value is a unit value for use with a 1-foot square footing. The modulus should be reduced in accordance with the following equation when used with larger foundations:

$$K_R = K\left[\frac{B+1}{2B}\right]^2$$

where: K_R = reduced subgrade modulus
K = unit subgrade modulus
B = foundation width (in feet)

7.11.3 A mat foundation system will allow the structure to settle with the ground and should have sufficient rigidity to allow the structure to move as a single unit. Re-leveling of the mat foundation could be necessary through the use of mud jacking, compaction grouting or other similar techniques if differential settlement occurs

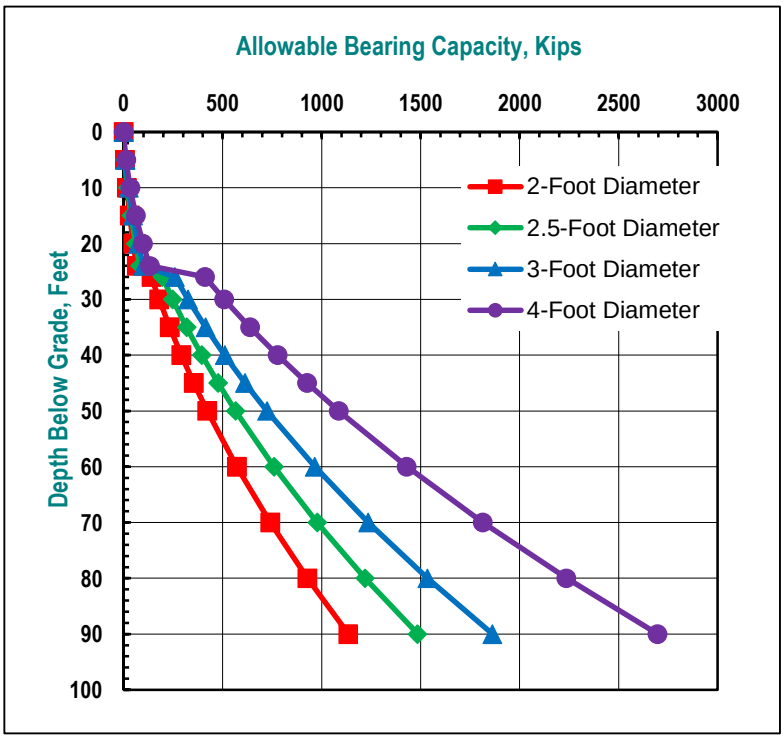
7.11.4 Slabs that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder. The vapor retarder design should be consistent with the guidelines presented in the American Concrete Institute's (ACI) *Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials* (ACI 302.2R-06). In addition, the membrane should be installed in accordance with manufacturer's recommendations and ASTM requirements and installed in a manner that prevents puncture. The vapor retarder used should be specified by the project architect or developer based on the type of floor covering that will be installed and if the structure will possess a humidity controlled environment.

7.11.5 The bedding sand thickness should be determined by the project foundation engineer, architect, and/or developer. However, we should be contacted to provide recommendations if the bedding sand is thicker than 6 inches. The foundation design engineer should provide appropriate concrete mix design criteria and curing measures to assure proper curing of the slab by reducing the potential for rapid moisture loss and subsequent cracking and/or slab curl. We suggest that the foundation design engineer present the concrete mix design and proper curing methods on the foundation plans. It is critical that the foundation contractor understands and follows the recommendations presented on the foundation plans.

7.12 Drilled Pier Recommendations

7.12.1 Drilled piers should be used for foundation support for structures supported within the influence of MSE wall backfill or structures supported on compacted fill over previously-placed fill and alluvium if the 2-inches of total settlement is prohibitive for mat or post-tensioned slabs. The foundation recommendations herein assume that the piers will extend through the fill into the Santiago Formation. The piers should be embedded at least 5 feet within the formational materials. For design purposes, a fill thickness of 25 feet was used to compute the allowable bearing capacities shown below. Once actual foundation types and locations are determined, revised allowable capacities may be provided based on actual site conditions.

7.12.2 Piers can be designed to develop support by end bearing within the formational materials and skin friction within the formational materials and portions of the fill soil. The end bearing capacity can be determined by the End Bearing Capacity Chart. These allowable values possess a factor of safety of 2 and 3 for skin friction and end bearing, respectively.



Allowable Bearing Capacity Chart

7.12.3 Piers can be designed to develop support by end bearing within the formational materials and skin friction within the formational materials and portions of the fill soil using the design parameters presented in Table 7.12.

TABLE 7.12
SUMMARY OF DRILLED PIER RECOMMENDATIONS

Parameter	Value
Minimum Pile Diameter	2 Feet
Minimum Pile Spacing	3 Times Pile Diameter
Minimum Foundation Embedment Depth	10 Feet
	5 Feet in Formational Materials
Allowable End Bearing Capacity	Per Chart
Allowable Skin Friction Capacity	300 psf (Fill Materials)
	750 psf (Santiago Formation)
Estimated Total Settlement	½ Inch
Estimated Differential Settlement	½ Inch in 40 Feet

7.12.4 The design length of the drilled piers should be determined by the designer based on the elevation of the pile cap or grade beam and the elevation of the top of the formational materials obtained from the Geologic Map and Geologic Cross-Sections presented herein. It is difficult to evaluate the exact length of the proposed drilled piers due to the variable thickness of the existing fill; therefore, some variation should be expected during drilling operations.

7.12.5 If pier spacing is at least three times the maximum dimension of the pier, no reduction in axial capacity for group effects is considered necessary. If piles are spaced between 2 and 3 pile diameters (center to center), the single pile axial capacity should be reduced by 25 percent. Geocon Incorporated should be contacted to provide single-pile capacity if piers are spaced closer than 2 diameters.

7.12.6 The allowable downward capacity may be increased by one-third when considering transient wind or seismic loads.

7.12.7 The existing materials may contain gravel and cobble and may possess very dense zones; therefore, the drilling contractor should expect difficult drilling conditions during excavations for the piers. Because a significant portion of the piers capacity will be developed by end bearing, the bottom of the borehole should be cleaned of loose cuttings prior to the placement of steel and concrete. Experience indicates that backspinning the auger does not remove loose material and a flat cleanout plate is necessary. We expect localized seepage may be encountered during the drilling operations and casing may be required to maintain the integrity of the pier excavation, particularly if seepage or sidewall instability is encountered. Concrete should be placed within the excavation as soon as possible after the auger/cleanout plate is withdrawn to reduce the potential for discontinuities or caving.

7.12.8 Pile settlement of production piers is expected to be on the order of ½ inch if the piers are loaded to their allowable capacities. Geocon should provide updated settlement estimates once the foundation plans are available. Settlements should be essentially complete shortly after completion of the building superstructure.

7.13 Concrete Flatwork

7.13.1 Exterior concrete flatwork not subject to vehicular traffic should be constructed in accordance with the recommendations herein. Slab panels should be a minimum of 4 inches thick and, when in excess of 8 feet square, should be reinforced with 6 x 6 - W2.9/W2.9 (6 x 6 - 6/6) welded wire mesh or No. 3 reinforcing bars spaced at least

18 inches center-to-center in both directions to reduce the potential for cracking. In addition, concrete flatwork should be provided with crack control joints to reduce and/or control shrinkage cracking. Crack control spacing should be determined by the project structural engineer based upon the slab thickness and intended usage. Criteria of the American Concrete Institute (ACI) should be taken into consideration when establishing crack control spacing. Subgrade soil for exterior slabs not subjected to vehicle loads should be compacted in accordance with criteria presented in the grading section prior to concrete placement. Subgrade soil should be properly compacted and the moisture content of subgrade soil should be checked prior to placing concrete. The recommendations herein assume the upper 3 feet of subgrade soil will possess a "very low" to "medium" expansion potential (expansion index of 90 or less).

7.13.2 Even with the incorporation of the recommendations within this report, the exterior concrete flatwork has a likelihood of experiencing some uplift due to expansive soil beneath grade; therefore, the steel reinforcement should overlap continuously in flatwork to reduce the potential for vertical offsets within flatwork. Additionally, flatwork should be structurally connected to the curbs, where possible, to reduce the potential for offsets between the curbs and the flatwork.

7.13.3 Where exterior flatwork abuts the structure at entrant or exit points, the exterior slab should be dowelled into the structure's foundation stemwall. This recommendation is intended to reduce the potential for differential elevations that could result from differential settlement or minor heave of the flatwork. Dowelling details should be designed by the project structural engineer.

7.13.4 The recommendations presented herein are intended to reduce the potential for cracking of slabs and foundations as a result of differential movement. However, even with the incorporation of the recommendations presented herein, foundations and slabs-on-grade will still crack. The occurrence of concrete shrinkage cracks is independent of the soil supporting characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, the use of crack control joints and proper concrete placement and curing. Literature provided by the Portland Concrete Association (PCA) and American Concrete Institute (ACI) present recommendations for proper concrete mix, construction, and curing practices, and should be incorporated into project construction.

7.14 Retaining Walls

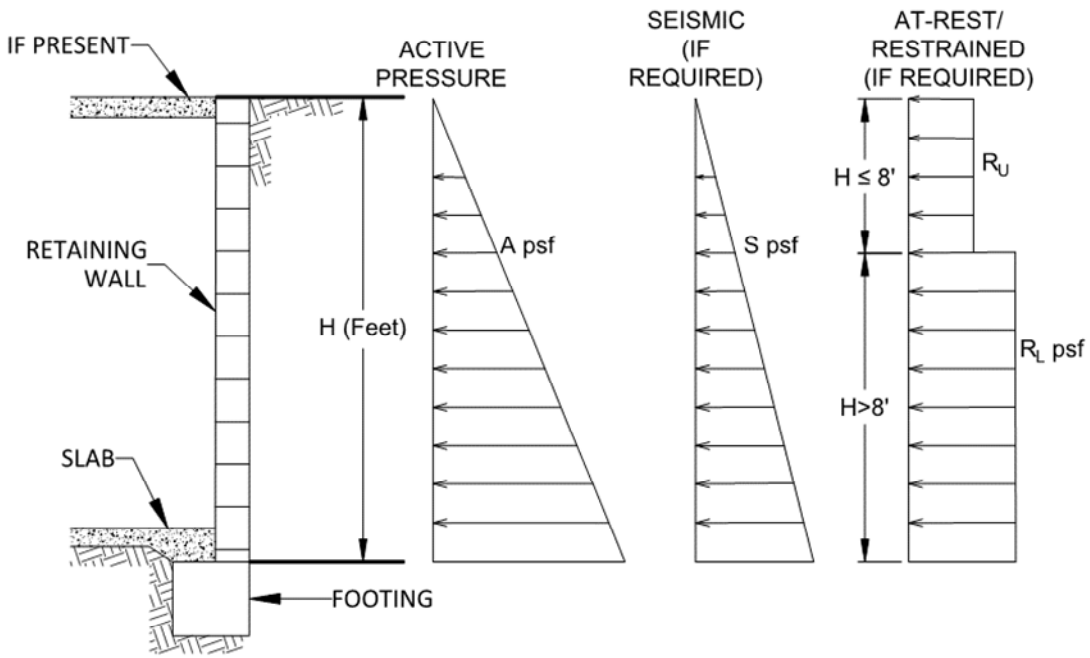
7.14.1 Retaining walls should be designed using the values presented in Table 7.14.1. Soil with an expansion index (EI) of greater than 50 should not be used as backfill material behind retaining walls.

TABLE 7.14.1
RETAINING WALL DESIGN RECOMMENDATIONS

Parameter	Value
Active Soil Pressure, A (Fluid Density, Level Backfill)	35 pcf
Active Soil Pressure, A (Fluid Density, 2:1 Sloping Backfill)	50 pcf
Seismic Pressure, S	21H psf
At-Rest/Restrained Walls Additional Uniform Pressure, R_U (0 to 8 Feet High)	7H psf
At-Rest/Restrained Walls Additional Uniform Pressure, R_L (8+ Feet High)	13H psf
Expected Expansion Index for the Subject Property	EI≤50

H equals the height of the retaining portion of the wall.

7.14.2 The project retaining walls should be designed as shown in the Retaining Wall Loading Diagram.



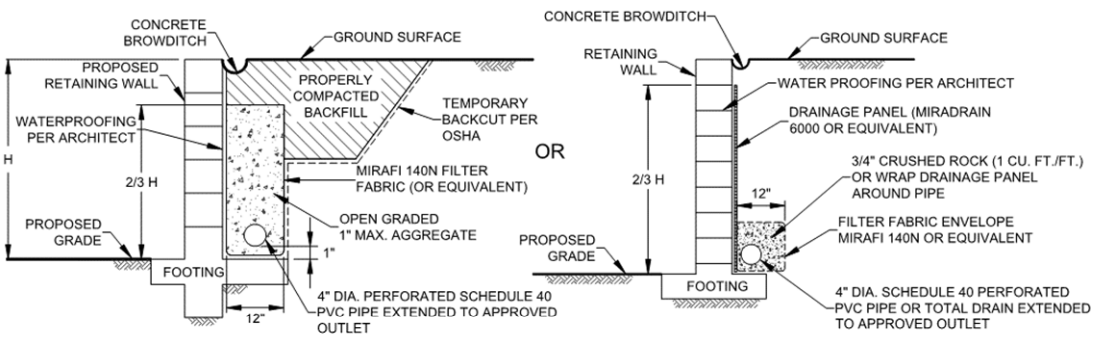
Retaining Wall Loading Diagram

7.14.3 Unrestrained walls are those that are allowed to rotate more than 0.001H (where H equals the height of the retaining portion of the wall) at the top of the wall. Where walls are restrained from movement at the top (at-rest condition), an additional uniform pressure should be applied to the wall. For retaining walls subject to vehicular loads within a horizontal distance equal to two-thirds the wall height, a surcharge equivalent to 2 feet of fill soil should be added.

7.14.4 The structural engineer should determine the Seismic Design Category for the project in accordance with Section 1613.3.5 of the 2019 CBC or Section 11.6 of ASCE 7-16. For structures assigned to Seismic Design Category of D, E, or F, retaining walls that support more than 6 feet of backfill should be designed with seismic lateral pressure in accordance with Section 1803.5.12 of the 2019 CBC. The seismic load is dependent on the retained height where H is the height of the wall, in feet, and the calculated loads result in pounds per square foot (psf) exerted at the base of the wall and zero at the top of the wall.

7.14.5 Retaining walls should be designed to ensure stability against overturning sliding, and excessive foundation pressure. Where a keyway is extended below the wall base with the intent to engage passive pressure and enhance sliding stability, it is not necessary to consider active pressure on the keyway.

7.14.6 Drainage openings through the base of the wall (weep holes) should not be used where the seepage could be a nuisance or otherwise adversely affect the property adjacent to the base of the wall. The recommendations herein assume a properly compacted granular (EI of 90 or less) free-draining backfill material with no hydrostatic forces or imposed surcharge load. The retaining wall should be properly drained as shown in the Typical Retaining Wall Drainage Detail. If conditions different than those described are expected, or if specific drainage details are desired, Geocon Incorporated should be contacted for additional recommendations.



Typical Retaining Wall Drainage Detail

7.14.7 The retaining walls may be designed using either the active and restrained (at-rest) loading condition or the active and seismic loading condition as suggested by the structural engineer. Typically, it appears the design of the restrained condition for retaining wall loading may be adequate for the seismic design of the retaining walls. However, the active earth pressure combined with the seismic design load should be reviewed and also considered in the design of the retaining walls.

7.14.8 In general, wall foundations should be designed in accordance with Table 7.14.2. The proximity of the foundation to the top of a slope steeper than 3:1 could impact the allowable soil bearing pressure. Therefore, retaining wall foundations should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.

TABLE 7.14.2
SUMMARY OF RETAINING WALL FOUNDATION RECOMMENDATIONS

Parameter	Value
Minimum Retaining Wall Foundation Width	12 inches
Minimum Retaining Wall Foundation Depth	12 Inches
Minimum Steel Reinforcement	Per Structural Engineer
Allowable Bearing Capacity	2,000 psf
Estimated Total Settlement	½ Inch
Estimated Differential Settlement	½ Inch in 40 Feet

7.14.9 The recommendations presented herein are generally applicable to the design of rigid concrete or masonry retaining walls. In the event that other types of walls (such as mechanically stabilized earth [MSE] walls, soil nail walls, or soldier pile walls) are planned, Geocon Incorporated should be consulted for additional recommendations.

7.14.10 Unrestrained walls will move laterally when backfilled and loading is applied. The amount of lateral deflection is dependent on the wall height, the type of soil used for backfill, and loads acting on the wall. The retaining walls and improvements above the retaining walls should be designed to incorporate an appropriate amount of lateral deflection as determined by the structural engineer.

7.14.11 Soil contemplated for use as retaining wall backfill, including import materials, should be identified in the field prior to backfill. At that time, Geocon Incorporated should obtain samples for laboratory testing to evaluate its suitability. Modified lateral earth pressures may be necessary if the backfill soil does not meet the required expansion index or shear strength. City or regional standard wall designs, if used, are based on a specific active lateral earth pressure and/or soil friction angle. In this regard, on-site soil to be used as backfill may or may not meet the values for standard wall designs. Geocon Incorporated should be consulted to assess the suitability of the on-site soil for use as wall backfill if standard wall designs will be used.

7.15 Lateral Loading

7.15.1 To resist lateral loads, a passive pressure exerted by an equivalent fluid density of 300 pounds per cubic foot (pcf) should be used for the design of footings or shear keys. The allowable passive pressure assumes a horizontal surface extending at least 5 feet, or three

times the surface generating the passive pressure, whichever is greater. The upper 12 inches of material in areas not protected by floor slabs or pavement should not be included in design for passive resistance.

7.15.2 If friction is to be used to resist lateral loads, an allowable coefficient of friction between soil and concrete of 0.35 should be used for design. The friction coefficient may be reduced depending on the vapor barrier or waterproofing material used for construction in accordance with the manufacturer's recommendations.

7.15.3 The passive and frictional resistant loads can be combined for design purposes. The lateral passive pressures may be increased by one-third when considering transient loads due to wind or seismic forces.

7.16 Mechanically Stabilized Earth (MSE) Retaining Walls

7.16.1 Mechanized stabilized earth (MSE) retaining walls can be used on the property. MSE retaining walls are alternative walls that consist of modular block facing units with geogrid reinforced earth behind the block. The reinforcement grid attaches to the block units and is typically placed at specified vertical intervals and embedment lengths. The grid length and spacing will be determined by the wall designer.

7.16.2 The geotechnical parameters listed in Table 7.16 can be used for preliminary design of the MSE walls. Soil with an expansion index (EI) of greater than 50 should not be used as backfill material behind retaining walls. In addition, some wall designers request soil with a plasticity index greater than 20, a liquid limit greater than 40 and a fines content greater than 35 percent should not be used for soil within the reinforcing zone. This may require import of select materials for the wall backfilling operations or selectively stockpiling of granular soils. Once the backfill source has been determined, laboratory testing should be performed to check that the shear strength parameters used in the design of the MSE walls meet or exceed the required strength within the reinforced zone.

TABLE 7.16
GEOTECHNICAL PARAMETERS FOR MSE WALLS

Parameter	Reinforced Zone	Retained Zone	Foundation Zone
Angle of Internal Friction	28 degrees	28 degrees	28 degrees
Cohesion	0 psf	0 psf	0 psf
Wet Unit Density	125 pcf	125 pcf	125 pcf

7.16.3 The soil parameters presented in Table 7.16 are based on our experience with MSE wall contractors on previous projects. The wet unit density values presented in Table 7.16 can be used for design but actual in-place densities may range from approximately 110 to 135 pounds per cubic foot. Geocon has no way of knowing which materials will actually be used as backfill behind the wall during construction. It is up to the wall designers to use their judgment in selection of the design parameters. As such, once backfill materials have been selected and/or stockpiled, sufficient shear tests should be conducted on samples of the proposed backfill materials to check that they conform to actual design values. Results should be provided to the designer to re-evaluate stability of the walls. Dependent upon test results, the designer may require modifications to the original wall design (e.g., longer reinforcement embedment lengths and/or steel reinforcement).

7.16.4 The foundation zone is the area where the footing is embedded, the reinforced zone is the area of the backfill that possesses the reinforcing fabric, and the retained zone is the area behind the reinforced zone.

7.16.5 Wall foundations having a minimum depth and width of one foot may be designed for an allowable soil bearing pressure of 2,000 psf. The MSE walls should be designed for a total and differential settlement of 1-inch and ½-inch in 40 feet, respectively. The planned MSE walls should be designed to accommodate the anticipated settlement.

7.16.6 Backfill materials within the reinforced zone should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content in accordance with ASTM D 1557. This is applicable to the entire embedment width of the reinforcement. Typically, wall designers specify no heavy compaction equipment within 3 feet of the face of the wall. However, smaller equipment (e.g., walk-behind, self-driven compactors or hand whackers) can be used to compact the materials without causing deformation of the wall. If the designer specifies no compactive effort for this zone, the materials are essentially not properly compacted and the reinforcement grid within the uncompacted zone should not be relied upon for reinforcement, and overall embedment lengths will have to be increased to account for the difference.

7.16.7 The wall should be provided with a drainage system sufficient to prevent excessive seepage through the wall and the base of the wall, thus preventing hydrostatic pressures behind the wall.

7.16.8 Geosynthetic reinforcement must elongate to develop full tensile resistance. This elongation generally results in movement at the top of the wall. The amount of movement is dependent upon the height of the wall (e.g., higher walls rotate more) and the type of reinforcing grid used. In addition, over time the reinforcement grid has been known to exhibit creep

(sometimes as much as 5 percent) and can undergo additional movement. Given this condition, the owner should be aware that structures and pavement placed within the reinforced and retained zones of the wall may undergo movement.

7.16.9 The MSE wall contractor should provide the estimated deformation of wall and adjacent ground in associated with wall construction. The calculated horizontal and vertical deformations should be determined by the wall designer. The estimated movements should be provided to the project structural engineer to determine if the planned improvements can tolerate the expected movements.

7.16.10 The MSE wall designer/contractor should review this report, including the slope stability requirements, and incorporate our recommendations as presented herein. We should be provided the plans for the MSE walls to check if they are in conformance with our recommendations prior to issuance of a permit and construction.

7.17 Preliminary Pavement Recommendations

7.17.1 We calculated the flexible pavement sections in general conformance with the *Caltrans Method of Flexible Pavement Design* (Highway Design Manual, Section 608.4) using estimated Traffic Indices (TI's) of 5.0, 6.0 and 7.0 for the interior roadways. The project civil engineer and owner should review the pavement designations to determine appropriate locations for pavement thickness. We have assumed an R-Value of 15 and 78 for the subgrade soil and base materials, respectively, based on laboratory test results for the purposes of this preliminary analysis. The final pavement sections should be based on the R-Value of the subgrade soil encountered at final subgrade elevation once site grading and utility trench backfill is completed. Table 7.17.1 presents the preliminary flexible pavement sections.

TABLE 7.17.1
PRELIMINARY FLEXIBLE PAVEMENT SECTION

Location	Assumed Traffic Index	Assumed Subgrade R-Value	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Interior Roadways (light-duty)	5.0	15	3	8
Interior Roadways (medium duty)	6.0	15	4	10
Interior Roadways (heavy duty)	7.0	15	4	13

7.17.2 Prior to placing base materials, the upper 12 inches of the subgrade soil should be scarified, moisture conditioned as necessary, and recompacted to a dry density of at least 95 percent of

the laboratory maximum dry density near to slightly above optimum moisture content as determined by ASTM D 1557. Similarly, the base material should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Asphalt concrete should be compacted to a density of at least 95 percent of the laboratory Hveem density in accordance with ASTM D 2726.

7.17.3 Base materials should conform to Section 26-1.02B of the *Standard Specifications for The State of California Department of Transportation (Caltrans)* with a ¾-inch maximum size aggregate. The asphalt concrete should conform to Section 203-6 of the *Standard Specifications for Public Works Construction (Greenbook).*

7.17.4 The base thickness can be reduced if a reinforcement geogrid is used during the installation of the pavement. Geocon should be contact for additional recommendations, if required.

7.17.5 A rigid Portland cement concrete (PCC) pavement section should be placed in driveway entrance aprons, cross-gutters and trash bin loading/storage areas. The concrete pad for trash truck areas should be large enough such that the truck wheels will be positioned on the concrete during loading. We calculated the rigid pavement section in general conformance with the procedure recommended by the American Concrete Institute report ACI 330R-08 *Guide for Design and Construction of Concrete Parking Lots* using the parameters presented in Table 7.17.2.

TABLE 7.17.2
RIGID PAVEMENT DESIGN PARAMETERS

Design Parameter	Design Value
Modulus of subgrade reaction, k	100 pci
Modulus of rupture for concrete, M_R	500 psi
Traffic Category, TC	B and C
Average daily truck traffic, ADTT	25 and 100

7.17.6 Based on the criteria presented herein, the PCC pavement sections should have a minimum thickness as presented in Table 7.17.3.

TABLE 7.17.3
RIGID PAVEMENT RECOMMENDATIONS

Location	Portland Cement Concrete (inches)
Medium Duty Areas (TC=B)	6.0
Heavy Duty Areas (TC=C)	7.0

7.17.7 The PCC pavement should be placed over subgrade soil that is compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. This pavement section is based on a minimum concrete compressive strength of approximately 3,000 psi (pounds per square inch). Base materials will not be required beneath concrete improvements including cross-gutters, curb and gutters, and sidewalks.

7.17.8 A thickened edge or integral curb should be constructed on the outside of concrete slabs subjected to wheel loads. The thickened edge should be 1.2 times the slab thickness or a minimum thickness of 2 inches, whichever results in a thicker edge, and taper back to the recommended slab thickness 4 feet behind the face of the slab (e.g., a 7.5-inch-thick slab would have a 9.5-inch-thick edge). Reinforcing steel will not be necessary within the concrete for geotechnical purposes with the possible exception of dowels at construction joints as discussed herein.

7.17.9 To control the location and spread of concrete shrinkage cracks, crack-control joints (weakened plane joints) should be included in the design of the concrete pavement slab. Crack-control joints should not exceed 30 times the slab thickness with a maximum spacing of 15 feet for slabs 6 inches and thicker and should be sealed with an appropriate sealant to prevent the migration of water through the control joint to the subgrade materials. The depth of the crack-control joints should be determined by the referenced ACI report. The depth of the crack-control joints should be at least ¼ of the slab thickness when using a conventional saw, or at least 1 inch when using early-entry saws on slabs 9 inches or less in thickness, as determined by the referenced ACI report discussed in the pavement section herein. Cuts at least ¼ inch wide are required for sealed joints, and a ⅜ inch wide cut is commonly recommended. A narrow joint width of $^{1}/_{10}$ to $^{1}/_{8}$-inch wide is common for unsealed joints.

7.17.10 Concrete curb/gutter should be placed on soil subgrade compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Cross-gutters should be placed on subgrade soil compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Base materials should not be placed below the curb/gutter, cross-gutters, or sidewalk so water is not able to migrate from the adjacent parkways to the pavement sections.

7.17.11 The performance of pavement is highly dependent on providing positive surface drainage away from the edge of the pavement. Ponding of water on or adjacent to the pavement and subgrade will likely result in pavement distress and subgrade failure. Drainage from landscaped areas should be directed to controlled drainage structures. Landscape areas

adjacent to the edge of asphalt pavements are not recommended due to the potential for surface or irrigation water to infiltrate the underlying permeable aggregate base and cause distress. Where such a condition cannot be avoided, consideration should be given to incorporating measures that will significantly reduce the potential for subsurface water migration into the aggregate base. If planter islands are planned, the perimeter curb should extend at least 6 inches below the level of the base materials.

7.18 Site Drainage and Moisture Protection

7.18.1 Adequate site drainage is critical to reduce the potential for differential soil movement, erosion and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to footings. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2019 CBC 1804.4 or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices. Roof and pavement drainage should be directed into conduits that carry runoff away from the proposed structure.

7.18.2 Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks, and detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.

7.18.3 Landscaping planters adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. Area drains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes can be used. In addition, where landscaping is planned adjacent to the pavement, construction of a cutoff wall along the edge of the pavement that extends at least 6 inches below the bottom of the base material should be considered.

7.18.4 We should perform a storm water management study when grading plans have been prepared detailing the type and location of the proposed BMPs.

7.19 Grading and Foundation Plan Review

7.19.1 Geocon Incorporated should review the grading plans and foundation plans for the project prior to final design submittal to evaluate whether additional analyses and/or recommendations are required.

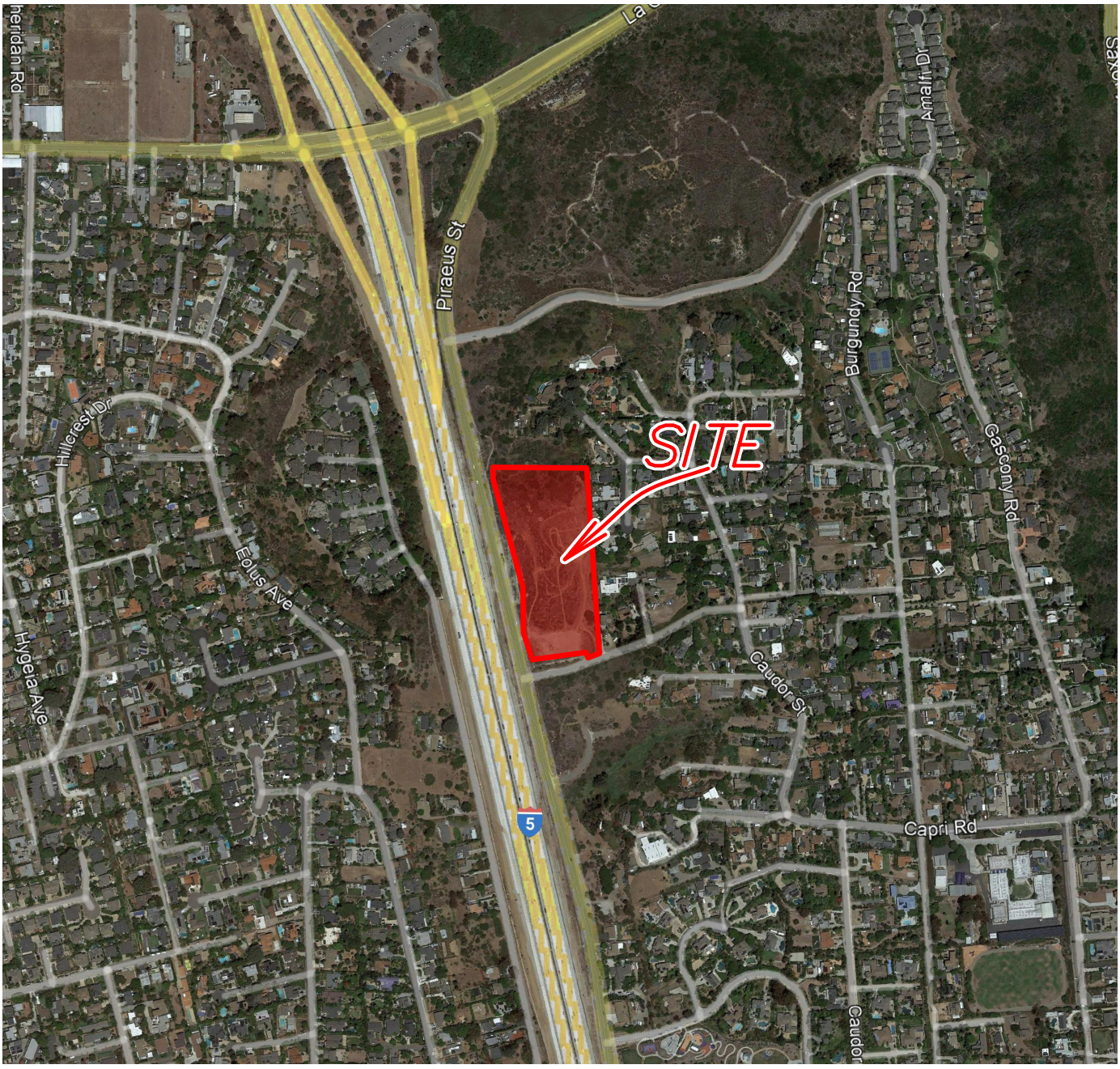
LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

2. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon Incorporated should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon Incorporated.

3. This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

4. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.



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NO SCALE

VICINITY MAP

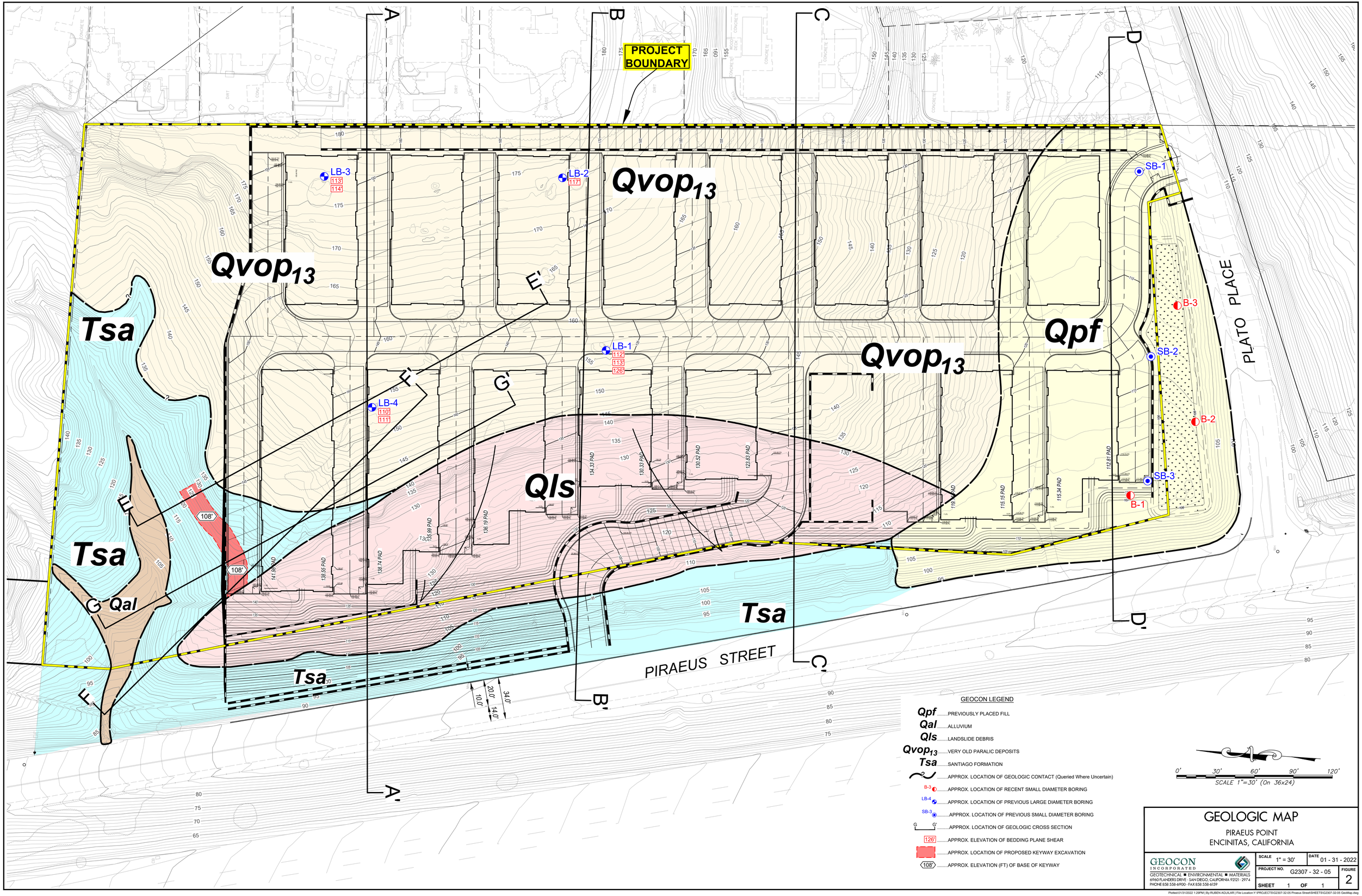
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PIRAEUS POINT
ENCINITAS, CALIFORNIA

TM / RA		DSK/GTYPD

DATE 01 - 31 - 2022	PROJECT NO. G2307 - 32 - 05	FIG. 1

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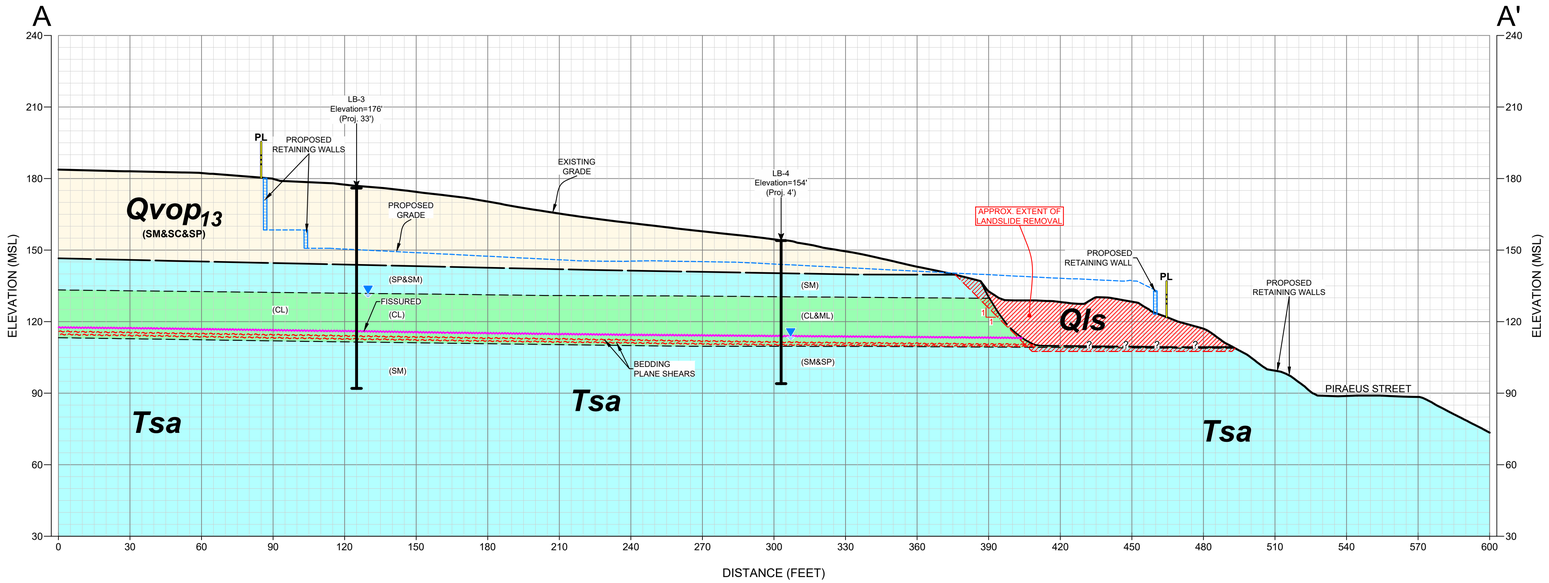
GEOLOGIC MAP

PIRAEUS POINT
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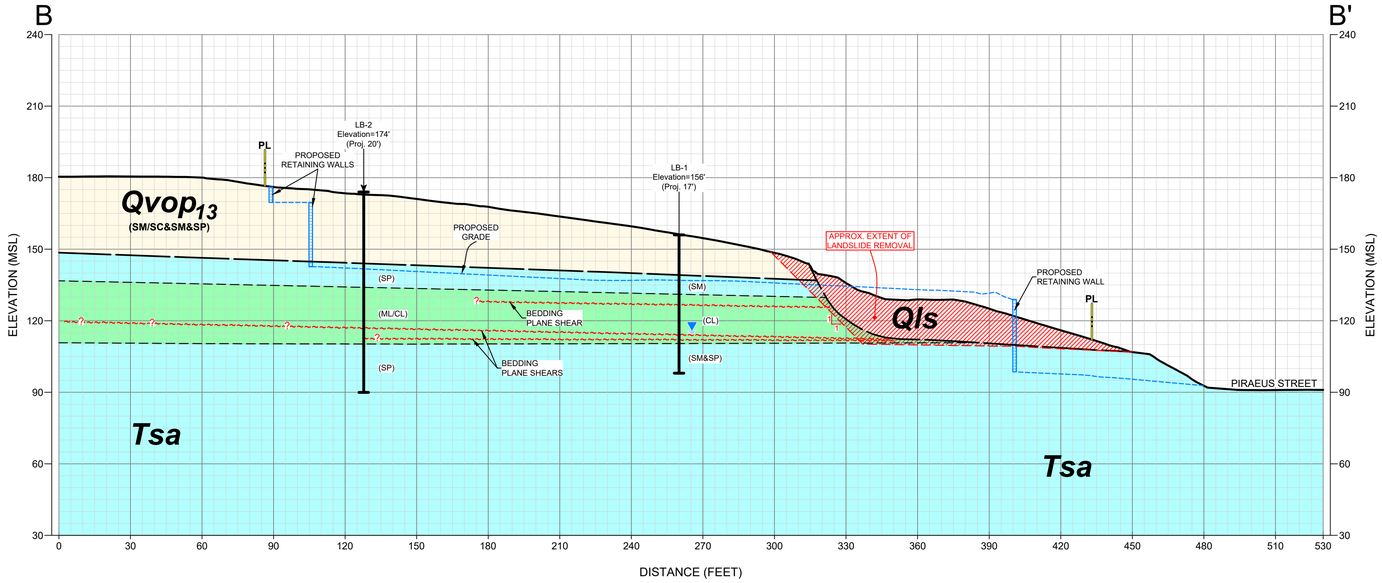
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DATE	01 - 31 - 2022
PROJECT NO.	G2307 - 32 - 05
FIGURE	2
SHEET	1 OF 1

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GEOLOGIC CROSS-SECTION A-A'

SCALE: 1" = 30' (Vert. = Horiz.)



GEOLOGIC CROSS-SECTION B-B'

SCALE: 1" = 30' (Vert. = Horiz.)

GEOCON LEGEND

- **Qpf** ..... PREVIOUSLY PLACED FILL
- **Qal** ..... ALLUVIUM
- **Qls** ..... LANDSLIDE DEBRIS
- **Qvop$_{13}$** ..... VERY OLD PARALIC DEPOSITS
- **Tsa** ..... SANTIAGO FORMATION
- ..... APPROX. LOCATION OF GEOLOGIC CONTACT
- ..... APPROX. LOCATION OF INTRAFORMATIONAL CONTACT
- B-4 ..... APPROX. LOCATION OF BORING
- ..... APPROX. LOCATION OF BEDDING PLANE SHEAR

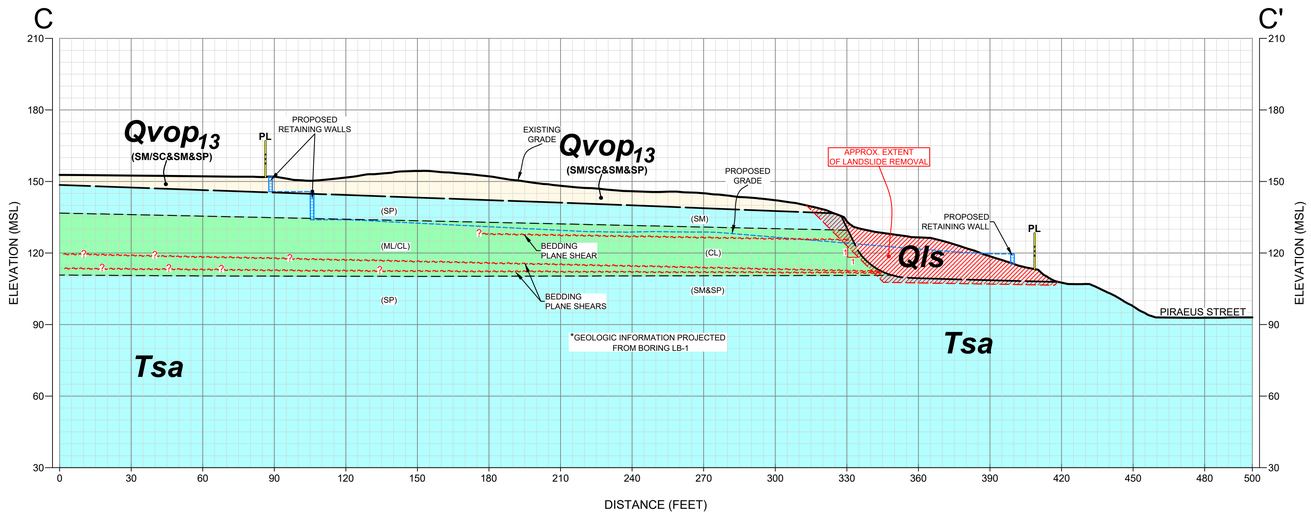
GEOLOGIC CROSS - SECTIONS

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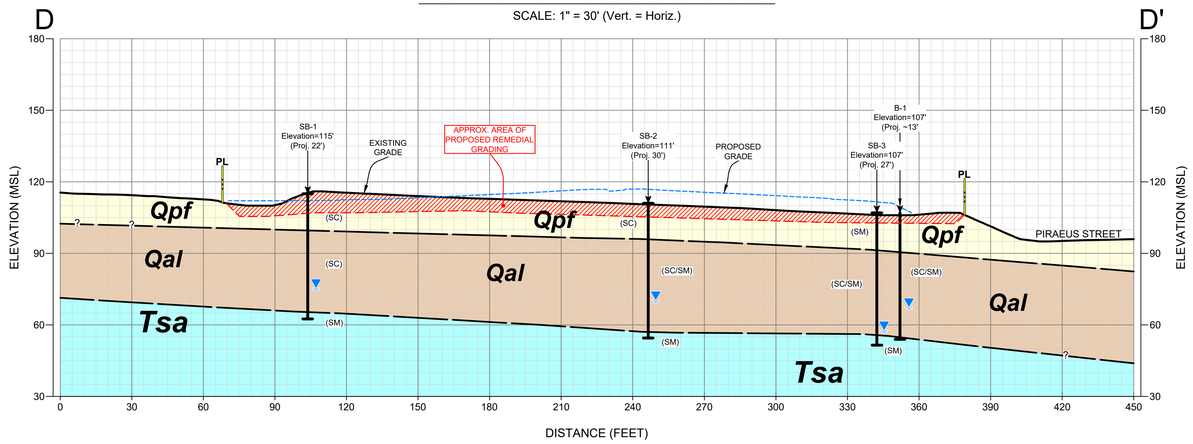
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PROJECT NO.	G2307 - 32 - 05	FIGURE	3
SHEET	1 OF 1		

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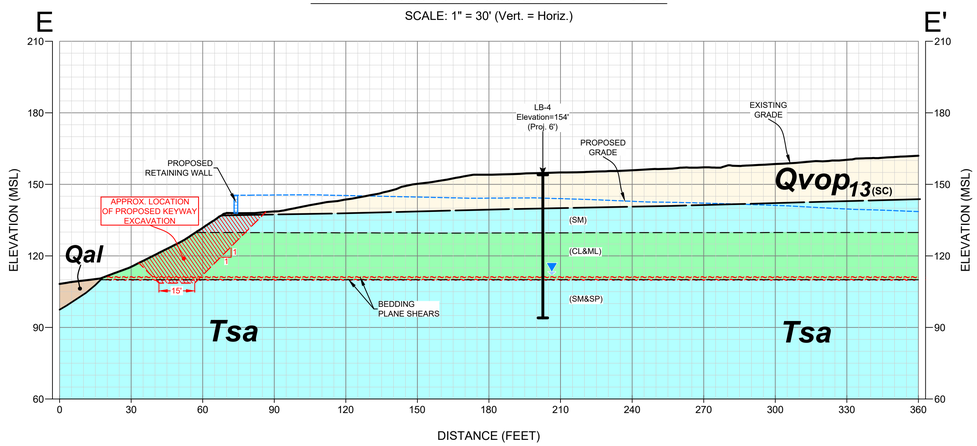
GEOLOGIC CROSS-SECTION C-C'

SCALE: 1" = 30' (Vert. = Horiz.)



GEOLOGIC CROSS-SECTION D-D'

SCALE: 1" = 30' (Vert. = Horiz.)



GEOLOGIC CROSS-SECTION E-E'

SCALE: 1" = 30' (Vert. = Horiz.)

GEOCON LEGEND

- Qpf ..... PREVIOUSLY PLACED FILL
- Qal ..... ALLUVIUM
- Qls ..... LANDSLIDE DEBRIS
- Qvop13 ..... VERY OLD PARALIC DEPOSITS
- Tsa ..... SANTIAGO FORMATION
- ?~~? ..... APPROX. LOCATION OF GEOLOGIC CONTACT
- ..... APPROX. LOCATION OF INTRAFORMATIONAL CONTACT
- B-4 ..... APPROX. LOCATION OF BORING
- ~~~~ ..... APPROX. LOCATION OF BEDDING PLANE SHEAR

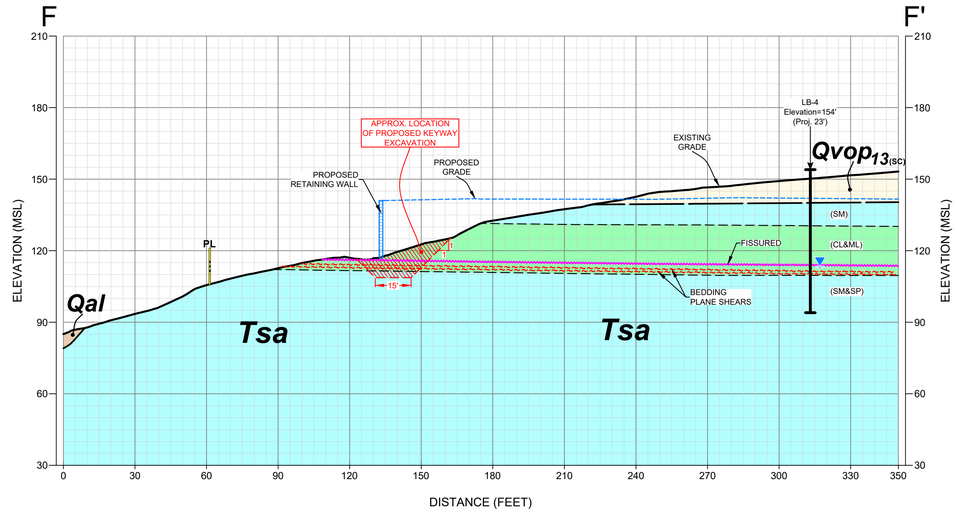
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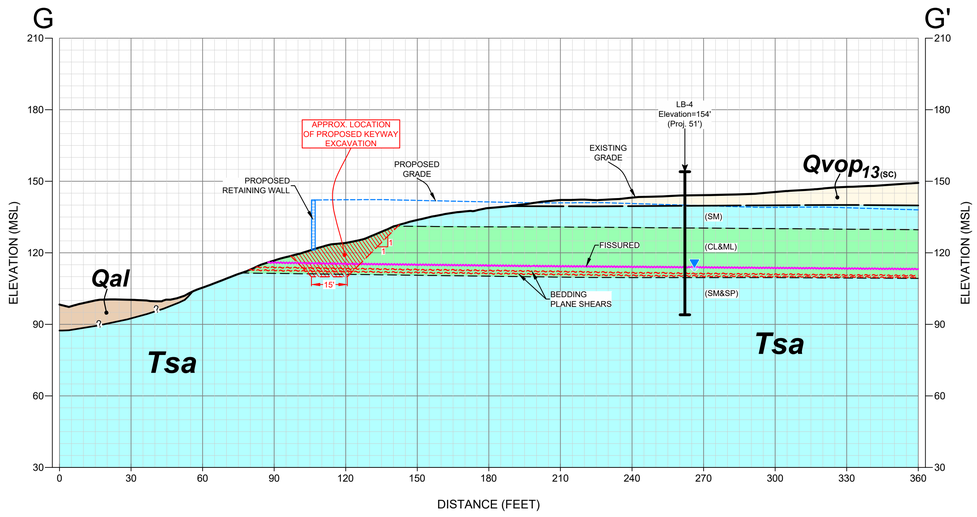
SCALE	1" = 30'	DATE	01 - 31 - 2022
PROJECT NO.	G2307 - 32 - 05	FIGURE	4
SHEET	1 OF 1		

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GEOLOGIC CROSS-SECTION F-F'

SCALE: 1" = 30' (Vert. = Horiz.)



GEOLOGIC CROSS-SECTION G-G'

SCALE: 1" = 30' (Vert. = Horiz.)

GEOCON LEGEND

- ***Qpf*** ..... PREVIOUSLY PLACED FILL
- ***Qal*** ..... ALLUVIUM
- ***Qls*** ..... LANDSLIDE DEBRIS
- ***Qvop13*** ..... VERY OLD PARALIC DEPOSITS
- ***Tsa*** ..... SANTIAGO FORMATION
- ..... APPROX. LOCATION OF GEOLOGIC CONTACT
- ..... APPROX. LOCATION OF INTRAFORMATIONAL CONTACT
- B-4 ..... APPROX. LOCATION OF BORING
- ..... APPROX. LOCATION OF BEDDING PLANE SHEAR

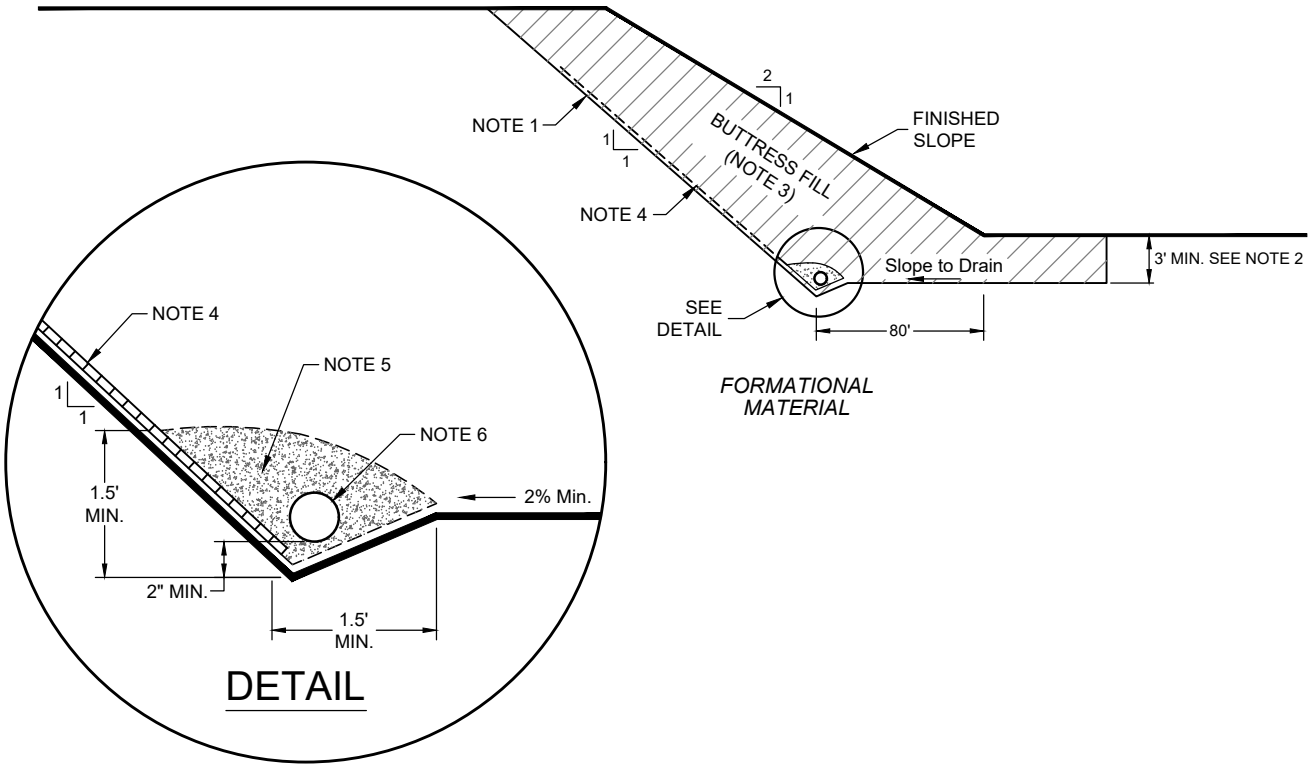
GEOLOGIC CROSS - SECTIONS

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SCALE	1" = 30'	DATE	01 - 31 - 2022
PROJECT NO.	G2307 - 32 - 05	FIGURE	5
SHEET	1 OF 1		

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NOTES:

1.....EXCAVATE BACKCUT AT 1:1 INCLINATION (UNLESS OTHERWISE NOTED).

2.....BASE OF BUTTRESS TO BE 3 FEET INTO FORMATIONAL MATERIAL, SLOPING A MINIMUM 5% INTO SLOPE.

3.....BUTTRESS FILL TO BE COMPOSED OF PROPERLY COMPACTED GRANULAR SOIL.

4.....CHIMNEY DRAINS TO BE APPROVED PREFABRICATED CHIMNEY DRAIN PANELS (MIRADRAIN G200N OR EQUIVALENT) SPACED APPROXIMATELY 10 FEET CENTER TO CENTER AND 4 FEET WIDE. CLOSER SPACING MAY BE REQUIRED IF SEEPAGE IS ENCOUNTERED.

5.....FILTER MATERIAL TO BE 3/4-INCH, OPEN-GRADED CRUSHED ROCK ENCLOSED IN APPROVED FILTER FABRIC (MIRAFI 140NC).

6.....COLLECTOR PIPE TO BE 4-INCH MINIMUM DIAMETER, PERFORATED, THICK-WALLED PVC SCHEDULE 40 OR EQUIVALENT, AND SLOPED TO DRAIN AT 1 PERCENT MINIMUM TO APPROVED OUTLET.

TYPICAL BUTTRESS FILL DETAIL

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PIRAEUS POINT
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TM / RA		DSK/GTYPD

DATE 01 - 31 - 2022	PROJECT NO. G2307 - 32 - 05	FIG. 6

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APPENDIX A

APPENDIX A

FIELD INVESTIGATION

We performed a preliminary field investigation on May 6 through 9, 2019. The preliminary investigation consisted of the excavation of three small-diameter borings drilled by Baja Exploration and four large-diameter borings by Dave's Drilling. The small diameter borings were excavated to a maximum depth of 56½ feet using a CME 75 rubber-tire drill rig equipped with 8-inch diameter hollow stem augers. The large diameter borings were excavated to a maximum depth of 84 feet with a truck-mounted drill rig equipped with a 30-inch diameter bucket-auger.

Our recent field investigation on December 17, 2021, consisted of excavating three additional borings by North County Drilling using an Ingersoll Rand A-300 truck-mounted drill rig equipped with 8-inch-diameter hollow-stem augers. The approximate locations of the excavations are shown on the Geologic Map, Figure 2. We located the exploratory borings in the field using a measuring tape and/or existing landmarks; therefore, actual boring locations may vary slightly.

We obtained samples during our boring excavations using either a California sampler or a Standard Penetration Test (SPT) sampler. Both samplers are composed of steel and driven to obtain relatively undisturbed soil samples. The California sampler has an inside diameter of 2.5 inches and an outside diameter of 2.875 inches. Up to 18 rings are placed inside the sampler that is 2.4 inches in diameter and 1 inch in height. The SPT sampler has an inside diameter of 1.5 inches and an outside diameter of 2 inches. We obtained ring samples at appropriate intervals were retained in moisture-tight containers and transported to the laboratory for testing. The type of sample is noted on the exploratory boring logs.

The samplers were driven 12 inches and 18 inches for California sampler and SPT sampler, respectively, with the use of an automatic hammer and the use of A rods. The sampler is connected to the A rods and driven into the bottom of the excavation using a 140-pound hammer with a 30-inch drop. Blow counts are recorded for every 6 inches the sampler is driven. The penetration resistances shown on the boring logs are shown in terms of blows per foot. The values indicated on the boring logs are the sum of the last 12 inches of the sampler if driven 12 inches. If the sampler was not driven for 12 inches, an approximate value is calculated in term of blows per foot or the final 6-inch interval is reported. These values are not to be taken as N-values, adjustments have not been applied.

The large-diameter boring sampler was driven up to 12 inches into the bottom of the excavation with the use of a telescoping Kelly bar. The weight of the Kelly bar (4,500 pounds maximum) drives the sampler and varies in weight with depth. The height of drop is usually 12 inches. Blow counts are recorded for every 12 inches the sampler is driven. The penetration resistance values on the boring

logs are shown in terms of blows per foot. These values are not to be taken as N-values and adjustments have not been applied.

We visually examined, classified and logged the soil conditions encountered in the excavations in general accordance with the Unified Soil Classification System (USCS). Logs of the exploratory borings are presented on Figures A-1 through A-10. The logs depict the general soil and geologic conditions encountered and the depth at which samples were obtained.

PROJECT NO. G2307-32-05

BORING B 1

ELEV. (MSL.) **107'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PREVIOUSLY PLACED FILL (Qpf)** Medium dense, moist, brown, Silty, fine to coarse SAND			
2								
4					-Becomes damp			
6	B1-1					80/11"	116.1	3.8
8								
10	B1-2				-Chunks of gray siltstone present	33	109.0	12.2
12								
14								
16	B1-3				-Becomes very dense	52	115.0	5.4
18				SC/SM	**ALLUVIUM (Qal)** Medium dense, moist, dark brown/reddish brown, Clayey to Silty, fine to coarse SAND			
20	B1-4					18	113.5	14.7
22								
24								
26	B1-5					33	114.2	14.8
28								
30	B1-6					82/11.5"	111.0	8.7
32	B1-7					30		
34								

Figure A-1,
Log of Boring B 1, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING B 1** ELEV. (MSL.) **107'** DATE COMPLETED **12/17/2021** EQUIPMENT **IR A-300** BY: **D. GITHENS**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
36	B1-8					35	104.3	20.6
	B1-9					26		
38			▽		-Seepage encountered at 39 feet			
40	B1-10					49	108.8	5.4
	B1-11					36		
42								
44								
	B1-12					50	113.3	15.3
46	B1-13					31		
48								
50	B1-14					31	107.1	20.0
	B1-15					28		
52					BORING TERMINATED AT 52.5 FEET Backfilled with bentonite Seepage encountered at 39 feet			

Figure A-1,
Log of Boring B 1, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING B 2

ELEV. (MSL.) **109'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PREVIOUSLY PLACED FILL (Qpf)** Loose to medium dense, moist, yellow to brown, Clayey, fine to coarse SAND; trace gravel			
2								
4								
6	B2-1				-Becomes damp with chunks of gray siltstone	50/5.5"	114.1	9.8
8								
10	B2-2				-Siltstone chunk in shoe	82	108.2	4.2
12								
14								
16	B2-3				-Becomes moist	63	112.7	15.2
					-Contact at 17 feet based on drilling efficiency			
18				SC/SM	**ALLUVIUM (Qal)** Medium dense, moist, dark brown, Clayey to Silty, fine to medium SAND; mottled white			
20	B2-4					42	112.9	9.6
22								
24								
26	B2-5				-Medium dense, dark brown, fine to medium sand; trace fines	44	107.3	4.7
28								
30	B2-6				-Becomes dense	63	120.0	12.5
32	B2-7					39		
34								

Figure A-2,
Log of Boring B 2, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING B 2

ELEV. (MSL.) **109'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	B2-8					71/10"	122.1	12.6
	B2-9					39		
38								
40	B2-10				-Becomes medium dense	36	115.3	15.4
	B2-11					29		
42			▽					
44					-Seepage encountered at 43 feet			
	B2-12					34	118.4	14.5
46	B2-13					16		
48								
50	B2-14					41	106.2	19.5
	B2-15			SM	**SANTIAGO FORMATION (Tsa)**	71/11"		
52					Very dense, saturated, light yellow to gray brown, Silty, fine grained SANDSTONE			
					BORING TERMINATED AT 52.5 FEET Backfilled with bentonite Seepage encountered at 43 feet			

Figure A-2,
Log of Boring B 2, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING B 3

ELEV. (MSL.) **113'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SC	**PREVIOUSLY PLACED FILL (Qpf)** Medium dense, moist, yellow to gray brown, Clayey, fine to coarse SAND with trace gravel			
4								
6	B3-1					50/5.5"	117.2	10.1
8								
10	B3-2				-Chunks of gray siltstone present	63	114.1	11.1
12								
14								
16	B3-3			SC	**ALLUVIUM (Qal)** Medium dense, damp, dark brown, Clayey, fine to medium SAND	36	119.5	10.9
18								
20	B3-4					38	112.9	10.7
22								
24								
26	B3-5				-Becomes moist below 26 feet	35	117.6	10.2
28								
30	B3-6					45	112.5	17.3
32	B3-7					27		
34								

Figure A-3,
Log of Boring B 3, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING B 3

ELEV. (MSL.) **113'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	B3-8			SC	-Becomes wet	35	114.5	14.6
	B3-9					26		
38			▽		-Seepage encountered at 38 feet			
40	B3-10			SM	**SANTIAGO FORMATION (Tsa)**	39	105.9	20.1
	B3-11				Dense, wet, yellow brown, Silty, fine grained SANDSTONE	53		
42								
44								
	B3-12					50/6"	113.3	15.7
46					BORING TERMINATED AT 46 FEET Backfilled with bentonite Seepage encountered at 38 feet			

Figure A-3,
Log of Boring B 3, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR ▽ ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING LB 1

ELEV. (MSL.) **156'** DATE COMPLETED **05-06-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**VERY OLD PARALIC DEPOSITS ($Qvop_{13}$)** Medium dense, damp to moist, reddish brown, Silty, fine to coarse SAND			
2								
4					-Upper 3 feet weathered			
6	LB1-1				-Becomes very dense	10/8"	124.9	5.4
8	LB1-2				-Becomes fine- to medium-grained			
10	LB1-3				-Becomes moist -Cobble up to 5 inches	6	117.7	8.6
12								
14								
16	LB1-4 LB1-5			SM	Dense, moist, brown to yellowish brown, Silty, fine to coarse SAND	8/8"	116.3	10.1
18	LB1-6			SM	-Cobble up to 8 inches -Erosional, undulatory contact			
20	LB1-7				**SANTIAGO FORMATION (Tsa)** Dense to very dense, moist, olive to yellowish brown, Silty, fine- to coarse-grained SANDSTONE; massive and very weakly laminated single undulatory sub vertical sand filled fracture 1/8"-1/4" wide, fracture is completely filled, trace claystone rip up clasts; rounded less than 3/4"	5		
22								
24					-Oxidation			
26	LB1-8			CL	-Bioturbated contact Hard, moist, grayish olive, CLAYSTONE; oxidation			
28								
30	LB1-9				-**BEDDING PLANE SHEAR at 30'**; 1/4" thick soft plastic clay gouge remolded, flat, moderately polished bounding surface with weak strike continuous around hole 1º at N30W DDD -Few, close, iron stained fractures, sub vertical with N_S strike with 1/16" gypsum filling -Few gypsum veins sub-parallel to bedding	8	107.5	20.3
32								
34								

Figure A-4,
Log of Boring LB 1, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING LB 1

ELEV. (MSL.) **156'** DATE COMPLETED **05-06-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	LB1-10					10/10"	100.8	23.1
38	LB1-11							
40	LB1-12		▽		-Open fractures 1/8"-1/4", moderate to heavy seepage	8/10"		
42								
44					-**BEDDING PLANE SHEAR at 43'**; 1/4"-1/2" thick, bluish-gray remolded clay gouge, soft plastic, continuous around hole			
46	LB1-13 LB1-14			SM	-**BEDDING PLANE SHEAR at 44.5'**; 1/2"-2" thick, bluish-gray and brown, fully remolded plastic clay gouge; soft, internally sheared with numerous polished parting surfaces	15/6"		
48				SP	Dense to very dense, wet, bluish-gray, Silty, fine- to medium-grained SANDSTONE; laminated			
50					Very dense, wet, reddish brown and gray, fine- to coarse-grained SANDSTONE; cross bedded, gunbarrel			
52								
54								
56					-End of log due to standing water			
58					BORING TERMINATED AT 58 FEET Seepage encountered at 40.5 feet Backfilled with bentonite chips and soil			

Figure A-4,
Log of Boring LB 1, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

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PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 2** ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				SM/SC	**VERY OLD PARALIC DEPOSITS ($Qvop_{13}$)** Medium dense to dense, moist, Silty to Clayey, fine to coarse SAND			
2								
4					-Upper 3 feet weathered			
6					-Vertical fractions, 1/4"-3" wide; completely sand filled with roots			
8								
10								
12								
14				SM	Dense, moist, brown to yellowish brown, Silty, fine to coarse SAND			
16					-Lenses of yellowish brown, fine to coarse sand			
18								
20					-Less cohesion			
22								
24				SP	Dense, damp, light brown, fine- to medium-grained SANDSTONE; oxidized and micaceous planer laminate			
26					-Belling of hole, logged cuttings only below			
28				SM	Medium dense, damp, yellowish brown, Silty, fine to coarse SANDSTONE; cobble up to 8"			
30				SP	**SANTIAGO FORMATION (Tsa)** Dense to very dense, moist, yellowish brown, fine- to coarse-grained SANDSTONE			
32								
34								

Figure A-5,
Log of Boring LB 2, Page 1 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING LB 2

ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36								
38								
40				ML/CL	Very stiff to hard, moist, bluish gray, SILTSTONE to CLAYSTONE; oxidized in areas			
42								
44								
46								
48								
50								
52								
54								
56	LB2-1				**-BEDDING PLANE SHEAR observed in cuttings at 57'**			
58								
60								
62								
64				SP	Very dense, damp to moist, light yellowish brown, fine- to coarse-grained SANDSTONE; cobble up to 6 inches			
66								
68								

Figure A-5,
Log of Boring LB 2, Page 2 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 2** ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
70								
72								
74								
76								
78								
80								
82								
84					BORING TERMINATED AT 84 FEET Groundwater/seepage not encountered Backfilled with bentonite chips and soil			

Figure A-5,
Log of Boring LB 2, Page 3 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

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PROJECT NO. G2307-32-05

BORING LB 3

ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**VERY OLD PARALIC DEPOSITS ($Qvop_{13}$)** Loose to medium dense, dry to damp, Silty, fine- to medium-grained SAND			
2								
4				SC	-Upper 3 feet weathered -Vertical fractures, 1/2" to 3" wide, sand infilled			
6	LB3-1				Medium dense, moist, reddish brown, Clayey, fine to medium SAND	3		
8					Vertical fractures, 1/4" to 2 1/2" wide, sand infilled			
10					-Less fractures			
12					-Becomes dense			
14								
16	LB3-2					5	116.1	5.9
18				SP	Dense, moist, brown, fine to medium SAND			
20					-Yellowish brown, fine to coarse SAND lenses			
22								
24				SC	Dense, moist, reddish brown, Clayey, fine to coarse SAND			
26					-Dark brown, sandy clay rip-up clasts			
28								
30	LB3-3				-Cobble lag up to 8"	8	101.5	7.5
32				SP	**SANTIAGO FORMATION (Tsa)** Dense, moist, yellowish brown, fine- to coarse-grained SANDSTONE			
34					-Lamination, fine to coarse cross-bedding			

Figure A-6,
Log of Boring LB 3, Page 1 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING LB 3

ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	LB3-4	SM	Dense, moist, olive gray, Silty, fine- to coarse-grained SANDSTONE	8/10"	117.1	9.1
40		SM	Very dense, moist, dark gray, Silty, fine- to coarse-grained SANDSTONE; mottled yellowish brown oxidation			
44		CL	-Low seepage along contact Hard, damp to moist, light bluish gray, CLAYSTONE			
46	LB3-5			10		
48			-Vertical and horizontal fracturing, oxidized with gypsum in fill			
50	LB3-6			10/8"		
52			-Sub-vertical fractures controlled seepage			
58			-Weakly fissured claystone beds with discontinuous, poorly developed clay gouge; fissile polished parting surfaces in some areas (58'-59.5')			
60	LB3-7			10/8"	101.5	19.4
62	LB3-8		-**BEDDING PLANE SHEAR at 62.5'**; 1/2" to 1" thick, soft and stiff, gray, fully developed, plastic clay bed 2º at N10W DDD			
64		SM	-**BEDDING PLANE SHEAR at 63.3'**; 1" to 1 1/4" thick, soft and stiff, gray, fully developed, moderately to fully remolded, plastic clay bed; numerous polished internal parting surfaces, 1º at N10W DDD			
66			Very dense, moist, bluish gray, fine- to medium-grained SANDSTONE			
68		SM	-Contact interbedded Very dense, moist, olive to yellowish brown, Silty, fine- to medium-grained SANDSTONE			

Figure A-6,
Log of Boring LB 3, Page 2 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 3** ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
70	LB3-9					10/4"		
72								
74					-Concretion			
76								
78								
80					-Becomes finer grained			
82								
84					BORING TERMINATED AT 84 FEET Seepage encountered at 44 feet Backfilled with bentonite chips and soil			

Figure A-6,
Log of Boring LB 3, Page 3 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 4** ELEV. (MSL.) **154'** DATE COMPLETED **05-09-2019** EQUIPMENT **EZ BORE E-120** BY: **R. ADAMS**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				SC	**VERY OLD PARALIC DEPOSITS ($Qvop_{13}$)** Dense, damp to moist, reddish brown to dark brown, Clayey, fine to coarse SAND; massive to very weakly bedded, few brown paleosol horizons			
2								
4					-Upper 3 feet weathered			
6								
8								
10					-Paleosol, 2"-6" thick, reddish to dark brown sand with trace silt			
12				SC	Medium dense to dense, moist, brown to reddish brown, Clayey, fine to coarse SAND; gravel and cobble up to 6 inches			
14				SM	**SANTIAGO FORMATION (Tsa)** Dense to very dense, damp, grayish to yellowish brown, Silty, fine- to coarse-grained SANDSTONE; massive to very weakly laminated, some cross bedding, few sand filled fractures extending down from contact, narrowing with increasing depth			
16								
18								
20					-Coarse grained			
22								
24					-Mottled -Sharp, bioturbated contact			
26				CL	Stiff to very stiff, damp, bluish gray to mottled orangish gray, CLAYSTONE; interbedded siltstone, oxidated laminae, short closed fractures			
28								
30								
32				ML	Stiff to hard, damp, gray to grayish brown, Clayey, SILTSTONE; massive, occasional closed fracture			
34								

Figure A-7,
Log of Boring LB 4, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING LB 4

ELEV. (MSL.) **154'** DATE COMPLETED **05-09-2019**

EQUIPMENT **EZ BORE E-120** BY: **R. ADAMS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36								
38				CL	-Transitional contact Stiff to hard, moist, bluish gray, CLAYSTONE; very weakly fissured, oxidized laminae, little seepage, few closed fractures, few thin, 1/8" thick, gypsum veins parallel to bedding			
40			▽					
42								
44				SM	-**BEDDING PLANE SHEAR at 42.9'**; 3/4" to 1" thick, gray, weak to moderately remolded, soft to very soft, plastic clay gouge; increase fissuring above shear			
46					-**BEDDING PLANE SHEAR at 43.9'**; 1 1/2" thick, gayish brown, weakly remolded, fully developed, soft plastic, clay bed, internally sheared with numerous parting surfaces, 1º N63W DDD			
48				SP	Very dense, damp, bluish gray, Silty, medium- to coarse-grained SANDSTONE -1/4" TO 1/2" sub-horizontal fractures with seepage; 40% TO 60% gypsum filled			
50					Very dense, damp, yellowish gray, medium- to coarse-grained SANDSTONE; very weakly laminated			
52					-Concretion bed			
54								
56								
58								
60					BORING TERMINATED AT 60 FEET Seepage encountered at 40 feet Backfilled with bentonite chips and soil			

Figure A-7,
Log of Boring LB 4, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. G2307-32-05

BORING SB 1

ELEV. (MSL.) **115'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB1-1			SC	**PREVIOUSLY PLACED FILL (Qpf)** Loose to medium dense, moist, yellowish to grayish brown, Clayey, fine to coarse SAND; trace gravel			
2								
4					-Becomes medium dense			
6	SB1-2				-Becomes damp; chunks of gray siltstone	46	113.3	8.1
8								
10	SB1-3				-Becomes moist, dark brown	38	123.0	11.1
12								
14								
16	SB1-4			SC	**ALLUVIUM (Qal)** Loose, damp, dark yellowish brown, Clayey, fine to coarse SAND	16	123.0	6.5
18								
20	SB1-5				Becomes medium dense; finer-grained	18	106.1	5.3
22	SB1-6							
24								
26	SB1-7				-Becomes moist; clay content increases	27	114.0	11.8
28								
30	SB1-8					19	108.8	10.8
32								
34								

Figure A-8,
Log of Boring SB 1, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING SB 1

ELEV. (MSL.) **115'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	SB1-9				Becomes loose, wet	15	110.2	15.0
38			▽		-Seepage encountered -Measured after leaving hole open for 15 min.			
40	SB1-10					17		
42								
44								
46	SB1-11					16	109.6	20.5
48								
50	SB1-12			SM	**SANTIAGO FORMATION (Tsa)** Very dense, damp, light yellowish to grayish brown, Silty, fine-grained SANDSTONE	80/10"		
52	SB1-13					50/5"		
					BORING TERMINATED AT 52.5 FEET Seepage encountered at 38 feet Backfilled with 18.3 ft³ of bentonite grout			

Figure A-8,
Log of Boring SB 1, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING SB 2

ELEV. (MSL.) **111'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB2-1			SC	**PREVIOUSLY PLACED FILL (Qpf)** Loose to medium dense, moist, yellowish to grayish brown, Clayey, fine to coarse SAND; trace organics, trace gravel			
2								
4								
6	SB2-2				-Becomes dense; chunks of gray siltstone and sandstone	61	120.2	11.4
8								
10	SB2-3				-Becomes medium dense	32	112.4	16.4
12								
14								
16	SB2-4			SC/SW	**ALLUVIUM (Qal)** Medium dense, moist, dark yellowish brown, Clayey, fine to medium SAND to well-graded, fine to medium SAND	19	115.0	9.1
18								
20	SB2-5			SC	Medium dense, moist, dark yellowish brown, Clayey, fine to medium SAND	22	115.2	10.0
22								
24								
26	SB2-6					18	107.1	6.5
28								
30	SB2-7					16	110.8	12.2
32								
34								

Figure A-9,
Log of Boring SB 2, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING SB 2

ELEV. (MSL.) **111'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	SB2-8			SM/SP	Medium dense, moist, dark yellowish brown, Silty, fine SAND to poorly-graded fine SAND	19	112.4	9.6
38								
40	SB2-9		▽	SC	Medium dense, saturated, yellowish brown, Clayey, fine SAND	18	115.4	17.0
42								
44								
46	SB2-10					18		
48								
50	SB2-11				-Becomes light reddish brown	24	114.5	19.5
52								
54								
56	SB2-12			SM	**SANTIAGO FORMATION (Tsa)**	82/8"		
	SB2-13				Very dense, damp, light yellowish brown to gray, Silty, fine-grained SANDSTONE	50/6"		

BORING TERMINATED AT 56.5 FEET
Seepage encountered at 40 feet
Backfilled with 19.7 ft³ of bentonite grout

Figure A-9,
Log of Boring SB 2, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING SB 3

ELEV. (MSL.) **107'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB3-1			SM	**PREVIOUSLY PLACED FILL (Qpf)** Loose to medium dense, damp, yellowish brown, Silty, fine to coarse SAND; trace organics; trace gravel -Becomes medium dense			
2								
4								
6	SB3-2				-Becomes dense, dark yellowish brown	56	120.9	3.7
8								
10	SB3-3				-Becomes medium dense, yellowish brown to gray	25	110.8	9.3
12								
14								
16	SB3-4			SC/CL	**ALLUVIUM (Qal)** Loose, moist, dark brown to yellowish brown, Clayey, fine to medium SAND to Sandy CLAY	16	121.1	11.5
18								
20	SB3-5			SC	Loose, moist, dark brown, Clayey, fine to medium SAND	14	116.1	9.4
22								
24								
26								
28								
30	SB3-6				-Becomes light yellowish brown; clay content increases	15	112.6	11.8
32								
34								

G2307-32-05.GPJ

Figure A-10,
Log of Boring SB 3, Page 1 of 2

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING SB 3

ELEV. (MSL.) **107'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	SB3-7					17	109.8	14.4
38								
40	SB3-8			SM	Loose, damp, light yellowish to grayish brown, Silty, fine SAND	14	97.8	5.7
42								
44								
46	SB3-9			SC	Loose, moist, light yellowish to grayish brown, Clayey, fine SAND	13	96.0	14.4
48			▽		-Seepage encountered			
50	SB3-10				-Becomes saturated	30		
52				SM	**SANTIAGO FORMATION (Tsa)** Very dense, moist, light yellowish to grayish brown, Silty, fine-grained SANDSTONE			
54	SB3-11					50/6"		
					BORING TERMINATED AT 55.5 FEET Seepage encountered at 49 feet Backfilled with 19.4 ft³ of bentonite grout			

Figure A-10,
Log of Boring SB 3, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

APPENDIX B

APPENDIX B

LABORATORY TESTING

We performed laboratory tests in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. We selected soil samples and tested them for their in-place dry density and moisture content, maximum dry density and optimum moisture content, shear strength, expansion index, water-soluble sulfate, Atterberg limits, resistance value (R-Value), consolidation and grain size characteristics. The results of our laboratory tests from both phases of study are presented on Tables B-I through B-VI and the following figures.

TABLE B-I
SUMMARY OF LABORATORY MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT TEST RESULTS
ASTM D 1557

Sample No. (Geologic Unit)	Description	Maximum Dry Density (pcf)	Optimum Moisture Content (% dry wt.)
LB1-2 (Qvop)	Reddish brown, Silty, fine to coarse SAND	127.5	10.9
LB1-6 (Tsa)	Olive brown, Silty, fine to coarse SAND	120.0	12.0
SB2-1 (Qpf)	Yellowish brown, Clayey, fine SAND	127.5	10.3

TABLE B-II
SUMMARY OF LABORATORY DIRECT SHEAR TEST RESULTS
ASTM D 3080

Sample No. (Geologic Unit)	Dry Density (pcf)	Moisture Content (%)		Peak [Ultimate] Cohesion (psf)	Peak [Ultimate] Angle of Shear Resistance (degrees)
		Initial	After Test		
LB1-3 (Qvop)	117.7	8.6	14.4	725 [475]	29 [29]
LB1-9 (Tsa, CL)	107.5	20.3	23.2	1,300 [600]	32 [32]
LB1-13[2] (BPS)	--	--	--	200 [100]	10 [8]
LB3-2 (Qvop)	116.1	5.9	14.0	480 [375]	34 [34]
LB3-3 (Qvop)	101.5	7.5	21.0	340 [330]	36 [32]
LB3-8[2] (BPS)	--	--	--	240 [180]	11 [11]
SB2-1[1] (Qpf)	114.8	10.7	17.7	430 [430]	29 [29]

[1] Sample remolded to a dry density of approximately 90 percent of the laboratory maximum dry density near optimum moisture content.
[2] Remolded Paste Shear Test.

TABLE B-III
SUMMARY OF LABORATORY EXPANSION INDEX TEST RESULTS
ASTM D 4829

Sample No.	Depth (feet)	Geologic Unit	Moisture Content (%)		Dry Density (pcf)	Expansion Index	2016 CBC Expansion Classification	ASTM Soil Expansion Classification
			Before Test	After Test				
LB1-2	7.5 – 10	Qvop	9.6	18.8	109.6	0	Non-Expansive	Very Low
LB1-6	18 – 20	Tsa	9.8	17.4	110.5	0	Non-Expansive	Very Low
SB2-1	0 – 5	Qpf	9.6	19.2	112.1	40	Expansive	Low

TABLE B-IV
SUMMARY OF LABORATORY WATER-SOLUBLE SULFATE TEST RESULTS
CALIFORNIA TEST NO. 417

Sample No.	Depth (feet)	Geologic Unit	Water-Soluble Sulfate (%)	Sulfate Class
LB1-2	7.5 – 10	Qvop	0.034	S0
LB1-6	18 – 20	Tsa	0.028	S0
SB2-1	0 – 5	Qpf	0.030	S0

TABLE B-V
SUMMARY OF LABORATORY PLASTICITY INDEX TEST RESULTS
ASTM D 4318

Sample No.	Depth (feet)	Geologic Unit	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification
LB1-13	45	BPS	103	34	69	CH
LB3-8	62.5	BPS	89	34	55	CH
SB1-10	40	Qal	32	16	16	CL
SB2-10	45	Qal	33	16	17	CL
B1-11	41	Qal	-	-	-	NP
B1-13	46	Qal	32	14	18	CL
B2-13	46	Qal	28	17	11	CL
B3-9	36	Qal	30	15	15	CL

TABLE B-VI
SUMMARY OF LABORATORY RESISTANCE VALUE (R-VALUE) TEST RESULTS
ASTM D 2844

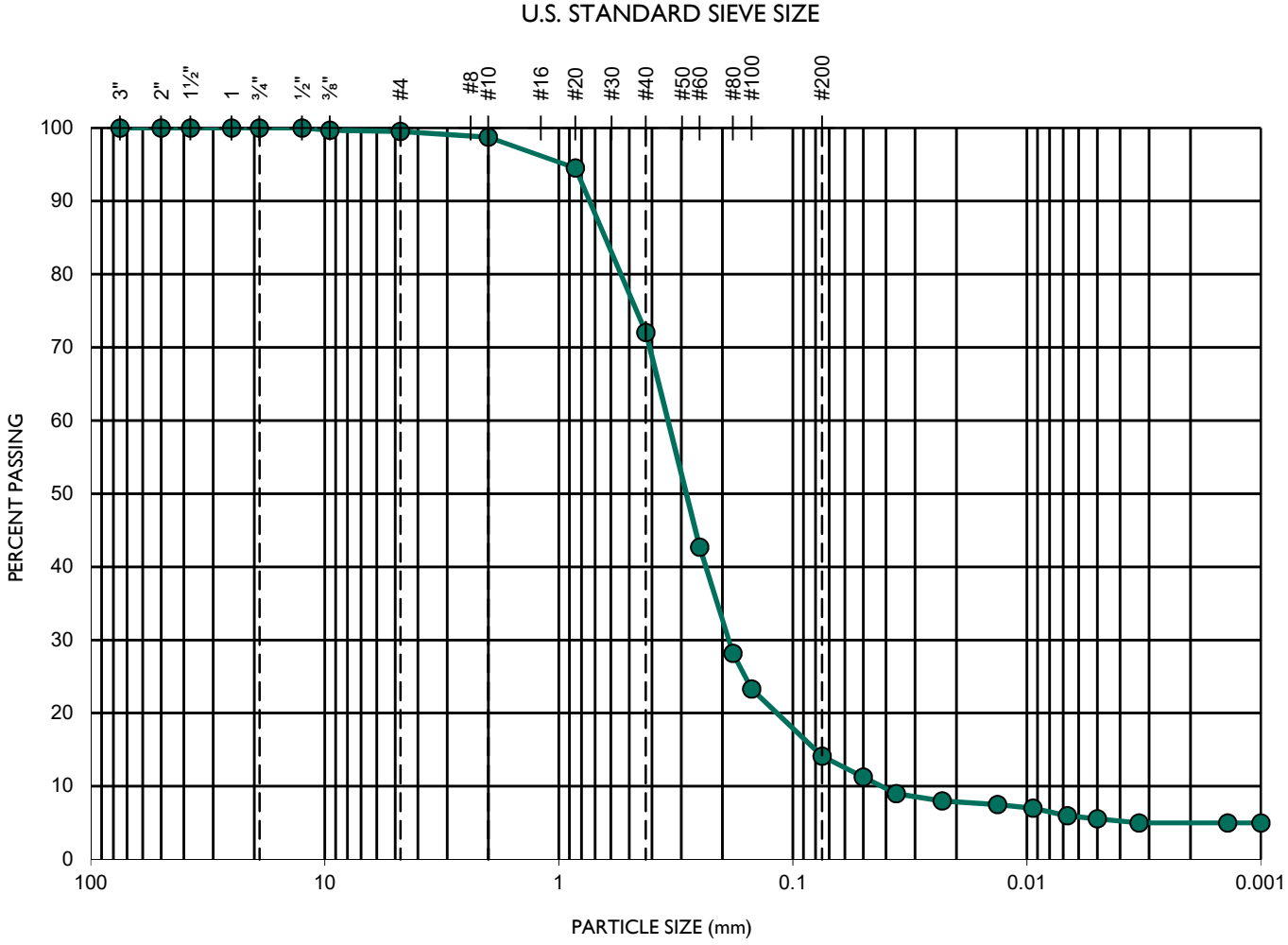
Sample No.	Depth (feet)	Description (Geologic Unit)	R-Value
LB1-2	7.5 – 10	Reddish brown, Silty, fine to coarse SAND (Qvop)	36
SB2-1	0 – 5	Yellowish brown, Clayey, fine SAND (Qpf)	13

SAMPLE NO.: **B1-11**

SAMPLE DEPTH (FT.): **41'**

GEOLOGIC UNIT: **Qal**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
0.04238	0.18887	0.35326	2.4	8.3	Silty SAND

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SIEVE ANALYSES - ASTM D 6913

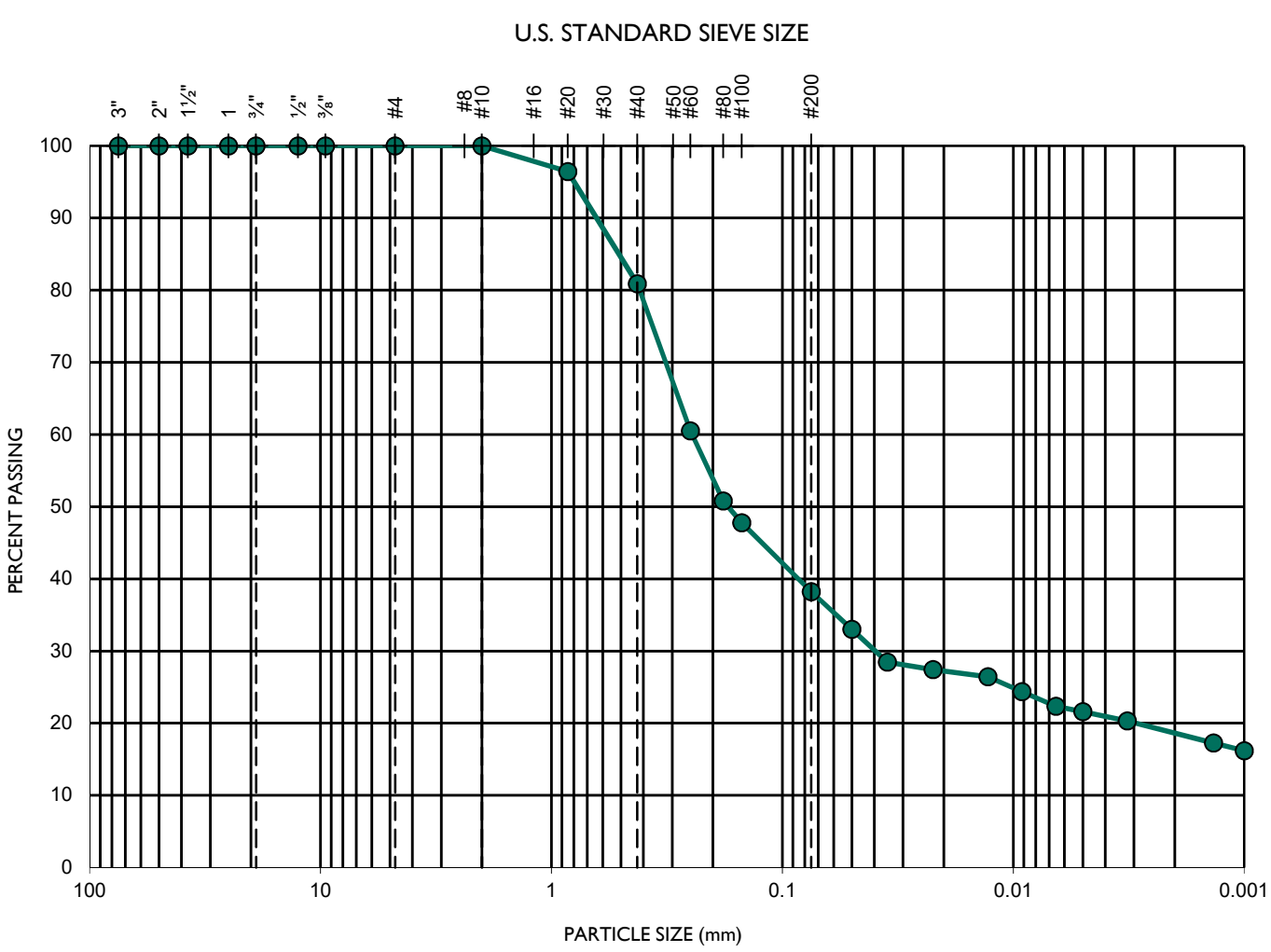
PIRAEUS POINT

PROJECT NO.: G2307-32-05

SAMPLE NO.: **B1-13** GEOLOGIC UNIT: **Qal**

SAMPLE DEPTH (FT.): **46'**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
--	0.04016	0.24651	--	--	Clayey SAND

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PIRAEUS POINT

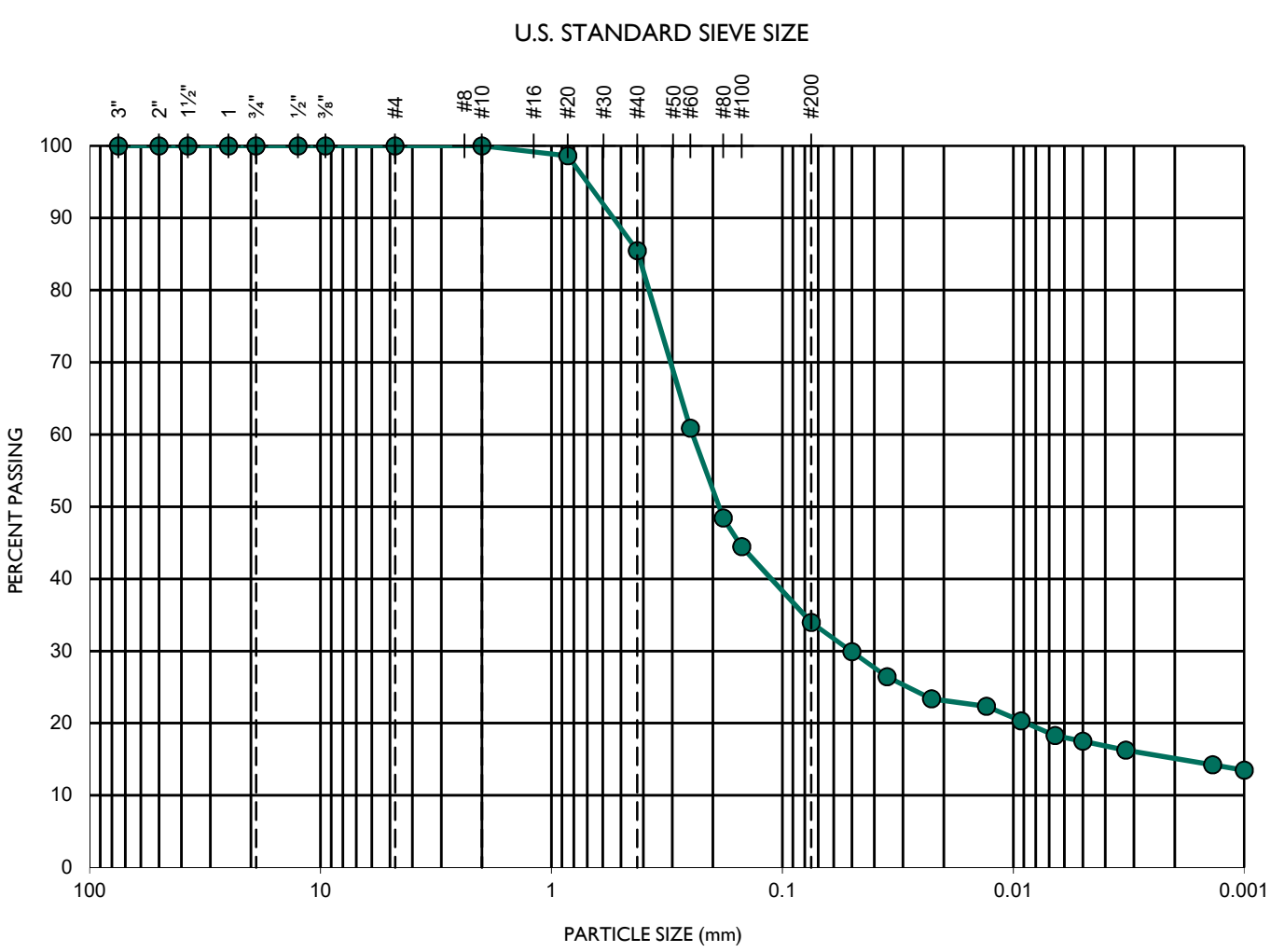
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B2-13**

SAMPLE DEPTH (FT.): **46'**

GEOLOGIC UNIT: **Qal**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
--	0.05058	0.24515	--	--	Silty Clayey SAND

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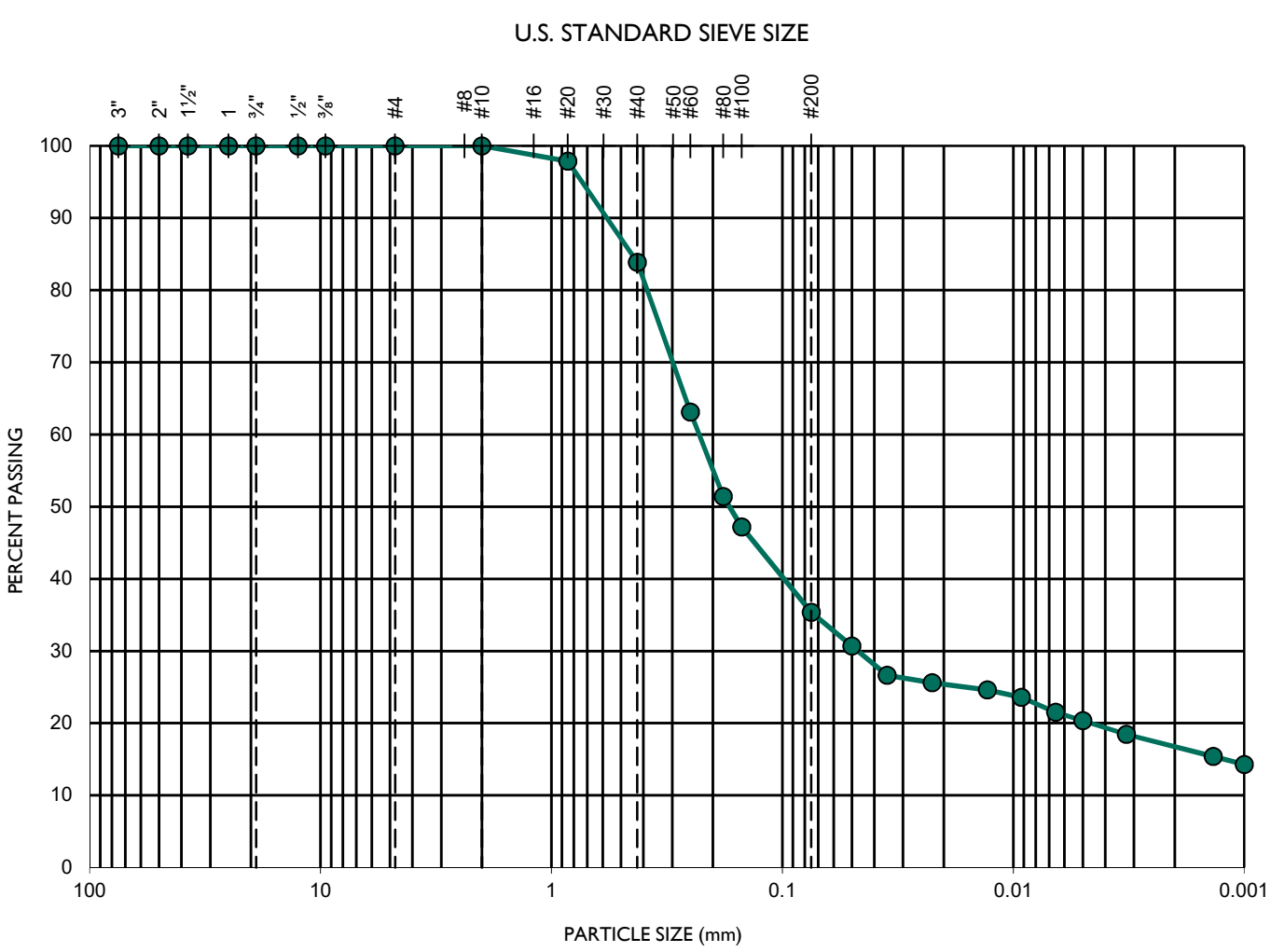
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B3-9**

SAMPLE DEPTH (FT.): **36'**

GEOLOGIC UNIT: **Qal**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
--	0.04749	0.23151	--	--	Silty Clayey SAND

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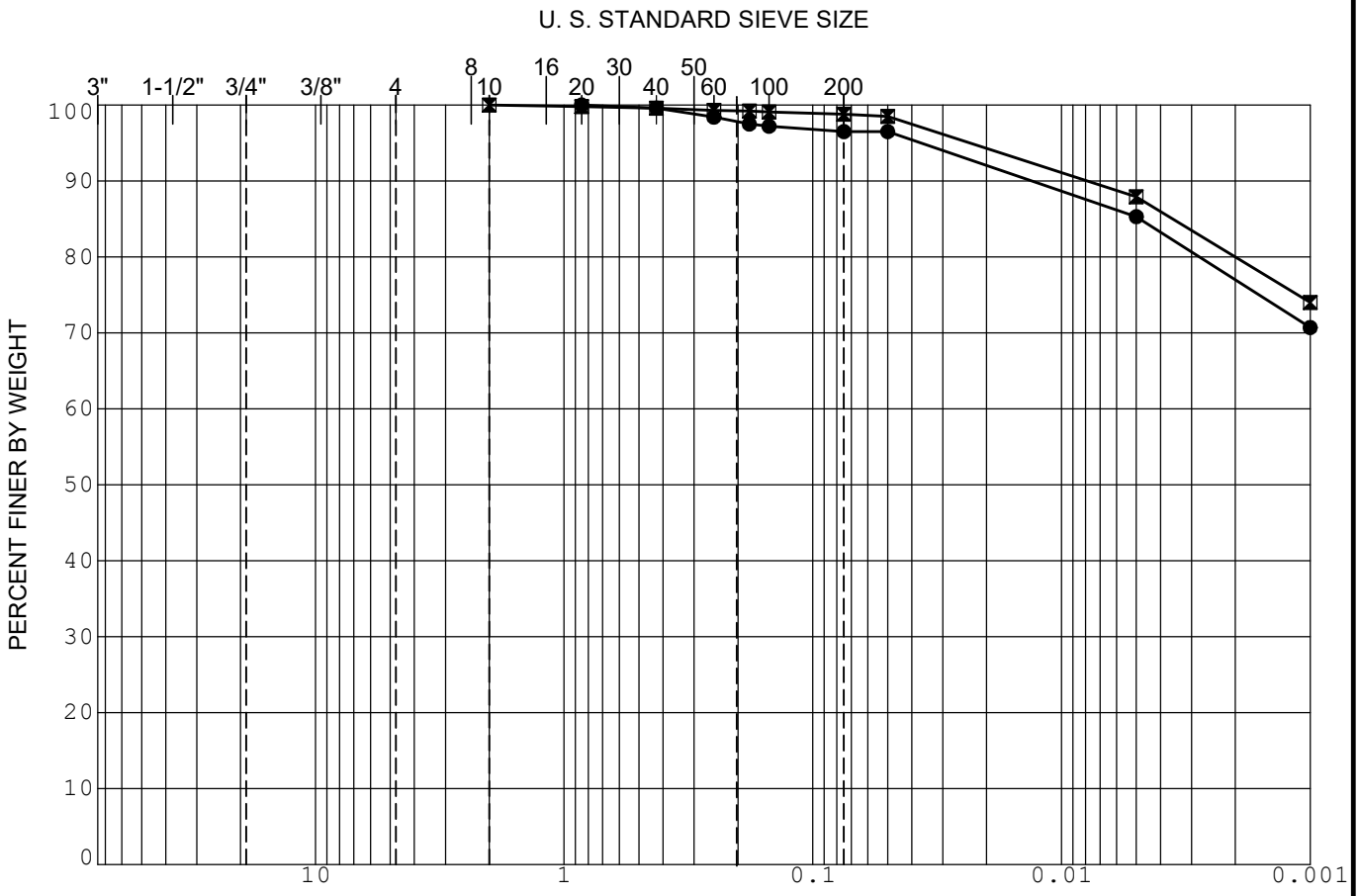
SIEVE ANALYSES - ASTM D 6913

PIRAEUS POINT

PROJECT NO.: G2307-32-05

PROJECT NO. G2307-32-05

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



ASTM D422

	SAMPLE	DEPTH (ft)	CLASSIFICATION	NAT WC	LL	PL	PI
●	LB1-13	44.5	CH - Fat CLAY		103	34	69
⊠	LB3-8	62.5	CH - Fat CLAY		89	34	55
▲							

GRADATION CURVE

PIRAEUS POINT

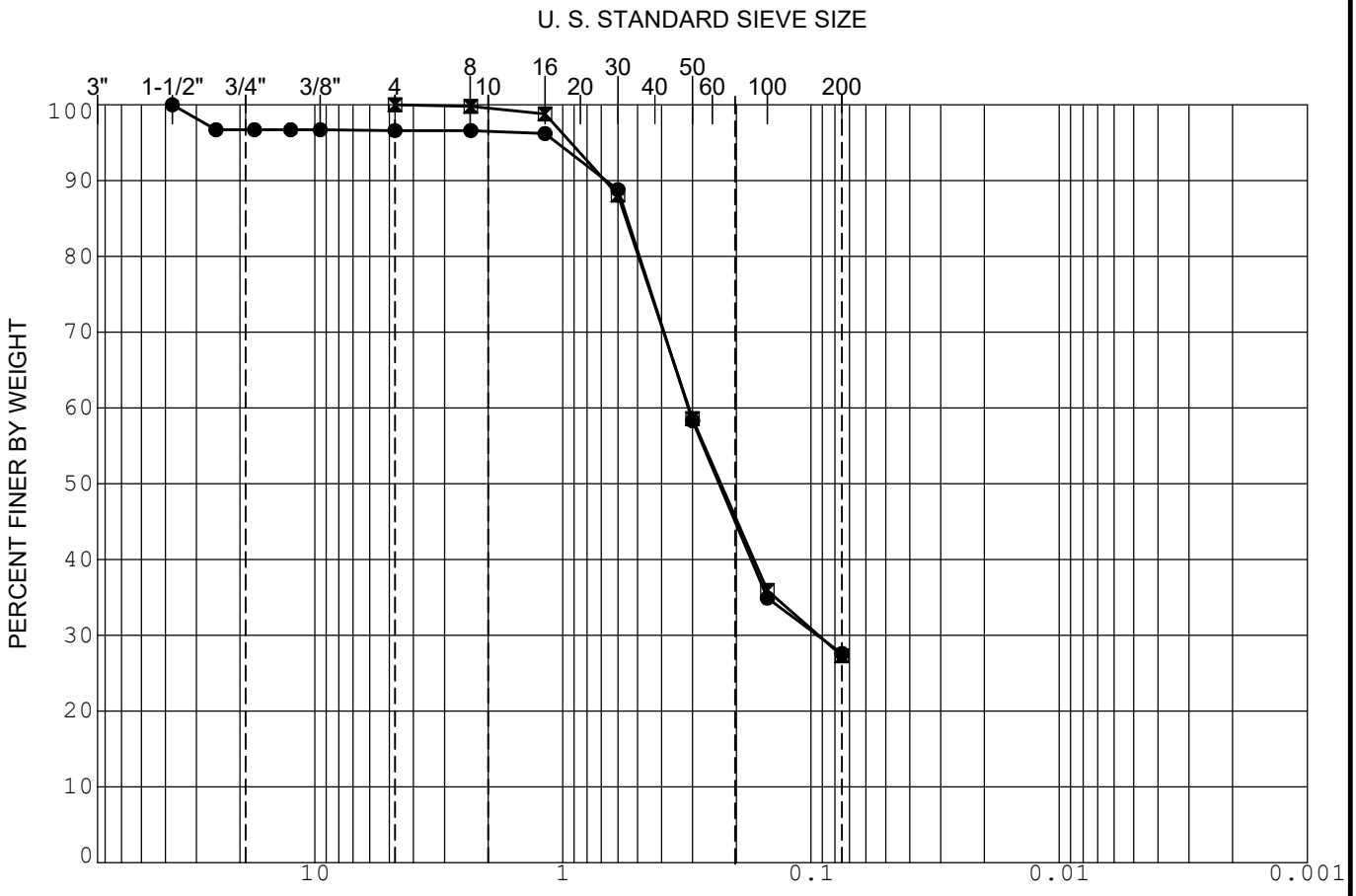
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GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



ASTM D422

	SAMPLE	DEPTH (ft)	CLASSIFICATION	NAT WC	LL	PL	PI
●	SB1-10	40.0	SC - Clayey SAND		32	16	16
⊠	SB2-10	45.0	SC - Clayey SAND		33	16	17
▲							

GRADATION CURVE

PIRAEUS POINT

ENCINITAS, CALIFORNIA

G2307-32-05.GPJ

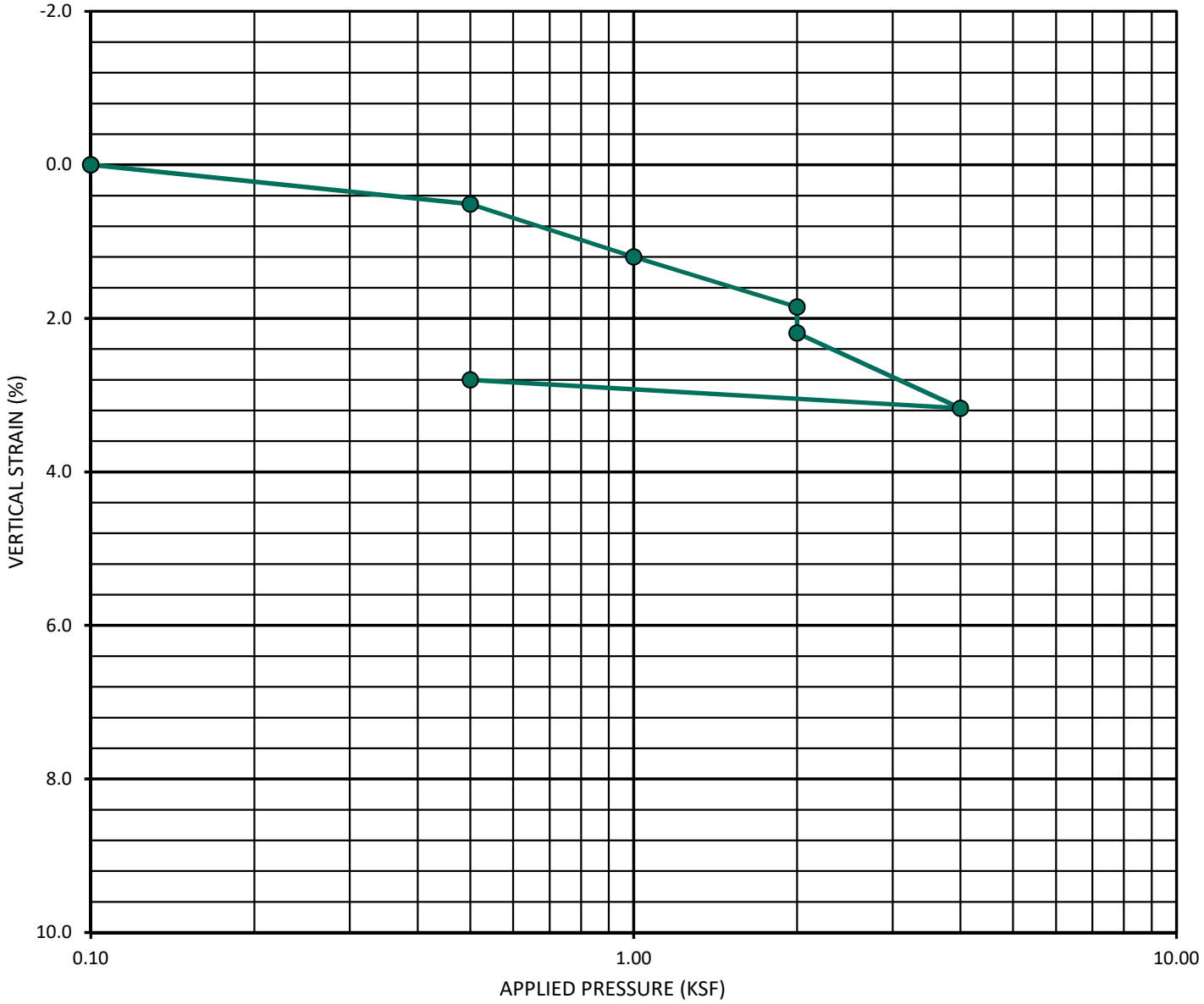
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SAMPLE NO.: **B1-2**

SAMPLE DEPTH (FT): **10'**

GEOLOGIC UNIT: **Qpf**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	109.0
INITIAL WATER CONTENT (%):	12.2%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	62.0%



CONSOLIDATION CURVE - ASTM D 2435

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PIRAEUS POINT

PROJECT NO.: G2307-32-05

SAMPLE NO.: **B1-4**

SAMPLE DEPTH (FT): **20'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	113.5
INITIAL WATER CONTENT (%):	14.7%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	84.4%



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CONSOLIDATION CURVE - ASTM D 2435

PIRAEUS POINT

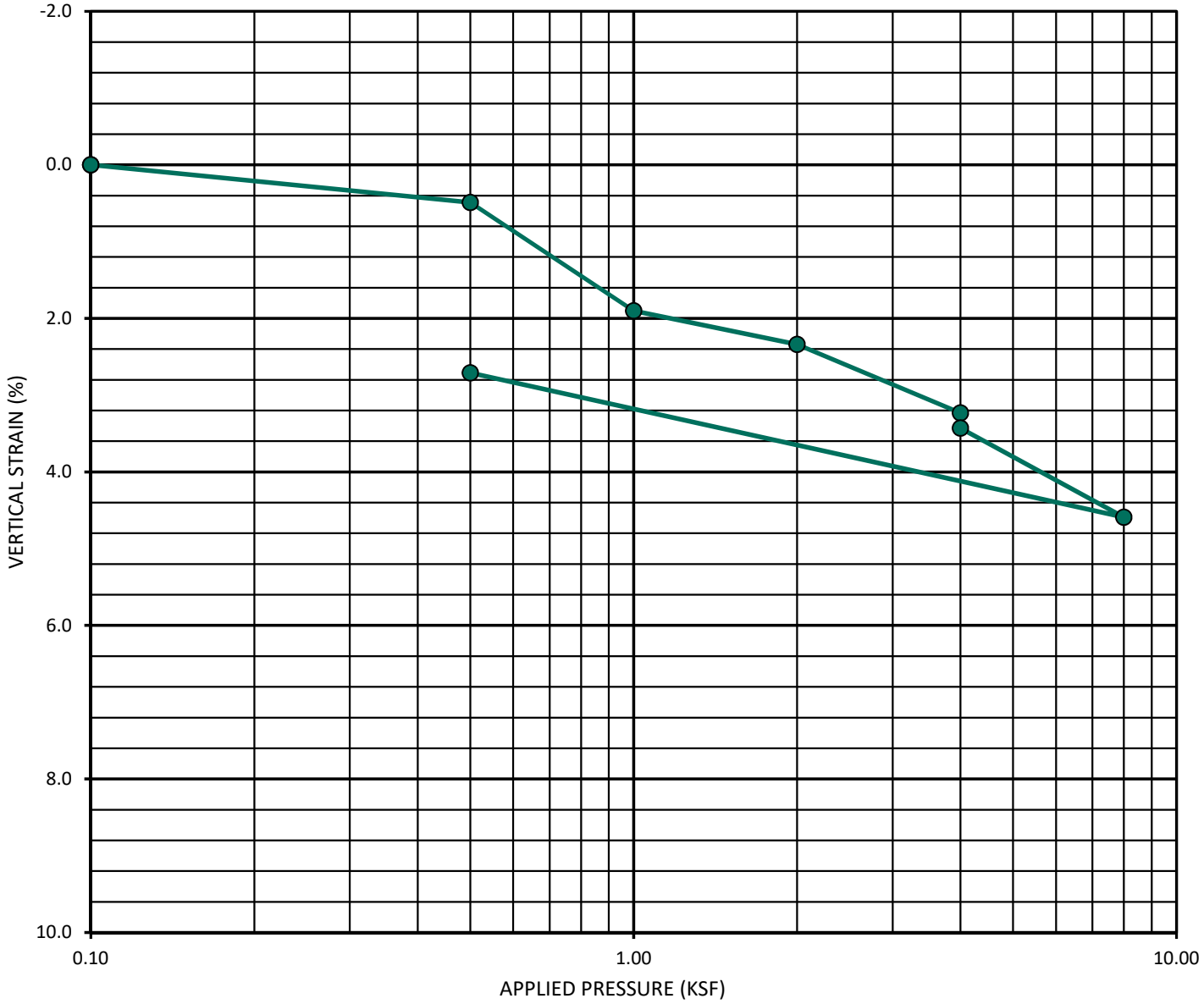
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B1-8**

SAMPLE DEPTH (FT): **35'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	104.3
INITIAL WATER CONTENT (%):	20.6%
SAMPLE SATURATED AT (KSF):	4.0
INITIAL SATURATION (%):	92.5%



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PIRAEUS POINT

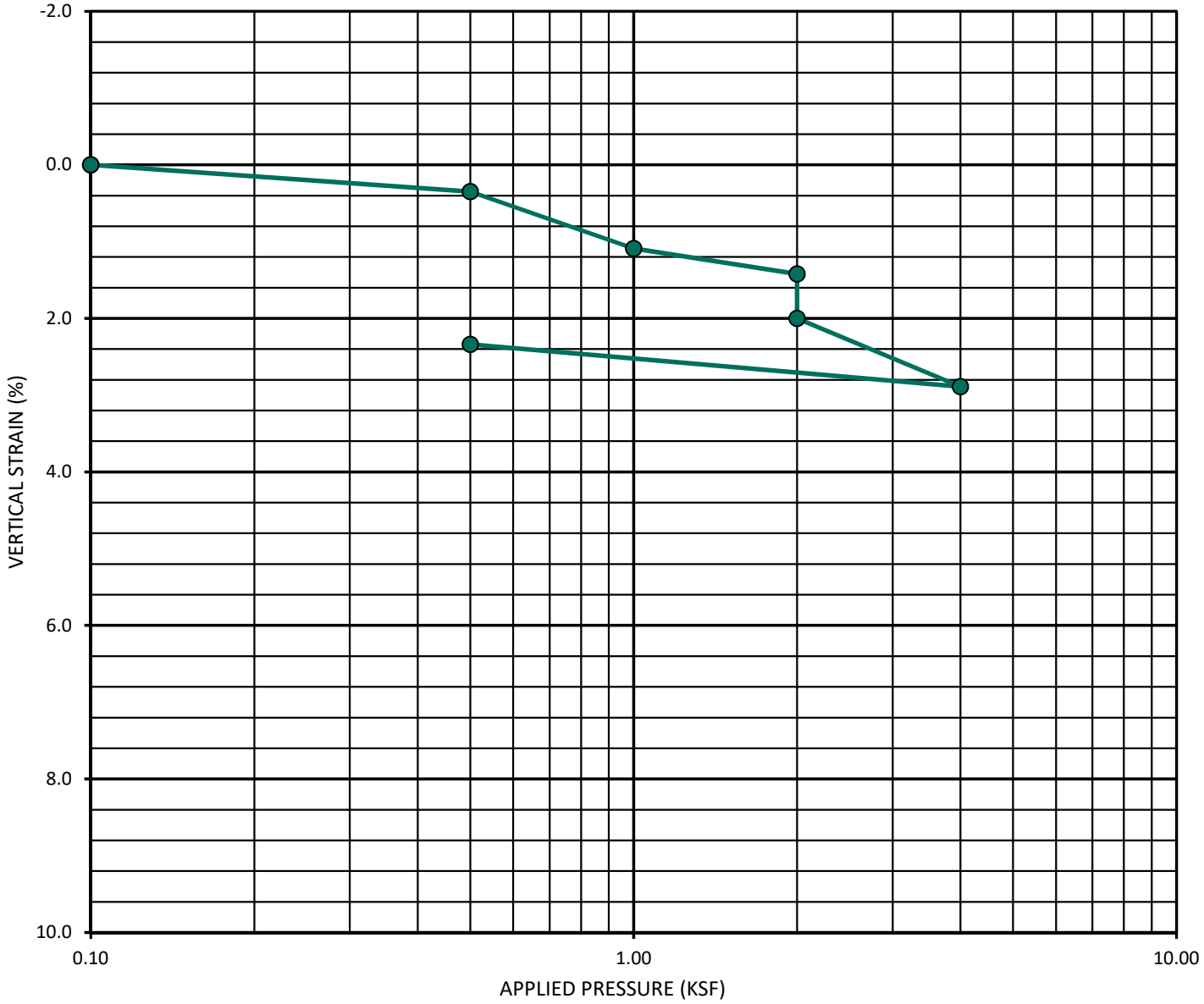
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B2-1**

SAMPLE DEPTH (FT): **5'**

GEOLOGIC UNIT: **Qpf**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	114.1
INITIAL WATER CONTENT (%):	9.8%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	57.5%



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PIRAEUS POINT

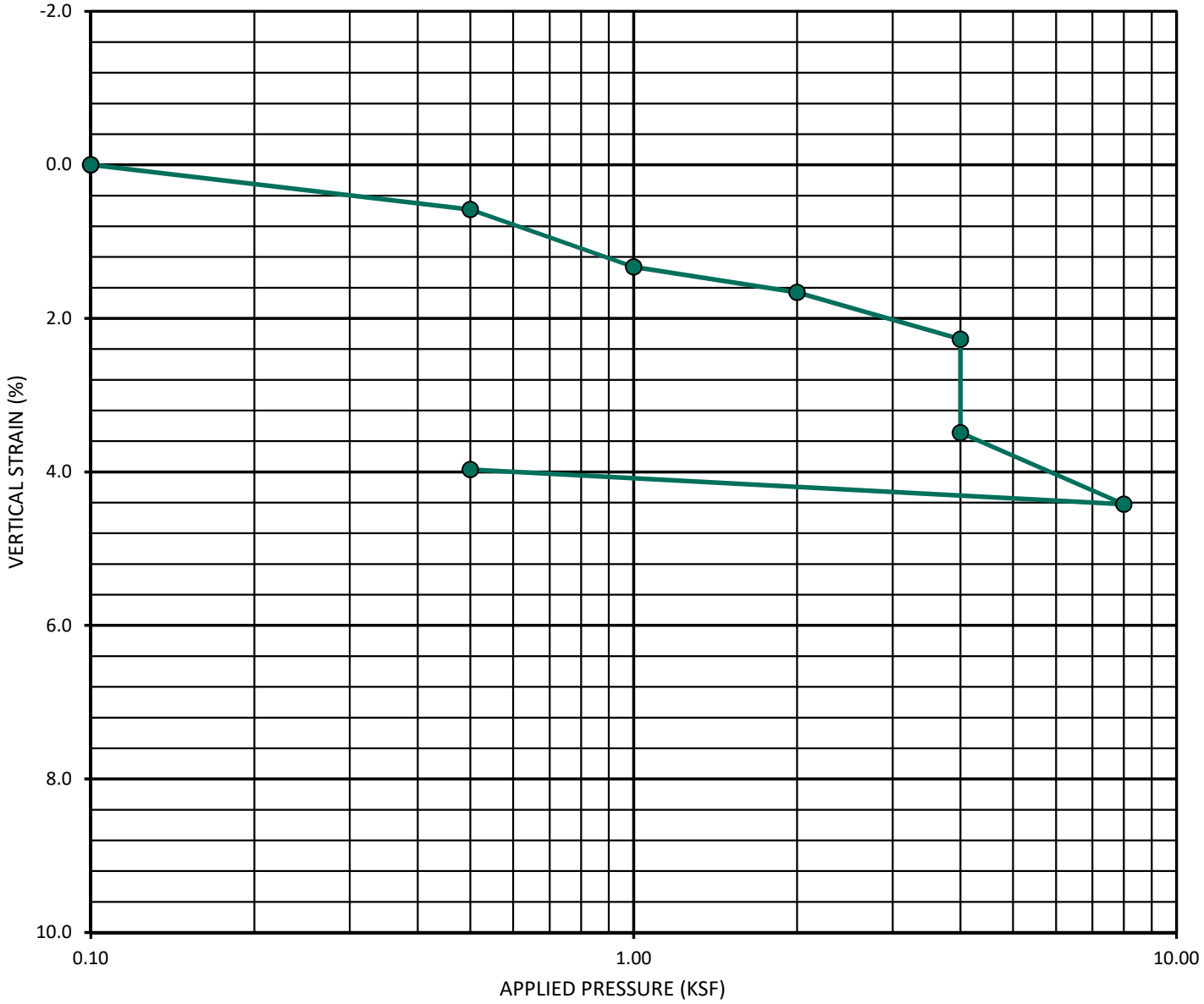
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B2-5**

SAMPLE DEPTH (FT): **25'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	107.3
INITIAL WATER CONTENT (%):	4.7%
SAMPLE SATURATED AT (KSF):	4.0
INITIAL SATURATION (%):	23.1%



CONSOLIDATION CURVE - ASTM D 2435

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PIRAEUS POINT

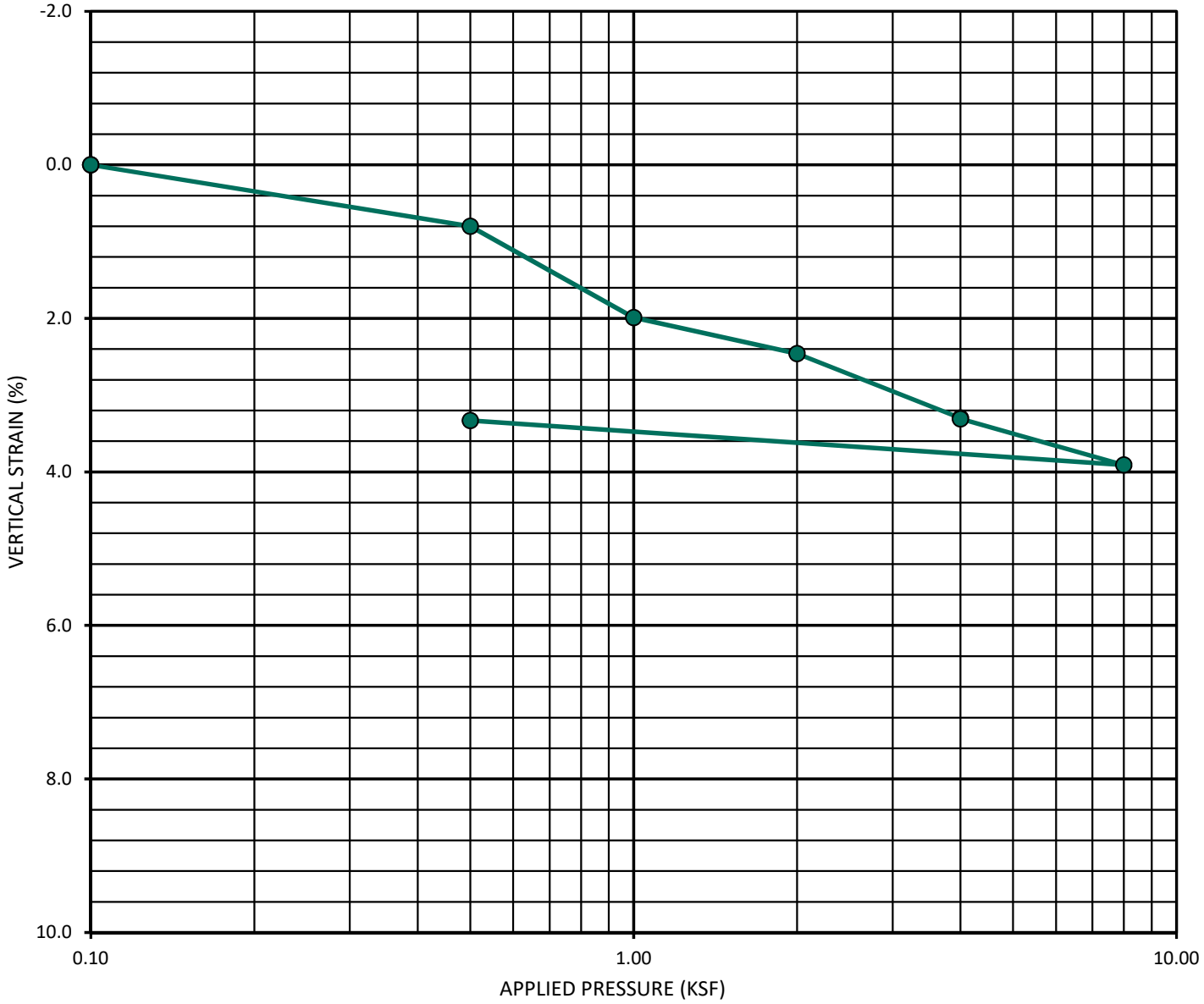
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B2-12**

SAMPLE DEPTH (FT): **45'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	118.4
INITIAL WATER CONTENT (%):	14.5%
SAMPLE SATURATED AT (KSF):	4.0
INITIAL SATURATION (%):	96.1%



CONSOLIDATION CURVE - ASTM D 2435

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PIRAEUS POINT

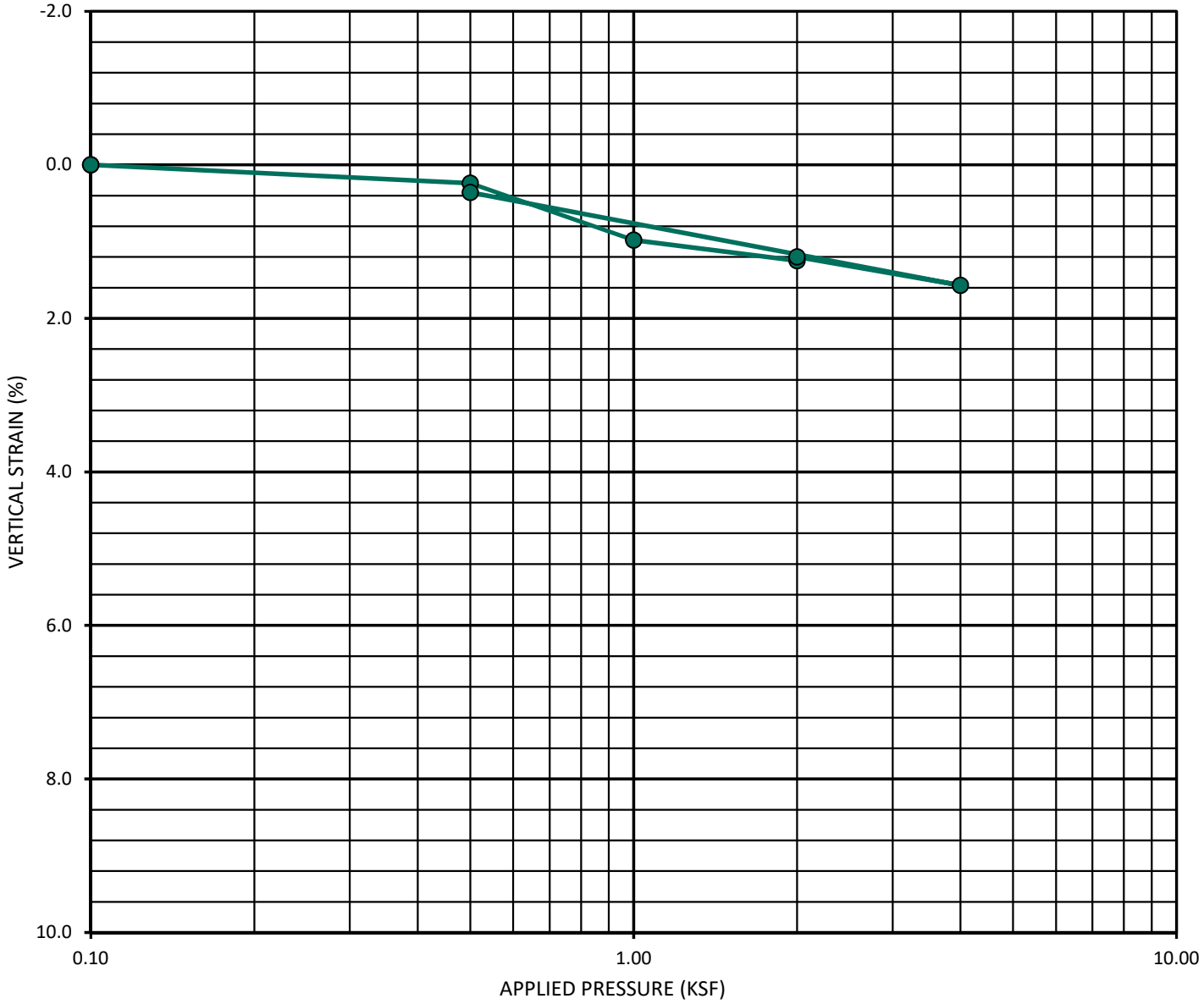
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B3-1**

SAMPLE DEPTH (FT): **5'**

GEOLOGIC UNIT: **Qpf**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	117.2
INITIAL WATER CONTENT (%):	10.1%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	65.0%



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CONSOLIDATION CURVE - ASTM D 2435

PIRAEUS POINT

PROJECT NO.: G2307-32-05

SAMPLE NO.: **B3-4**

SAMPLE DEPTH (FT): **20'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	112.9
INITIAL WATER CONTENT (%):	10.7%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	60.5%



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PIRAEUS POINT

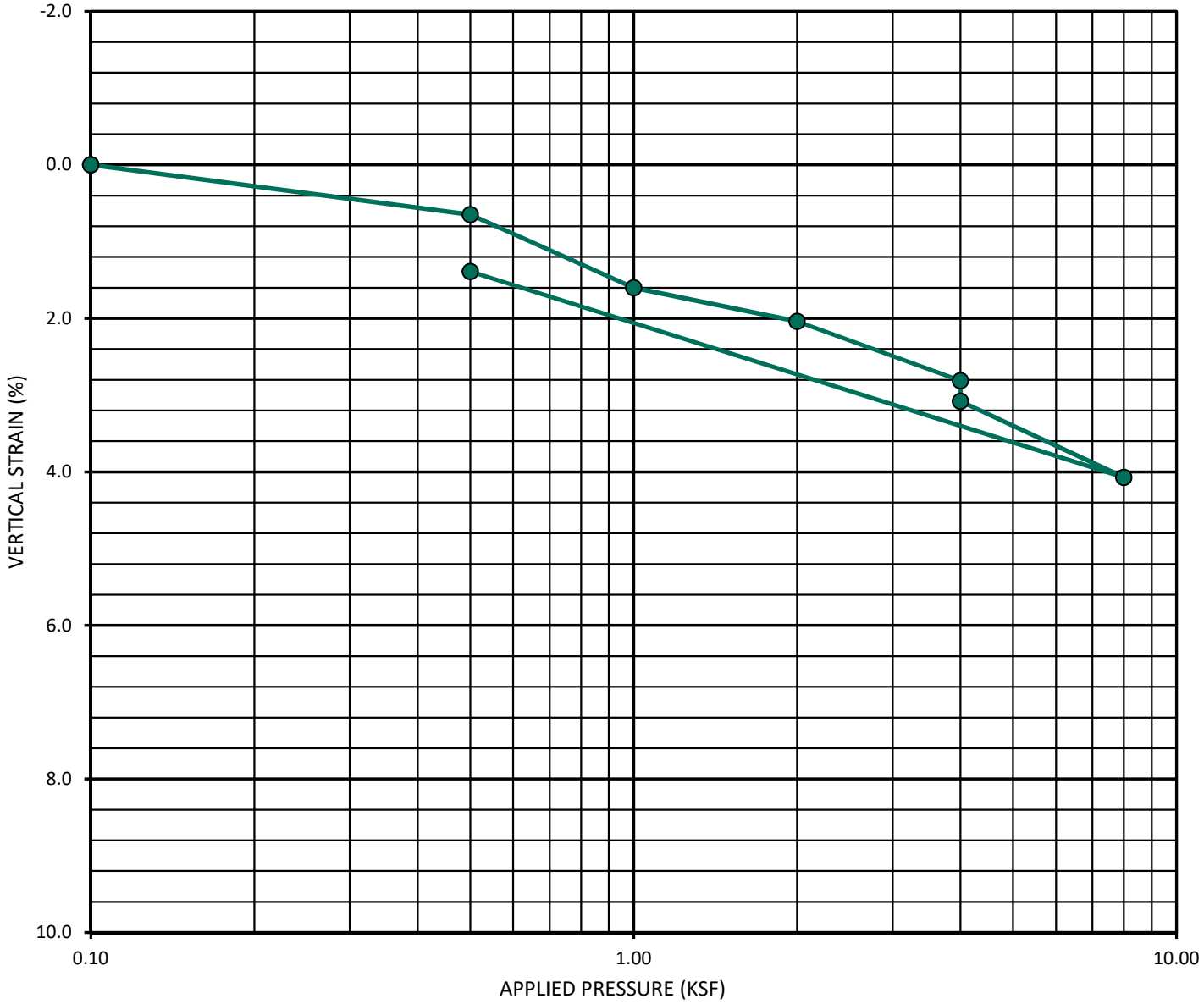
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B3-8**

SAMPLE DEPTH (FT): **35'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	114.5
INITIAL WATER CONTENT (%):	14.6%
SAMPLE SATURATED AT (KSF):	4.0
INITIAL SATURATION (%):	86.4%



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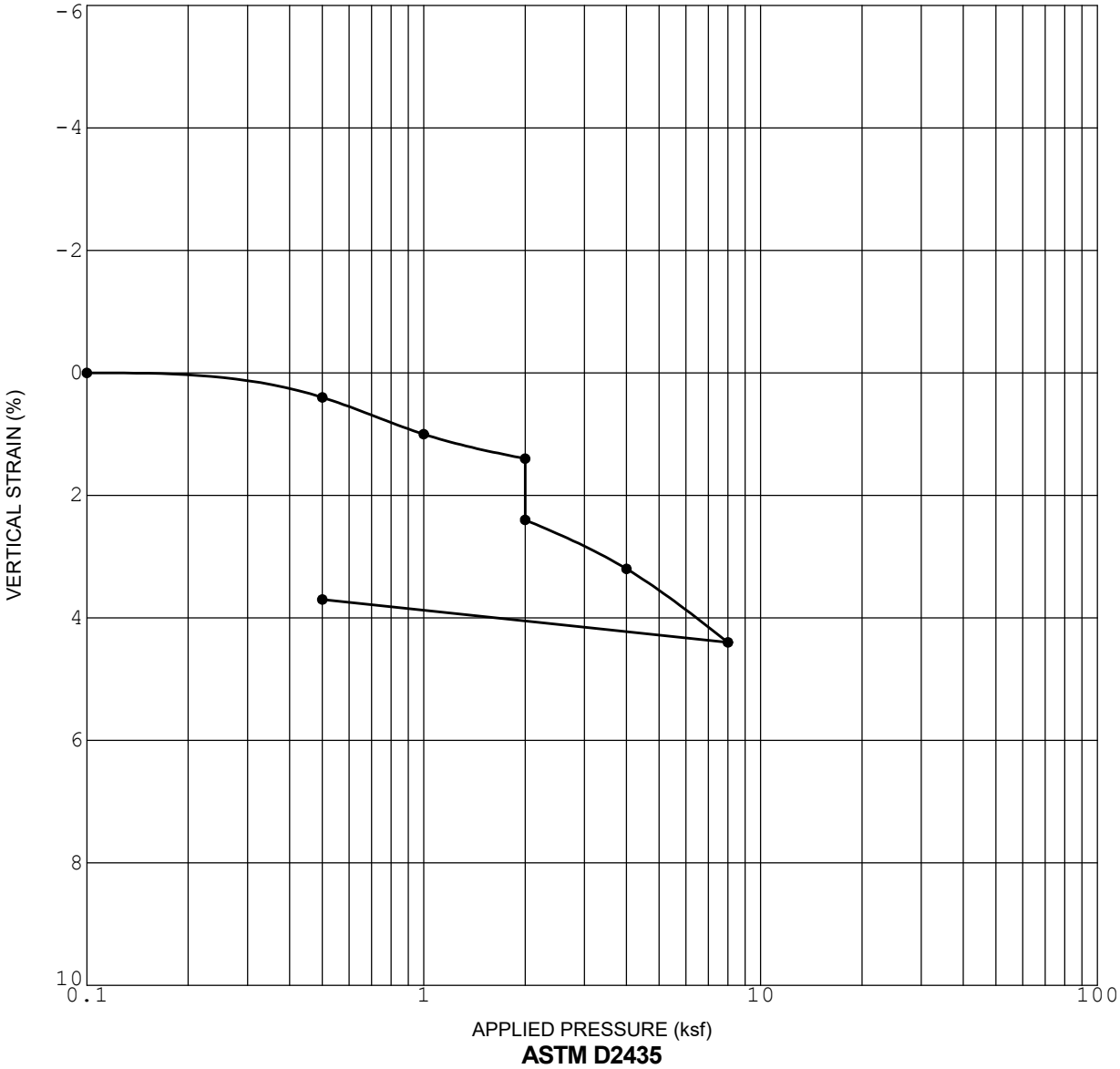
CONSOLIDATION CURVE - ASTM D 2435

PIRAEUS POINT

PROJECT NO.: G2307-32-05

PROJECT NO. G2307-32-05

SAMPLE NO. SB1-2



ASTM D2435

Initial Dry Density (pcf)	113.3	**Initial Saturation (%)**	52.1
Initial Water Content (%)	8.1	**Sample Saturated at (ksf)**	2.0

CONSOLIDATION CURVE

PIRAEUS POINT

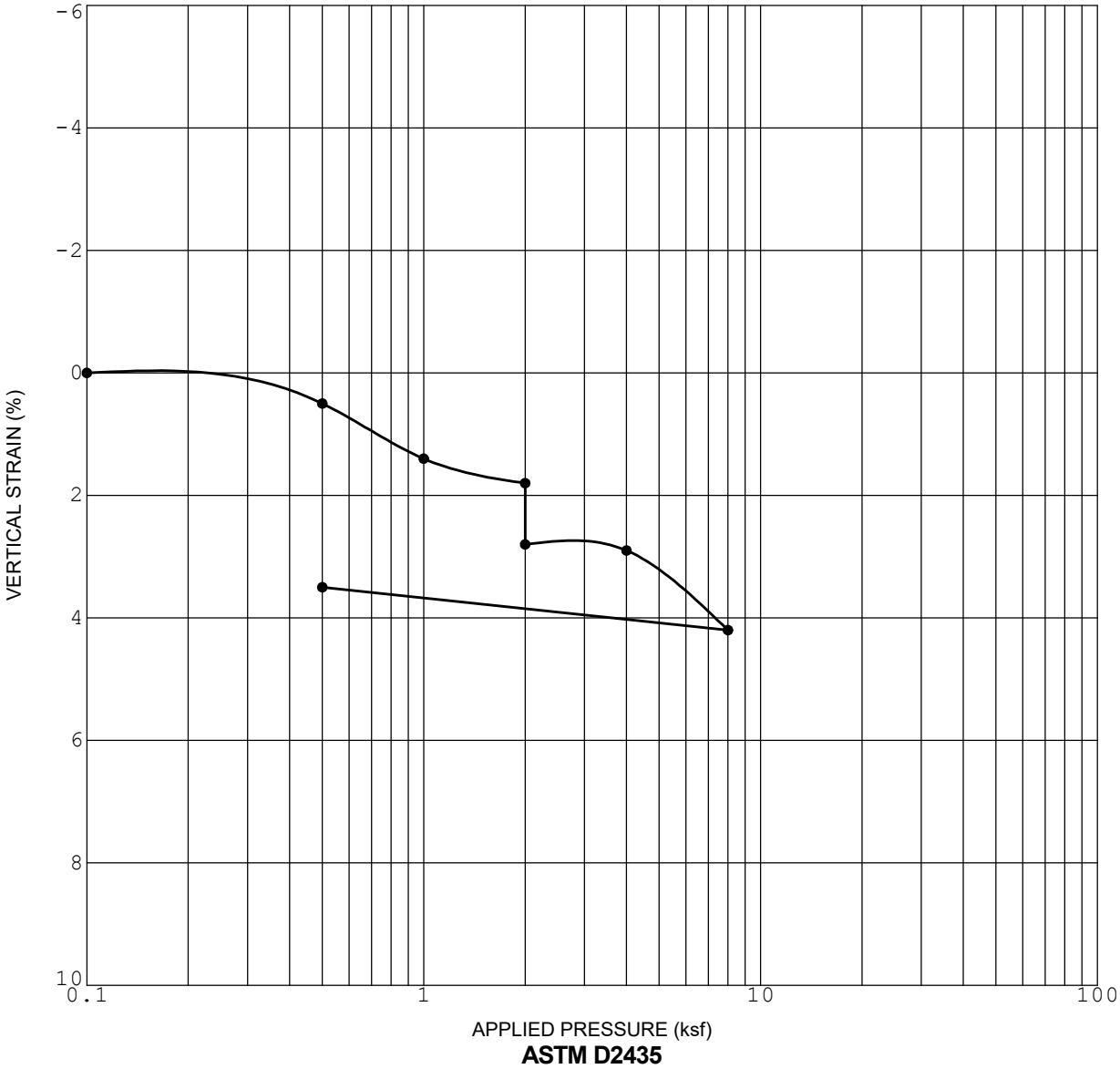
ENCINITAS, CALIFORNIA

G2307-32-05.GPJ

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PROJECT NO. G2307-32-05

SAMPLE NO. SB2-5



ASTM D2435

Initial Dry Density (pcf)	115.2	**Initial Saturation (%)**	60.0
Initial Water Content (%)	10.0	**Sample Saturated at (ksf)**	2.0

CONSOLIDATION CURVE

PIRAEUS POINT

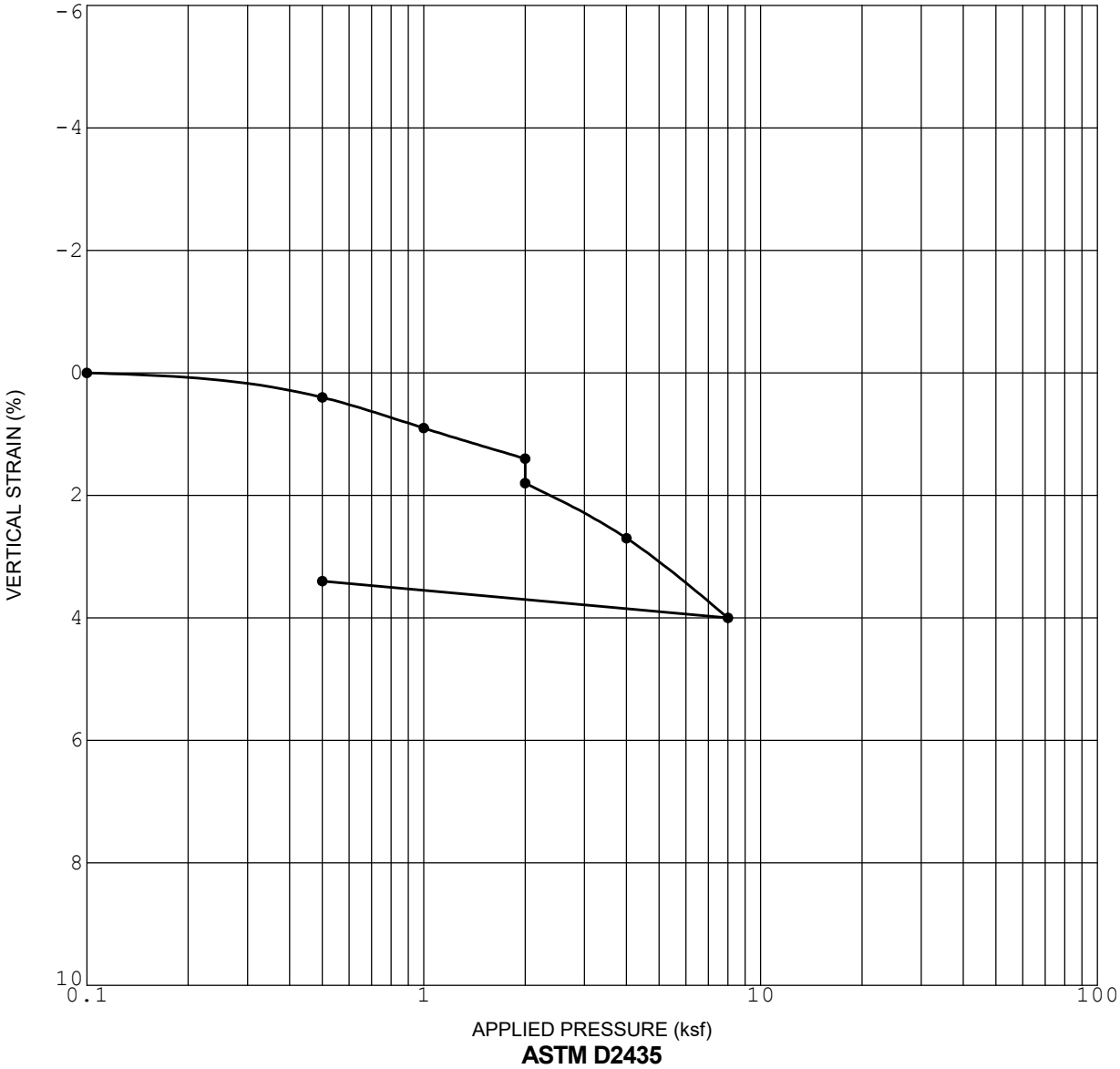
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PROJECT NO. G2307-32-05

SAMPLE NO. SB2-7



ASTM D2435

Initial Dry Density (pcf)	111.7	**Initial Saturation (%)**	61.7
Initial Water Content (%)	11.3	**Sample Saturated at (ksf)**	2.0

CONSOLIDATION CURVE

PIRAEUS POINT

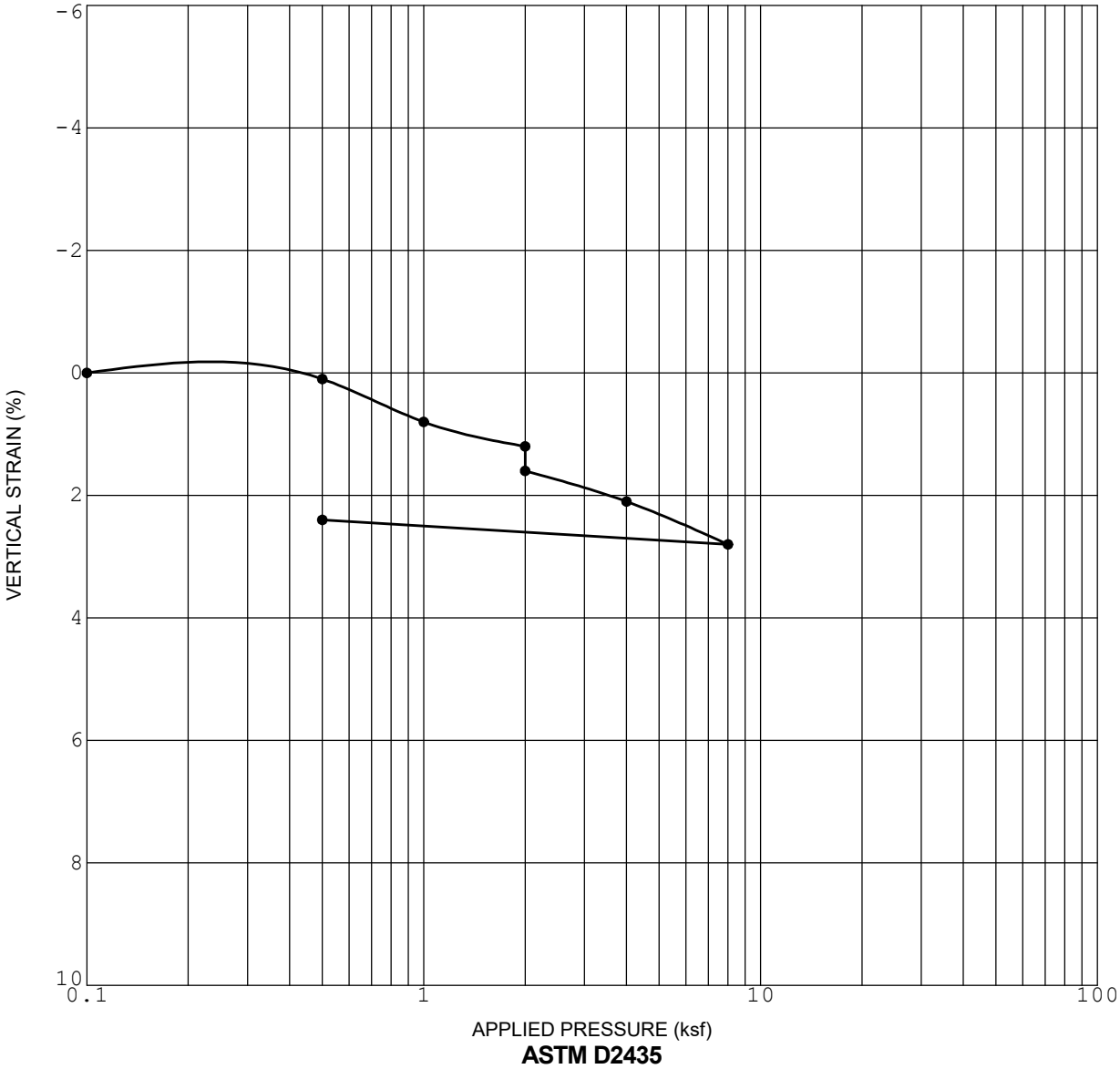
ENCINITAS, CALIFORNIA

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PROJECT NO. G2307-32-05

SAMPLE NO. SB2-11



ASTM D2435

Initial Dry Density (pcf)	115.6	**Initial Saturation (%)**	100
Initial Water Content (%)	18.4	**Sample Saturated at (ksf)**	.1

CONSOLIDATION CURVE

PIRAEUS POINT

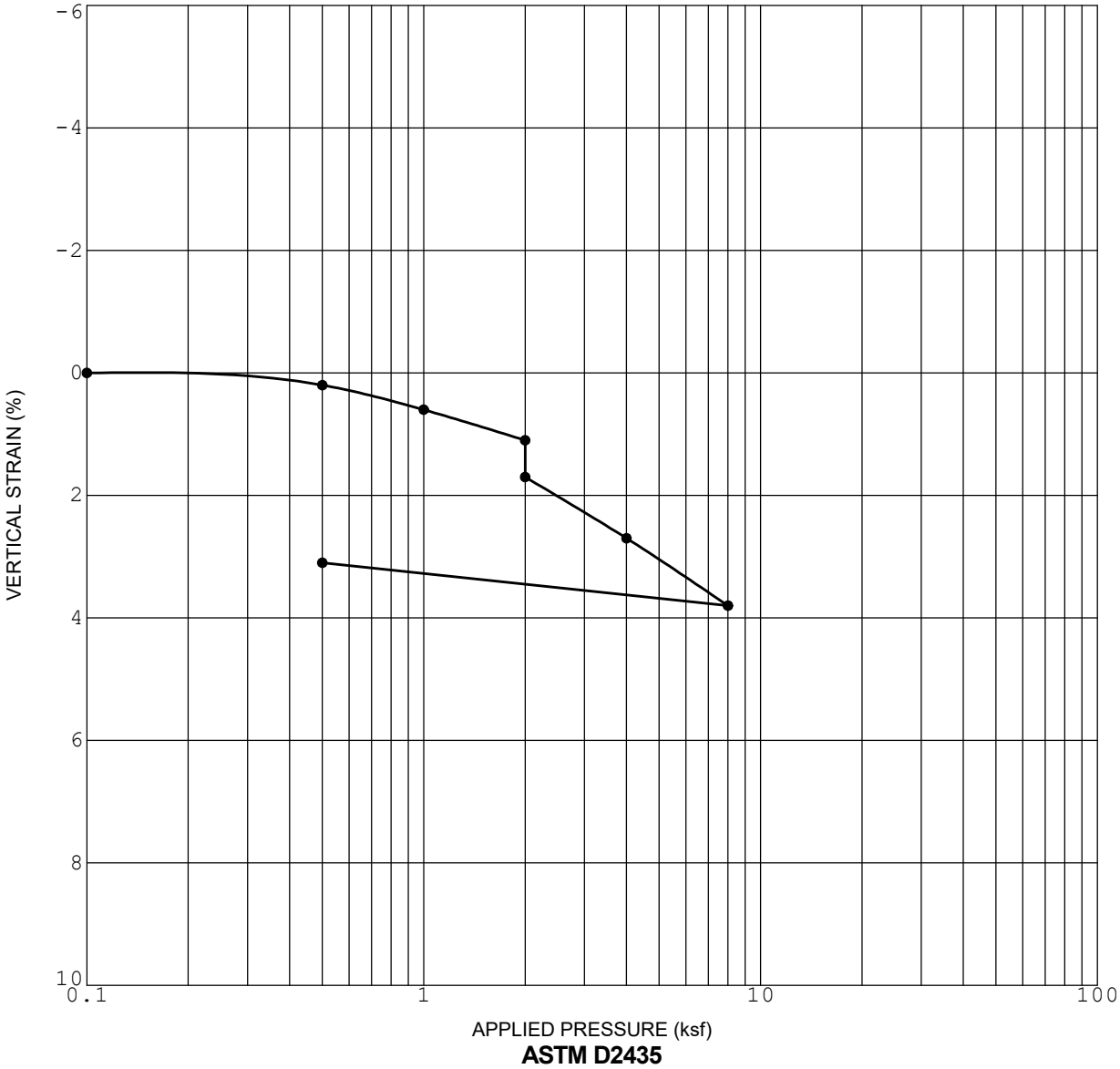
ENCINITAS, CALIFORNIA

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PROJECT NO. G2307-32-05

SAMPLE NO. SB3-3



ASTM D2435

Initial Dry Density (pcf)	110.8	**Initial Saturation (%)**	49.8
Initial Water Content (%)	9.3	**Sample Saturated at (ksf)**	2.0

CONSOLIDATION CURVE

PIRAEUS POINT

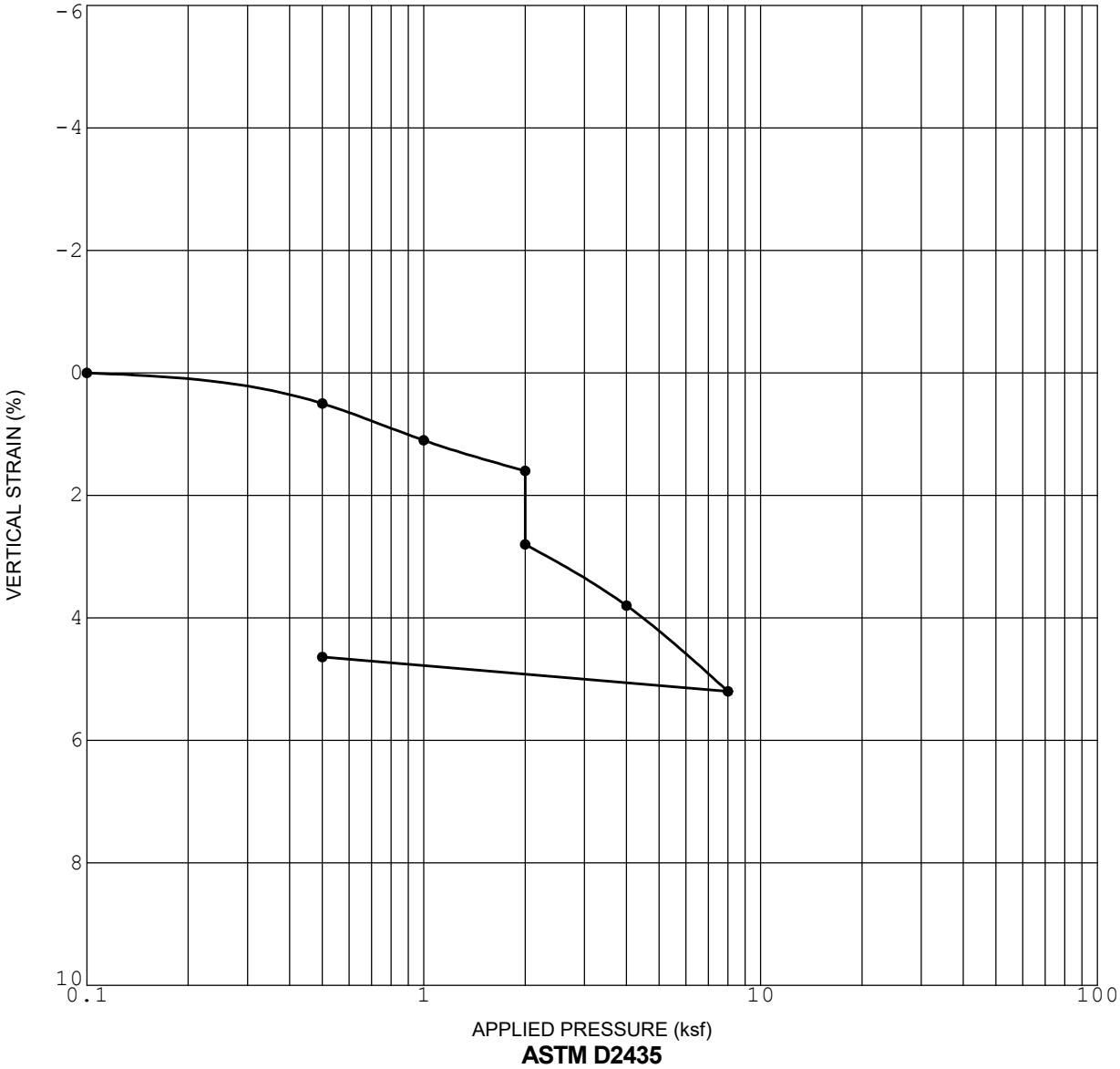
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PROJECT NO. G2307-32-05

SAMPLE NO. SB3-5



ASTM D2435

Initial Dry Density (pcf)	116.1	**Initial Saturation (%)**	58.0
Initial Water Content (%)	9.4	**Sample Saturated at (ksf)**	2.0

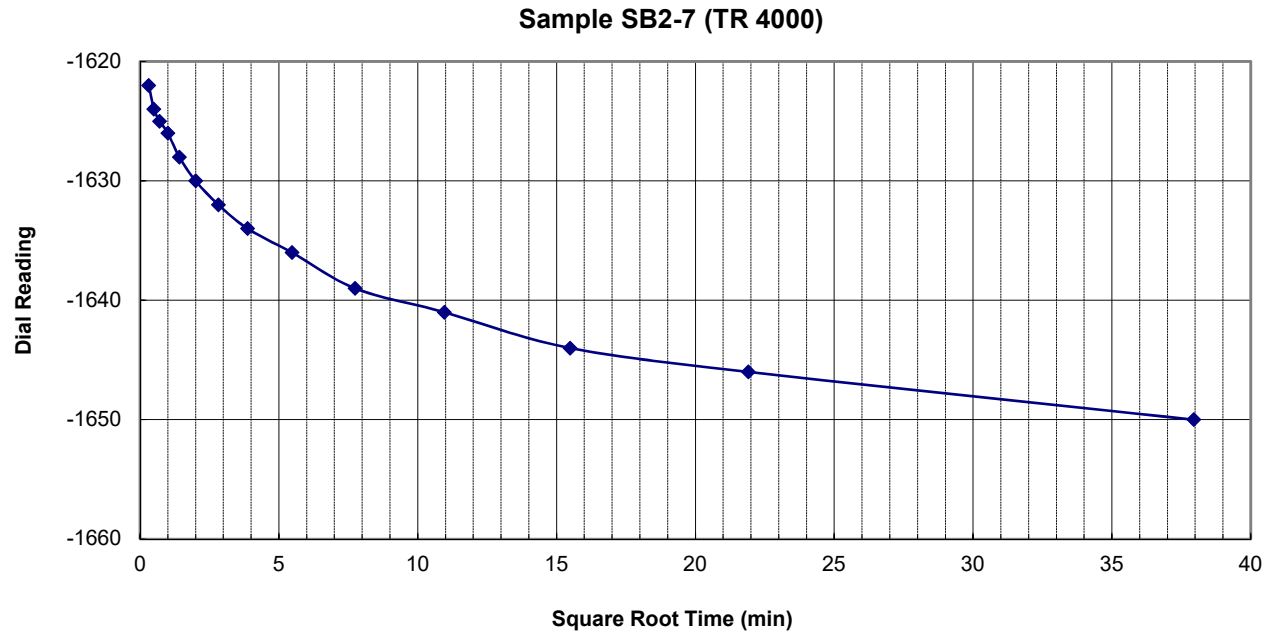
CONSOLIDATION CURVE

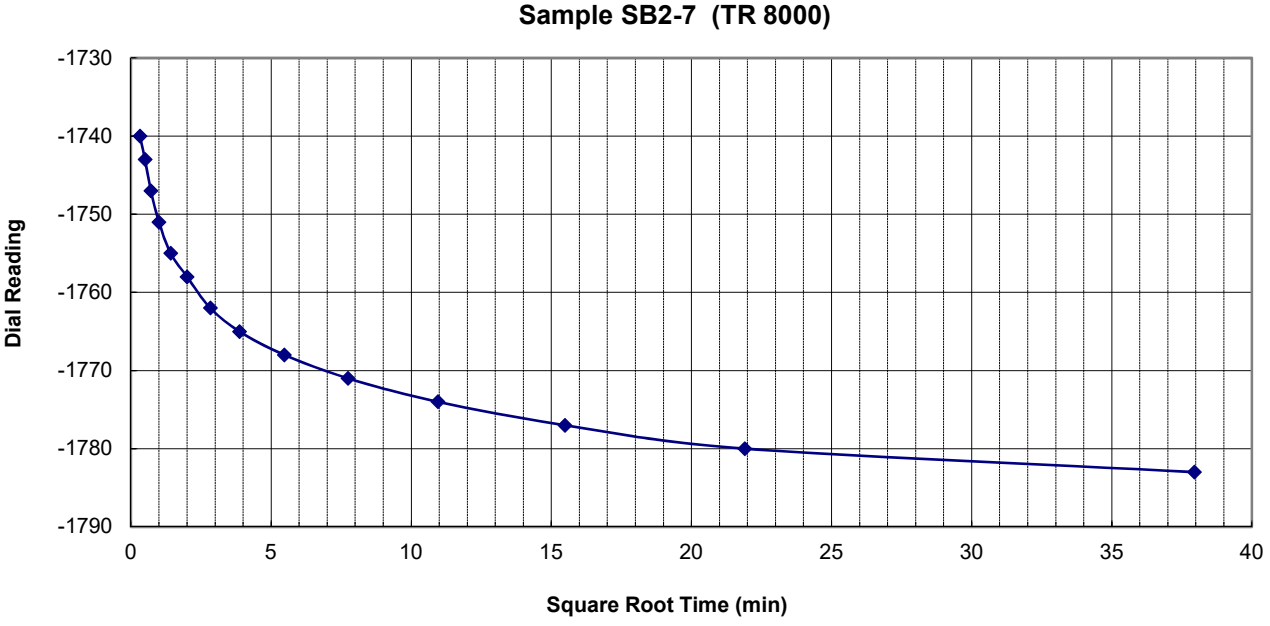
PIRAEUS POINT

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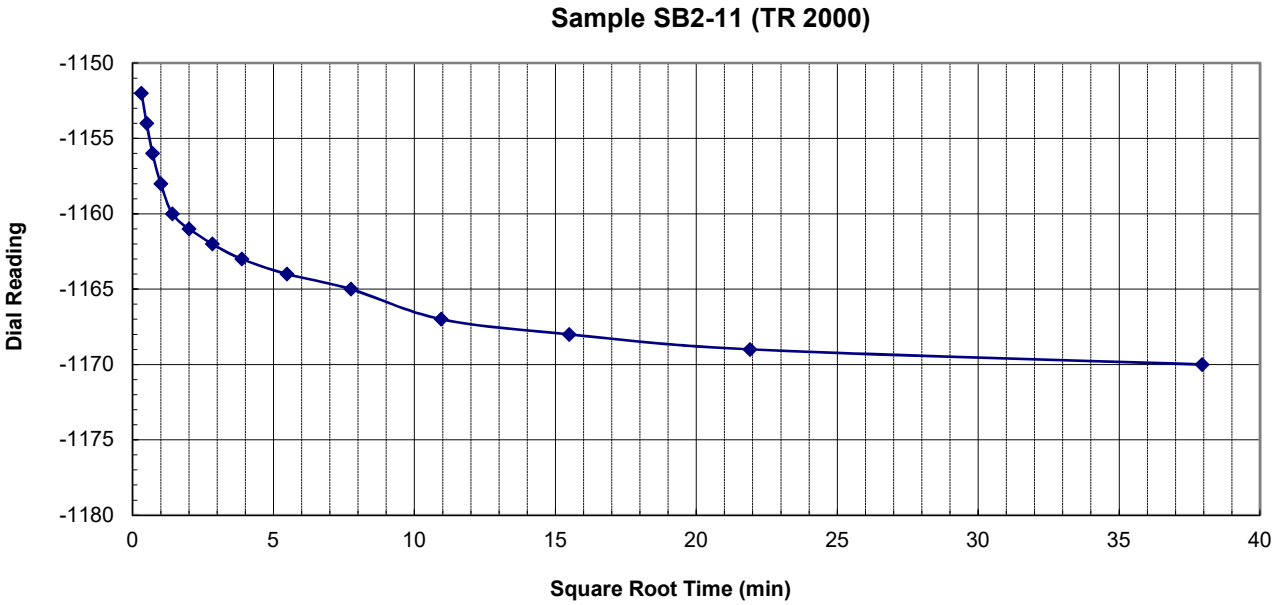
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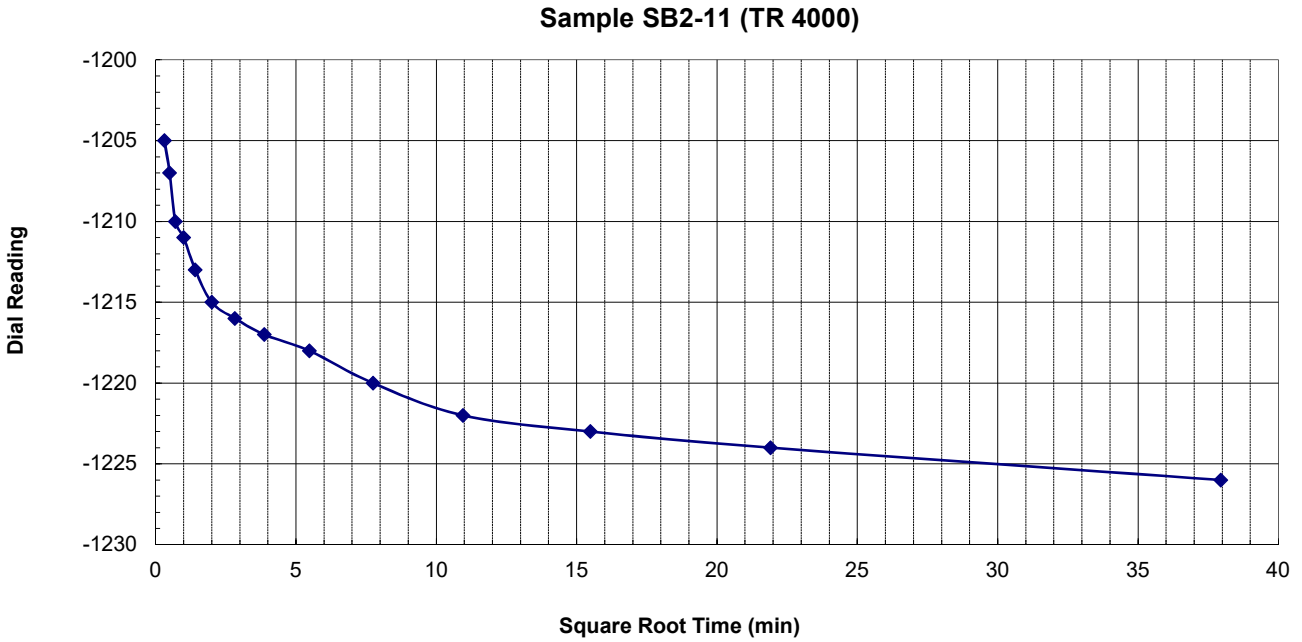
LR / SW

TIME RATE OF CONSOLIDATION RESULTS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05





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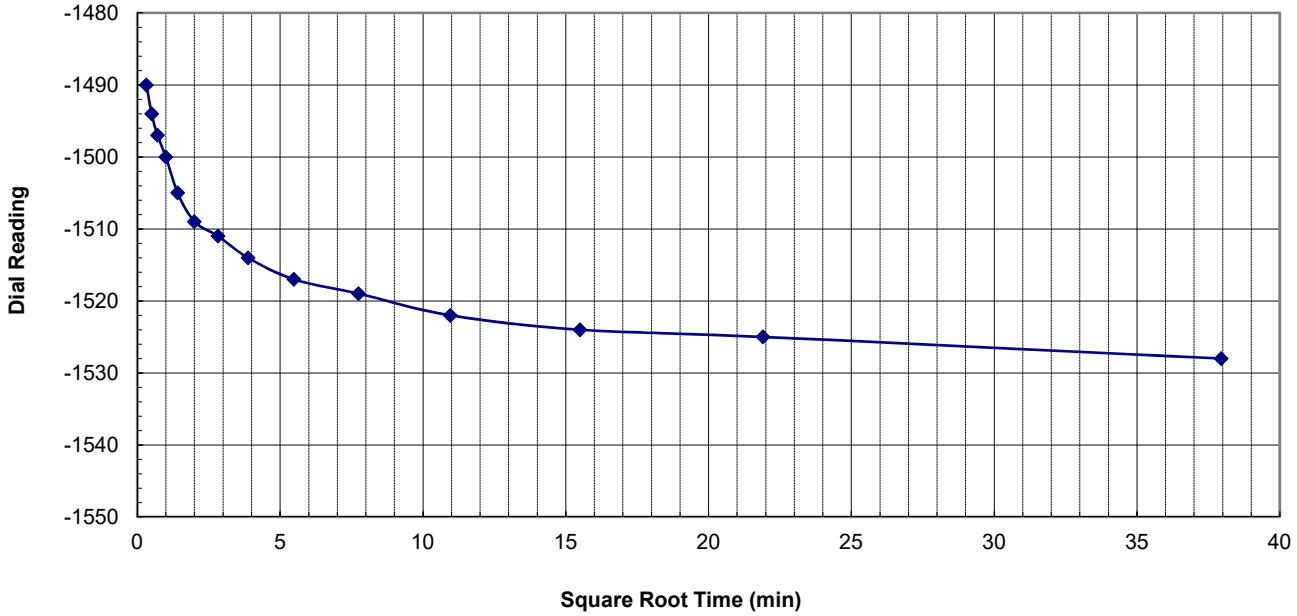
LR / SW

TIME RATE OF CONSOLIDATION RESULTS

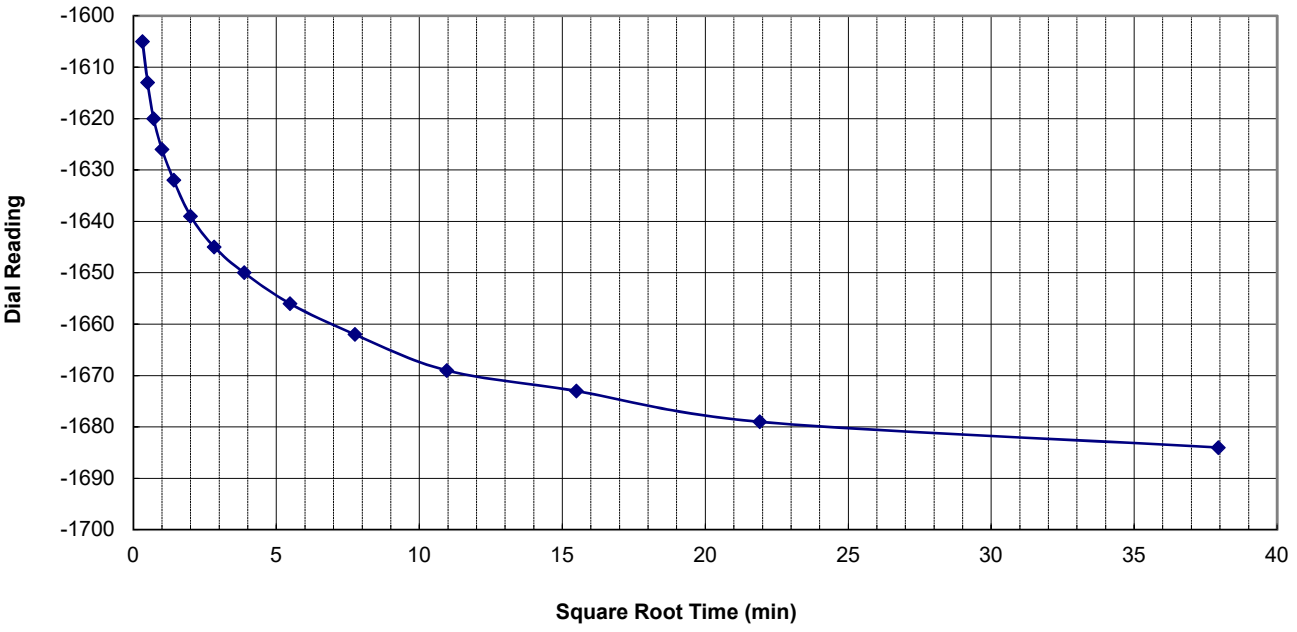
PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

Sample SB3-4 (TR 4000)



Sample SB3-4 (TR 8000)



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LR / SW

TIME RATE OF CONSOLIDATION RESULTS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

APPENDIX C

APPENDIX C

SLOPE STABILITY ANALYSES

FOR

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case1.gsz
Date: 01/20/2022 Time: 02:55:21 PM

Proposed Condition
Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

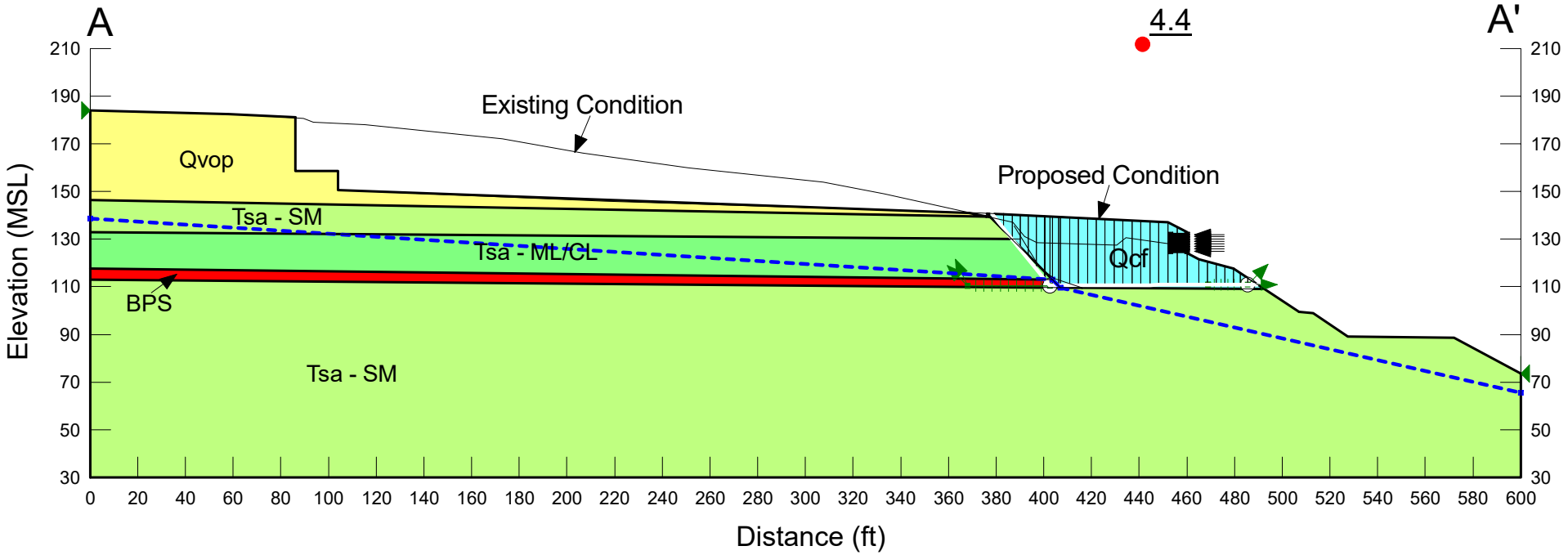


Figure C-1

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case1s.gsz
Date: 01/21/2022 Time: 09:00:42 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

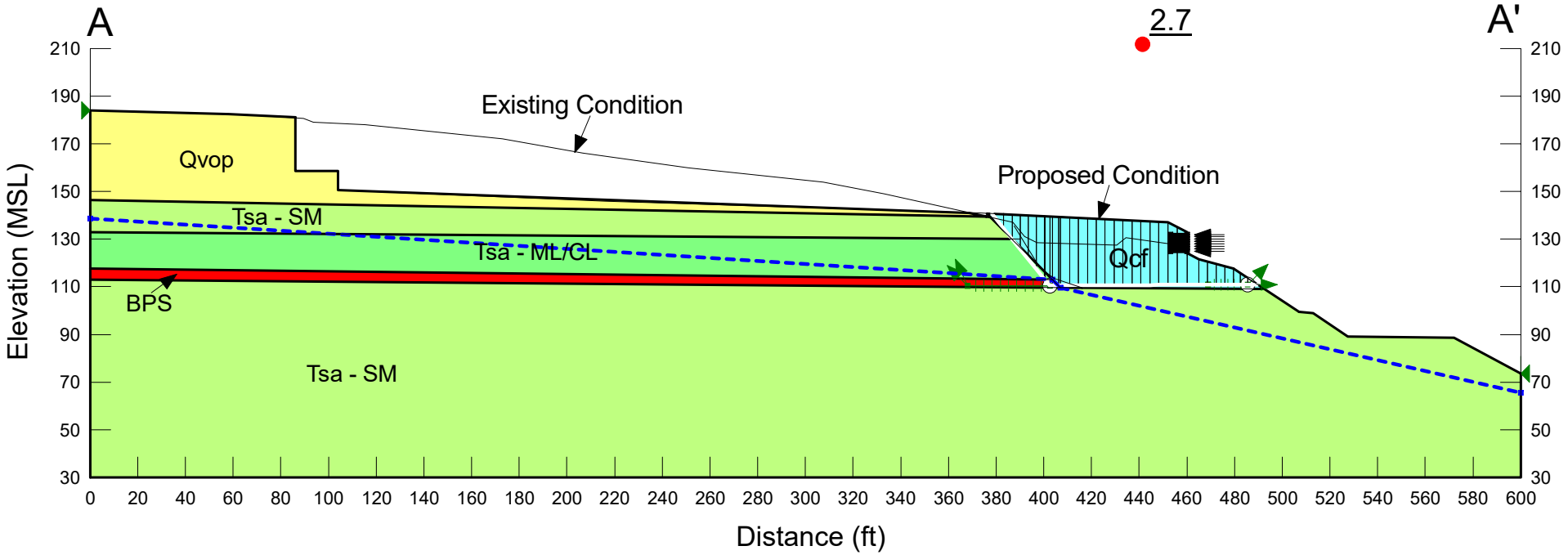


Figure C-2

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case2.gsz
Date: 01/20/2022 Time: 02:57:03 PM

Proposed Condition
Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

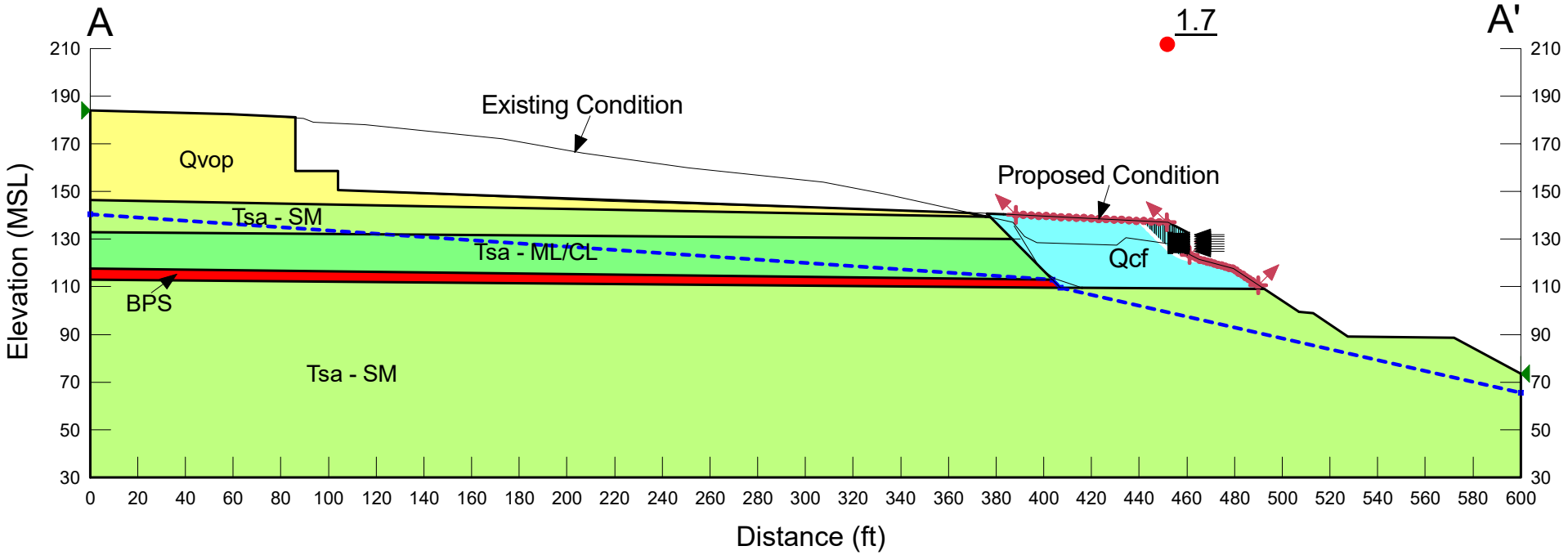


Figure C-3

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case2s.gsz
Date: 01/21/2022 Time: 09:03:00 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

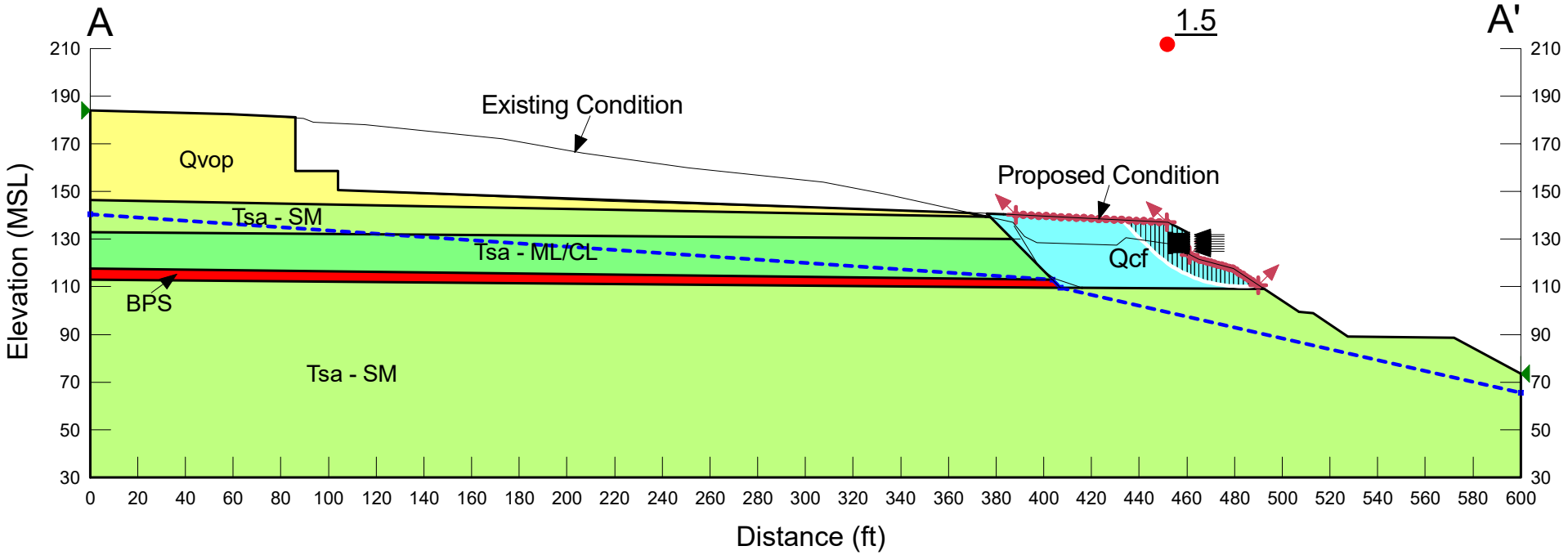


Figure C-4

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case3.gsz
Date: 01/20/2022 Time: 02:58:54 PM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

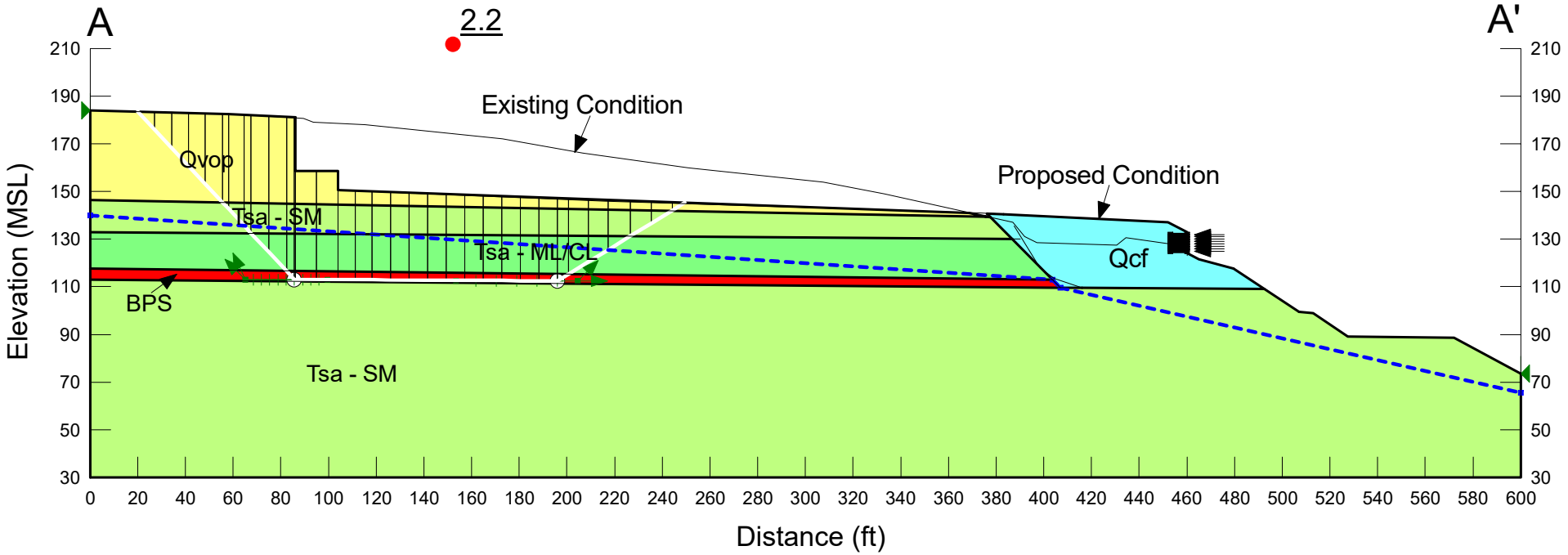


Figure C-5

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case3s.gsz
Date: 01/21/2022 Time: 09:08:25 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

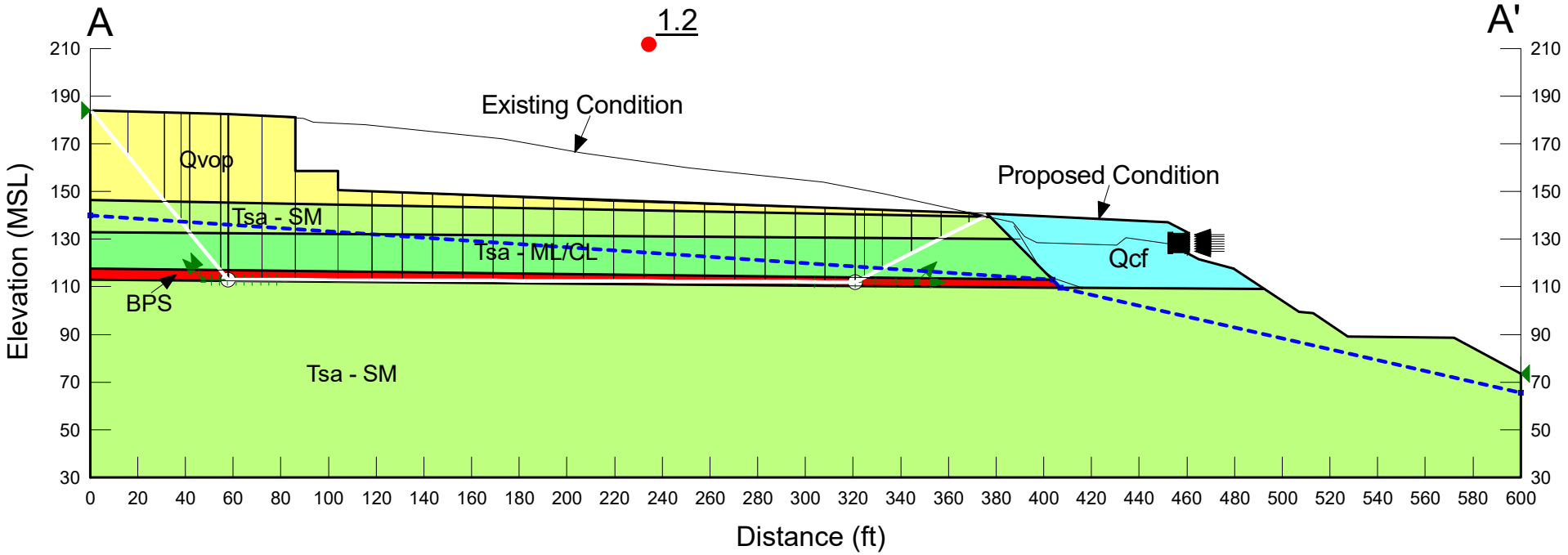


Figure C-6

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case4.gsz
Date: 01/20/2022 Time: 03:12:49 PM

Proposed Condition

Static Analysis

Micropile Wall (6,500 lbf/ft reinforcement load)

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

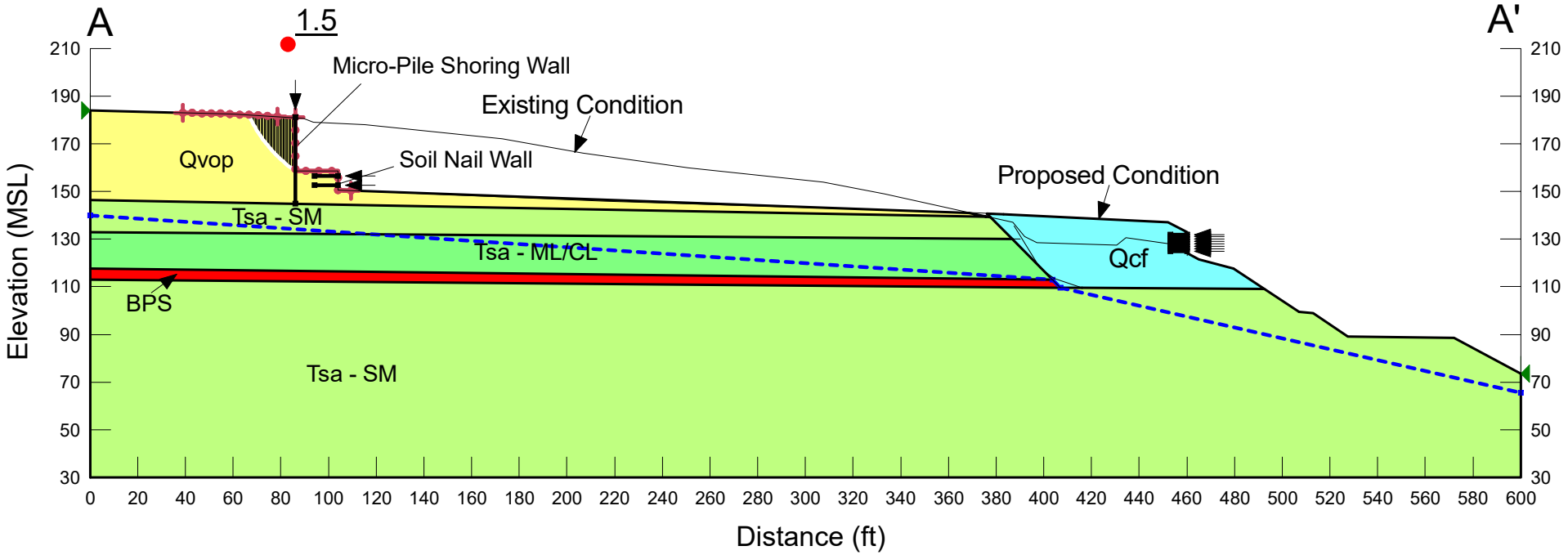


Figure C-7

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case4s.gsz
Date: 01/21/2022 Time: 09:10:50 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Micropile Wall (6,500 lbf/ft reinforcement load)

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

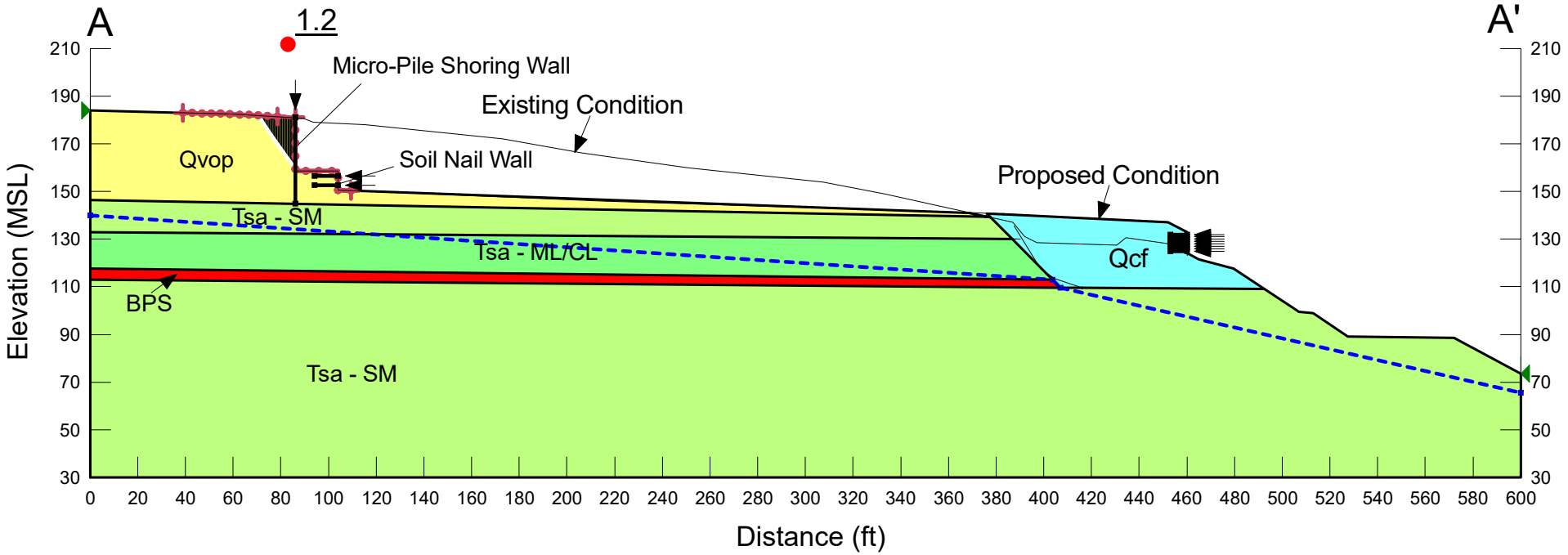


Figure C-8

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case5.gsz
Date: 01/20/2022 Time: 03:18:38 PM

Proposed Condition

Static Analysis

Micropile Wall (6,500 lbf/ft reinforcement load)

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

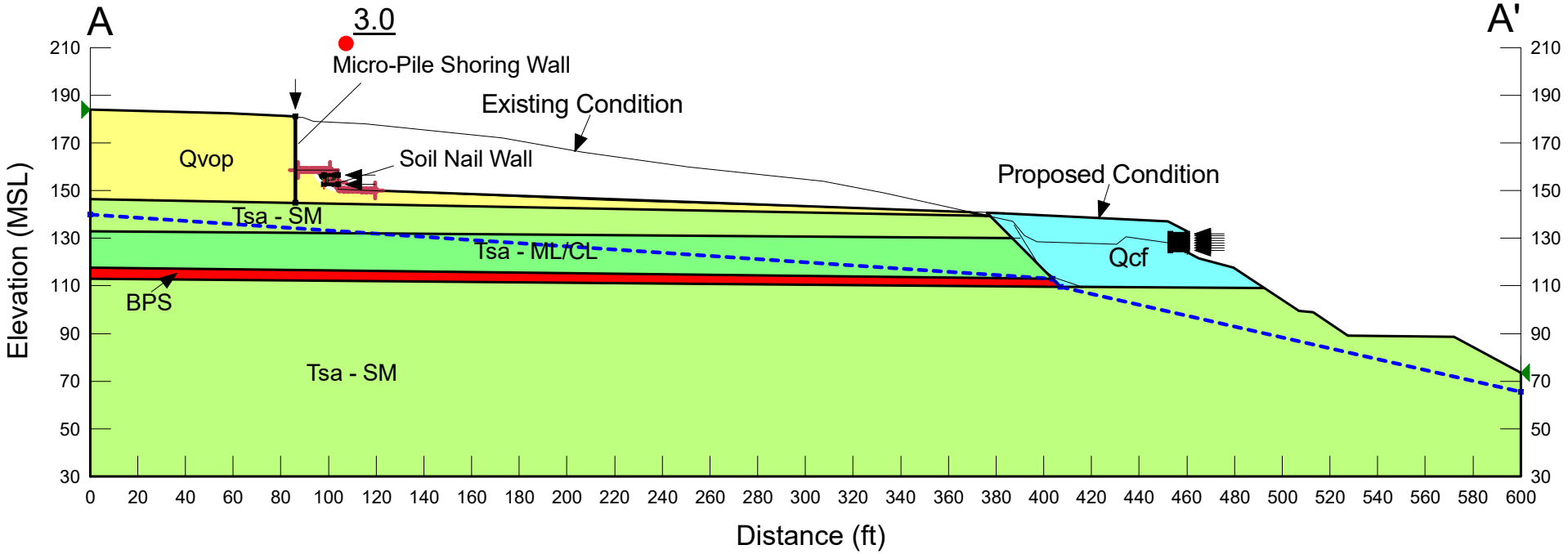


Figure C-9

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case5s.gsz
Date: 01/21/2022 Time: 09:13:09 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Micropile Wall (6,500 lbf/ft reinforcement load)

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

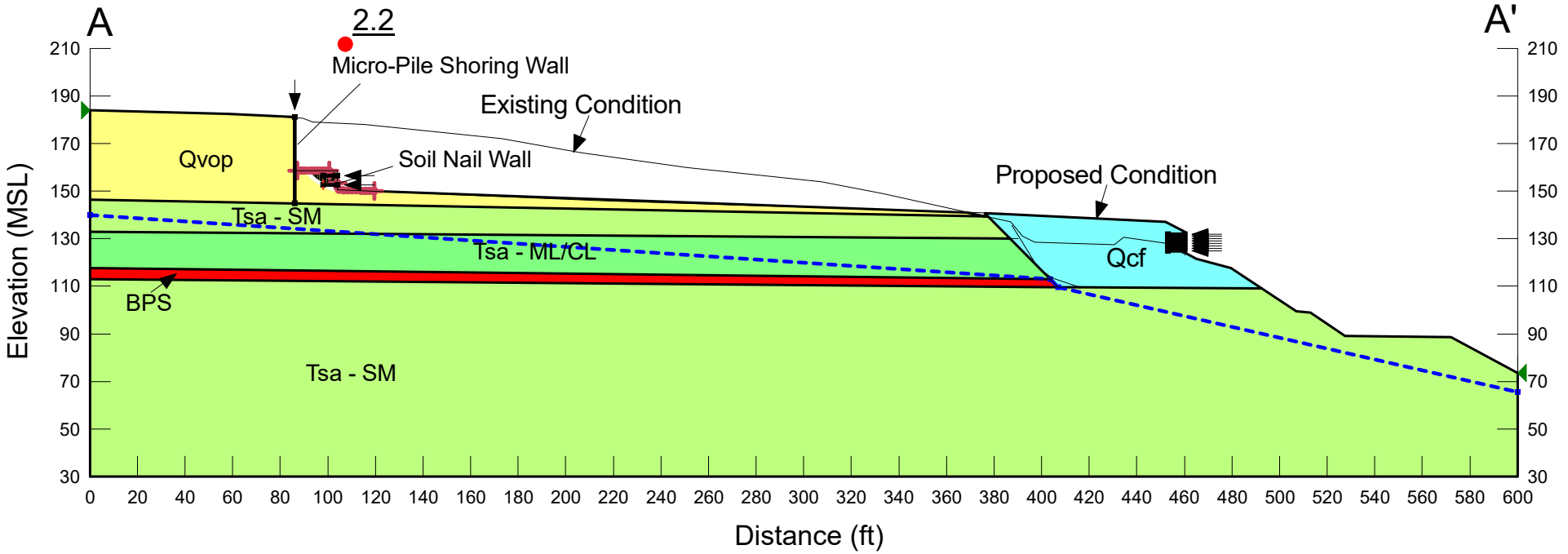


Figure C-10

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case1.gsz
Date: 01/21/2022 Time: 09:37:58 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

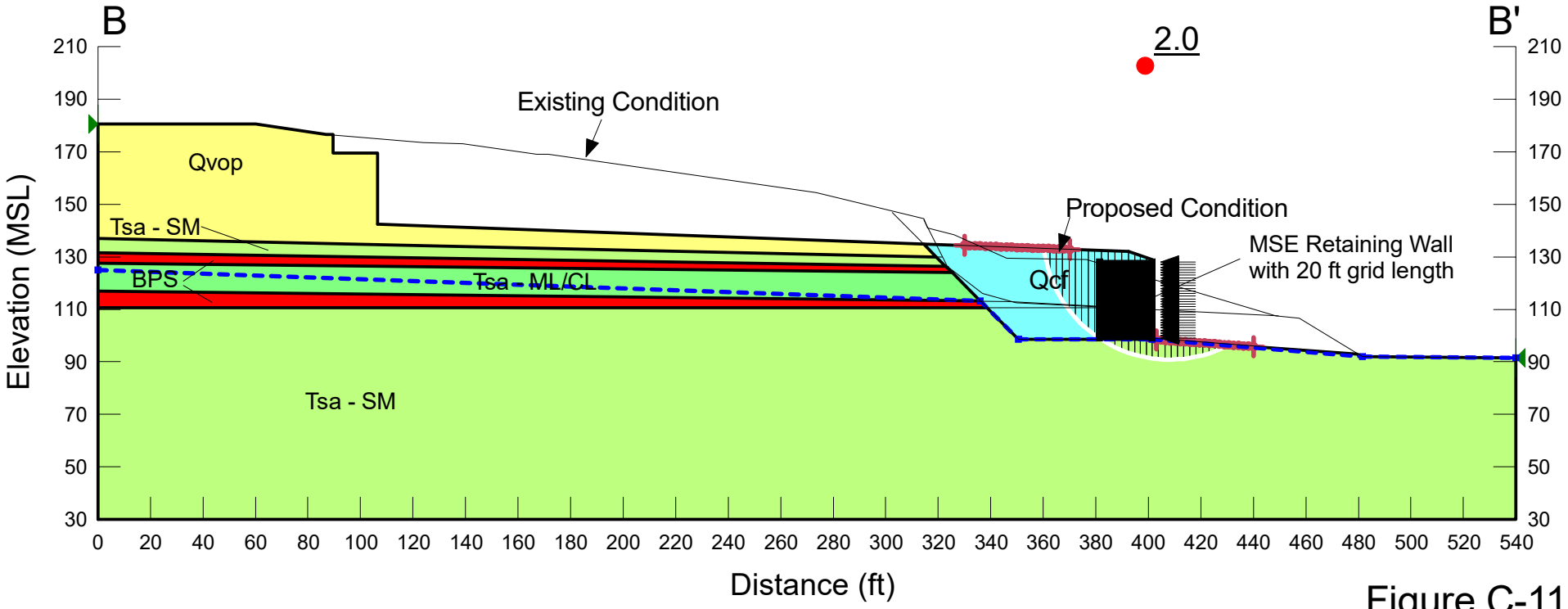


Figure C-11

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case1s.gsz
Date: 01/21/2022 Time: 09:39:10 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

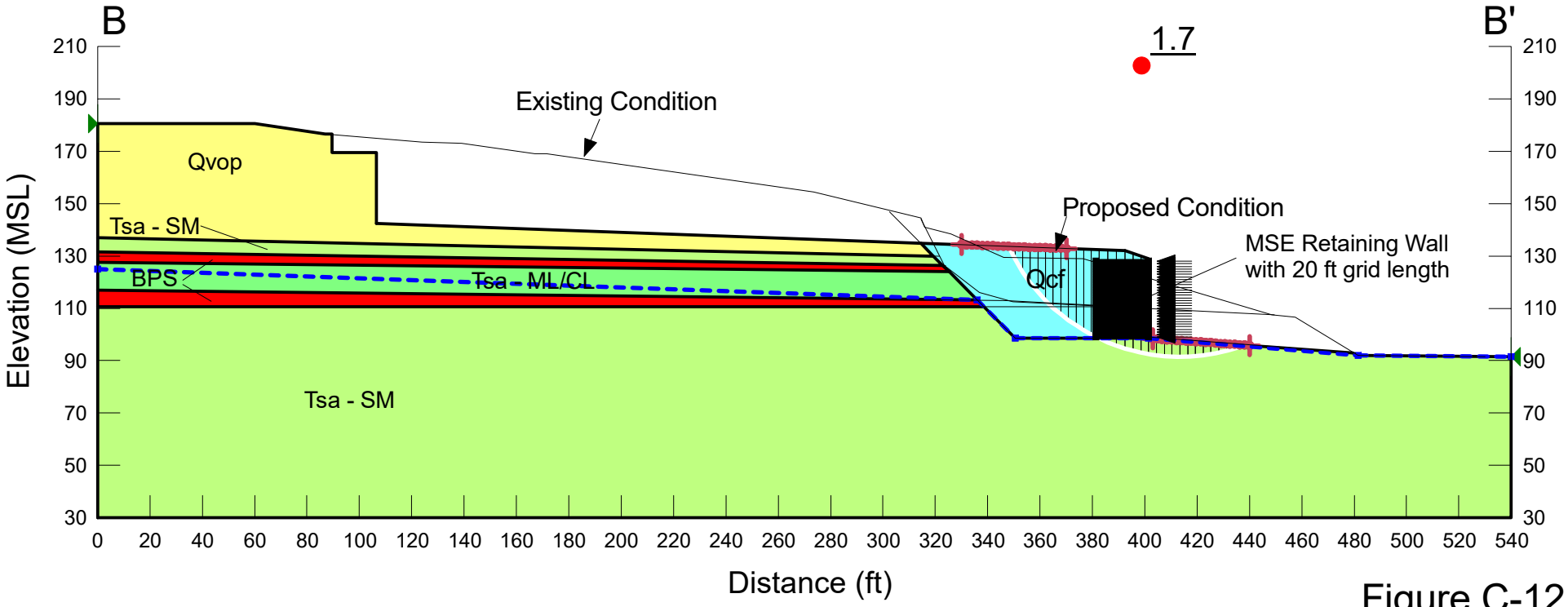


Figure C-12

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case2.gsz
Date: 01/21/2022 Time: 09:40:20 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

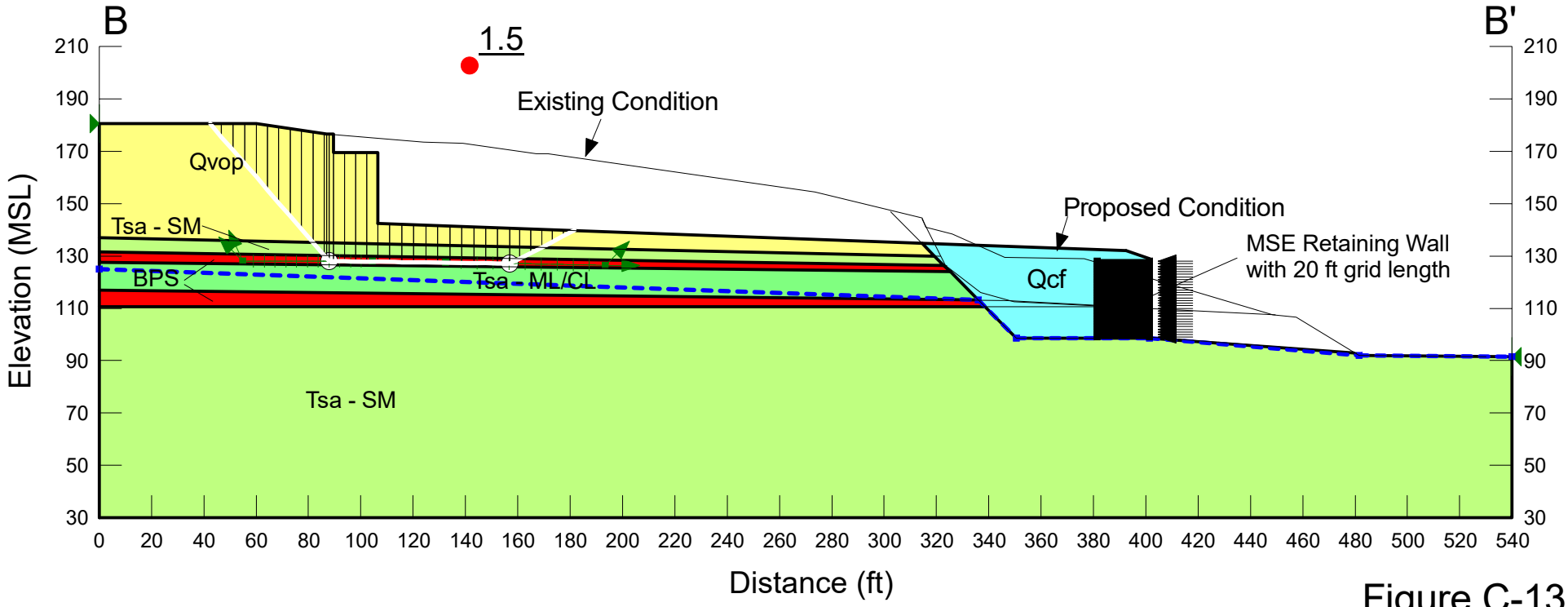


Figure C-13

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case2s.gsz
Date: 01/21/2022 Time: 09:41:31 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

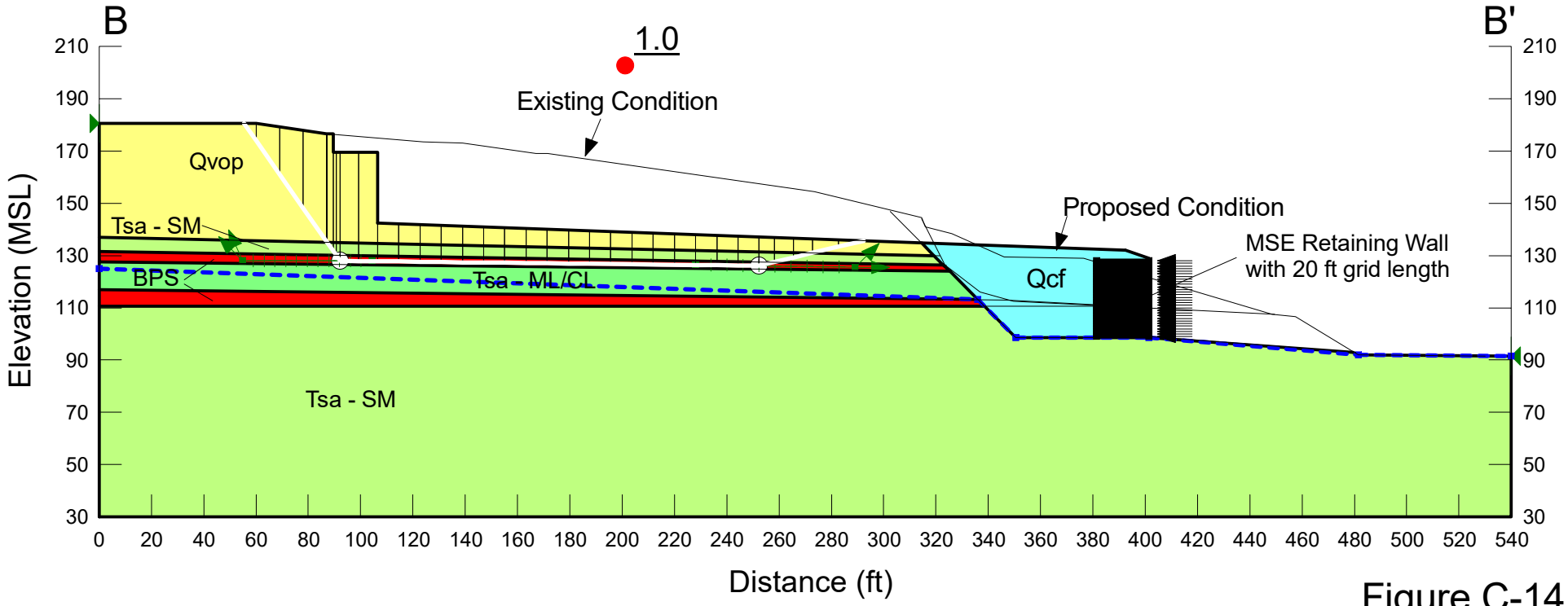


Figure C-14

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case3.gsz
Date: 01/21/2022 Time: 09:57:23 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

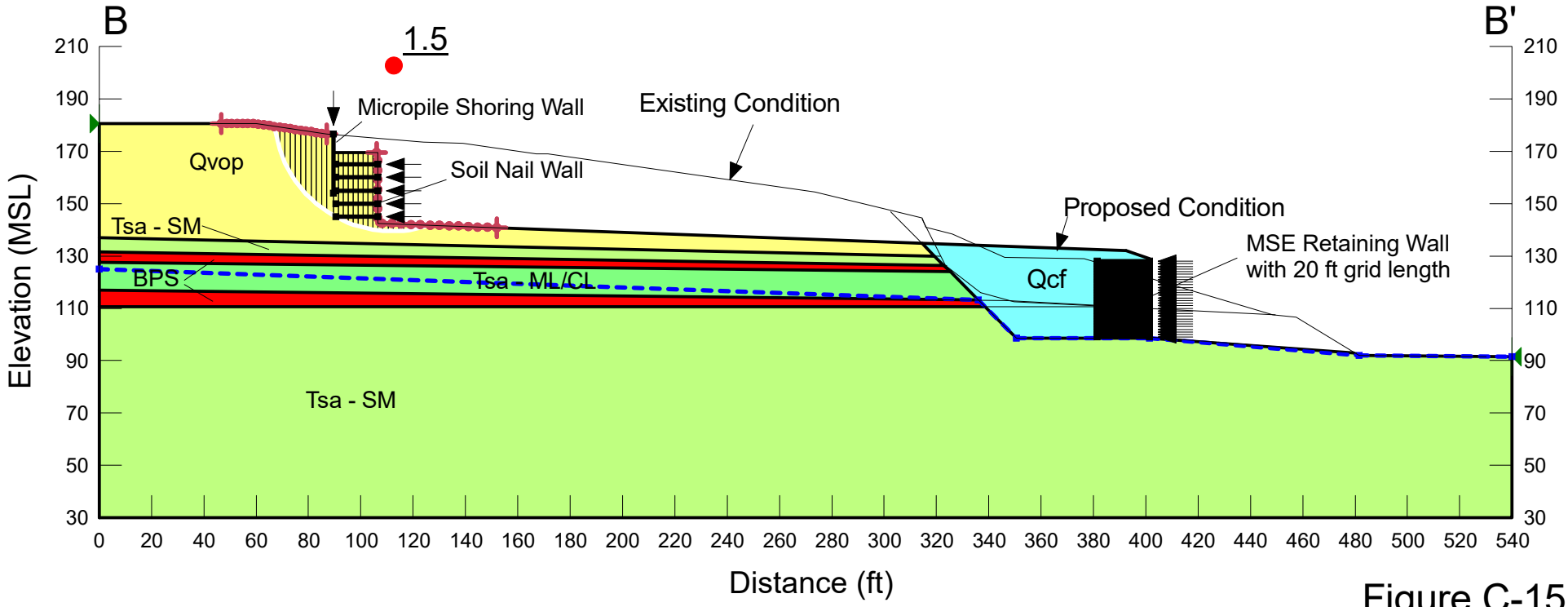


Figure C-15

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case3s.gsz
Date: 01/21/2022 Time: 10:00:04 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

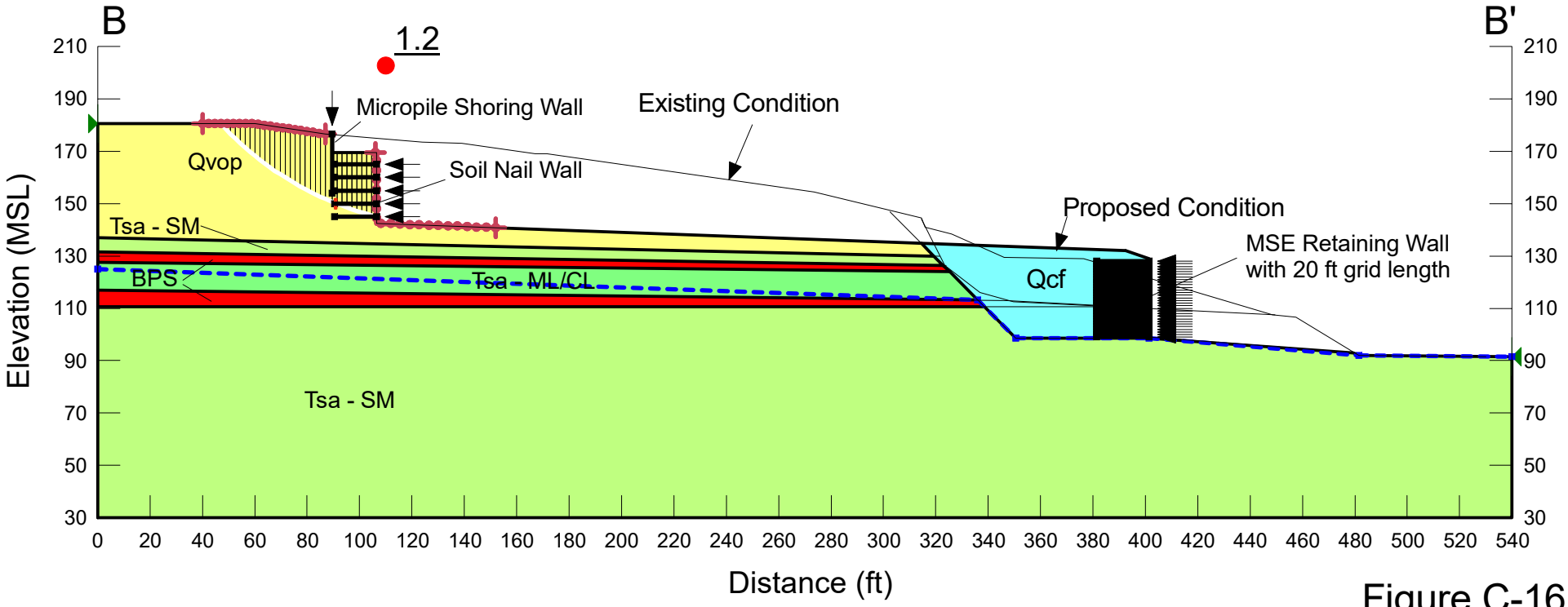


Figure C-16

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case4.gsz
Date: 01/21/2022 Time: 10:05:49 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

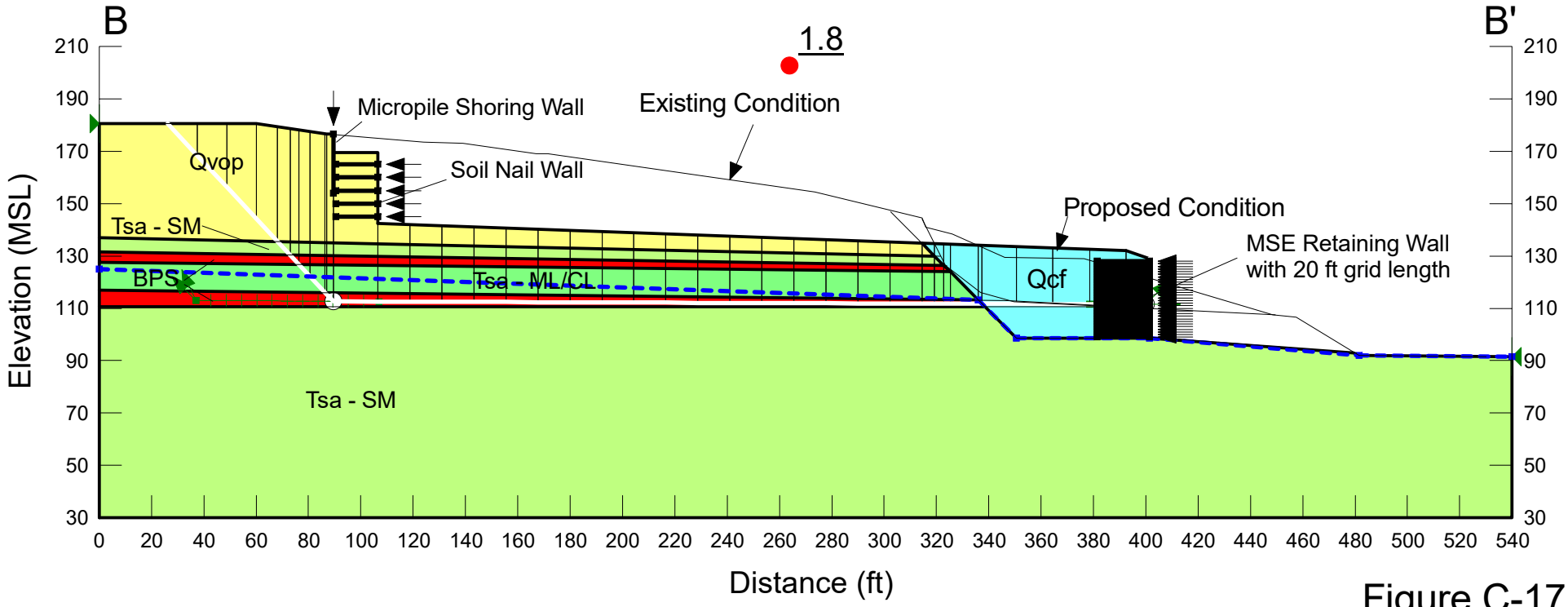


Figure C-17

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case4s.gsz
Date: 01/21/2022 Time: 10:07:34 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

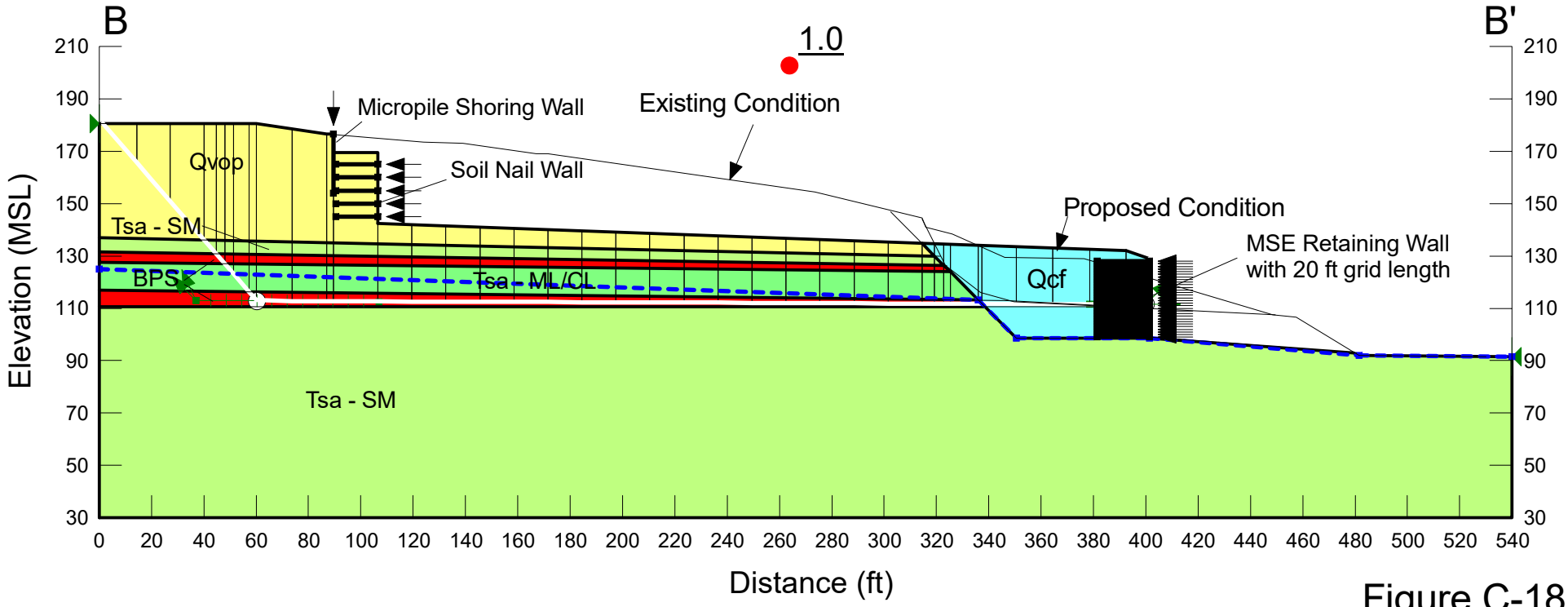


Figure C-18

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case5.gsz
Date: 01/21/2022 Time: 10:10:46 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

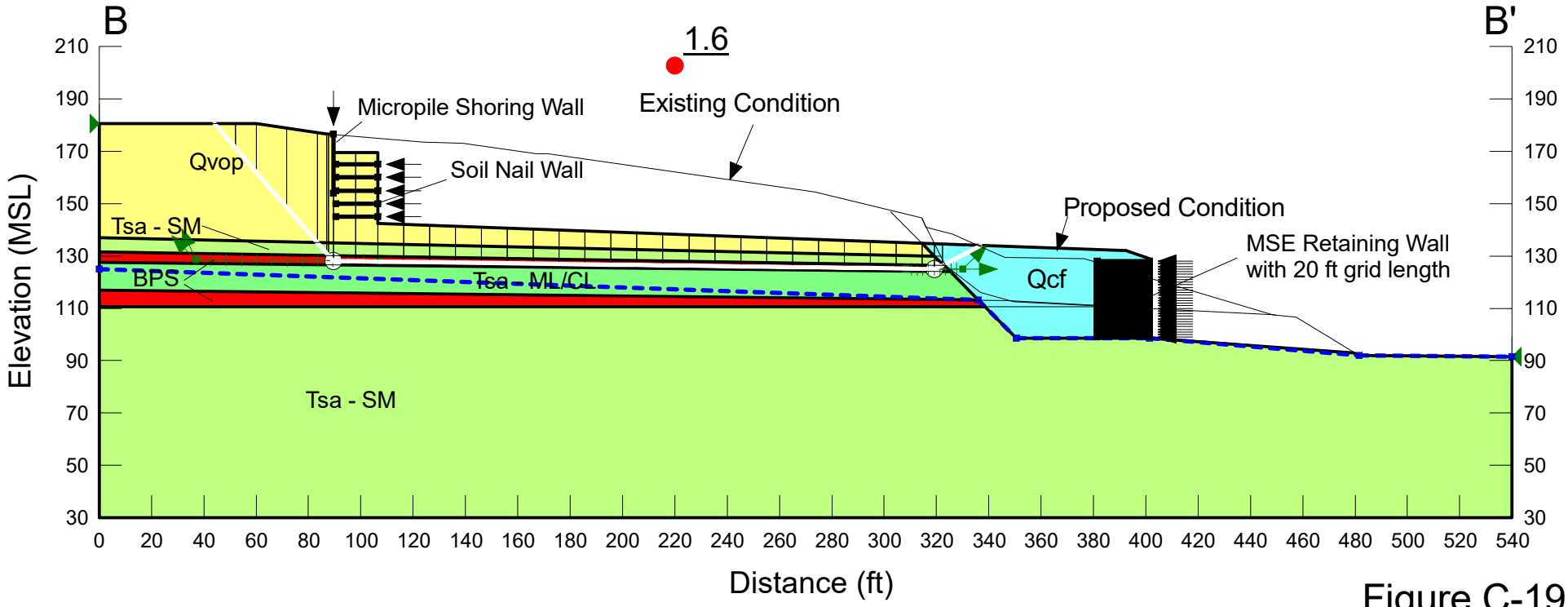


Figure C-19

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case5s.gsz
Date: 01/21/2022 Time: 10:12:33 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

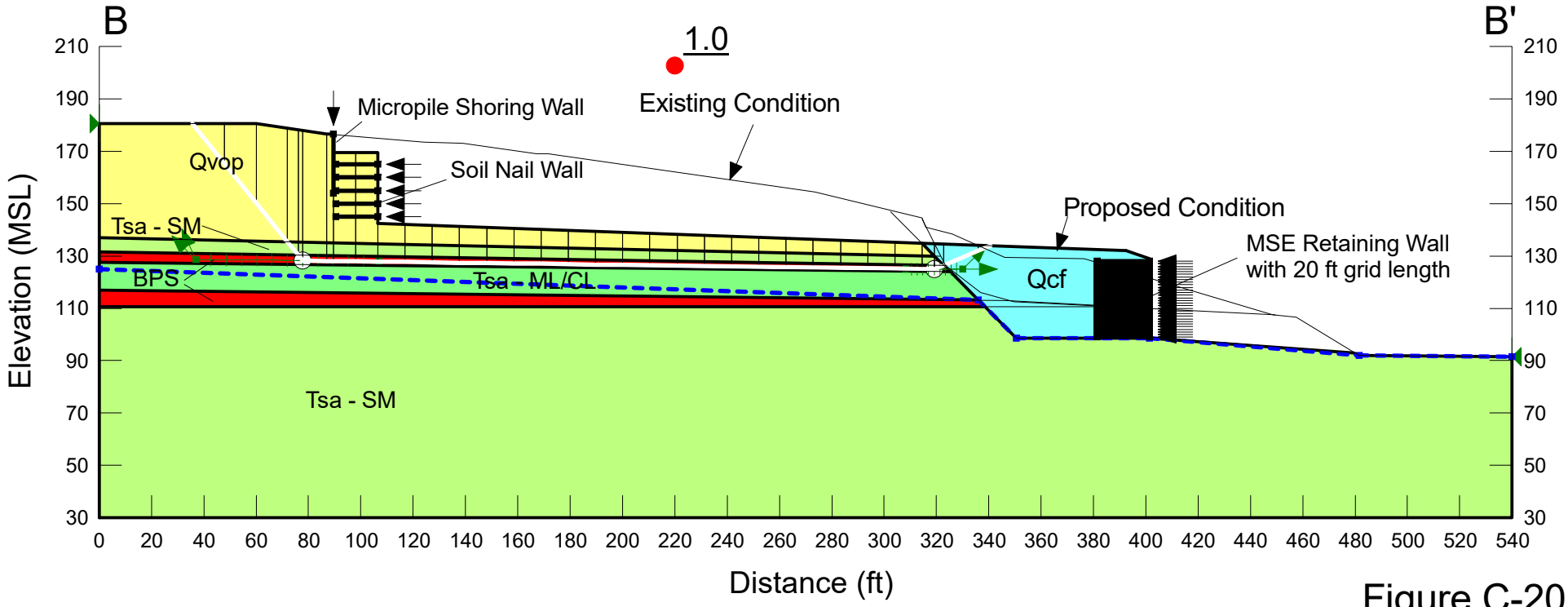


Figure C-20

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case1.gsz
Date: 01/21/2022 Time: 11:10:39 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

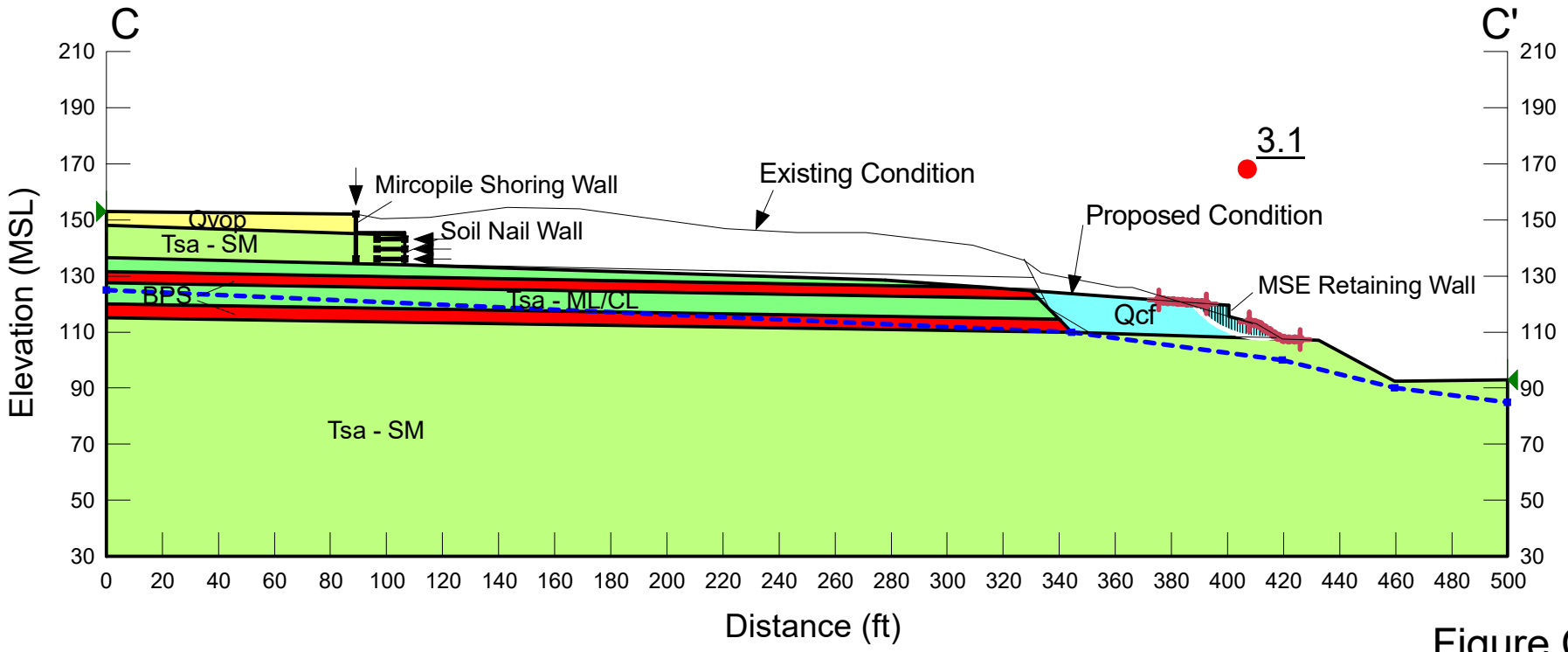


Figure C-21

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case1s.gsz
Date: 01/21/2022 Time: 11:12:31 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

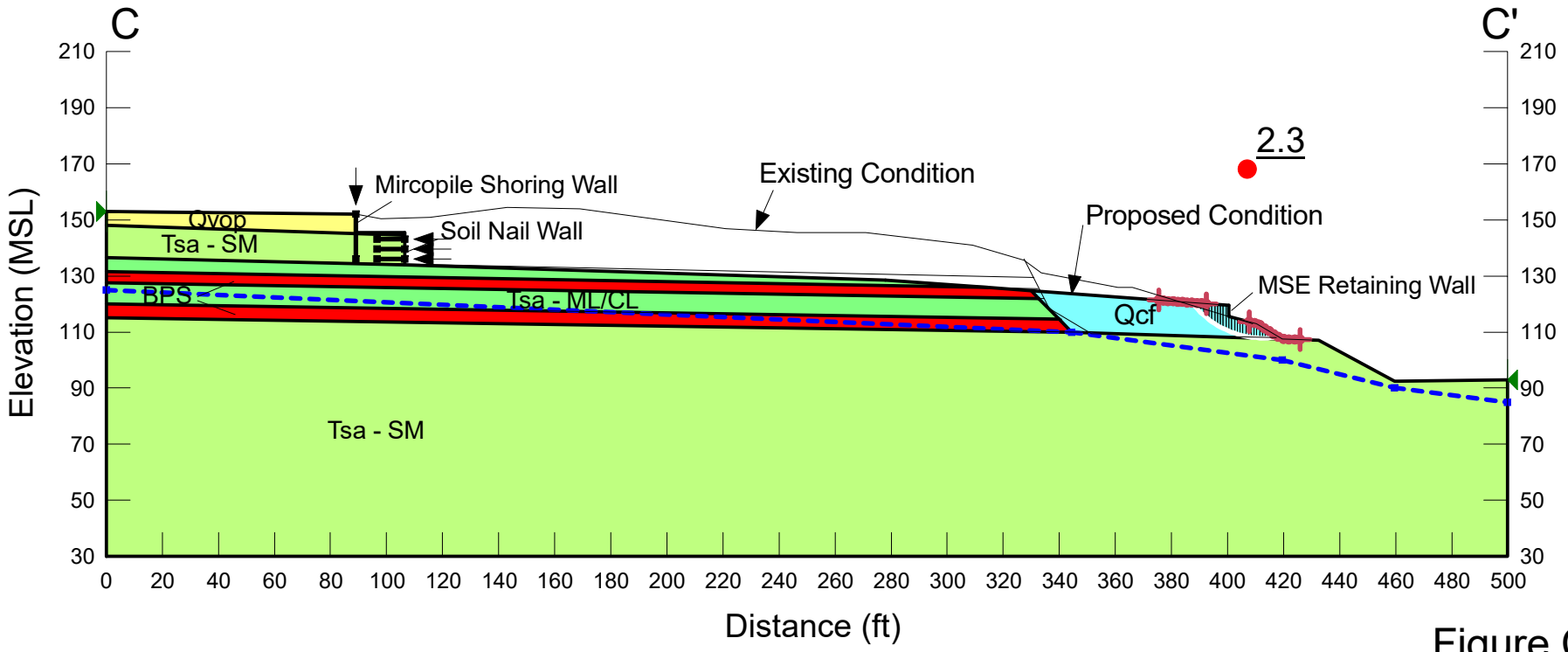


Figure C-22

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case2.gsz
Date: 01/21/2022 Time: 11:16:57 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

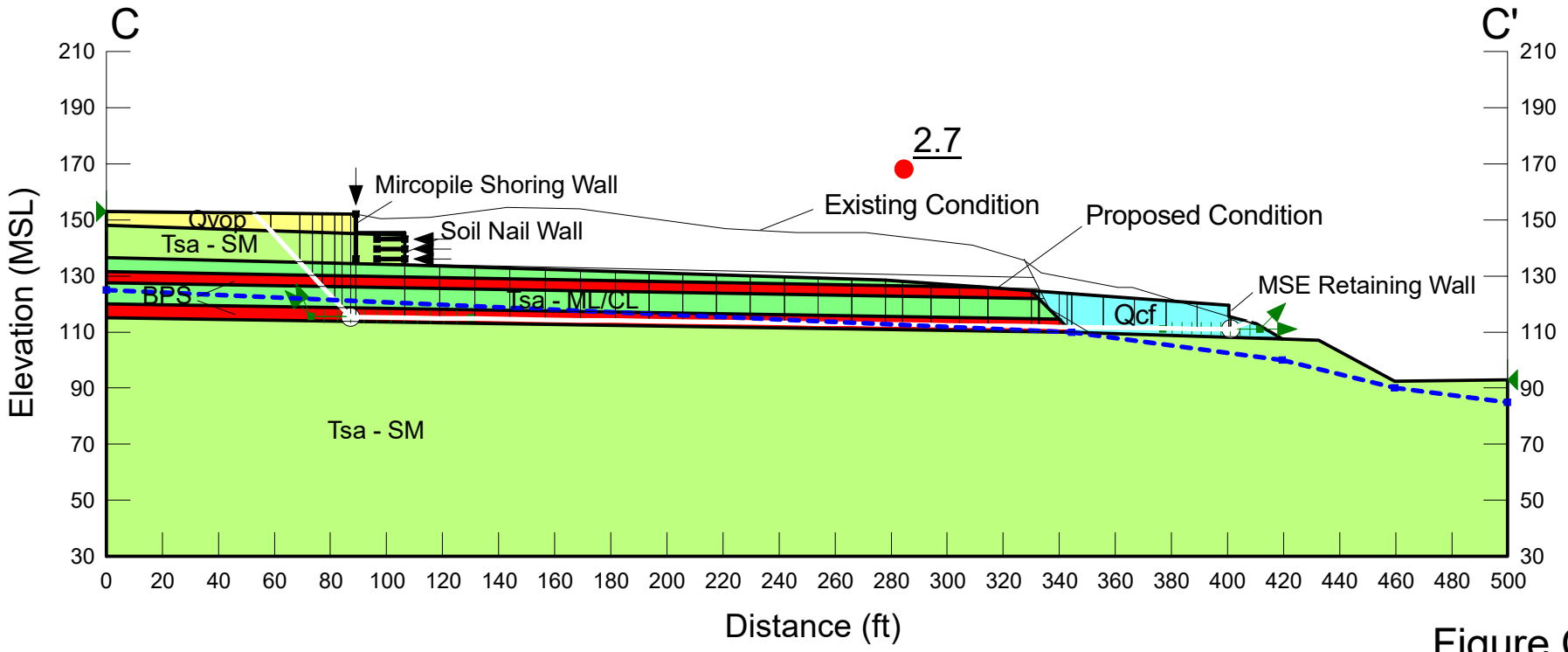


Figure C-23

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case2s.gsz
Date: 01/21/2022 Time: 11:22:11 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

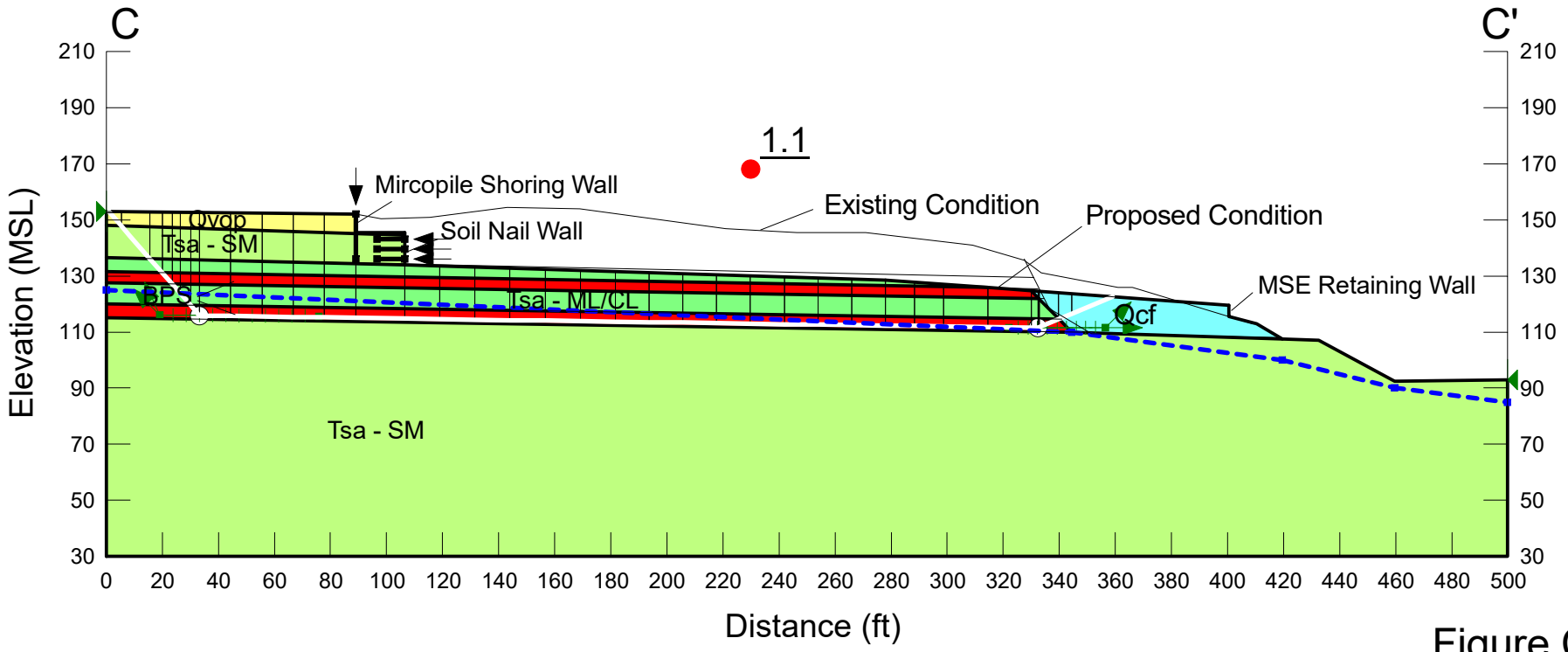


Figure C-24

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case3.gsz
Date: 01/21/2022 Time: 12:26:27 PM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

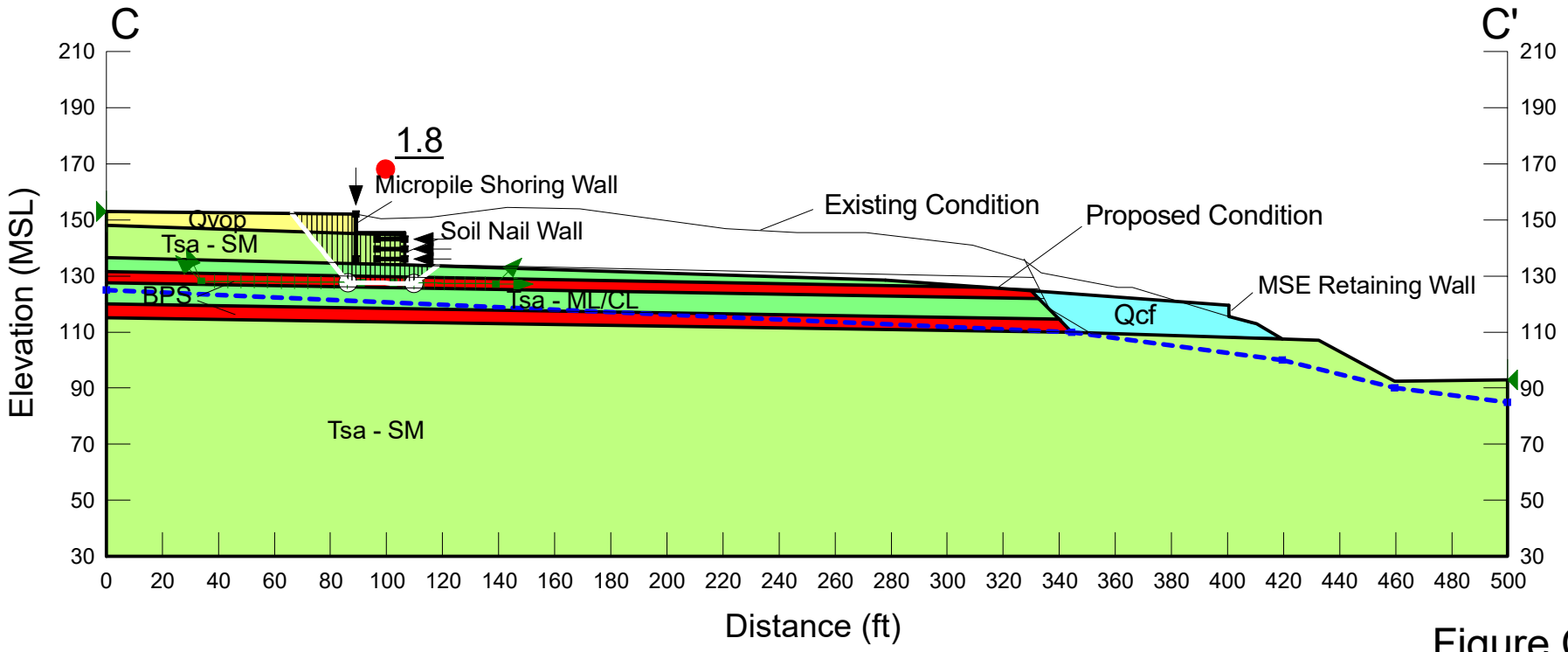


Figure C-25

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case3s.gsz
Date: 01/21/2022 Time: 12:32:57 PM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

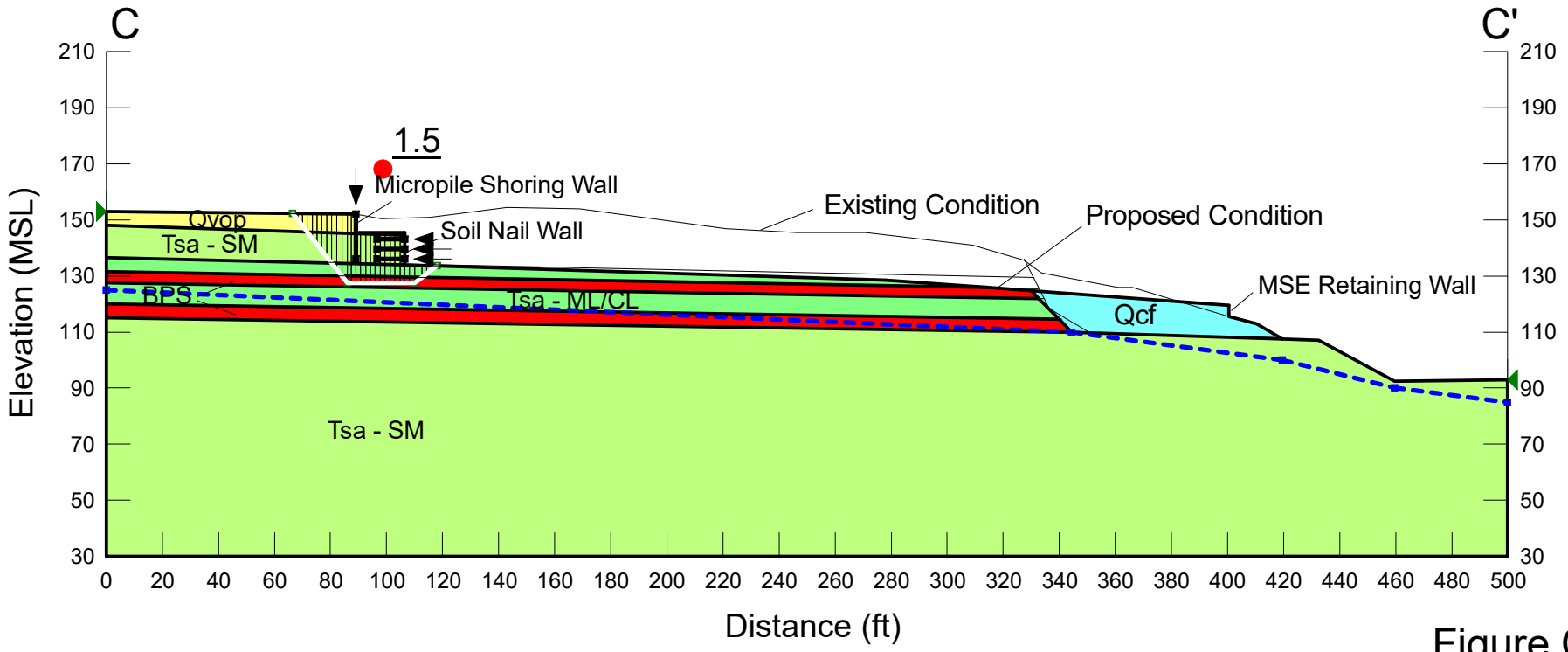


Figure C-26

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case4.gsz
Date: 01/21/2022 Time: 12:37:01 PM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

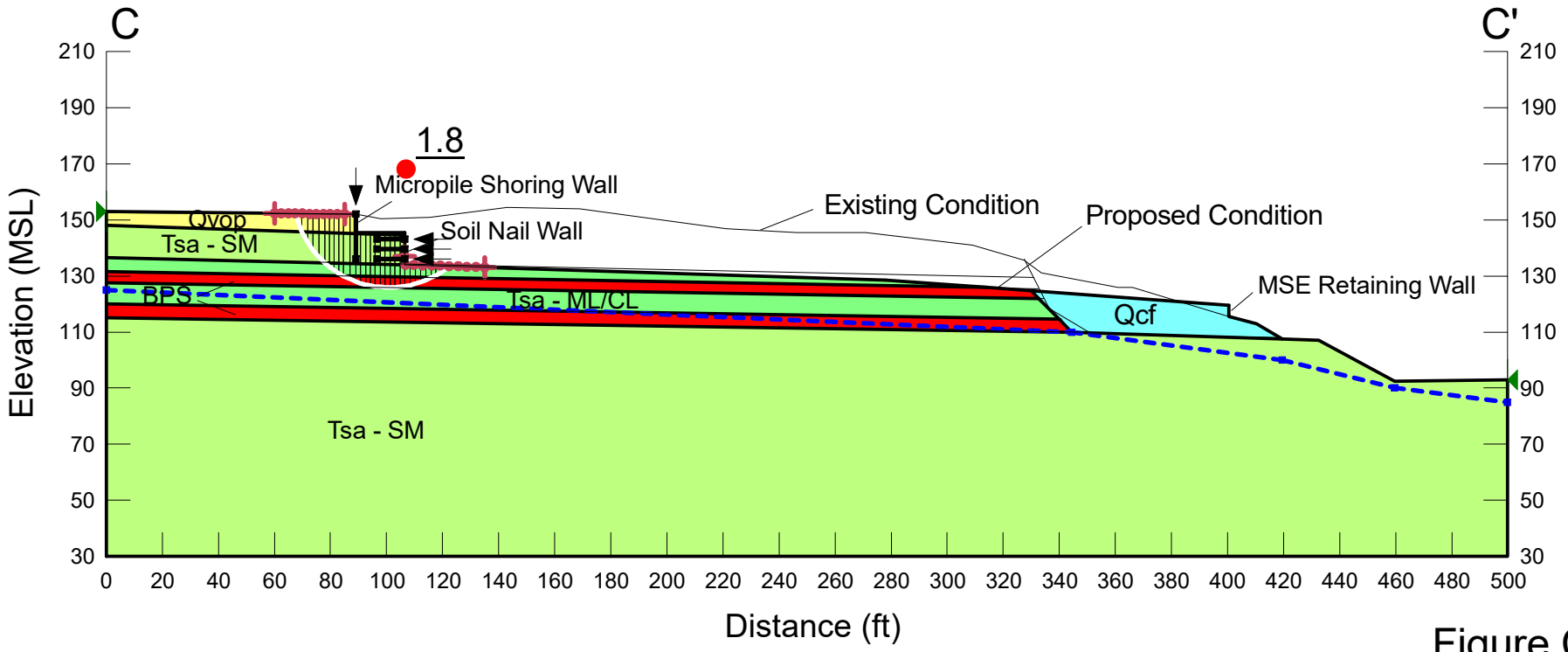


Figure C-27

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case4s.gsz
Date: 01/21/2022 Time: 12:38:21 PM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

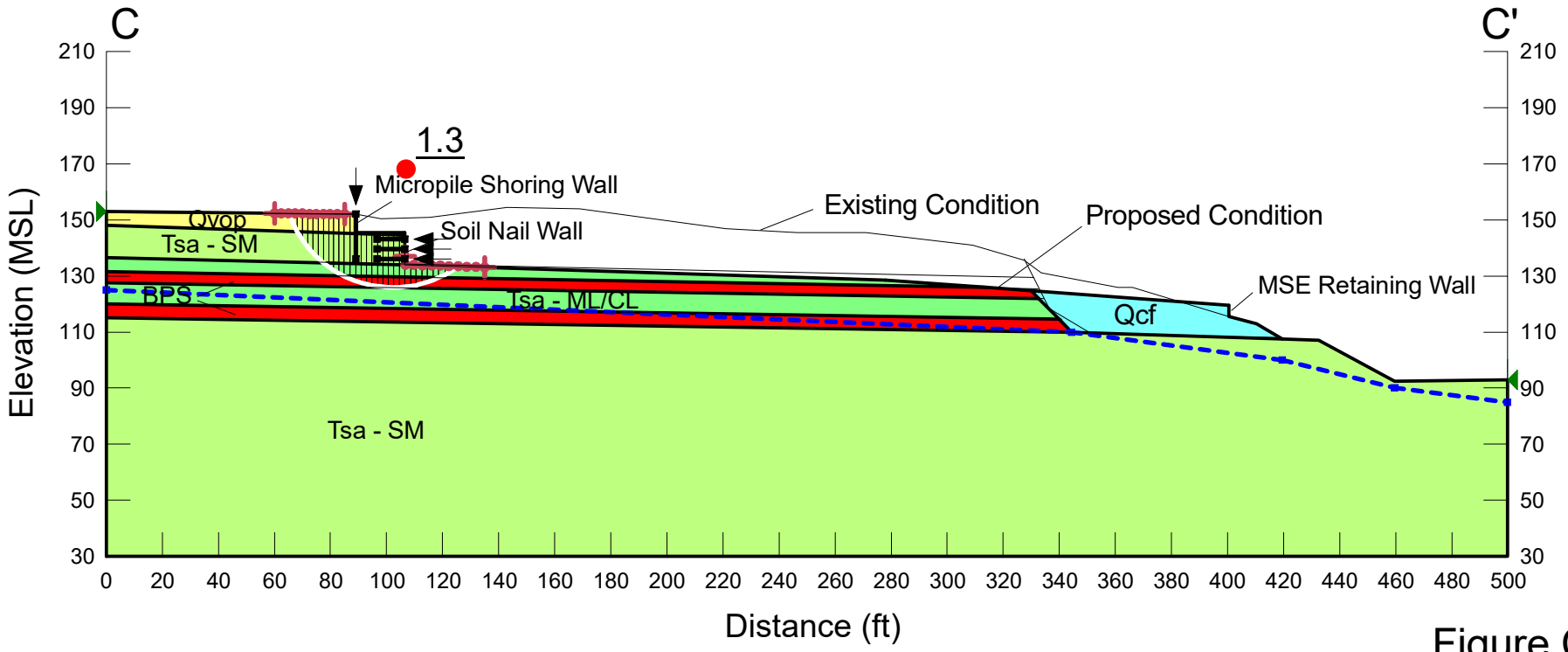


Figure C-28

Piraeus Point
Project No. G2307-32-05
Section E-E'
Name: EE-Case7.gsz
Date: 01/31/2022 Time: 10:24:42 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

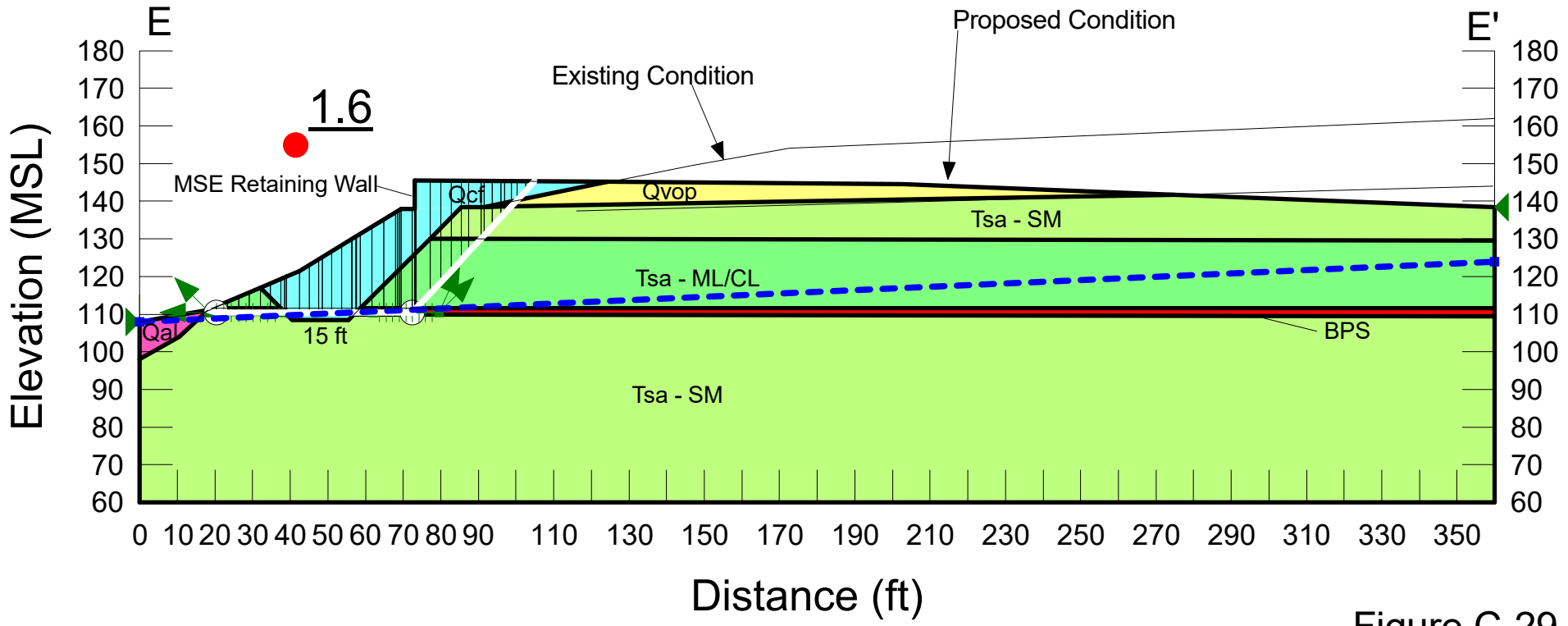


Figure C-29

Piraeus Point
Project No. G2307-32-05
Section E-E'
Name: EE-Case7s.gsz
Date: 01/31/2022 Time: 11:22:21 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

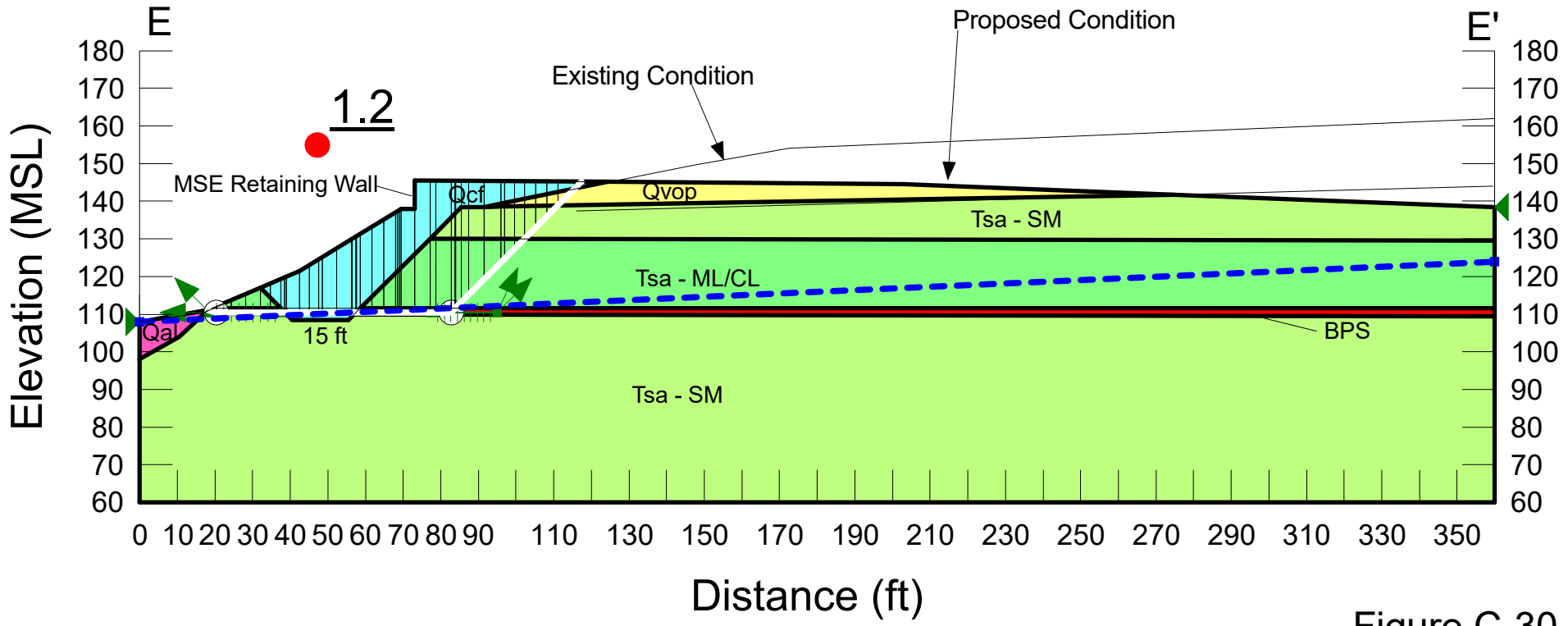


Figure C-30

Piraeus Point
Project No. G2307-32-05
Section E-E'
Name: EE-Case8.gsz
Date: 01/31/2022 Time: 10:21:42 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

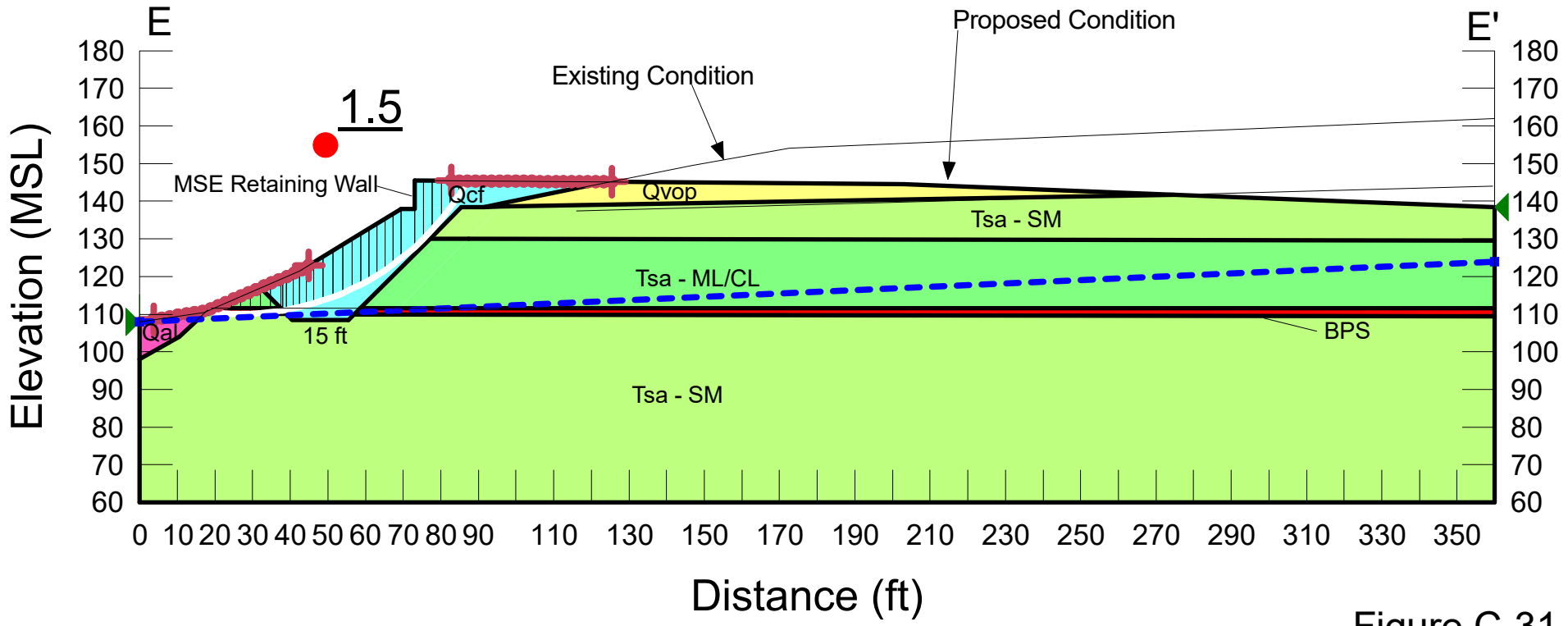


Figure C-31

Piraeus Point
Project No. G2307-32-05
Section E-E'
Name: EE-Case8s.gsz
Date: 01/31/2022 Time: 11:31:55 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

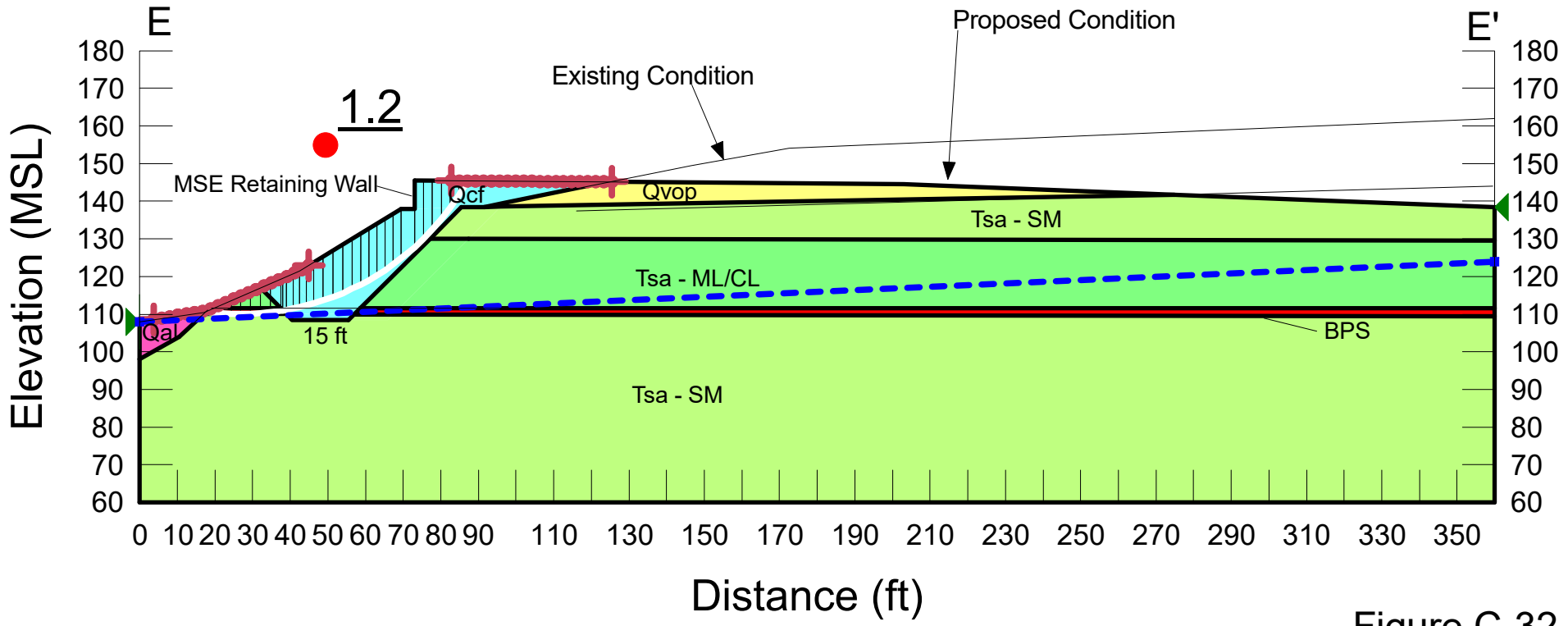


Figure C-32

Piraeus Point
Project No. G2307-32-05
Section F-F'
Name: FF-Case2.gsz
Date: 01/31/2022 Time: 09:25:50 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	350	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

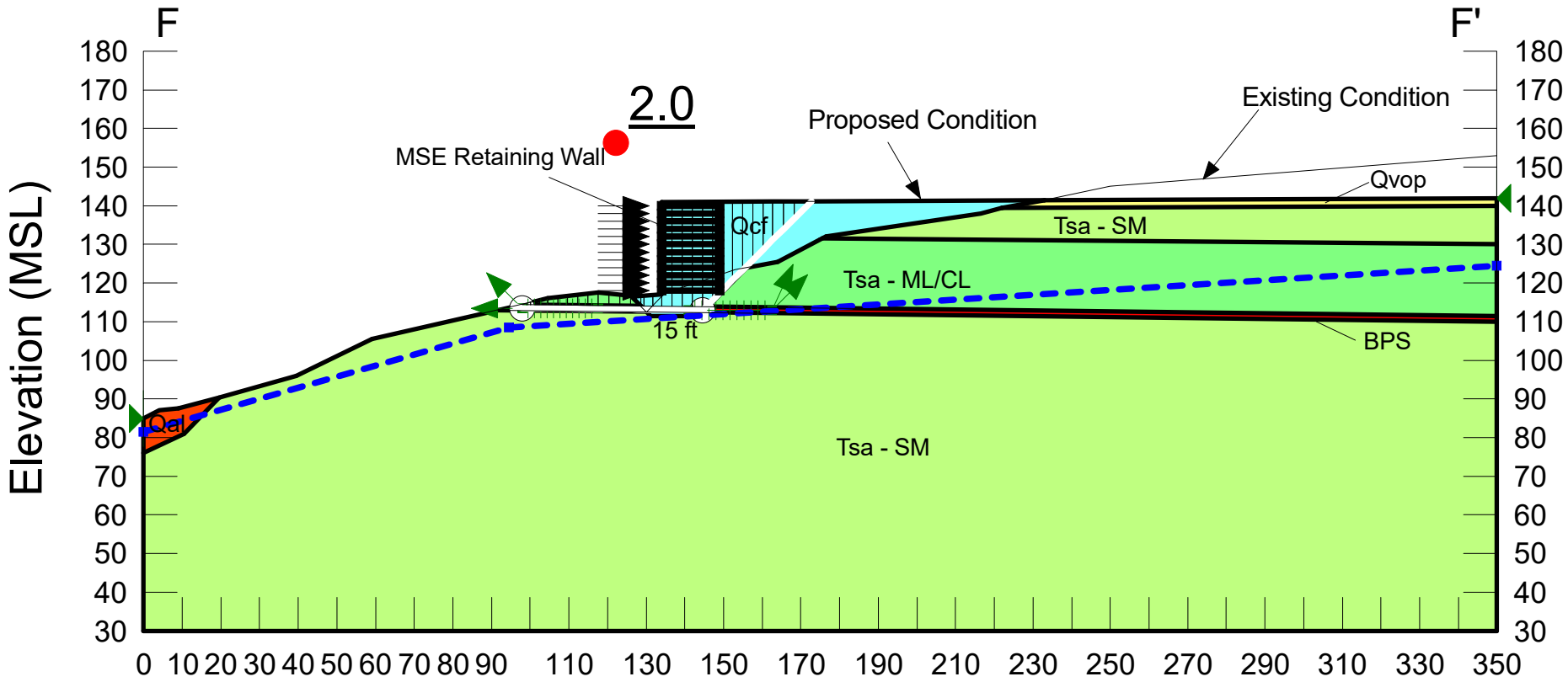


Figure C-33

Piraeus Point
Project No. G2307-32-05
Section F-F'
Name: FF-Case2s.gsz
Date: 01/31/2022 Time: 11:43:30 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	350	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

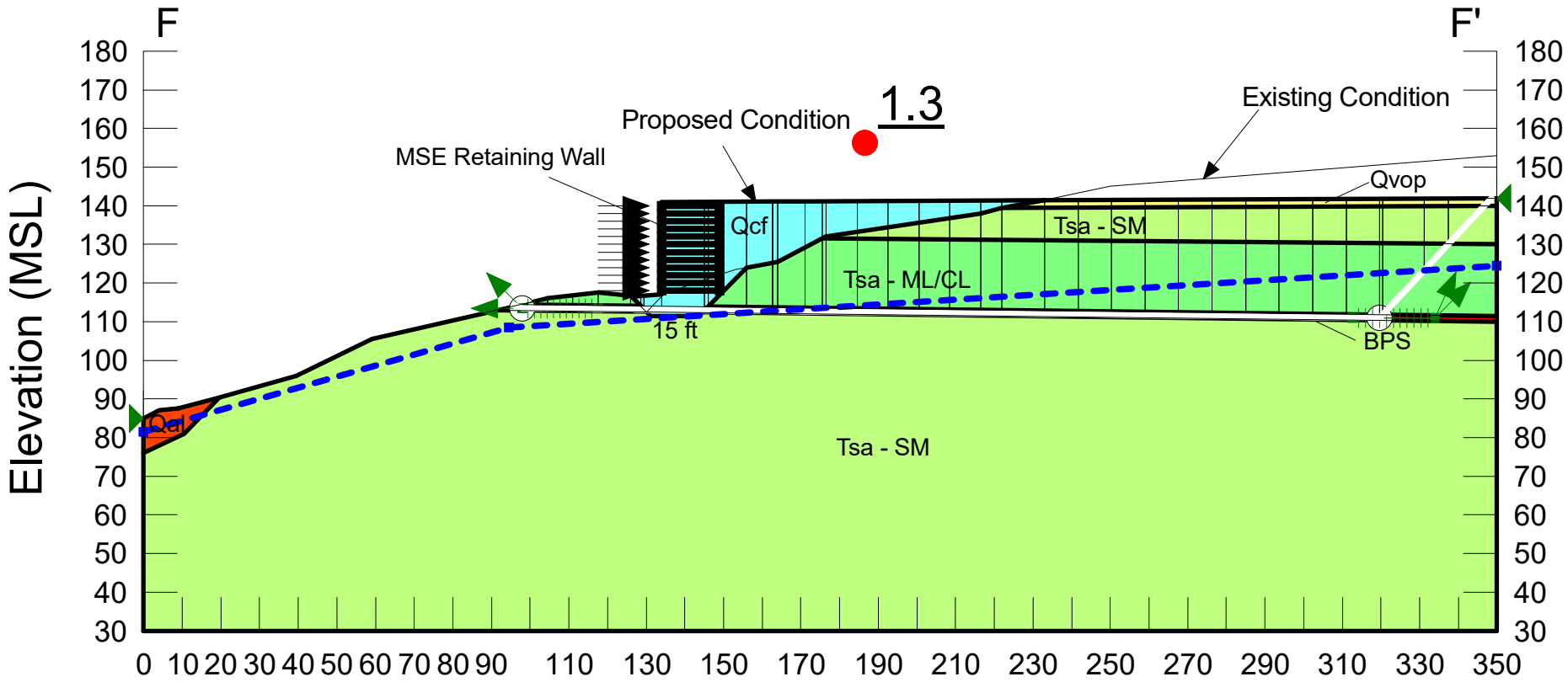


Figure C-34

Piraeus Point
Project No. G2307-32-05
Section F-F'
Name: FF-Case2a.gsz
Date: 01/31/2022 Time: 09:30:41 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	350	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

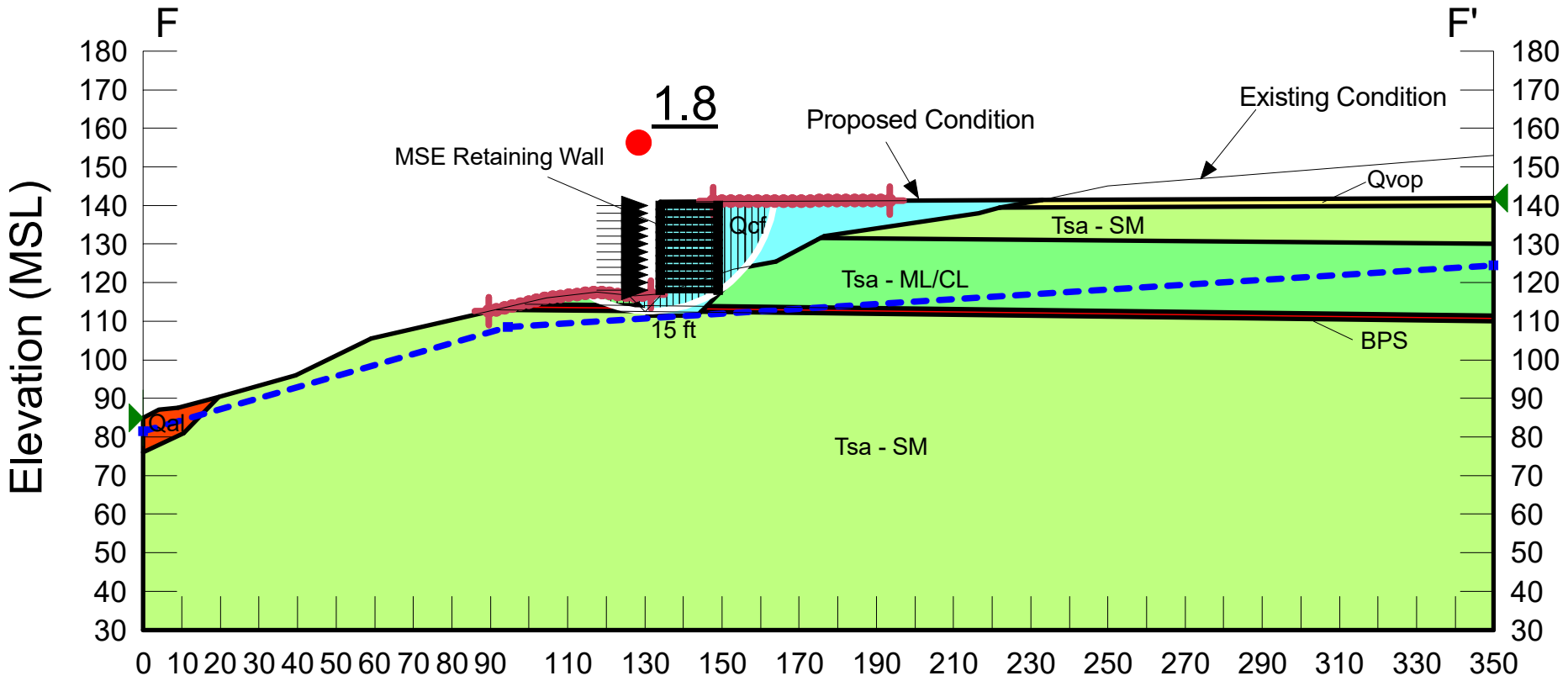


Figure C-35

Piraeus Point
Project No. G2307-32-05
Section F-F'
Name: FF-Case2as.gsz
Date: 01/31/2022 Time: 11:47:22 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	350	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

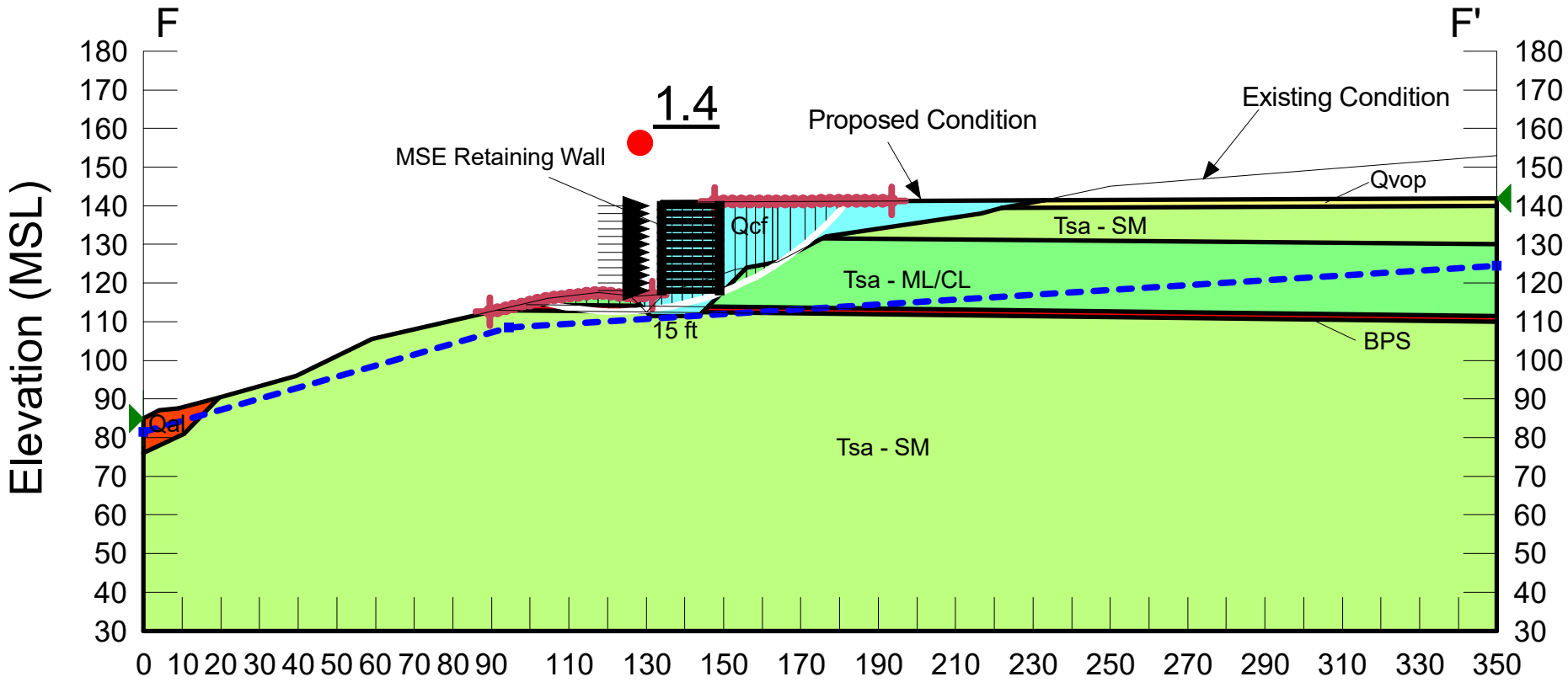


Figure C-36

Piraeus Point
Project No. G2307-32-05
Section G-G'
Name: GG-Case2.gsz
Date: 01/31/2022 Time: 09:44:12 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

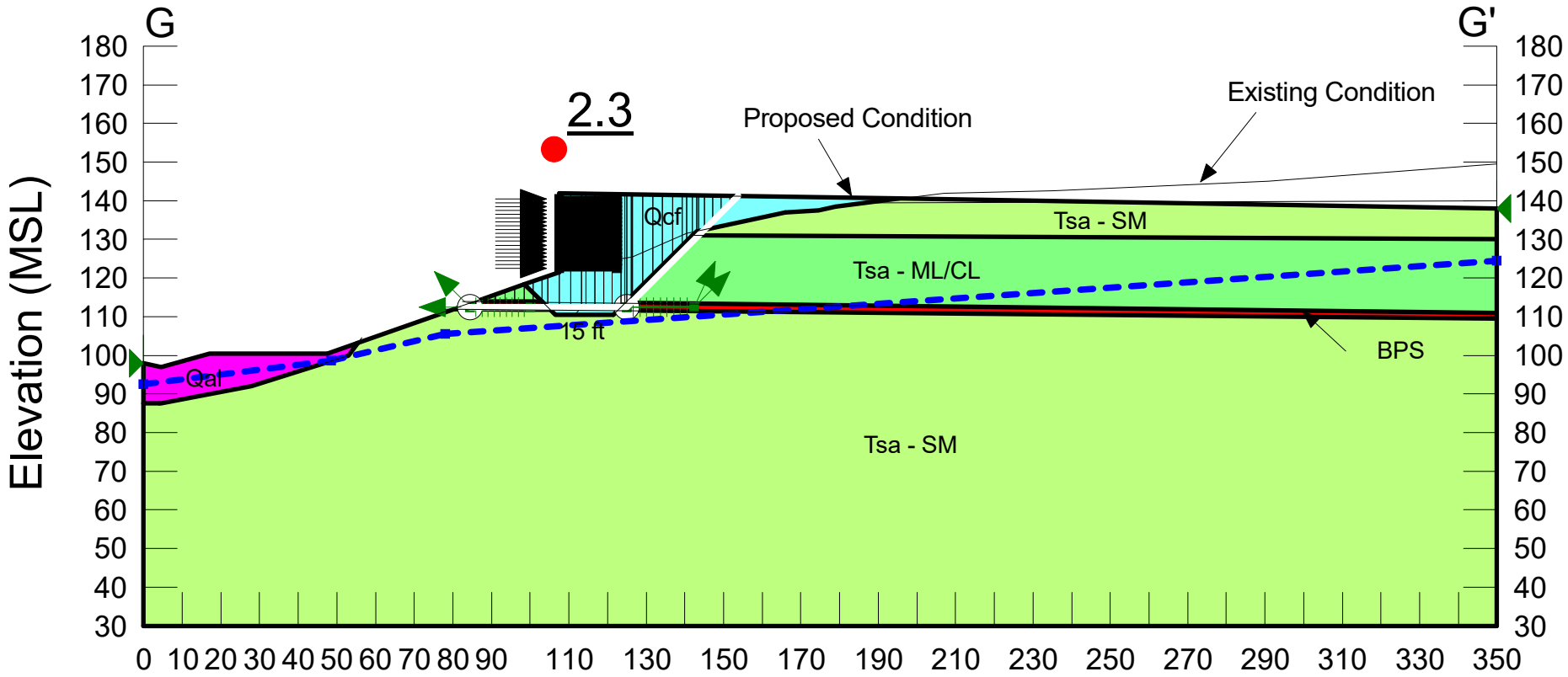


Figure C-37

Piraeus Point
Project No. G2307-32-05
Section G-G'
Name: GG-Case2s.gsz
Date: 01/31/2022 Time: 11:53:14 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

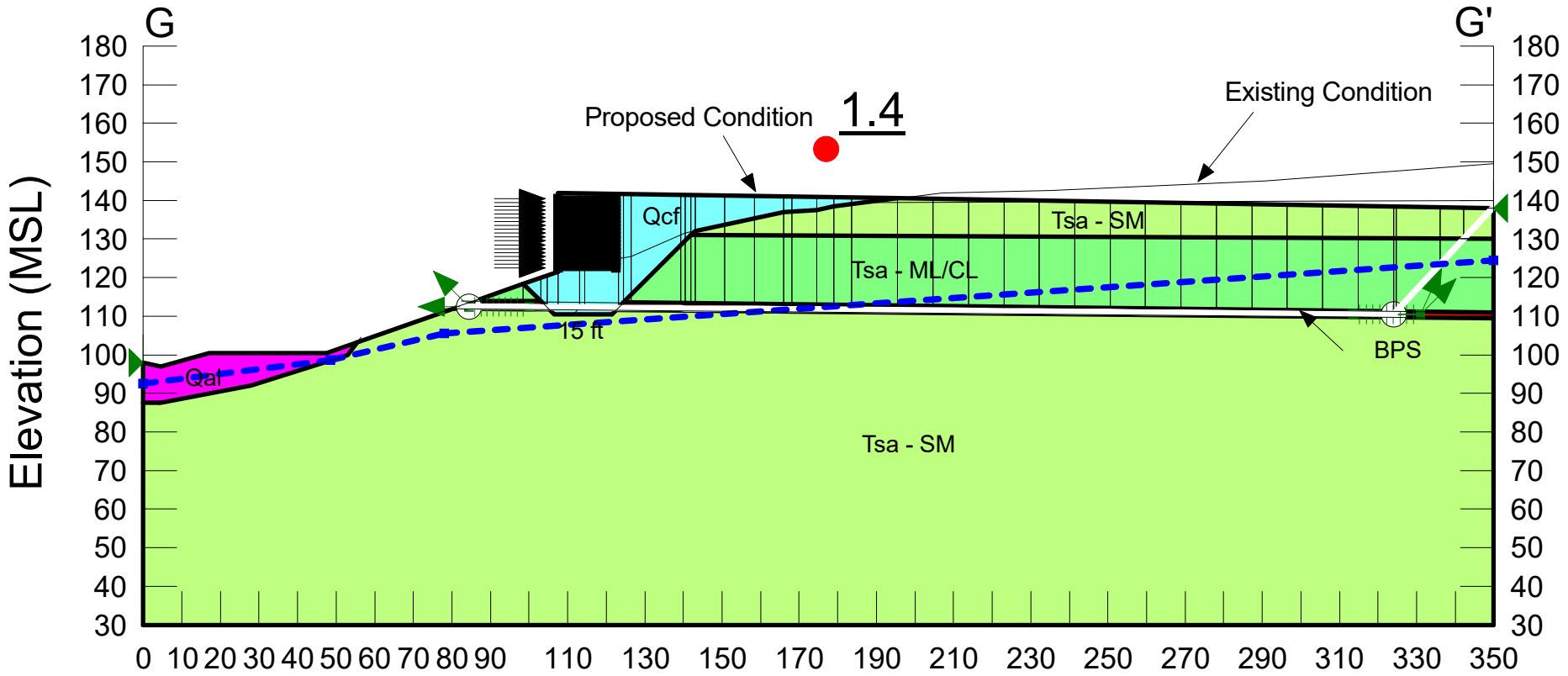


Figure C-38

Piraeus Point
Project No. G2307-32-05
Section G-G'
Name: GG-Case2a.gsz
Date: 01/31/2022 Time: 09:51:59 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

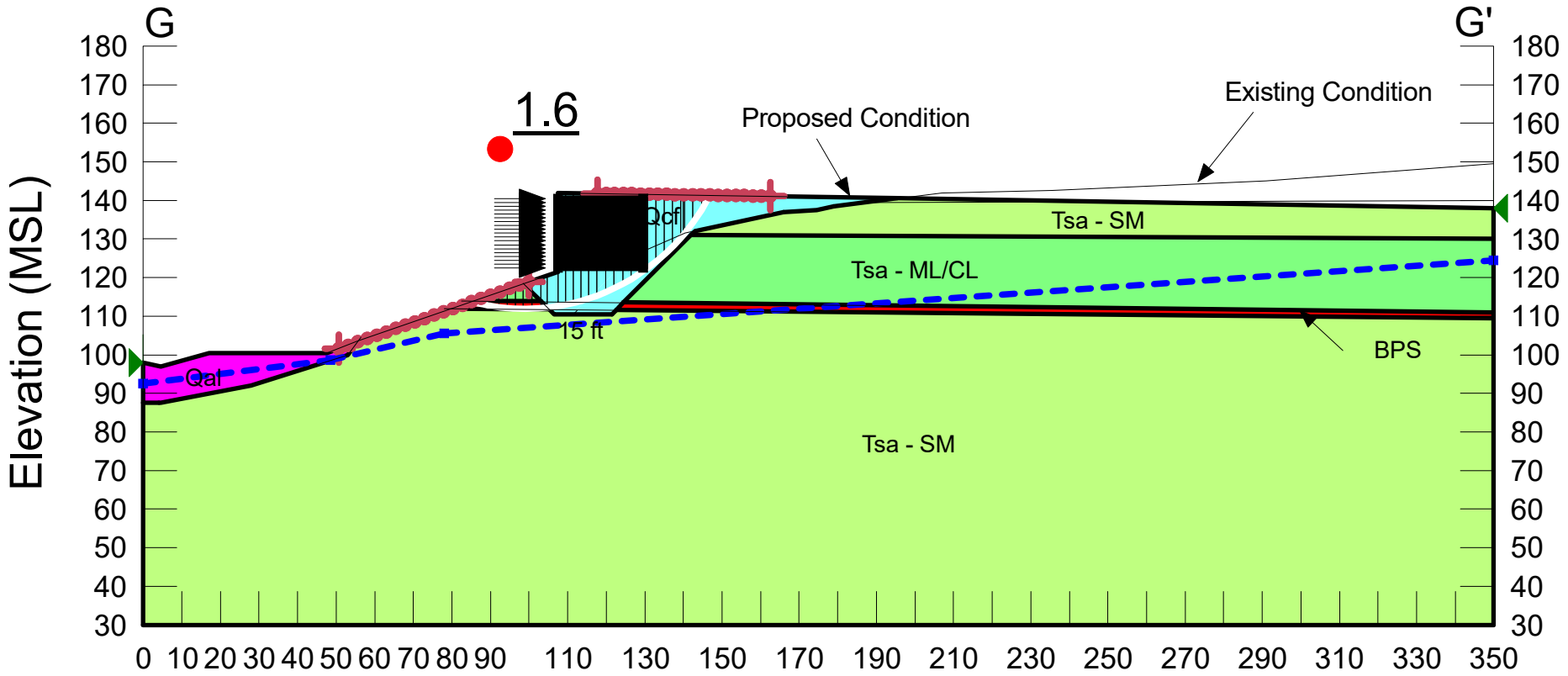


Figure C-39

Piraeus Point
Project No. G2307-32-05
Section G-G'
Name: GG-Case2as.gsz
Date: 01/31/2022 Time: 11:56:17 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

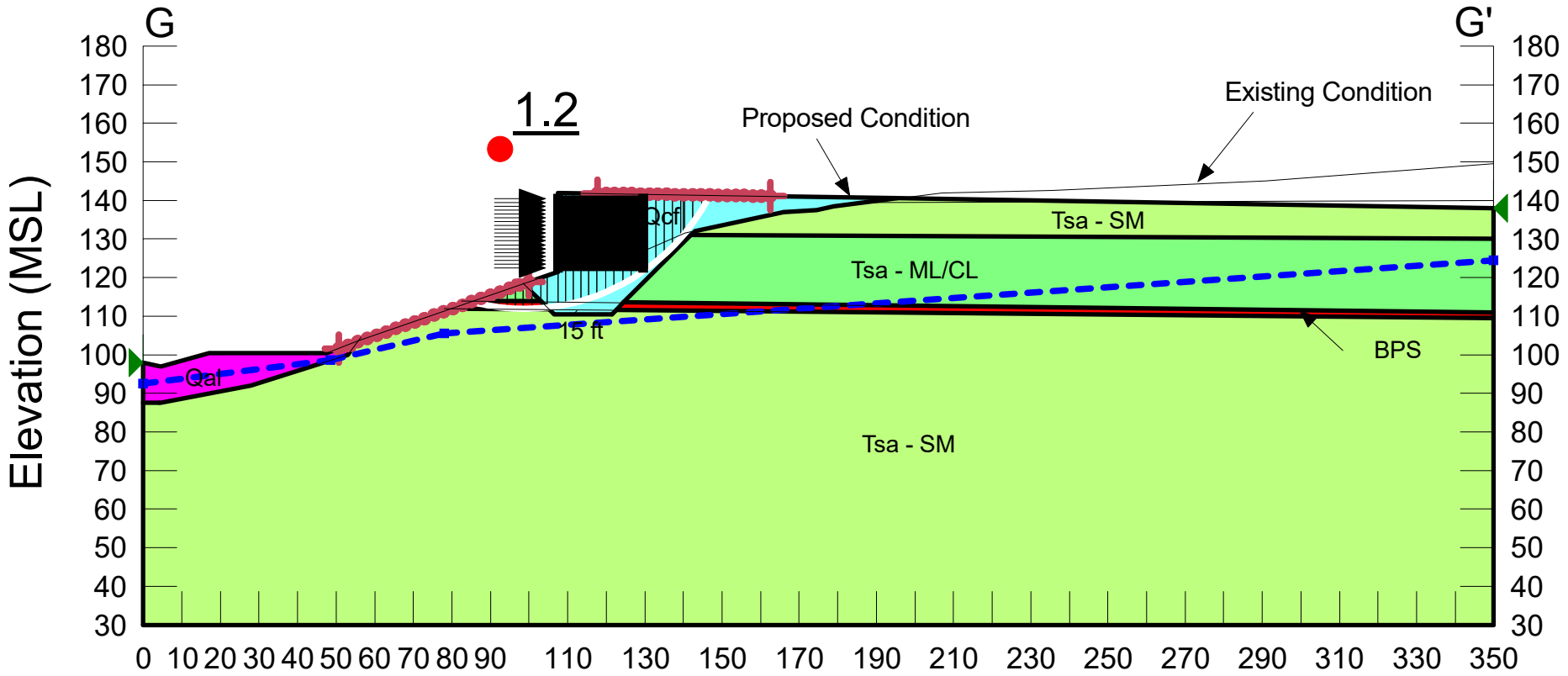


Figure C-40

Surficial Slope Stability Evaluation

Slope Height, H (feet)	∞	
Vertical Depth of Stauration, Z (feet)	3	
Slope Inclination	2.00	:1
Slope Inclination, I (degrees)	26.6	
Unit Weight of Water, γW (pcf)	62.4	
Total Unit Weight of Soil, γ_T (pcf)	125	
Friction Angle, ϕ (degrees)	28	
Cohesion, C (psf)	300	
Factor of Safety = $(C+(\gamma_T-\gamma_W)Z\cos^2 i \tan\phi)/(\gamma_T Z \sin i \cos i)$	2.53	

References: (1) Haefeli, R. *The Stability of Slopes Acted Upon by Parallel Seepage* , Proc. Second International Conference, SMFE, Rotterdam, 1948, 1, 57-62.

(2) Skempton, A. W., and F. A. Delory, *Stability of Natural Slopes in London Clay* , Proc. Fourth International Conference, SMFE, London, 1957, 2, 378-81.

Slope Stability Evaluation

Slope Height, H (feet)	25	
Slope Inclination	2.0	:1
Total Unit Weight of Soil, γ_T (pcf)	125	
Friction Angle, ϕ (degrees)	28	
Cohesion, C (psf)	300	
$\gamma_{C\phi} = (\gamma H \tan\phi)/C$	5.5	
N_{Cf} (from Chart)	20	
Factor of Safety = $(N_{Cf}C)/(\gamma H)$	1.92	

References: (1) Janbu, N. *Stability Analysis of Slopes with Dimensionless Parameters,* Harvard Soil Mechanics, Series No. 46, 1954.

(2) Janbu, N. *Discussion of J.M. Bell, DimensionlessParameters for Homogeneous Earth Slopes,* Journal of Soil Mechanics and Foundation Design, No. SM6, November 1967.

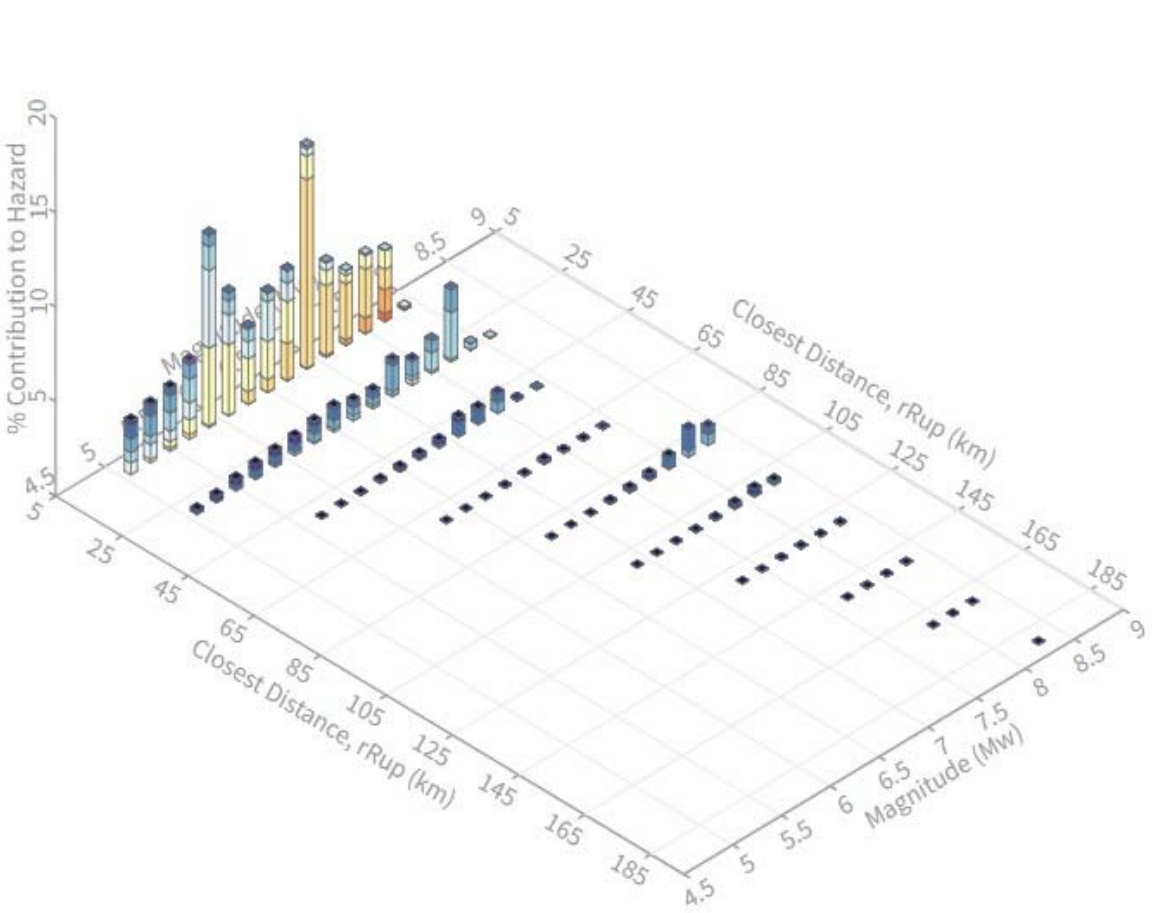
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SLOPE STABILITY ANALYSIS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

DATE 1-31-2022 | PROJECT NO. G2307-32-05 | FIG. C-41



Summary statistics for, Deaggregation: Total

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SEISMIC DEAGGREGATION

PIRAEUS POINT
ENCINITAS, CALIFORNIA

DATE 1-31-2022	PROJECT NO. G2307-32-05	FIG. C-42

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Seismic Slope Stability Evaluation

Input Data in Shaded Areas

Project	Piraeus Point	Computed By	TEM
Project Number	G2307-32-05		
Date	01/31/22		
Filename			

Peak Ground Acceleration (Firm Rock), MHA_r, g	0.23	10% in 50 years
Modal Magnitude, M	6.9	
Modal Distance, r, km	6.3	
Site Condition, S (0 for rock, 1 for soil)	1	
Yield Acceleration, k_y/g	NA	<-- Enter Value or NA for Screening Analysis
Shear Wave Velocity, V_s (ft/sec)	NA	<--
Max Vertical Distance, H (Feet)	NA	<--
Is Slide X-Area > 25,000ft^2 (Y/N)	N	<-- Use "N" for Buttress Fills
Correction for horizontal incoherence	1.0	
Duration, $D_{5-95}\|_{med}$, sec	12.801	
Coefficient, C_1	0.5190	
Coefficient, C_2	0.0837	
Coefficient, C_3	0.0019	
Standard Error, ε_T	0.437	
Mean Square Period, T_m, sec	0.606	

Initial Screening with MHEA = MHA = k_{max}g

k_y/MHA	NA
$f_{EQ}(u=5cm) = (NRF/3.477)*(1.87-\log(u/((MHA_r/g)*NRF*D_{5-95})))$	0.5752
$k_{EO} = feq(MHA_r)/g$	0.132
Factor of Safety in Slope Analysis Using k_{EQ}	1.00

Passes Initial Screening Analysis

Approximation of Seismic Demand

Period of Sliding Mass, $T_s = 4H/V_s$, sec	NA
T_s/T_m	NA
MHEA/(MHA*NRF)	NA
$NRF = 0.6225+0.9196EXP(-2.25*MHA_r/g)$	1.17
MHEA/g	NA
$k_y/MHEA = k_y/k_{max}$	NA
Normalized Displacement, Normu	NA

Estimated Displacement, u (cm) NA

FIGURE C-43

APPENDIX D

APPENDIX D

LIQUEFACTION ANALYSIS

FOR

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

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Hammer Energy Correction Factors

Reference: Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10

Project Name: Piraeus Point Date: 1/24/2022

Project Number: G2307-32-05

Hole Diameter, Inches:	8	Hole Diameter Correction, C_B: 1.15
Average Unit Weight, γ (pcf):	125	
Adjustment Factor for 350 LB Hammer Above Groundwater	1.00	<-- Enter 1.0 if an adjustment is not required; Applied to "MC" Samples
Adjustment Factor for 350 LB Hammer Below Groundwater	1.00	<-- Enter 1.0 if an adjustment is not required; Applied to "MC" Samples
Approximate Depth to Groundwater in Boring B-1	39	
Approximate Depth to Groundwater in Boring B-2	43	*Auto, Cathead, or Downhole Hammer
Approximate Depth to Groundwater in Boring B-3	15	

					Adjust for each GWT Level		Energy Correction, C_E (1.0 Safe-T-Driver/Cathead, 1.3 Automatic)				
Sample	Depth, Feet	Field Blow Count (per Foot)	Type of Sampler (MC or SPT)	Hammer Type* (A/C/D)	Equiv. SPT Blow Count, N	σ'_v, psf	Overburden Pressure Correction, C_N	Energy Ratio Correction, C_E	Rod Length Correction, C_R	Sampling Correction, C_S	N1|60 Blowcounts (Prior to Fines)
B1-1	5.0	80	MC	C	53.3	625.0	1.70	1.0	0.75	1.00	78.20
B1-2	10.0	33	MC	A	22.0	1250.0	1.26	1.3	0.80	1.00	33.28
B1-3	15.0	52	MC	A	34.7	1875.0	1.03	1.3	0.85	1.00	45.50
B1-4	20.0	18	MC	A	12.0	2500.0	0.89	1.3	0.95	1.00	15.24
B1-5	25.0	33	MC	A	22.0	3125.0	0.80	1.3	0.95	1.00	25.00
B1-6	30.0	82	MC	A	54.7	3750.0	0.73	1.3	1.00	1.00	59.68
B1-7	31.0	30	SPT	A	30.0	3875.0	0.72	1.3	1.00	1.10	35.44
B1-8	35.0	35	MC	A	23.3	4375.0	0.68	1.3	1.00	1.00	23.59
B1-9	36.0	26	SPT	A	26.0	4500.0	0.67	1.3	1.00	1.10	28.50
B1-10	40.0	49	MC	A	32.7	4937.6	0.64	1.3	1.00	1.00	31.08
B1-11	41.0	36	SPT	A	36.0	5000.2	0.63	1.3	1.00	1.10	37.44
B1-12	45.0	50	MC	A	33.3	5250.6	0.62	1.3	1.00	1.00	30.76
B1-13	46.0	28	SPT	A	28.0	5313.2	0.61	1.3	1.00	1.10	28.25
B1-14	50.0	31	MC	A	20.7	5563.6	0.60	1.3	1.00	1.00	18.52
B1-15	51.0	28	MC	A	18.7	5626.2	0.60	1.3	1.00	1.00	16.64
B2-1	5.0	50	MC	A	33.3	625.0	1.70	1.3	0.75	1.00	63.54
B2-2	10.0	82	MC	A	54.7	1250.0	1.26	1.3	0.80	1.00	82.70
B2-3	15.0	63	MC	A	42.0	1875.0	1.03	1.3	0.85	1.00	55.12
B2-4	20.0	42	MC	A	28.0	2500.0	0.89	1.3	0.95	1.00	35.57
B2-5	25.0	44	MC	A	29.3	3125.0	0.80	1.3	0.95	1.00	33.33
B2-6	30.0	63	MC	A	42.0	3750.0	0.73	1.3	1.00	1.00	45.86
B2-7	31.0	39	SPT	A	39.0	3875.0	0.72	1.3	1.00	1.10	46.08
B2-8	35.0	71	MC	A	47.3	4375.0	0.68	1.3	1.00	1.00	47.84
B2-9	36.0	39	SPT	A	39.0	4500.0	0.67	1.3	1.00	1.10	42.76
B2-10	40.0	36	MC	A	24.0	5000.0	0.63	1.3	1.00	1.00	22.69
B2-11	41.0	29	SPT	A	29.0	5125.0	0.62	1.3	1.00	1.10	29.79
B2-12	45.0	34	MC	A	22.7	5500.2	0.60	1.3	1.00	1.00	20.43
B2-13	46.0	16	SPT	A	16.0	5562.8	0.60	1.3	1.00	1.10	15.78
B2-14	50.0	41	MC	A	27.3	5813.2	0.59	1.3	1.00	1.00	23.97
B2-15	51.0	71	SPT	A	71.0	5875.8	0.58	1.3	1.00	1.10	68.12
B3-1	5.0	50	MC	A	33.3	625.0	1.70	1.3	0.75	1.00	63.54
B3-2	10.0	63	MC	A	42.0	1250.0	1.26	1.3	0.80	1.00	63.54
B3-3	15.0	36	MC	A	24.0	1875.0	1.03	1.3	0.85	1.00	31.50
B3-4	20.0	38	MC	A	25.3	2188.0	0.96	1.3	0.95	1.00	34.40

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Hammer Energy Correction Factors

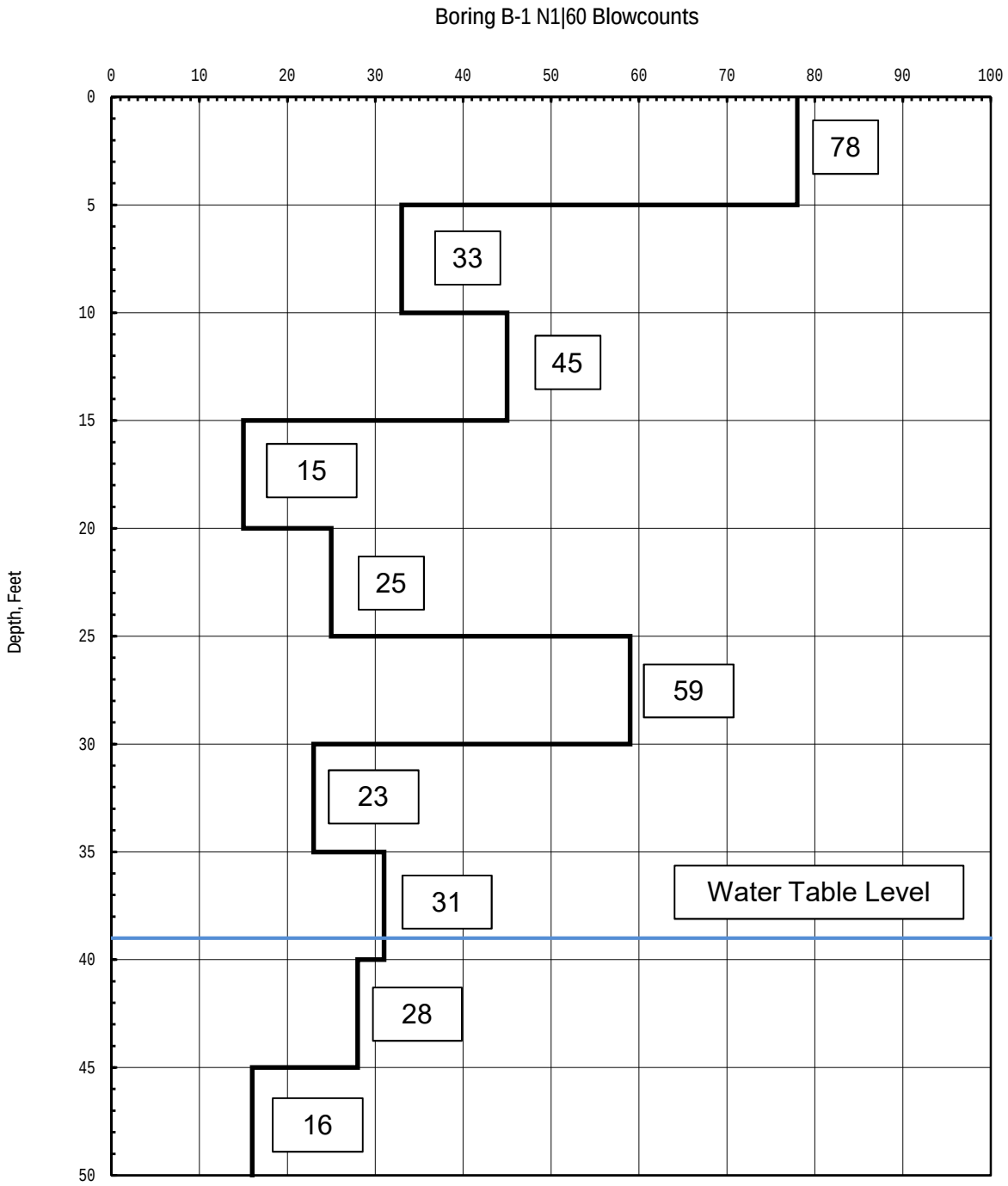
Reference: Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10

Project Name: Piraeus Point Date: 1/24/2022

Project Number: G2307-32-05

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Average Unit Weight, γ (pcf):	125	
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Approximate Depth to Groundwater in Boring B-1	39	
Approximate Depth to Groundwater in Boring B-2	43	*Auto, Cathead, or Downhole Hammer
Approximate Depth to Groundwater in Boring B-3	15	

					Adjust for each GWT Level		Energy Correction, C_E (1.0 Safe-T-Driver/Cathead, 1.3 Automatic)				
Sample	Depth, Feet	Field Blow Count (per Foot)	Type of Sampler (MC or SPT)	Hammer Type* (A/C/D)	Equiv. SPT Blow Count, N	σ'_v, psf	Overburden Pressure Correction, C_N	Energy Ratio Correction, C_E	Rod Length Correction, C_R	Sampling Correction, C_S	N1|60 Blowcounts (Prior to Fines)
B3-5	25.0	35	MC	A	23.3	2501.0	0.89	1.3	0.95	1.00	29.63
B3-6	30.0	45	MC	A	30.0	2814.0	0.84	1.3	1.00	1.00	37.81
B3-7	31.0	27	SPT	A	27.0	2876.6	0.83	1.3	1.00	1.10	37.02
B3-8	35.0	35	MC	A	23.3	3127.0	0.80	1.3	1.00	1.00	27.90
B3-9	36.0	26	SPT	A	26.0	3189.6	0.79	1.3	1.00	1.10	33.86
B3-10	40.0	39	MC	A	26.0	3440.0	0.76	1.3	1.00	1.00	29.64
B3-11	41.0	53	SPT	A	53.0	3502.6	0.76	1.3	1.00	1.10	65.86
B3-12	42.0	50	MC	A	33.3	3565.2	0.75	1.3	1.00	1.00	37.32



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LIQUEFACTION - N 1 | 60 BLOW COUNT

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

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Liquefaction Analysis Using SPT

References
1. *Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10*
2. *Seed, et al, Recent Advances in Soil Liquefaction Engineering: A Unified and Consistant Framework, 2003.*

Project Name: Piraeus Point
Project Number: G2307-32-05
Boring: B-1

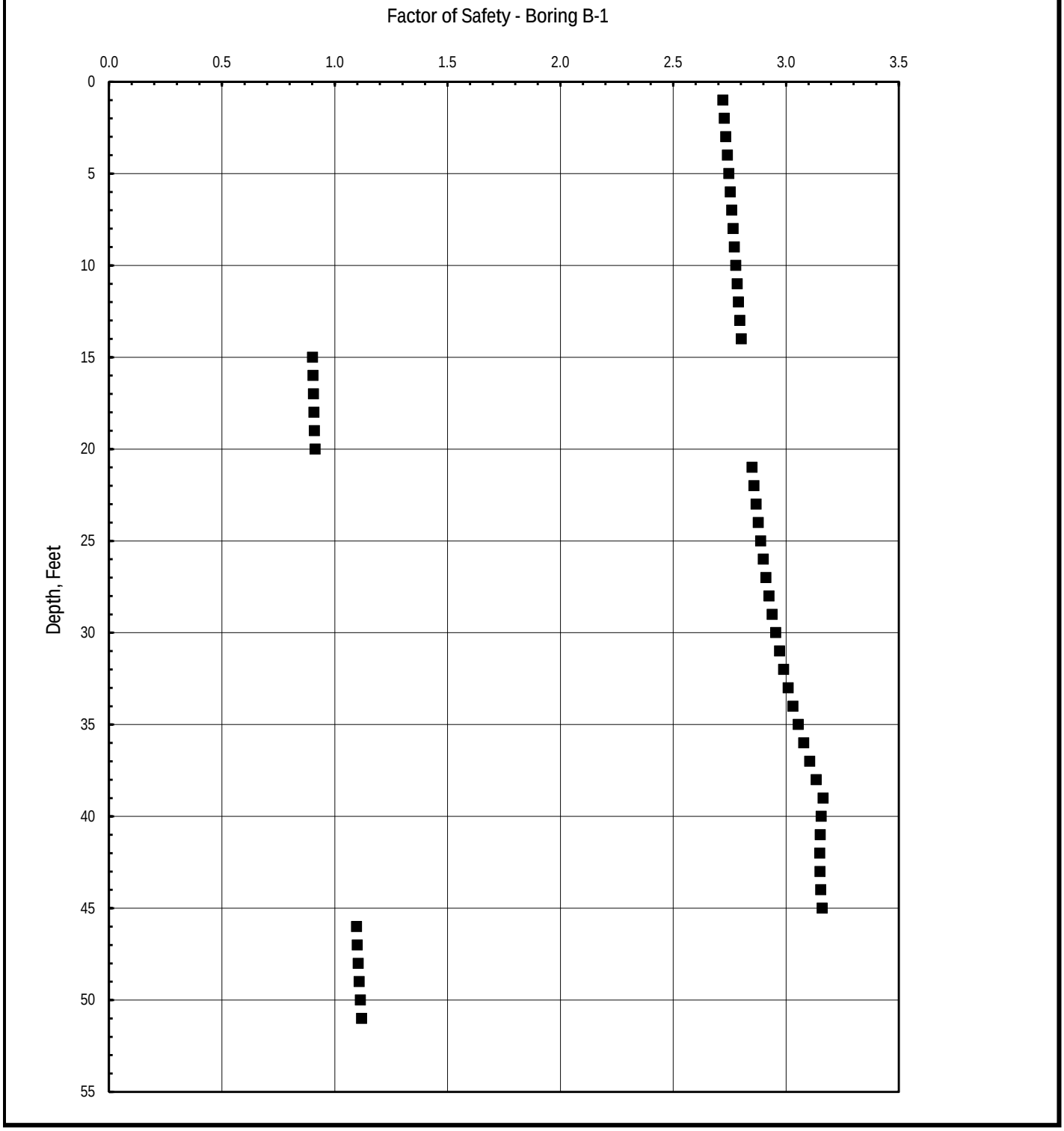
a_{max}/g 0.56
Magnitude 6.9
Groundwater Depth, Ft 39.0
Reference Pressure, p_a 2000
Unit Weight of Water 62.4
Soil Unit Weight, pcf 125

Include Kσ (Y/N) N
Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
Minimum Factor of Safety for Liquefaction 1

Enter for Fine-Grained Materials | Old | New | MWF Idriss(1997) = $(M)^{2.56}/10^{2.24}$ | From Graph

Depth, ft	$N_1]_{60}$	Fines Content, FC (%)	Water Content, w_C (%)	Liquid Limit	Plastic Limit	Plasticity Index	$N_1]_{60}$, Adj. for Fines	$N_1]_{60}$, Adj. for Fines	σ, psf	σ', psf	r_d	K_σ	NCEER $CRR_{7.5}$	RAUCH $CRR_{7.5}$	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
1	78	35	3.8	30	15	15	98.6	84.0	125	125	1.00	1.00	0.800	0.800	0.294	N	Above GWT	2.721		
2	78	35	3.8	30	15	15	98.6	84.0	250	250	1.00	1.00	0.800	0.800	0.293	N	Above GWT	2.727		
3	78	35	3.8	30	15	15	98.6	84.0	375	375	0.99	1.00	0.800	0.800	0.293	N	Above GWT	2.734		
4	78	35	3.8	30	15	15	98.6	84.0	500	500	0.99	1.00	0.800	0.800	0.292	N	Above GWT	2.740		
5	78	35	3.8	30	15	15	98.6	84.0	625	625	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.747		
6	33	35	3.8	30	15	15	44.6	39.0	750	750	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.753		
7	33	35	3.8	30	15	15	44.6	39.0	875	875	0.99	1.00	0.800	0.800	0.290	N	Above GWT	2.759		
8	33	35	3.8	30	15	15	44.6	39.0	1000	1000	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.766		
9	33	35	3.8	30	15	15	44.6	39.0	1125	1125	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.772		
10	33	35	3.8	30	15	15	44.6	39.0	1250	1250	0.98	1.00	0.800	0.800	0.288	N	Above GWT	2.778		
11	45	35	5.4	30	15	15	59.0	51.0	1375	1375	0.98	1.00	0.800	0.800	0.287	N	Above GWT	2.784		
12	45	35	5.4	30	15	15	59.0	51.0	1500	1500	0.97	1.00	0.800	0.800	0.287	N	Above GWT	2.790		
13	45	35	5.4	30	15	15	59.0	51.0	1625	1625	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.796		
14	45	35	5.4	30	15	15	59.0	51.0	1750	1750	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.802		
15	15	35	5.4	30	15	15	23.0	21.0	1875	1875	0.97	1.00	0.255	0.257	0.285	N	Above GWT	0.902		
16	15	35	5.4	30	15	15	23.0	21.0	2000	2000	0.97	1.00	0.255	0.257	0.284	N	Above GWT	0.904		
17	15	35	5.4	30	15	15	23.0	21.0	2125	2125	0.96	1.00	0.255	0.257	0.284	N	Above GWT	0.906		
18	15	35	5.4	30	15	15	23.0	21.0	2250	2250	0.96	1.00	0.255	0.257	0.283	N	Above GWT	0.908		
19	15	35	5.4	30	15	15	23.0	21.0	2375	2375	0.96	1.00	0.255	0.257	0.282	N	Above GWT	0.911		
20	15	35	5.4	30	15	15	23.0	21.0	2500	2500	0.96	1.00	0.255	0.257	0.281	N	Above GWT	0.913		
21	25	35	14.8	30	15	15	35.0	31.0	2625	2625	0.95	1.00	0.800	0.800	0.281	N	Above GWT	2.850		
22	25	35	14.8	30	15	15	35.0	31.0	2750	2750	0.95	1.00	0.800	0.800	0.280	N	Above GWT	2.859		
23	25	35	14.8	30	15	15	35.0	31.0	2875	2875	0.95	1.00	0.800	0.800	0.279	N	Above GWT	2.868		
24	25	35	14.8	30	15	15	35.0	31.0	3000	3000	0.95	1.00	0.800	0.800	0.278	N	Above GWT	2.877		
25	25	35	14.8	30	15	15	35.0	31.0	3125	3125	0.94	1.00	0.800	0.800	0.277	N	Above GWT	2.888		
26	59	35	8.7	30	15	15	75.8	65.0	3250	3250	0.94	1.00	0.800	0.800	0.276	N	Above GWT	2.899		
27	59	35	8.7	30	15	15	75.8	65.0	3375	3375	0.93	1.00	0.800	0.800	0.275	N	Above GWT	2.911		
28	59	35	8.7	30	15	15	75.8	65.0	3500	3500	0.93	1.00	0.800	0.800	0.274	N	Above GWT	2.925		
29	59	35	8.7	30	15	15	75.8	65.0	3625	3625	0.93	1.00	0.800	0.800	0.272	N	Above GWT	2.939		
30	59	35	8.7	30	15	15	75.8	65.0	3750	3750	0.92	1.00	0.800	0.800	0.271	N	Above GWT	2.955		
31	23	35	8.7	30	15	15	32.6	29.0	3875	3875	0.92	1.00	0.800	0.800	0.269	N	Above GWT	2.972		
32	23	35	8.7	30	15	15	32.6	29.0	4000	4000	0.91	1.00	0.800	0.800	0.268	N	Above GWT	2.990		
33	23	35	8.7	30	15	15	32.6	29.0	4125	4125	0.90	1.00	0.800	0.800	0.266	N	Above GWT	3.010		
34	23	35	8.7	30	15	15	32.6	29.0	4250	4250	0.90	1.00	0.800	0.800	0.264	N	Above GWT	3.031		
35	23	35	8.7	30	15	15	32.6	29.0	4375	4375	0.89	1.00	0.800	0.800	0.262	N	Above GWT	3.054		
36	31	35	8.7	30	15	15	42.2	37.0	4500	4500	0.88	1.00	0.800	0.800	0.260	N	Above GWT	3.079		
37	31	35	15.3	30	15	15	42.2	37.0	4625	4625	0.88	1.00	0.800	0.800	0.258	N	Above GWT	3.106		
38	31	35	15.3	30	15	15	42.2	37.0	4750	4750	0.87	1.00	0.800	0.800	0.255	N	Above GWT	3.134		
39	31	35	15.3	30	15	15	42.2	37.0	4875	4875	0.86	1.00	0.800	0.800	0.253	N	NL	3.165		
40	31	35	15.3	30	15	15	42.2	37.0	5000	4938	0.85	1.00	0.800	0.800	0.253	N	NL	3.157		
41	28	35	15.3	30	15	15	38.6	34.0	5125	5000	0.84	1.00	0.800	0.800	0.254	N	NL	3.152		
42	28	35	15.3	30	15	15	38.6	34.0	5250	5063	0.83	1.00	0.800	0.800	0.254	N	NL	3.150		
43	28	35	15.3	30	15	15	38.6	34.0	5375	5125	0.82	1.00	0.800	0.800	0.254	N	NL	3.151		
44	28	35	15.3	30	15	15	38.6	34.0	5500	5188	0.81	1.00	0.800	0.800	0.254	N	NL	3.155		
45	28	35	20.0	30	15	15	38.6	34.0	5625	5251	0.80	1.00	0.800	0.800	0.253	N	NL	3.160		
46	16	35	20.0	30	15	15	24.2	22.0	5750	5313	0.79	1.00	0.273	0.277	0.253	N	NL	1.097		
47	16	35	20.0	30	15	15	24.2	22.0	5875	5376	0.78	1.00	0.273	0.277	0.252	N	NL	1.100		
48	16	35	20.0	30	15	15	24.2	22.0	6000	5438	0.77	1.00	0.273	0.277	0.251	N	NL	1.104		
49	16	35	20.0	30	15	15	24.2	22.0	6125	5501	0.76	1.00	0.273	0.277	0.250	N	NL	1.109		
50	16	35	20.0	30	15	15	24.2	22.0	6250	5564	0.75	1.00	0.273	0.277	0.249	N	NL	1.114		
51	16	35	20.0	30	15	15	24.2	22.0	6375	5626	0.74	1.00	0.273	0.277	0.247	N	NL	1.119		

Total Settlement, S_{LIQ} (in.) = 0
Total Liquifiable Layers = 0



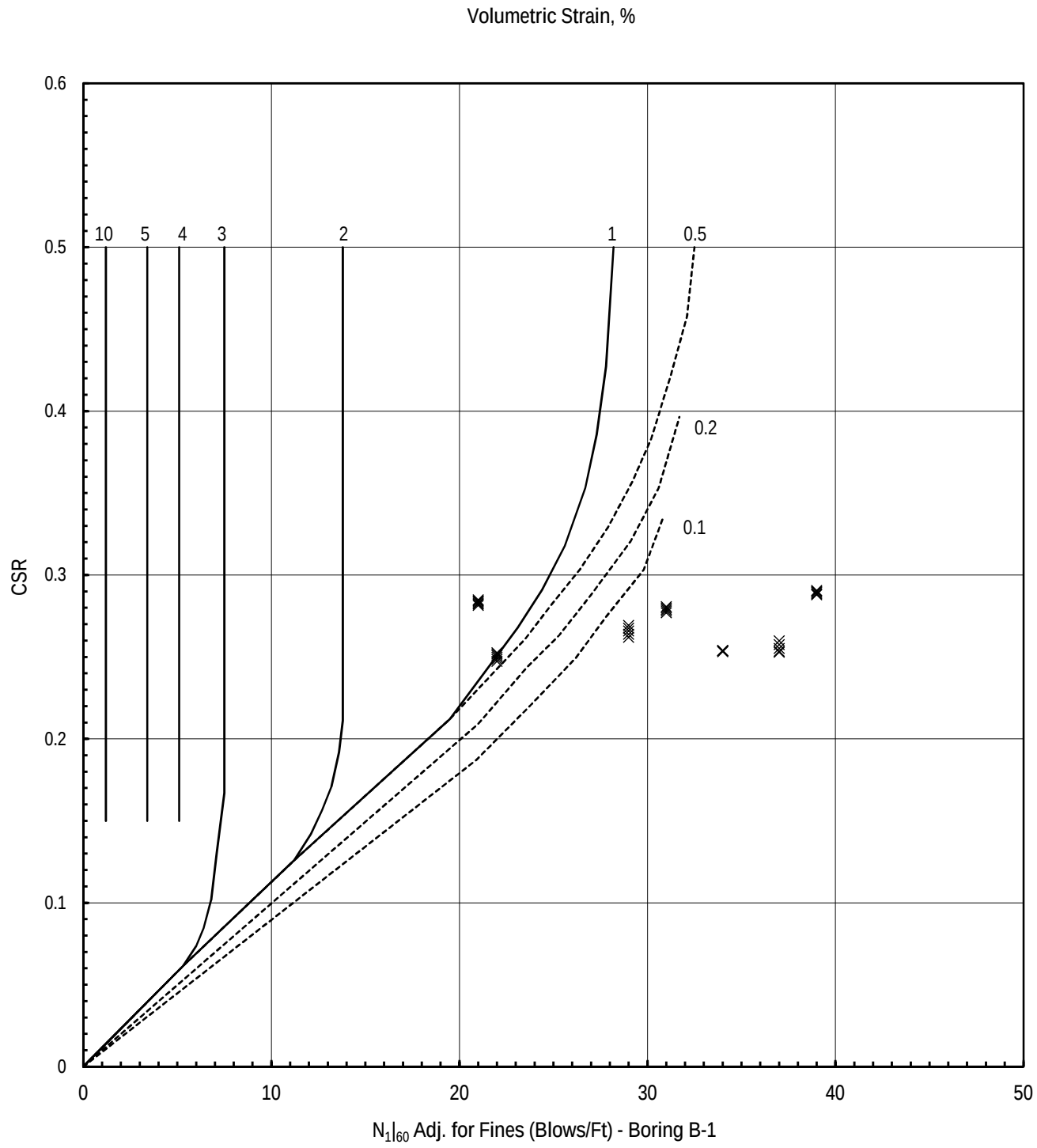
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SW / SW

LIQUEFACTION - FACTOR OF SAFETY

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05



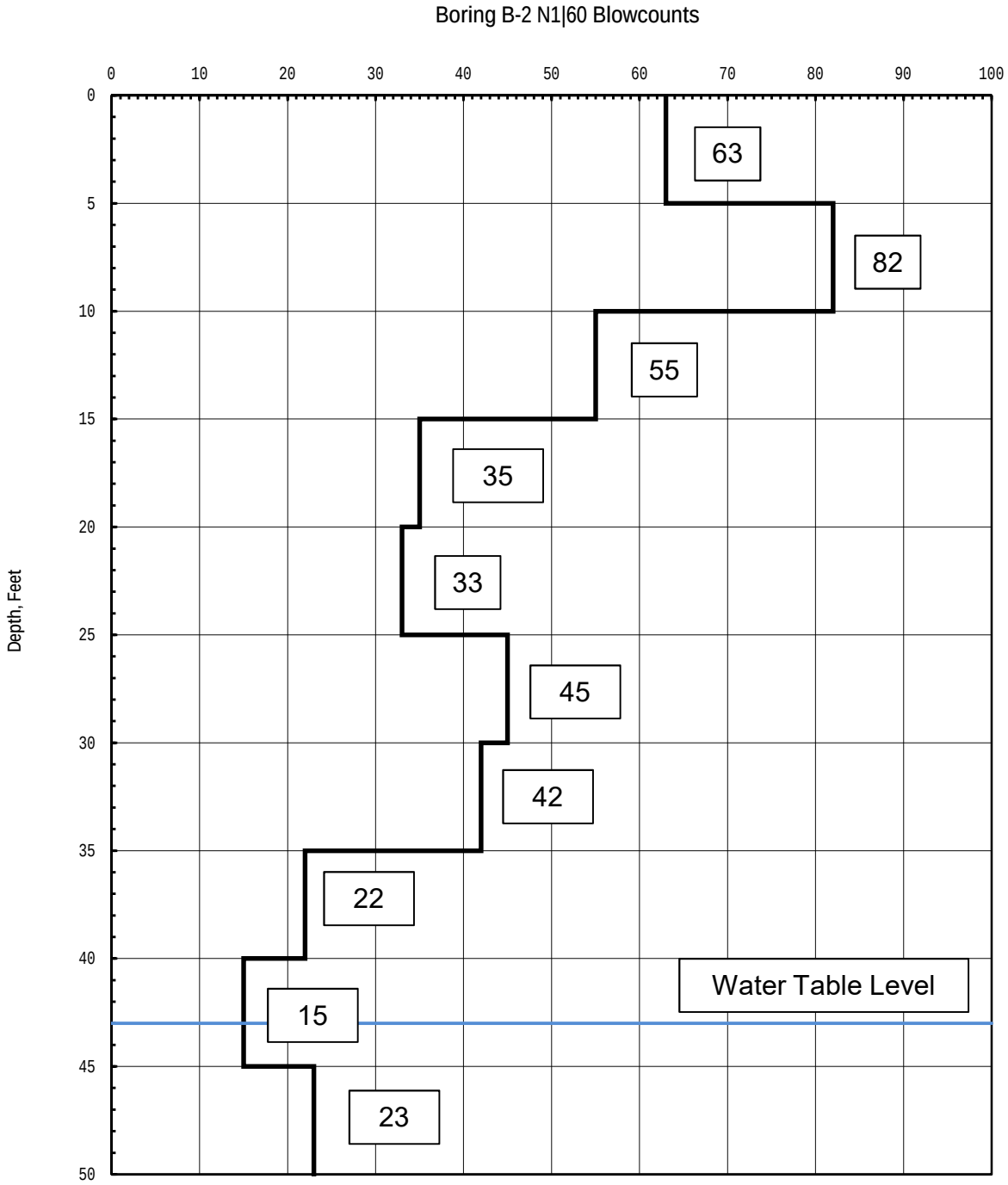
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SW / SW

LIQUEFACTION - VOLUMETRIC STRAIN

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TM / DG

LIQUEFACTION - N 1 | 60 BLOW COUNT

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

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Liquefaction Analysis Using SPT

References
1. *Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10*
2. *Seed, et al, Recent Advances in Soil Liquefaction Engineering: A Unified and Consistant Framework, 2003.*

Project Name: Piraeus Point
Project Number: G2307-32-05
Boring: B-2

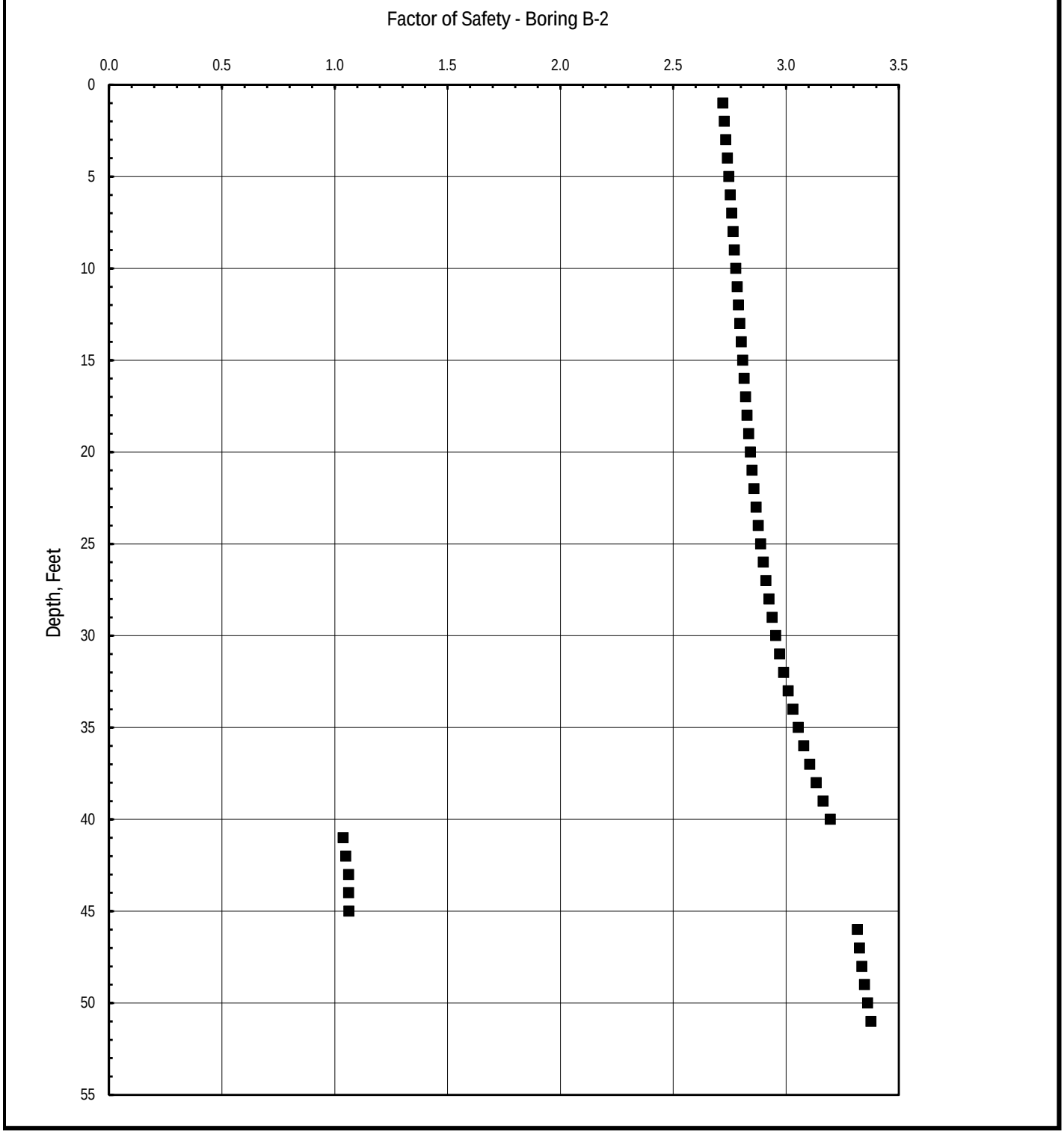
a_{max}/g 0.56
Magnitude 6.9
Groundwater Depth, Ft 43.0
Reference Pressure, p_a 2000
Unit Weight of Water 62.4
Soil Unit Weight, pcf 125

Include Kσ (Y/N) N
Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
Minimum Factor of Safety for Liquefaction 1

Enter for Fine-Grained Materials | Old | New | MWF Idriss(1997) = $(M)^{2.56}/10^{2.24}$ | From Graph

Depth, ft	$N_1]_{60}$	Fines Content, FC (%)	Water Content, w_C (%)	Liquid Limit	Plastic Limit	Plasticity Index	$N_1]_{60}$, Adj. for Fines	$N_1]_{60}$, Adj. for Fines	σ, psf	σ', psf	r_d	K_σ	NCEER $CRR_{7.5}$	RAUCH $CRR_{7.5}$	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
1	63	35	5.3	30	15	15	80.6	69.0	125	125	1.00	1.00	0.800	0.800	0.294	N	Above GWT	2.721		
2	63	35	5.3	30	15	15	80.6	69.0	250	250	1.00	1.00	0.800	0.800	0.293	N	Above GWT	2.727		
3	63	35	5.3	30	15	15	80.6	69.0	375	375	0.99	1.00	0.800	0.800	0.293	N	Above GWT	2.734		
4	63	35	5.3	30	15	15	80.6	69.0	500	500	0.99	1.00	0.800	0.800	0.292	N	Above GWT	2.740		
5	63	35	5.3	30	15	15	80.6	69.0	625	625	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.747		
6	82	35	5.3	30	15	15	103.4	88.0	750	750	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.753		
7	82	35	5.3	30	15	15	103.4	88.0	875	875	0.99	1.00	0.800	0.800	0.290	N	Above GWT	2.759		
8	82	35	5.3	30	15	15	103.4	88.0	1000	1000	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.766		
9	82	35	5.3	30	15	15	103.4	88.0	1125	1125	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.772		
10	82	35	5.3	30	15	15	103.4	88.0	1250	1250	0.98	1.00	0.800	0.800	0.288	N	Above GWT	2.778		
11	55	35	15.2	30	15	15	71.0	61.0	1375	1375	0.98	1.00	0.800	0.800	0.287	N	Above GWT	2.784		
12	55	35	15.2	30	15	15	71.0	61.0	1500	1500	0.97	1.00	0.800	0.800	0.287	N	Above GWT	2.790		
13	55	35	15.2	30	15	15	71.0	61.0	1625	1625	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.796		
14	55	35	15.2	30	15	15	71.0	61.0	1750	1750	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.802		
15	55	35	15.2	30	15	15	71.0	61.0	1875	1875	0.97	1.00	0.800	0.800	0.285	N	Above GWT	2.808		
16	35	35	9.6	30	15	15	47.0	41.0	2000	2000	0.97	1.00	0.800	0.800	0.284	N	Above GWT	2.814		
17	35	35	9.6	30	15	15	47.0	41.0	2125	2125	0.96	1.00	0.800	0.800	0.284	N	Above GWT	2.821		
18	35	35	9.6	30	15	15	47.0	41.0	2250	2250	0.96	1.00	0.800	0.800	0.283	N	Above GWT	2.828		
19	35	35	9.6	30	15	15	47.0	41.0	2375	2375	0.96	1.00	0.800	0.800	0.282	N	Above GWT	2.835		
20	35	35	9.6	30	15	15	47.0	41.0	2500	2500	0.96	1.00	0.800	0.800	0.281	N	Above GWT	2.842		
21	33	35	12.5	30	15	15	44.6	39.0	2625	2625	0.95	1.00	0.800	0.800	0.281	N	Above GWT	2.850		
22	33	35	12.5	30	15	15	44.6	39.0	2750	2750	0.95	1.00	0.800	0.800	0.280	N	Above GWT	2.859		
23	33	35	12.5	30	15	15	44.6	39.0	2875	2875	0.95	1.00	0.800	0.800	0.279	N	Above GWT	2.868		
24	33	35	12.5	30	15	15	44.6	39.0	3000	3000	0.95	1.00	0.800	0.800	0.278	N	Above GWT	2.877		
25	33	35	12.5	30	15	15	44.6	39.0	3125	3125	0.94	1.00	0.800	0.800	0.277	N	Above GWT	2.888		
26	45	35	12.5	30	15	15	59.0	51.0	3250	3250	0.94	1.00	0.800	0.800	0.276	N	Above GWT	2.899		
27	45	35	12.5	30	15	15	59.0	51.0	3375	3375	0.93	1.00	0.800	0.800	0.275	N	Above GWT	2.911		
28	45	35	12.5	30	15	15	59.0	51.0	3500	3500	0.93	1.00	0.800	0.800	0.274	N	Above GWT	2.925		
29	45	35	12.5	30	15	15	59.0	51.0	3625	3625	0.93	1.00	0.800	0.800	0.272	N	Above GWT	2.939		
30	45	35	12.5	30	15	15	59.0	51.0	3750	3750	0.92	1.00	0.800	0.800	0.271	N	Above GWT	2.955		
31	42	35	12.5	30	15	15	55.4	48.0	3875	3875	0.92	1.00	0.800	0.800	0.269	N	Above GWT	2.972		
32	42	35	12.5	30	15	15	55.4	48.0	4000	4000	0.91	1.00	0.800	0.800	0.268	N	Above GWT	2.990		
33	42	35	12.5	30	15	15	55.4	48.0	4125	4125	0.90	1.00	0.800	0.800	0.266	N	Above GWT	3.010		
34	42	35	12.5	30	15	15	55.4	48.0	4250	4250	0.90	1.00	0.800	0.800	0.264	N	Above GWT	3.031		
35	42	35	12.5	30	15	15	55.4	48.0	4375	4375	0.89	1.00	0.800	0.800	0.262	N	Above GWT	3.054		
36	22	35	15.4	30	15	15	31.4	28.0	4500	4500	0.88	1.00	0.800	0.800	0.260	N	Above GWT	3.079		
37	22	35	15.4	30	15	15	31.4	28.0	4625	4625	0.88	1.00	0.800	0.800	0.258	N	Above GWT	3.106		
38	22	35	15.4	30	15	15	31.4	28.0	4750	4750	0.87	1.00	0.800	0.800	0.255	N	Above GWT	3.134		
39	22	35	15.4	30	15	15	31.4	28.0	4875	4875	0.86	1.00	0.800	0.800	0.253	N	Above GWT	3.165		
40	22	35	15.4	30	15	15	31.4	28.0	5000	5000	0.85	1.00	0.800	0.800	0.250	N	Above GWT	3.197		
41	15	35	15.4	30	15	15	23.0	21.0	5125	5125	0.84	1.00	0.255	0.257	0.248	N	Above GWT	1.038		
42	15	35	15.4	30	15	15	23.0	21.0	5250	5250	0.83	1.00	0.255	0.257	0.245	N	Above GWT	1.049		
43	15	35	15.4	30	15	15	23.0	21.0	5375	5375	0.82	1.00	0.255	0.257	0.242	N	NL	1.061		
44	15	35	15.4	30	15	15	23.0	21.0	5500	5438	0.81	1.00	0.255	0.257	0.242	N	NL	1.062		
45	15	35	15.4	30	15	15	23.0	21.0	5625	5500	0.80	1.00	0.255	0.257	0.242	N	NL	1.063		
46	23	35	19.5	30	15	15	32.6	29.0	5750	5563	0.79	1.00	0.800	0.800	0.241	N	NL	3.317		
47	23	35	19.5	30	15	15	32.6	29.0	5875	5625	0.78	1.00	0.800	0.800	0.241	N	NL	3.326		
48	23	35	19.5	30	15	15	32.6	29.0	6000	5688	0.77	1.00	0.800	0.800	0.240	N	NL	3.336		
49	23	35	19.5	30	15	15	32.6	29.0	6125	5751	0.76	1.00	0.800	0.800	0.239	N	NL	3.348		
50	23	35	19.5	30	15	15	32.6	29.0	6250	5813	0.75	1.00	0.800	0.800	0.238	N	NL	3.362		
51	23	35	19.5	30	15	15	32.6	29.0	6375	5876	0.74	1.00	0.800	0.800	0.237	N	NL	3.377		

Total Settlement, S_{LIQ} (in.) = 0
Total Liquifiable Layers = 0



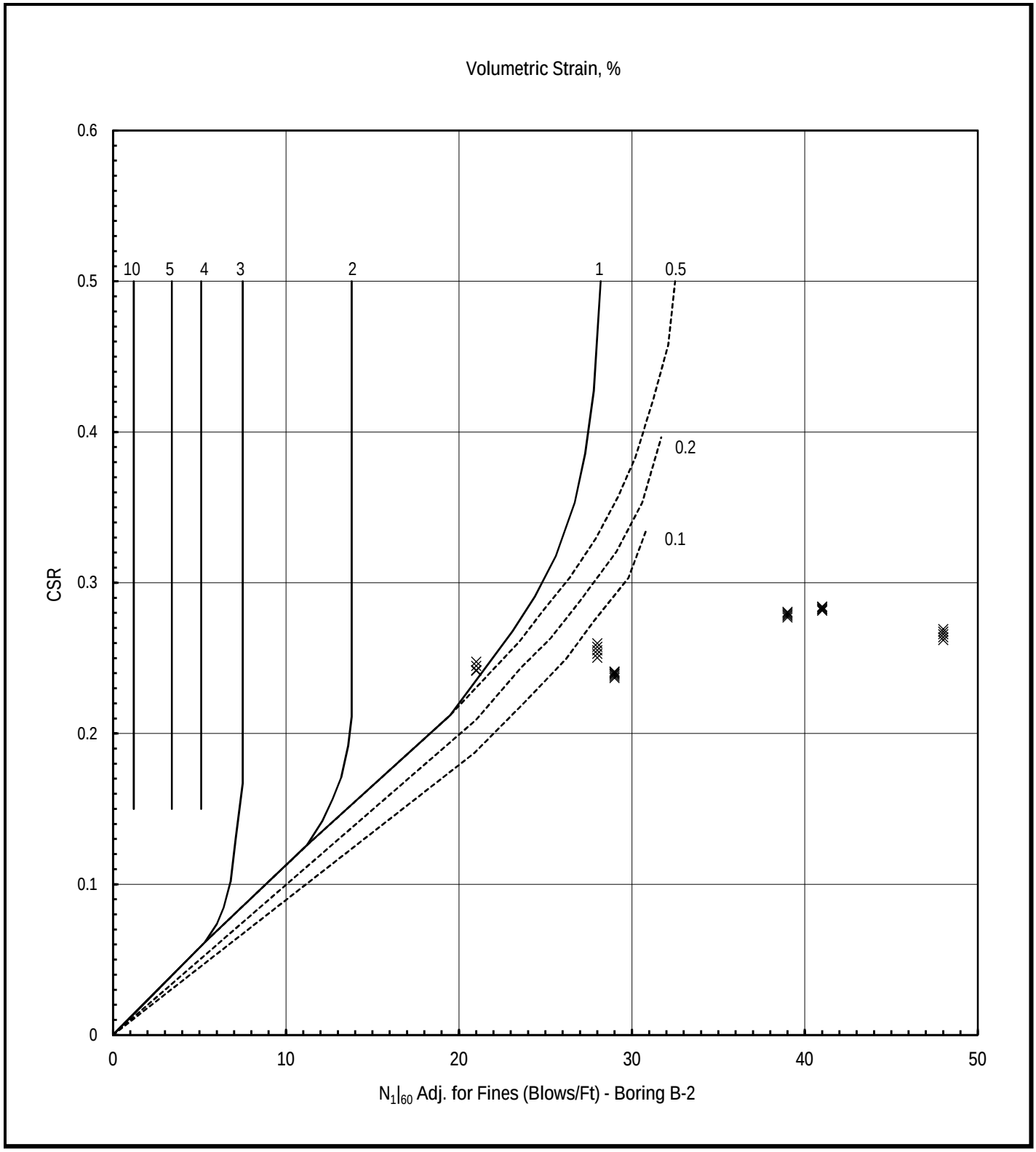
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SW / SW

LIQUEFACTION - FACTOR OF SAFETY

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05



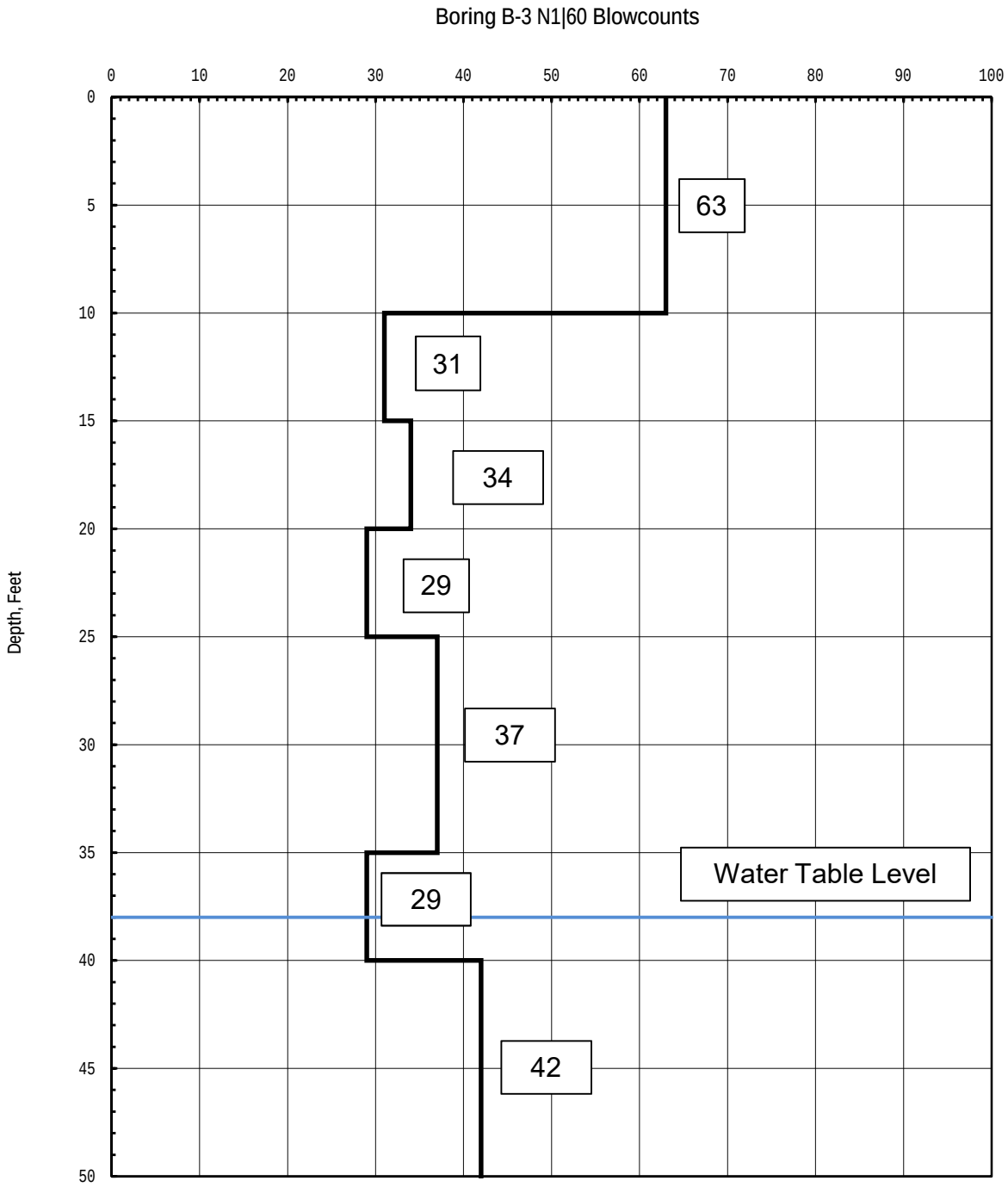
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LIQUEFACTION - VOLUMETRIC STRAIN

PIRAEUS POINT
ENCINITAS, CALIFORNIA

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TM / DG

LIQUEFACTION - N 1 | 60 BLOW COUNT

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

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Liquefaction Analysis Using SPT

References
1. *Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10*
2. *Seed, et al, Recent Advances in Soil Liquefaction Engineering: A Unified and Consistant Framework, 2003.*

Project Name: Piraeus Point
Project Number: G2307-32-05
Boring: B-3

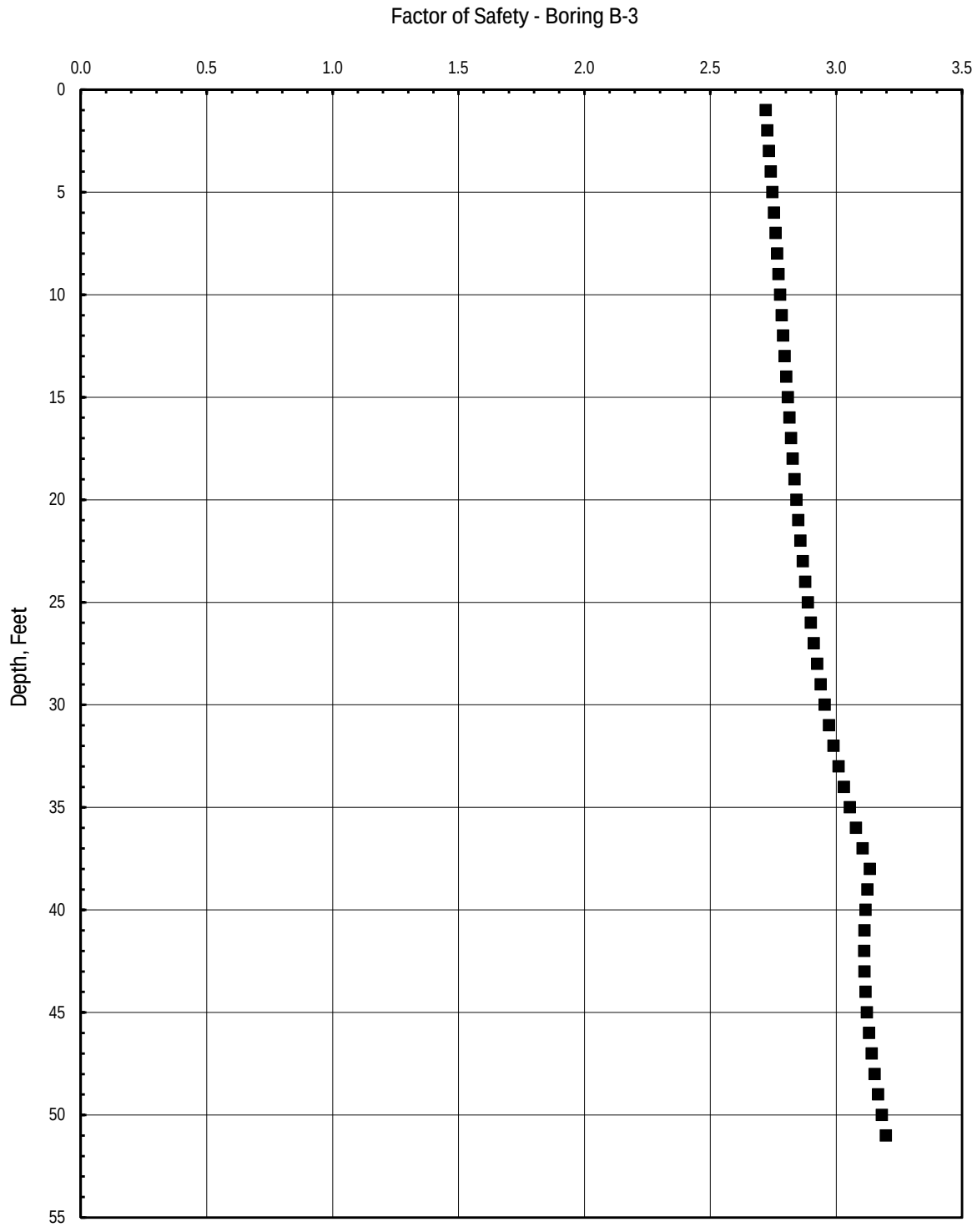
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Groundwater Depth, Ft 38.0
Reference Pressure, p_a 2000
Unit Weight of Water 62.4
Soil Unit Weight, pcf 125

Include Kσ (Y/N) N
Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
Minimum Factor of Safety for Liquefaction 1

Enter for Fine-Grained Materials | Old | New | MWF Idriss(1997) = $(M)^{2.56}/10^{2.24}$ | From Graph

Depth, ft	$N_1]_{60}$	Fines Content, FC (%)	Water Content, w_C (%)	Liquid Limit	Plastic Limit	Plasticity Index	$N_1]_{60}$, Adj. for Fines	$N_1]_{60}$, Adj. for Fines	σ, psf	σ', psf	r_d	K_σ	NCEER $CRR_{7.5}$	RAUCH $CRR_{7.5}$	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
1	63	35	11.1	30	15	15	80.6	69.0	125	125	1.00	1.00	0.800	0.800	0.294	N	Above GWT	2.721		
2	63	35	11.1	30	15	15	80.6	69.0	250	250	1.00	1.00	0.800	0.800	0.293	N	Above GWT	2.727		
3	63	35	11.1	30	15	15	80.6	69.0	375	375	0.99	1.00	0.800	0.800	0.293	N	Above GWT	2.734		
4	63	35	11.1	30	15	15	80.6	69.0	500	500	0.99	1.00	0.800	0.800	0.292	N	Above GWT	2.740		
5	63	35	11.1	30	15	15	80.6	69.0	625	625	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.747		
6	63	35	11.1	30	15	15	80.6	69.0	750	750	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.753		
7	63	35	11.1	30	15	15	80.6	69.0	875	875	0.99	1.00	0.800	0.800	0.290	N	Above GWT	2.759		
8	63	35	11.1	30	15	15	80.6	69.0	1000	1000	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.766		
9	63	35	11.1	30	15	15	80.6	69.0	1125	1125	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.772		
10	63	35	11.1	30	15	15	80.6	69.0	1250	1250	0.98	1.00	0.800	0.800	0.288	N	Above GWT	2.778		
11	31	35	10.9	30	15	15	42.2	37.0	1375	1375	0.98	1.00	0.800	0.800	0.287	N	Above GWT	2.784		
12	31	35	10.9	30	15	15	42.2	37.0	1500	1500	0.97	1.00	0.800	0.800	0.287	N	Above GWT	2.790		
13	31	35	10.9	30	15	15	42.2	37.0	1625	1625	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.796		
14	31	35	10.9	30	15	15	42.2	37.0	1750	1750	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.802		
15	31	35	10.9	30	15	15	42.2	37.0	1875	1875	0.97	1.00	0.800	0.800	0.285	N	Above GWT	2.808		
16	34	35	10.2	30	15	15	45.8	40.0	2000	2000	0.97	1.00	0.800	0.800	0.284	N	Above GWT	2.814		
17	34	35	10.2	30	15	15	45.8	40.0	2125	2125	0.96	1.00	0.800	0.800	0.284	N	Above GWT	2.821		
18	34	35	10.2	30	15	15	45.8	40.0	2250	2250	0.96	1.00	0.800	0.800	0.283	N	Above GWT	2.828		
19	34	35	10.2	30	15	15	45.8	40.0	2375	2375	0.96	1.00	0.800	0.800	0.282	N	Above GWT	2.835		
20	34	35	10.2	30	15	15	45.8	40.0	2500	2500	0.96	1.00	0.800	0.800	0.281	N	Above GWT	2.842		
21	29	35	10.2	30	15	15	39.8	35.0	2625	2625	0.95	1.00	0.800	0.800	0.281	N	Above GWT	2.850		
22	29	35	10.2	30	15	15	39.8	35.0	2750	2750	0.95	1.00	0.800	0.800	0.280	N	Above GWT	2.859		
23	29	35	10.2	30	15	15	39.8	35.0	2875	2875	0.95	1.00	0.800	0.800	0.279	N	Above GWT	2.868		
24	29	35	10.2	30	15	15	39.8	35.0	3000	3000	0.95	1.00	0.800	0.800	0.278	N	Above GWT	2.877		
25	29	35	10.2	30	15	15	39.8	35.0	3125	3125	0.94	1.00	0.800	0.800	0.277	N	Above GWT	2.888		
26	37	35	17.3	30	15	15	49.4	43.0	3250	3250	0.94	1.00	0.800	0.800	0.276	N	Above GWT	2.899		
27	37	35	17.3	30	15	15	49.4	43.0	3375	3375	0.93	1.00	0.800	0.800	0.275	N	Above GWT	2.911		
28	37	35	17.3	30	15	15	49.4	43.0	3500	3500	0.93	1.00	0.800	0.800	0.274	N	Above GWT	2.925		
29	37	35	17.3	30	15	15	49.4	43.0	3625	3625	0.93	1.00	0.800	0.800	0.272	N	Above GWT	2.939		
30	37	35	17.3	30	15	15	49.4	43.0	3750	3750	0.92	1.00	0.800	0.800	0.271	N	Above GWT	2.955		
31	37	35	17.3	30	15	15	49.4	43.0	3875	3875	0.92	1.00	0.800	0.800	0.269	N	Above GWT	2.972		
32	37	35	17.3	30	15	15	49.4	43.0	4000	4000	0.91	1.00	0.800	0.800	0.268	N	Above GWT	2.990		
33	37	35	17.3	30	15	15	49.4	43.0	4125	4125	0.90	1.00	0.800	0.800	0.266	N	Above GWT	3.010		
34	37	35	17.3	30	15	15	49.4	43.0	4250	4250	0.90	1.00	0.800	0.800	0.264	N	Above GWT	3.031		
35	37	35	17.3	30	15	15	49.4	43.0	4375	4375	0.89	1.00	0.800	0.800	0.262	N	Above GWT	3.054		
36	29	35	51.7	30	15	15	39.8	35.0	4500	4500	0.88	1.00	0.800	0.800	0.260	Y	Above GWT	3.079		
37	29	35	17.3	30	15	15	39.8	35.0	4625	4625	0.88	1.00	0.800	0.800	0.258	N	Above GWT	3.106		
38	29	35	17.3	30	15	15	39.8	35.0	4750	4750	0.87	1.00	0.800	0.800	0.255	N	NL	3.134		
39	29	35	17.3	30	15	15	39.8	35.0	4875	4813	0.86	1.00	0.800	0.800	0.256	N	NL	3.124		
40	29	35	17.3	30	15	15	39.8	35.0	5000	4875	0.85	1.00	0.800	0.800	0.257	N	NL	3.117		
41	42	35	20.1	30	15	15	55.4	48.0	5125	4938	0.84	1.00	0.800	0.800	0.257	N	NL	3.113		
42	42	35	20.1	30	15	15	55.4	48.0	5250	5000	0.83	1.00	0.800	0.800	0.257	N	NL	3.111		
43	42	35	20.1	30	15	15	55.4	48.0	5375	5063	0.82	1.00	0.800	0.800	0.257	N	NL	3.113		
44	42	35	20.1	30	15	15	55.4	48.0	5500	5126	0.81	1.00	0.800	0.800	0.257	N	NL	3.117		
45	42	35	20.1	30	15	15	55.4	48.0	5625	5188	0.80	1.00	0.800	0.800	0.256	N	NL	3.123		
46	42	35	15.7	30	15	15	55.4	48.0	5750	5251	0.79	1.00	0.800	0.800	0.256	N	NL	3.131		
47	42	35	15.7	30	15	15	55.4	48.0	5875	5313	0.78	1.00	0.800	0.800	0.255	N	NL	3.141		
48	42	35	15.7	30	15	15	55.4	48.0	6000	5376	0.77	1.00	0.800	0.800	0.254	N	NL	3.153		
49	42	35	15.7	30	15	15	55.4	48.0	6125	5439	0.76	1.00	0.800	0.800	0.253	N	NL	3.167		
50	42	35	15.7	30	15	15	55.4	48.0	6250	5501	0.75	1.00	0.800	0.800	0.251	N	NL	3.182		
51	42	35	15.7	30	15	15	55.4	48.0	6375	5564	0.74	1.00	0.800	0.800	0.250	N	NL	3.198		

Total Settlement, S_{LIQ} (in.) = 0
Total Liquifiable Layers = 0



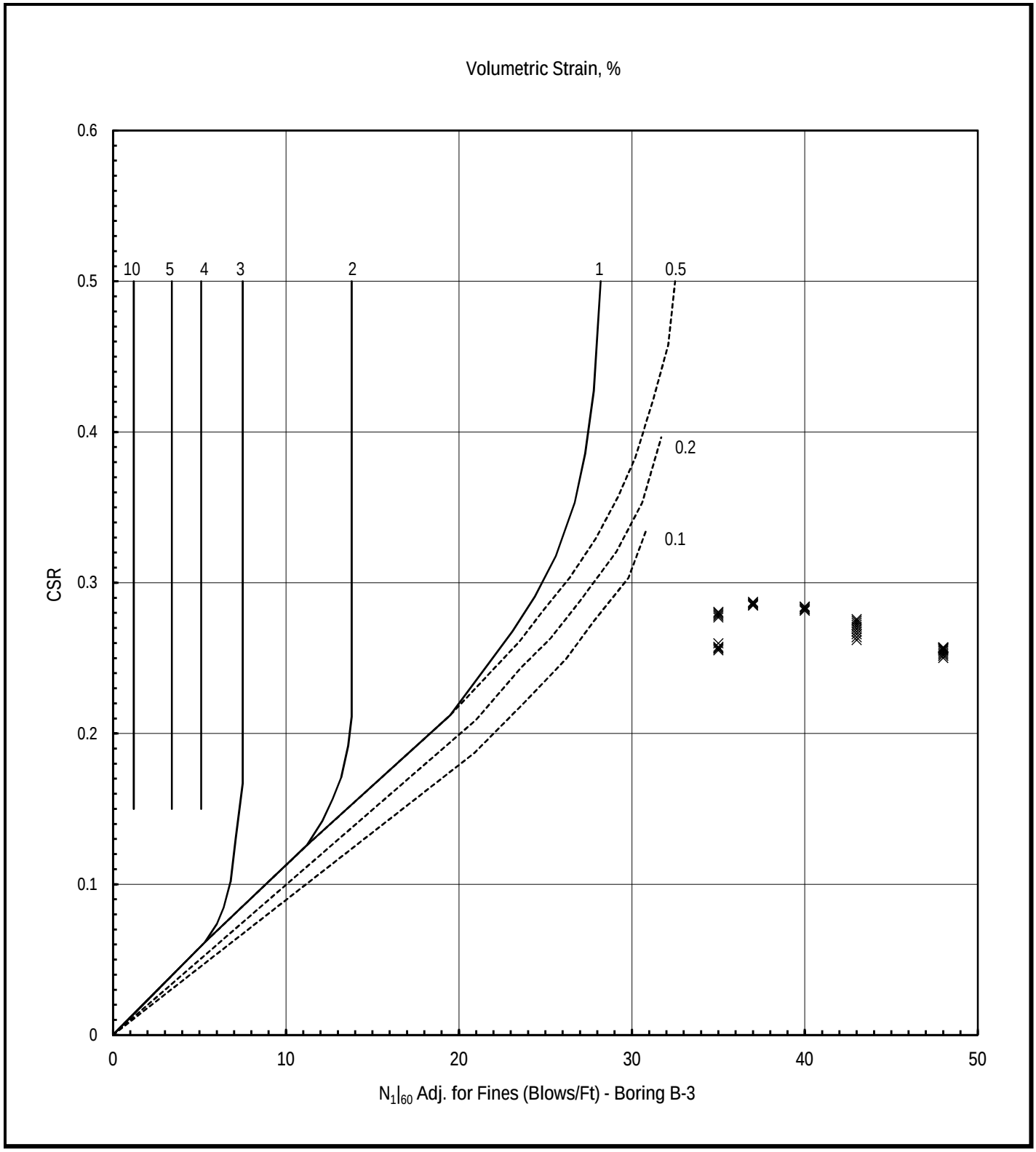
GEOCON
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6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858 558-6900 - FAX 858 558-6159

SW / SW

LIQUEFACTION - FACTOR OF SAFETY

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05



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SW / SW

LIQUEFACTION - VOLUMETRIC STRAIN

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

APPENDIX E

APPENDIX E

RECOMMENDED GRADING SPECIFICATIONS

FOR

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

RECOMMENDED GRADING SPECIFICATIONS

1. GENERAL

1.1 These Recommended Grading Specifications shall be used in conjunction with the Geotechnical Report for the project prepared by Geocon. The recommendations contained in the text of the Geotechnical Report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereinafter in the case of conflict.

1.2 Prior to the commencement of grading, a geotechnical consultant (Consultant) shall be employed for the purpose of observing earthwork procedures and testing the fills for substantial conformance with the recommendations of the Geotechnical Report and these specifications. The Consultant should provide adequate testing and observation services so that they may assess whether, in their opinion, the work was performed in substantial conformance with these specifications. It shall be the responsibility of the Contractor to assist the Consultant and keep them apprised of work schedules and changes so that personnel may be scheduled accordingly.

1.3 It shall be the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and the approved grading plans. If, in the opinion of the Consultant, unsatisfactory conditions such as questionable soil materials, poor moisture condition, inadequate compaction, and/or adverse weather result in a quality of work not in conformance with these specifications, the Consultant will be empowered to reject the work and recommend to the Owner that grading be stopped until the unacceptable conditions are corrected.

2. DEFINITIONS

2.1 **Owner** shall refer to the owner of the property or the entity on whose behalf the grading work is being performed and who has contracted with the Contractor to have grading performed.

2.2 **Contractor** shall refer to the Contractor performing the site grading work.

2.3 **Civil Engineer** or **Engineer of Work** shall refer to the California licensed Civil Engineer or consulting firm responsible for preparation of the grading plans, surveying and verifying as-graded topography.

2.4 **Consultant** shall refer to the soil engineering and engineering geology consulting firm retained to provide geotechnical services for the project.

2.5 **Soil Engineer** shall refer to a California licensed Civil Engineer retained by the Owner, who is experienced in the practice of geotechnical engineering. The Soil Engineer shall be responsible for having qualified representatives on-site to observe and test the Contractor's work for conformance with these specifications.

2.6 **Engineering Geologist** shall refer to a California licensed Engineering Geologist retained by the Owner to provide geologic observations and recommendations during the site grading.

2.7 **Geotechnical Report** shall refer to a soil report (including all addenda) which may include a geologic reconnaissance or geologic investigation that was prepared specifically for the development of the project for which these Recommended Grading Specifications are intended to apply.

3. MATERIALS

3.1 Materials for compacted fill shall consist of any soil excavated from the cut areas or imported to the site that, in the opinion of the Consultant, is suitable for use in construction of fills. In general, fill materials can be classified as *soil* fills, *soil-rock* fills or *rock* fills, as defined below.

3.1.1 **Soil fills** are defined as fills containing no rocks or hard lumps greater than 12 inches in maximum dimension and containing at least 40 percent by weight of material smaller than ¾ inch in size.

3.1.2 **Soil-rock fills** are defined as fills containing no rocks or hard lumps larger than 4 feet in maximum dimension and containing a sufficient matrix of soil fill to allow for proper compaction of soil fill around the rock fragments or hard lumps as specified in Paragraph 6.2. **Oversize rock** is defined as material greater than 12 inches.

3.1.3 **Rock fills** are defined as fills containing no rocks or hard lumps larger than 3 feet in maximum dimension and containing little or no fines. Fines are defined as material smaller than ¾ inch in maximum dimension. The quantity of fines shall be less than approximately 20 percent of the rock fill quantity.

3.2 Material of a perishable, spongy, or otherwise unsuitable nature as determined by the Consultant shall not be used in fills.

3.3 Materials used for fill, either imported or on-site, shall not contain hazardous materials as defined by the California Code of Regulations, Title 22, Division 4, Chapter 30, Articles 9

and 10; 40CFR; and any other applicable local, state or federal laws. The Consultant shall not be responsible for the identification or analysis of the potential presence of hazardous materials. However, if observations, odors or soil discoloration cause Consultant to suspect the presence of hazardous materials, the Consultant may request from the Owner the termination of grading operations within the affected area. Prior to resuming grading operations, the Owner shall provide a written report to the Consultant indicating that the suspected materials are not hazardous as defined by applicable laws and regulations.

3.4 The outer 15 feet of *soil-rock* fill slopes, measured horizontally, should be composed of properly compacted *soil* fill materials approved by the Consultant. *Rock* fill may extend to the slope face, provided that the slope is not steeper than 2:1 (horizontal:vertical) and a soil layer no thicker than 12 inches is track-walked onto the face for landscaping purposes. This procedure may be utilized provided it is acceptable to the governing agency, Owner and Consultant.

3.5 Samples of soil materials to be used for fill should be tested in the laboratory by the Consultant to determine the maximum density, optimum moisture content, and, where appropriate, shear strength, expansion, and gradation characteristics of the soil.

3.6 During grading, soil or groundwater conditions other than those identified in the Geotechnical Report may be encountered by the Contractor. The Consultant shall be notified immediately to evaluate the significance of the unanticipated condition.

4. CLEARING AND PREPARING AREAS TO BE FILLED

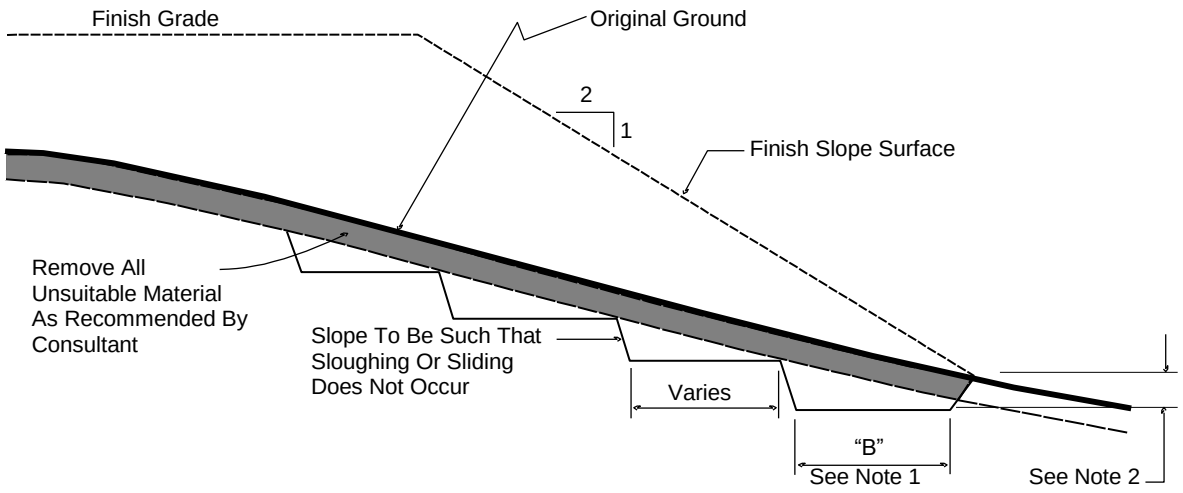
4.1 Areas to be excavated and filled shall be cleared and grubbed. Clearing shall consist of complete removal above the ground surface of trees, stumps, brush, vegetation, man-made structures, and similar debris. Grubbing shall consist of removal of stumps, roots, buried logs and other unsuitable material and shall be performed in areas to be graded. Roots and other projections exceeding 1½ inches in diameter shall be removed to a depth of 3 feet below the surface of the ground. Borrow areas shall be grubbed to the extent necessary to provide suitable fill materials.

4.2 Asphalt pavement material removed during clearing operations should be properly disposed at an approved off-site facility or in an acceptable area of the project evaluated by Geocon and the property owner. Concrete fragments that are free of reinforcing steel may be placed in fills, provided they are placed in accordance with Section 6.2 or 6.3 of this document.

4.3 After clearing and grubbing of organic matter and other unsuitable material, loose or porous soils shall be removed to the depth recommended in the Geotechnical Report. The depth of removal and compaction should be observed and approved by a representative of the Consultant. The exposed surface shall then be plowed or scarified to a minimum depth of 6 inches and until the surface is free from uneven features that would tend to prevent uniform compaction by the equipment to be used.

4.4 Where the slope ratio of the original ground is steeper than 5:1 (horizontal:vertical), or where recommended by the Consultant, the original ground should be benched in accordance with the following illustration.

TYPICAL BENCHING DETAIL



No Scale

DETAIL NOTES:

(1) Key width "B" should be a minimum of 10 feet, or sufficiently wide to permit complete coverage with the compaction equipment used. The base of the key should be graded horizontal, or inclined slightly into the natural slope.

(2) The outside of the key should be below the topsoil or unsuitable surficial material and at least 2 feet into dense formational material. Where hard rock is exposed in the bottom of the key, the depth and configuration of the key may be modified as approved by the Consultant.

4.5 After areas to receive fill have been cleared and scarified, the surface should be moisture conditioned to achieve the proper moisture content, and compacted as recommended in Section 6 of these specifications.

5. COMPACTION EQUIPMENT

5.1 Compaction of *soil* or *soil-rock* fill shall be accomplished by sheepsfoot or segmented-steel wheeled rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers, or other types of acceptable compaction equipment. Equipment shall be of such a design that it will be capable of compacting the *soil* or *soil-rock* fill to the specified relative compaction at the specified moisture content.

5.2 Compaction of *rock* fills shall be performed in accordance with Section 6.3.

6. PLACING, SPREADING AND COMPACTION OF FILL MATERIAL

6.1 *Soil* fill, as defined in Paragraph 3.1.1, shall be placed by the Contractor in accordance with the following recommendations:

6.1.1 *Soil* fill shall be placed by the Contractor in layers that, when compacted, should generally not exceed 8 inches. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to obtain uniformity of material and moisture in each layer. The entire fill shall be constructed as a unit in nearly level lifts. Rock materials greater than 12 inches in maximum dimension shall be placed in accordance with Section 6.2 or 6.3 of these specifications.

6.1.2 In general, the *soil* fill shall be compacted at a moisture content at or above the optimum moisture content as determined by ASTM D 1557.

6.1.3 When the moisture content of *soil* fill is below that specified by the Consultant, water shall be added by the Contractor until the moisture content is in the range specified.

6.1.4 When the moisture content of the *soil* fill is above the range specified by the Consultant or too wet to achieve proper compaction, the *soil* fill shall be aerated by the Contractor by blading/mixing, or other satisfactory methods until the moisture content is within the range specified.

6.1.5 After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted by the Contractor to a relative compaction of at least 90 percent. Relative compaction is defined as the ratio (expressed in percent) of the in-place dry density of the compacted fill to the maximum laboratory dry density as determined in accordance with ASTM D 1557. Compaction shall be continuous over the entire area, and compaction equipment shall make sufficient passes so that the specified minimum relative compaction has been achieved throughout the entire fill.

6.1.6 Where practical, soils having an Expansion Index greater than 50 should be placed at least 3 feet below finish pad grade and should be compacted at a moisture content generally 2 to 4 percent greater than the optimum moisture content for the material.

6.1.7 Properly compacted *soil* fill shall extend to the design surface of fill slopes. To achieve proper compaction, it is recommended that fill slopes be over-built by at least 3 feet and then cut to the design grade. This procedure is considered preferable to track-walking of slopes, as described in the following paragraph.

6.1.8 As an alternative to over-building of slopes, slope faces may be back-rolled with a heavy-duty loaded sheepsfoot or vibratory roller at maximum 4-foot fill height intervals. Upon completion, slopes should then be track-walked with a D-8 dozer or similar equipment, such that a dozer track covers all slope surfaces at least twice.

6.2 *Soil-rock* fill, as defined in Paragraph 3.1.2, shall be placed by the Contractor in accordance with the following recommendations:

6.2.1 Rocks larger than 12 inches but less than 4 feet in maximum dimension may be incorporated into the compacted *soil* fill, but shall be limited to the area measured 15 feet minimum horizontally from the slope face and 5 feet below finish grade or 3 feet below the deepest utility, whichever is deeper.

6.2.2 Rocks or rock fragments up to 4 feet in maximum dimension may either be individually placed or placed in windrows. Under certain conditions, rocks or rock fragments up to 10 feet in maximum dimension may be placed using similar methods. The acceptability of placing rock materials greater than 4 feet in maximum dimension shall be evaluated during grading as specific cases arise and shall be approved by the Consultant prior to placement.

6.2.3 For individual placement, sufficient space shall be provided between rocks to allow for passage of compaction equipment.

6.2.4 For windrow placement, the rocks should be placed in trenches excavated in properly compacted *soil* fill. Trenches should be approximately 5 feet wide and 4 feet deep in maximum dimension. The voids around and beneath rocks should be filled with approved granular soil having a Sand Equivalent of 30 or greater and should be compacted by flooding. Windrows may also be placed utilizing an "open-face" method in lieu of the trench procedure, however, this method should first be approved by the Consultant.

6.2.5 Windrows should generally be parallel to each other and may be placed either parallel to or perpendicular to the face of the slope depending on the site geometry. The minimum horizontal spacing for windrows shall be 12 feet center-to-center with a 5-foot stagger or offset from lower courses to next overlying course. The minimum vertical spacing between windrow courses shall be 2 feet from the top of a lower windrow to the bottom of the next higher windrow.

6.2.6 Rock placement, fill placement and flooding of approved granular soil in the windrows should be continuously observed by the Consultant.

6.3 *Rock* fills, as defined in Section 3.1.3, shall be placed by the Contractor in accordance with the following recommendations:

6.3.1 The base of the *rock* fill shall be placed on a sloping surface (minimum slope of 2 percent). The surface shall slope toward suitable subdrainage outlet facilities. The *rock* fills shall be provided with subdrains during construction so that a hydrostatic pressure buildup does not develop. The subdrains shall be permanently connected to controlled drainage facilities to control post-construction infiltration of water.

6.3.2 *Rock* fills shall be placed in lifts not exceeding 3 feet. Placement shall be by rock trucks traversing previously placed lifts and dumping at the edge of the currently placed lift. Spreading of the *rock* fill shall be by dozer to facilitate *seating* of the rock. The *rock* fill shall be watered heavily during placement. Watering shall consist of water trucks traversing in front of the current rock lift face and spraying water continuously during rock placement. Compaction equipment with compactive energy comparable to or greater than that of a 20-ton steel vibratory roller or other compaction equipment providing suitable energy to achieve the required compaction or deflection as recommended in Paragraph 6.3.3 shall be utilized. The number of passes to be made should be determined as described in Paragraph 6.3.3. Once a *rock* fill lift has been covered with *soil* fill, no additional *rock* fill lifts will be permitted over the *soil* fill.

6.3.3 Plate bearing tests, in accordance with ASTM D 1196, may be performed in both the compacted *soil* fill and in the *rock* fill to aid in determining the required minimum number of passes of the compaction equipment. If performed, a minimum of three plate bearing tests should be performed in the properly compacted *soil* fill (minimum relative compaction of 90 percent). Plate bearing tests shall then be performed on areas of *rock* fill having two passes, four passes and six passes of the compaction equipment, respectively. The number of passes required for the *rock* fill shall be determined by comparing the results of the plate bearing tests for the *soil* fill and the *rock* fill and by evaluating the deflection

variation with number of passes. The required number of passes of the compaction equipment will be performed as necessary until the plate bearing deflections are equal to or less than that determined for the properly compacted *soil* fill. In no case will the required number of passes be less than two.

6.3.4 A representative of the Consultant should be present during *rock* fill operations to observe that the minimum number of "passes" have been obtained, that water is being properly applied and that specified procedures are being followed. The actual number of plate bearing tests will be determined by the Consultant during grading.

6.3.5 Test pits shall be excavated by the Contractor so that the Consultant can state that, in their opinion, sufficient water is present and that voids between large rocks are properly filled with smaller rock material. In-place density testing will not be required in the *rock* fills.

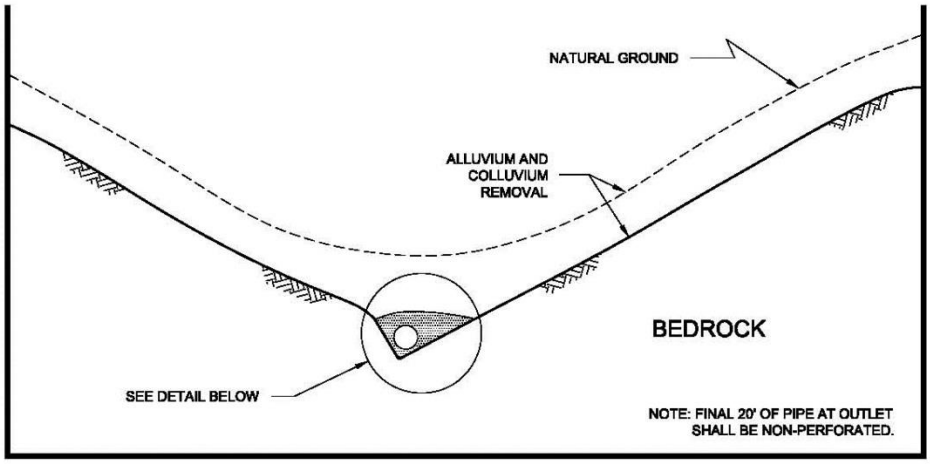
6.3.6 To reduce the potential for "piping" of fines into the *rock* fill from overlying *soil* fill material, a 2-foot layer of graded filter material shall be placed above the uppermost lift of *rock* fill. The need to place graded filter material below the *rock* should be determined by the Consultant prior to commencing grading. The gradation of the graded filter material will be determined at the time the *rock* fill is being excavated. Materials typical of the *rock* fill should be submitted to the Consultant in a timely manner, to allow design of the graded filter prior to the commencement of *rock* fill placement.

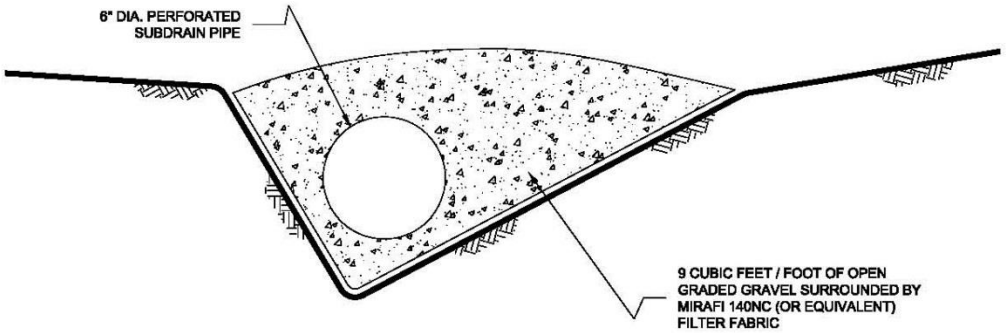
6.3.7 *Rock* fill placement should be continuously observed during placement by the Consultant.

7. SUBDRAINS

7.1 The geologic units on the site may have permeability characteristics and/or fracture systems that could be susceptible under certain conditions to seepage. The use of canyon subdrains may be necessary to mitigate the potential for adverse impacts associated with seepage conditions. Canyon subdrains with lengths in excess of 500 feet or extensions of existing offsite subdrains should use 8-inch-diameter pipes. Canyon subdrains less than 500 feet in length should use 6-inch-diameter pipes.

TYPICAL CANYON DRAIN DETAIL





NOTES:

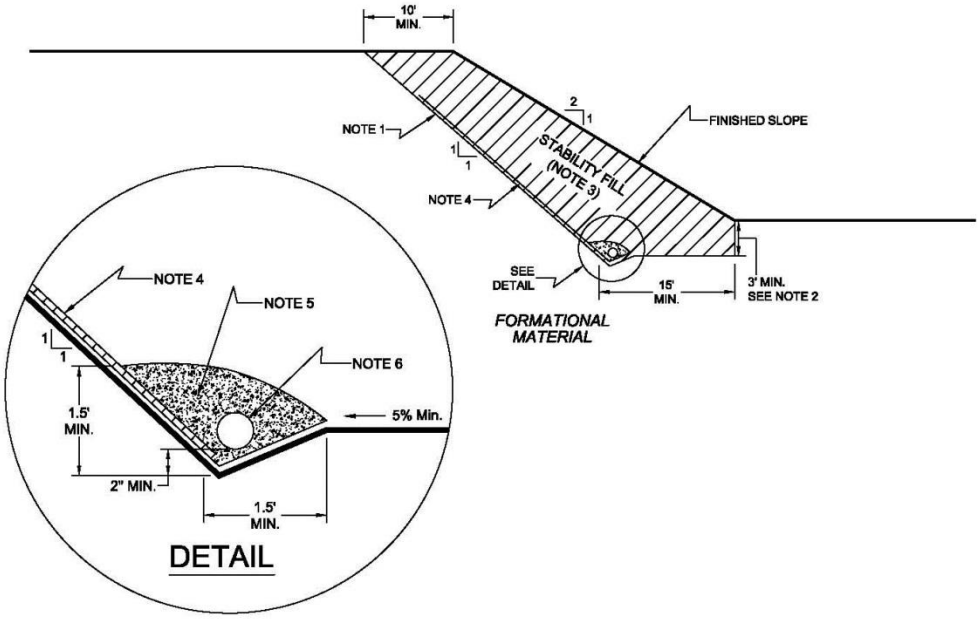
1.....6-INCH DIAMETER, SCHEDULE 80 PVC PERFORATED PIPE FOR FILLS
IN EXCESS OF 100-FEET IN DEPTH OR A PIPE LENGTH OF LONGER THAN 500 FEET.

2.....6-INCH DIAMETER, SCHEDULE 40 PVC PERFORATED PIPE FOR FILLS
LESS THAN 100-FEET IN DEPTH OR A PIPE LENGTH SHORTER THAN 500 FEET.

NO SCALE

7.2 Slope drains within stability fill keyways should use 4-inch-diameter (or lager) pipes.

TYPICAL STABILITY FILL DETAIL



NOTES:

1.....EXCAVATE BACKCUT AT 1:1 INCLINATION (UNLESS OTHERWISE NOTED).

2.....BASE OF STABILITY FILL TO BE 3 FEET INTO FORMATIONAL MATERIAL, SLOPING A MINIMUM 5% INTO SLOPE.

3.....STABILITY FILL TO BE COMPOSED OF PROPERLY COMPACTED GRANULAR SOIL.

4.....CHIMNEY DRAINS TO BE APPROVED PREFABRICATED CHIMNEY DRAIN PANELS (MIRADRAIN G200N OR EQUIVALENT) SPACED APPROXIMATELY 20 FEET CENTER TO CENTER AND 4 FEET WIDE. CLOSER SPACING MAY BE REQUIRED IF SEEPAGE IS ENCOUNTERED.

5.....FILTER MATERIAL TO BE 3/4-INCH, OPEN-GRADED CRUSHED ROCK ENCLOSED IN APPROVED FILTER FABRIC (MIRAFI 140NC).

6.....COLLECTOR PIPE TO BE 4-INCH MINIMUM DIAMETER, PERFORATED, THICK-WALLED PVC SCHEDULE 40 OR EQUIVALENT, AND SLOPED TO DRAIN AT 1 PERCENT MINIMUM TO APPROVED OUTLET.

NO SCALE

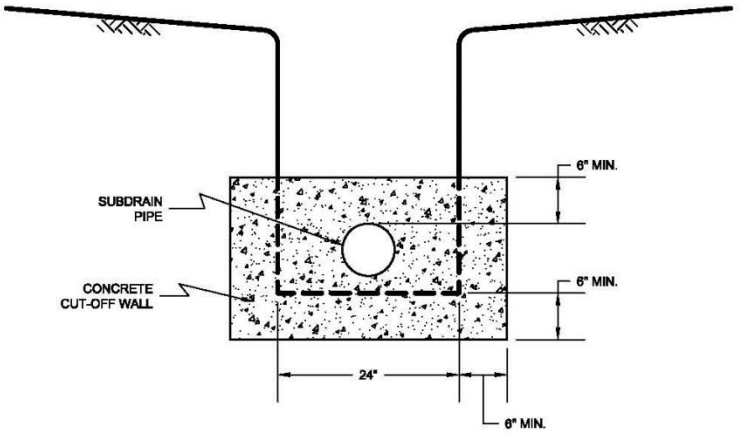
7.3 The actual subdrain locations will be evaluated in the field during the remedial grading operations. Additional drains may be necessary depending on the conditions observed and the requirements of the local regulatory agencies. Appropriate subdrain outlets should be evaluated prior to finalizing 40-scale grading plans.

7.4 *Rock* fill or *soil-rock* fill areas may require subdrains along their down-slope perimeters to mitigate the potential for buildup of water from construction or landscape irrigation. The subdrains should be at least 6-inch-diameter pipes encapsulated in gravel and filter fabric. *Rock* fill drains should be constructed using the same requirements as canyon subdrains.

7.5 Prior to outletting, the final 20-foot segment of a subdrain that will not be extended during future development should consist of non-perforated drainpipe. At the non-perforated/ perforated interface, a seepage cutoff wall should be constructed on the downslope side of the pipe.

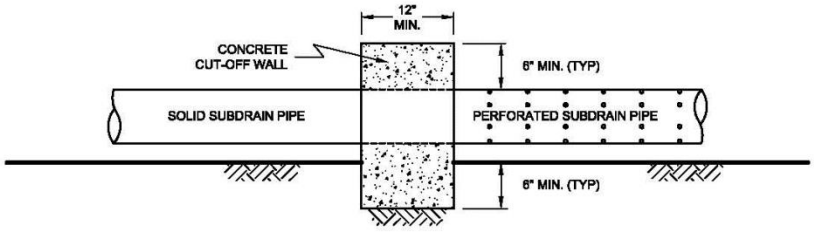
TYPICAL CUT OFF WALL DETAIL

FRONT VIEW



NO SCALE

SIDE VIEW

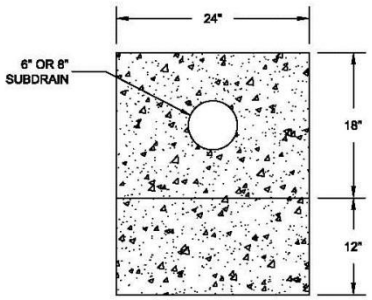


NO SCALE

7.6 Subdrains that discharge into a natural drainage course or open space area should be provided with a permanent headwall structure.

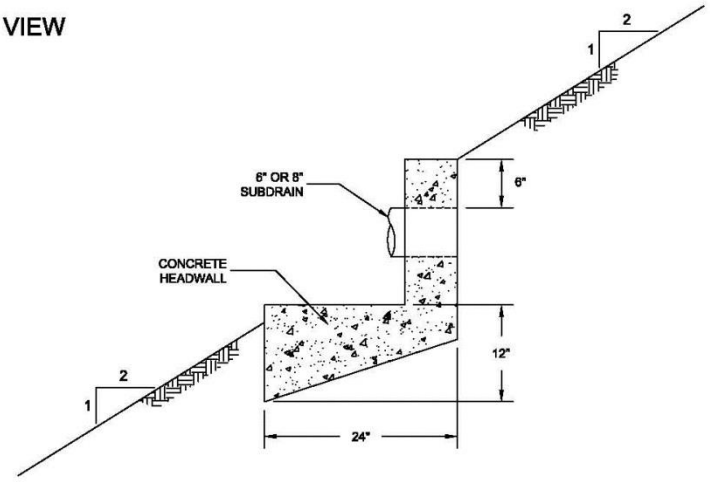
TYPICAL HEADWALL DETAIL

FRONT VIEW



NO SCALE

SIDE VIEW



NOTE: HEADWALL SHOULD OUTLET AT TOE OF FILL SLOPE OR INTO CONTROLLED SURFACE DRAINAGE

NO SCALE

7.7 The final grading plans should show the location of the proposed subdrains. After completion of remedial excavations and subdrain installation, the project civil engineer should survey the drain locations and prepare an "as-built" map showing the drain locations. The final outlet and connection locations should be determined during grading operations. Subdrains that will be extended on adjacent projects after grading can be placed on formational material and a vertical riser should be placed at the end of the subdrain. The grading contractor should consider videoing the subdrains shortly after burial to check proper installation and functionality. The contractor is responsible for the performance of the drains.

8. OBSERVATION AND TESTING

8.1 The Consultant shall be the Owner's representative to observe and perform tests during clearing, grubbing, filling, and compaction operations. In general, no more than 2 feet in vertical elevation of *soil* or *soil-rock* fill should be placed without at least one field density test being performed within that interval. In addition, a minimum of one field density test should be performed for every 2,000 cubic yards of *soil* or *soil-rock* fill placed and compacted.

8.2 The Consultant should perform a sufficient distribution of field density tests of the compacted *soil* or *soil-rock* fill to provide a basis for expressing an opinion whether the fill material is compacted as specified. Density tests shall be performed in the compacted materials below any disturbed surface. When these tests indicate that the density of any layer of fill or portion thereof is below that specified, the particular layer or areas represented by the test shall be reworked until the specified density has been achieved.

8.3 During placement of *rock* fill, the Consultant should observe that the minimum number of passes have been obtained per the criteria discussed in Section 6.3.3. The Consultant should request the excavation of observation pits and may perform plate bearing tests on the placed *rock* fills. The observation pits will be excavated to provide a basis for expressing an opinion as to whether the *rock* fill is properly seated and sufficient moisture has been applied to the material. When observations indicate that a layer of *rock* fill or any portion thereof is below that specified, the affected layer or area shall be reworked until the *rock* fill has been adequately seated and sufficient moisture applied.

8.4 A settlement monitoring program designed by the Consultant may be conducted in areas of *rock* fill placement. The specific design of the monitoring program shall be as recommended in the Conclusions and Recommendations section of the project Geotechnical Report or in the final report of testing and observation services performed during grading.

8.5 We should observe the placement of subdrains, to check that the drainage devices have been placed and constructed in substantial conformance with project specifications.

8.6 Testing procedures shall conform to the following Standards as appropriate:

8.6.1 Soil and Soil-Rock Fills:

8.6.1.1 Field Density Test, ASTM D 1556, *Density of Soil In-Place By the Sand-Cone Method.*

8.6.1.2 Field Density Test, Nuclear Method, ASTM D 6938, *Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth).*

8.6.1.3 Laboratory Compaction Test, ASTM D 1557, *Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-Pound Hammer and 18-Inch Drop*.

8.6.1.4. Expansion Index Test, ASTM D 4829, *Expansion Index Test*.

9. PROTECTION OF WORK

9.1 During construction, the Contractor shall properly grade all excavated surfaces to provide positive drainage and prevent ponding of water. Drainage of surface water shall be controlled to avoid damage to adjoining properties or to finished work on the site. The Contractor shall take remedial measures to prevent erosion of freshly graded areas until such time as permanent drainage and erosion control features have been installed. Areas subjected to erosion or sedimentation shall be properly prepared in accordance with the Specifications prior to placing additional fill or structures.

9.2 After completion of grading as observed and tested by the Consultant, no further excavation or filling shall be conducted except in conjunction with the services of the Consultant.

10. CERTIFICATIONS AND FINAL REPORTS

10.1 Upon completion of the work, Contractor shall furnish Owner a certification by the Civil Engineer stating that the lots and/or building pads are graded to within 0.1 foot vertically of elevations shown on the grading plan and that all tops and toes of slopes are within 0.5 foot horizontally of the positions shown on the grading plans. After installation of a section of subdrain, the project Civil Engineer should survey its location and prepare an *as-built* plan of the subdrain location. The project Civil Engineer should verify the proper outlet for the subdrains and the Contractor should ensure that the drain system is free of obstructions.

10.2 The Owner is responsible for furnishing a final as-graded soil and geologic report satisfactory to the appropriate governing or accepting agencies. The as-graded report should be prepared and signed by a California licensed Civil Engineer experienced in geotechnical engineering and by a California Certified Engineering Geologist, indicating that the geotechnical aspects of the grading were performed in substantial conformance with the Specifications or approved changes to the Specifications.

LIST OF REFERENCES

1. *2019 California Building Code, California Code of Regulations, Title 24, Part 2, based on the 2018 International Building Code*, prepared by California Building Standards Commission, dated July 2016.

2. *ACI 318-14, Building Code Requirements for Structural Concrete* and *Commentary on Building Code Requirements for Structural Concrete*, prepared by the American Concrete Institute, dated September, 2014.

3. *ACI 330-08, Guide for the Design and Construction of Concrete Parking Lots*, prepared by the American Concrete Institute, dated June, 2008.

4. *ASCE 7-16, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, dated 2017.*

5. California Department of Conservation, Division of Mines and Geology, Probabilistic Seismic Hazard Assessment for the State of California, Open File Report 96-08, 1996.

6. County of San Diego, *San Diego County Multi Jurisdiction Hazard Mitigation Plan, San Diego, California, dated October 2017.*

7. Risk Engineering, *EZ-FRISK*, 2016.

8. Structural Engineers Association of California (SEAOC) and Office of Statewide Health Planning and Development (OSHPD), *Seismic Design Maps*, https://seismicmaps.org/, accessed January 11, 2019.

9. United States Geological Survey, *2002 Interactive Deaggregations*, http://eqint.cr.usgs.gov/deaggint/2002/index.php.

10. United States Department of Agriculture, *1953 Stereoscopic Aerial Photographs, Flight AXN-8M,* Photos Nos. 74 and 75 (scale 1:20,000).

APPENDIX G-2.
CONSULTATION: LIMITS OF AREAS OF PREVIOUS GRADING DISTURBANCE

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Project No. G2307-11-03
October 22, 2019

Legacy Partners
5141 California Avenue, Suite 100
Irvine, California 92617

Attention: Mr. David Pinto

Subject: CONSULTATION: LIMITS OF AREAS OF PREVIOUS GRADING DISTURBANCE
ENCINITAS APARTMENTS
ENCINITAS, CALIFORNIA

Reference: *Preliminary Geotechnical Investigation, Encinitas Apartments, Encinitas, California,* prepared by Geocon Incorporated, dated June 3, 2019 (Project No. G2307-11-02).

Dear Mr. Pinto:

In accordance with your request and our acknowledgement dated August 19, 2019, we prepared this letter to provide our updated Geologic Map, Figure 1, which presents the approximate limits of areas of previous grading and disturbance on the property. Based on our review of the existing geotechnical documents and site visits, the property has not been developed but has been previously graded and disturbed within five areas (shown on the updated Geologic Map and Site Plan, Figures 1 and 2, respectively):

- Area 1 – Landslide failure.
- Area 2 – Cut area during landslide remediation.
- Area 3 – Fill area/grading operations during landslide remediation.
- Area 4 – Previous grading operations to the west along existing Piraeus Street.
- Area 5 – Surficial disturbance associated with creating a bike trails and ramps.

Area 1 consists of a landslide failure that occurred around 2001. The landslide occurred along the cut slope north of Plato Place that temporarily closed Piraeus Street. The west facing landslide slope currently consists of an upper scarp area that has down dropped roughly 5 to 10 feet along the backscarp creating hummocky surface topography within the upper portion of the landslide.

The city removed portions of the failed material above the landslide and within this landslide area to help reduce the loading conditions to the landslide. Areas 2 and 3 show the approximate cut area above the landslide and southern fill areas, respectively, during the landslide remediation operations. The cut area (Area 2) is located above the existing landslide and was the source for the fill placed in

Area 3 within the southern portion of the property. The landslide remediation also included track-walking the face of the slope in the landslide area.

Area 4 consists of grading that was performed to install the existing Piraeus Street and Interstate 5. The northern portion of the slope included the installation of a concrete brow ditch. The cut slopes are about 10 to 15 feet high on the subject property.

Based on an aerial survey and site visit, it appears surficial disturbance has occurred that includes a make-shift off-road bike course and associated trails (Area 5). The area is in the central portion of the site and was likely disturbed around 2017 based on review of readily available aerial photography.

Should you have any questions regarding this correspondence, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON INCORPORATED



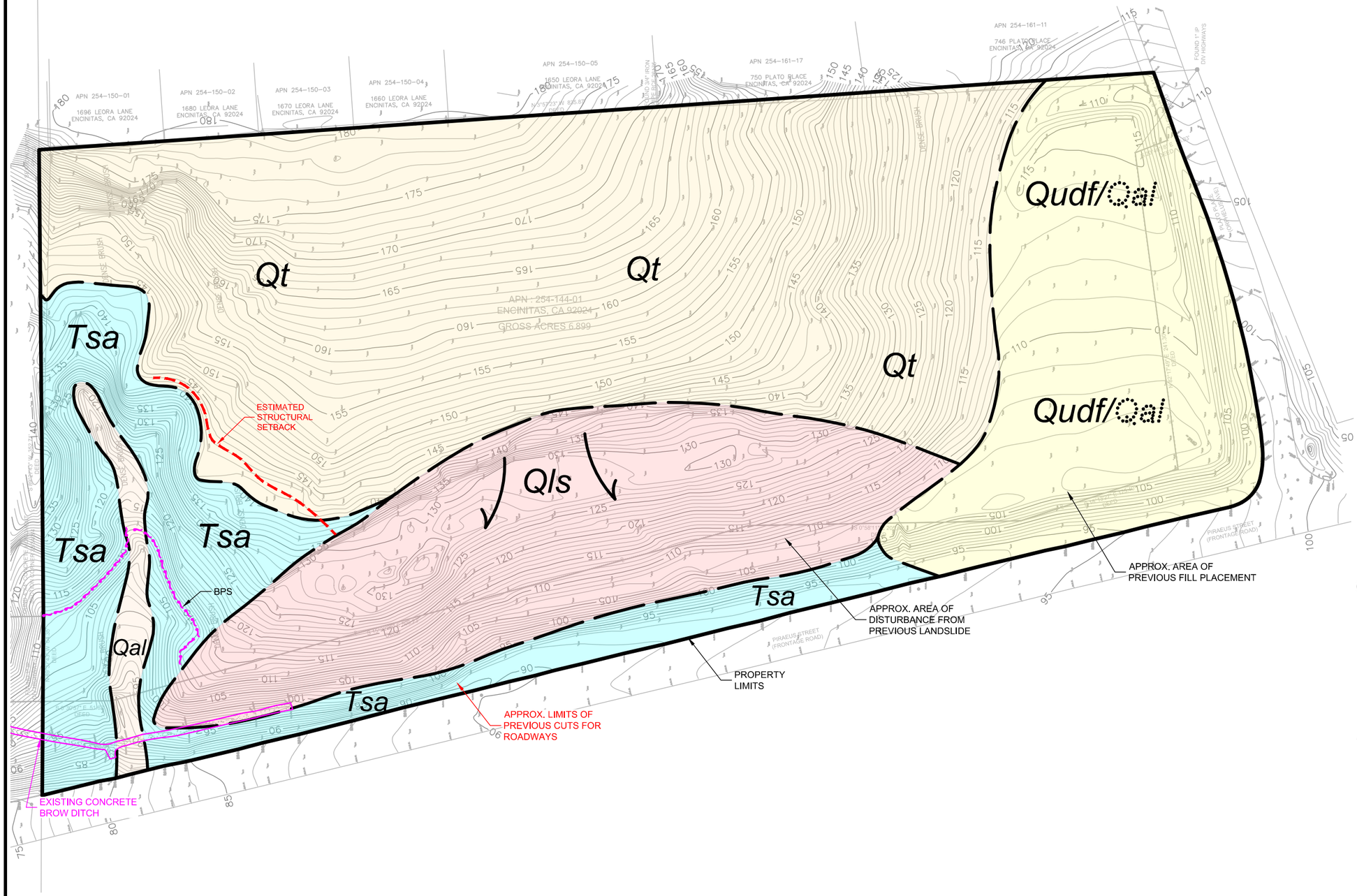


Shawn Foy Weedon
GE 2714

SFW:kcd

(e-mail) Addressee

ENCINITAS APARTMENTS
ENCINITAS, CALIFORNIA



0' 40' 80' 120' 160'

SCALE 1"=80'(on 11x17)

GEOCON LEGEND

- Qudf ..... UNDOCUMENTED FILL
- Qal ..... ALLUVIUM (Dotted Where Buried)
- Qls ..... LANDSLIDE DEBRIS
- Qt ..... TERRACE DEPOSITS
- Tsa ..... SANTIAGO FORMATION
- ~ ..... APPROX. LOCATION OF GEOLOGIC CONTACT
- ~~~ ..... APPROX. LOCATION OF BEDDING PLANE SHEAR (BPS) ZONE

GEOCON INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

PROJECT NO. G2307 - 11 - 03
FIGURE 1
DATE 10 - 22 - 2019

GEOLOGIC MAP

Plotted:10/22/2019 8:09AM | By:ALVIN LADRILLONO | File Location:Y:\1_GEOTECH\G2000\G2307-11-03\2019-10-22\G2307-11-03 Geo Map.dwg

ENCINITAS APARTMENTS
ENCINITAS, CALIFORNIA



0' 40' 80' 120' 160'

SCALE 1"=80'(on 11x17)

GEOCON LEGEND

.....APPROX. DISTURBANCE LIMITS

GEOCON
INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

PROJECT NO. G2307 - 11 - 03
FIGURE 2
DATE 10 - 22 - 2019

GEOLOGIC MAP

Plotted:10/22/2019 7:58AM | By:ALVIN LADRILLONO | File Location:Y:\1_GEOTECH\G2000\G2307-11-03\2019-10-22\G2307-11-03 Site Plan.dwg

APPENDIX G-3.
PALEONTOLOGICAL RECORDS SEARCH

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22 February 2022

Michael M. DeGiovine
ECORP Consulting, Inc.
3838 Camino Del Rio North, Suite 370
San Diego, CA 92108

RE: Paleontological Records Search – Piraeus and Plato Residential Development (ECORP Project 2022-023.01)

Dear Mr. DeGiovine:

This letter presents the results of a paleontological records search conducted for the Piraeus and Plato Residential Development project (Project), located in the City of Encinitas, San Diego County, California. The Project site is located along the east side of Interstate (I-) 5 and straddles Sky Loft Road. The site is bordered to the west by Piraeus Street, to the south by Plato Place, to the east by undeveloped land and residential development, and to the north by La Costa Avenue (Figure 1).

Methods

A review of published geological maps covering the Project site and surrounding area was conducted to determine the specific geologic units underlying the Project site. Each geologic unit was subsequently assigned a paleontological resource sensitivity (Deméré and Walsh, 1993). In addition, a search of the paleontological collection records housed at the San Diego Natural History Museum (SDNHM) was conducted in order to determine if any documented fossil collection localities occur at the Project site or within the immediate surrounding area.

Results

Published geological reports (e.g., Kennedy and Tan, 2007) covering the Project area indicate that the proposed Project has the potential to impact Quaternary very old paralic deposits (broadly equivalent to the Lindavista Formation) and the Santiago Formation. These geologic units and their paleontological sensitivity are summarized below.

The SDNHM has 17 recorded fossil localities that lie within one mile of the Project site, none of which occur within the boundaries of the Project site. Nine of these localities are from the Santiago Formation, and are described in greater detail below. A map (Figure 1) and list (Appendix A) of the fossil localities are attached at the end of this report.

Quaternary very old paralic deposits (Lindavista Formation) – Marine and/or non-marine terrace deposits of the early to middle Pleistocene-age (approximately 1.5 to 0.5 million years old) Lindavista Formation partially underlie the southeastern portion of the Project site, and are broadly equivalent to Quaternary very old paralic deposits mapped by Kennedy and Tan (2007). The SDNHM does not have any recorded fossil collection localities from the Lindavista Formation within a one-mile radius of the Project site. Elsewhere in San Diego County, the Lindavista Formation has produced remains of nearshore marine invertebrates (e.g., clams, scallops, snails, barnacles, and sand dollars), as well as sparse remains of marine vertebrates (e.g., sharks and baleen whales). Fossils have primarily

been recovered from localities in Tierrasanta and Mira Mesa where the Lindavista Formation is assigned a high paleontological sensitivity; elsewhere in San Diego County, including in the vicinity of the Project site, the Lindavista Formation is assigned a moderate paleontological sensitivity.

Santiago Formation – The middle Eocene-age (approximately 49 to 40 million years old) Santiago Formation underlies nearly the entire Project site. The Santiago Formation has been divided into three informal members in the Encinitas-Carlsbad-Vista area of San Diego County (Wilson, 1972). The SDNHM has nine recorded fossil localities from the Santiago Formation within a one-mile radius of the Project site, which are from marine and estuarine deposits of members "B" and "C." These localities produced trace fossil burrows and fossil impressions or remains of marine and estuarine invertebrates (e.g., snails, clams, mussels, oysters, scaphopods, and the extinct cephalopod *Cymatoceras* sp.) and the eagle ray *Myliobatis* sp. The Santiago Formation has produced significant terrestrial fossil vertebrate localities in northern San Diego County, along with assemblages of marine and estuarine mollusks, and is considered to have a high paleontological sensitivity.

Summary and Recommendations

The high paleontological sensitivity of the Santiago Formation in the City of Encinitas (Deméré and Walsh, 1993) and the presence of documented fossil collection localities from this geologic unit in the vicinity of the Project site, along with the moderate paleontological sensitivity of Quaternary very old paralic deposits (the Lindavista Formation), suggests the potential for construction of the proposed Project to result in impacts to paleontological resources. Any proposed excavation activities that extend deep enough to encounter previously undisturbed deposits of these geologic units (i.e., below the depth of any previously imported artificial fill or disturbed sediments present within the Project site) have the potential to impact the paleontological resources preserved therein. If such excavations are required for Project construction, implementation of a complete paleontological resource mitigation program during ground-disturbing activities is recommended.

The fossil collection locality information contained within this paleontological records search should be considered private and is the sole property of the San Diego Natural History Museum. Any use or reprocessing of information contained within this document beyond the scope of the Piraeus and Plato Residential Development project is prohibited.

If you have any questions concerning these findings please feel free to contact me at 619-255-0264 or kmccomas@sdnhm.org.

Sincerely,



Katie McComas, M.S.
Paleontological Report Writer & GIS Specialist
San Diego Natural History Museum

Enc: Figure 1: Project map with one-mile radius buffer, showing SDNHM fossil localities
Appendix A: List of SDNHM fossil localities

Literature Cited

Deméré, T.A., and S.L. Walsh. 1993. Paleontological Resources, County of San Diego. Unpublished technical report prepared for the San Diego County Department of Public Works: 1–68.

Kennedy, M.P., and Tan, S.S. 2007. Geologic Map of the Oceanside 30' x 60' Quadrangle, California. California Geological Survey, Regional Geologic Map Series 1:100,000 scale, map no. 2.

San Diego Natural History Museum (SDNHM), unpublished paleontological collections data.

Wilson, K.L. 1972. Eocene and related geology of a portion of the San Luis Rey and Encinitas quadrangles, San Diego County, California. Unpublished Master's Thesis, University of California, Riverside.

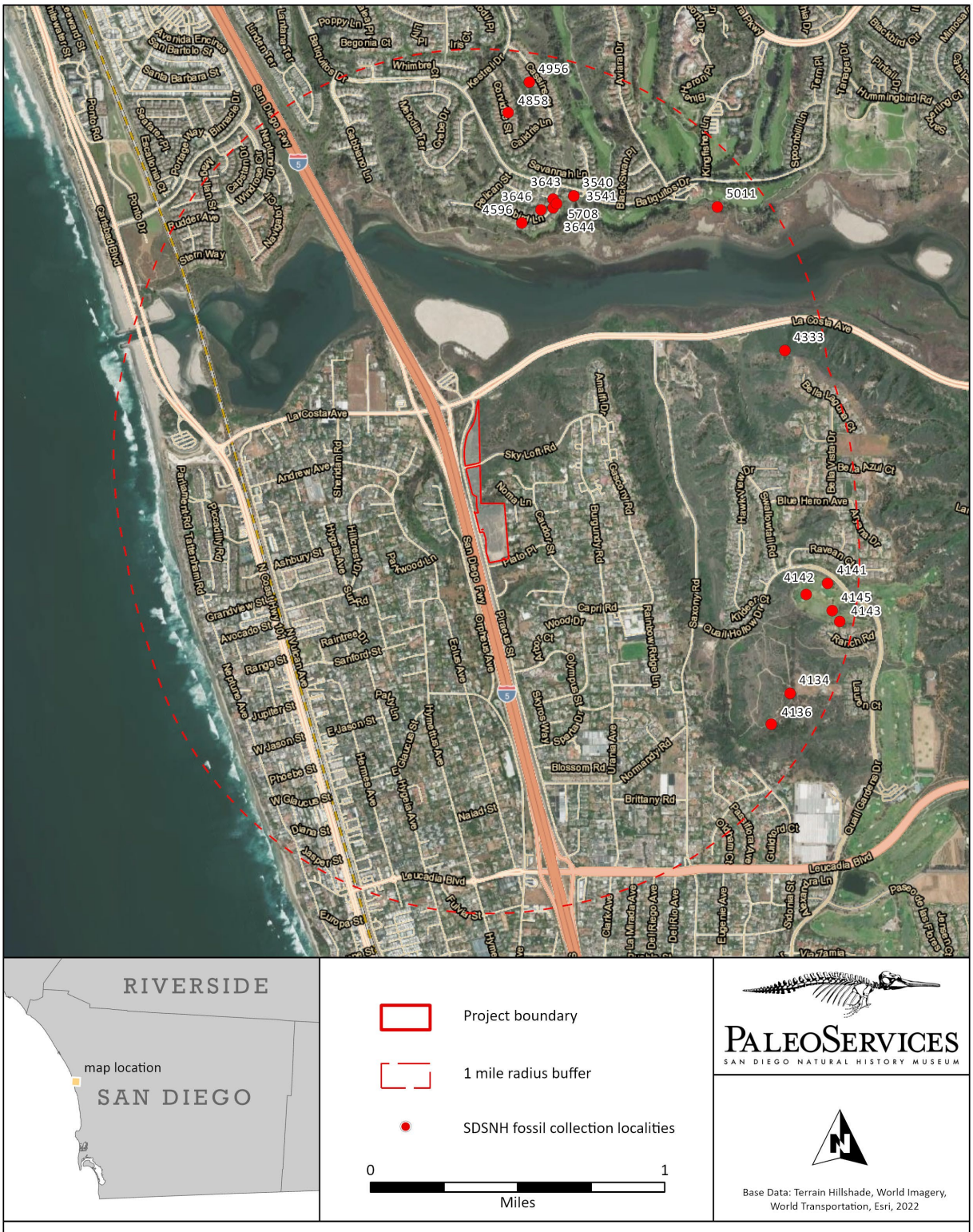


Figure 1: Records Search Map, Piraeus and Plato Residential Development, City of Encinitas, San Diego County, California

Appendix A: Locality List
San Diego Natural History Museum
Department of Paleontology

Locality Number	Locality Name	Location	Elevation (feet)	Geologic Unit	Era	Period	Epoch
4596	Aviara - Phase II - Site 9	City of Carlsbad, San Diego County, California	34	Bay Point Formation	Cenozoic	Quaternary	late Pleistocene
5011	Batiquitos Lagoon	City of San Diego, San Diego County, California	21	Bay Point Formation	Cenozoic	Quaternary	Pleistocene
3540	Aviara - Phase II	City of Carlsbad, San Diego County, California	50	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
3541	Aviara - Phase II	City of Carlsbad, San Diego County, California	52	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
3643	Aviara - Pleistocene, Bed II	City of Carlsbad, San Diego County, California	59	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
3644	Aviara - Pleistocene, Bed I	City of Carlsbad, San Diego County, California	54	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
3646	Aviara - Pleistocene, Bed III	City of Carlsbad, San Diego County, California	68	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
4956	Aviara - Phase II - Site 153	City of Carlsbad, San Diego County, California	183	Santiago Formation member B	Cenozoic	Paleogene	middle Eocene
4858	Aviara - Phase II - Site 168 - Red Beds	City of Carlsbad, San Diego County, California	173	Santiago Formation member B ?	Cenozoic	Paleogene	middle Eocene
4333	Leucadia Highlands	City of Encinitas, San Diego County, California	280	Santiago Formation member C	Cenozoic	Paleogene	middle Eocene
4136	Encinitas Ranch #5	City of Encinitas, San Diego County, California	265	Santiago Formation member C, gritstone A	Cenozoic	Paleogene	Eocene
4145	Encinitas Ranch #14	City of Encinitas, San Diego County, California	265	Santiago Formation member C, gritstone A	Cenozoic	Paleogene	Eocene
4141	Encinitas Ranch #10	City of Encinitas, San Diego County, California	310	Santiago Formation member C, gritstone C	Cenozoic	Paleogene	Eocene
4134	Encinitas Ranch #3	City of Encinitas, San Diego County, California	270	Santiago Formation member C, siltstone A	Cenozoic	Paleogene	Eocene
4142	Encinitas Ranch #11	City of Encinitas, San Diego County, California	270	Santiago Formation member C, siltstone A	Cenozoic	Paleogene	Eocene
4143	Encinitas Ranch #12	City of Encinitas, San Diego County, California	285	Santiago Formation member C, siltstone A	Cenozoic	Paleogene	Eocene
5708	Aviara - Phase II - Site 160	City of Carlsbad, San Diego County, California	67	Delmar Formation	Cenozoic	Paleogene	middle Eocene

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APPENDIX H-1.
PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

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PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

PIRAEUS POINT
ENCINITAS, CALIFORNIA

GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

LENNAR
SAN DIEGO, CALIFORNIA

FEBRUARY 15, 2022
PROJECT NO. G2307-62-04A

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Project No. G2307-62-04A
February 15, 2022

Lennar
16465 Via Esprillo, Suite 150
San Diego, California 92127

Attention: Mr. David Shepherd

Subject: PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT
PIRAEUS POINT
ENCINITAS, CALIFORNIA

Dear Mr. Shepherd:

In accordance with your request and our Proposal No. LE-22050 dated February 2, 2022, we have performed a Phase I Environmental Site Assessment (ESA) of the subject project located to the northeast of the intersection of Piraeus Street and Plato Place (the Site) in Encinitas, California.

We performed the Phase I ESA to provide information regarding the potential for existing hazardous substances and/or petroleum product impacts at the Site as part of Lennar's due diligence. The accompanying report presents the details of our Phase I.

We appreciate the opportunity to have performed this Phase I ESA for Lennar. Please contact us if you have any questions concerning this report or if we may be of further service.

Very truly yours,

GEOCON INCORPORATED

Cole E. Mikesell
Senior Staff Geologist

Troy K. Reist, CEG, MBA
Senior Geologist

CEM:TKR:am

(e-mail) Addressee

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F. EDR Historical Topo Map Report
G. EDR-City Directory Image Report

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

1. INTRODUCTION

We have performed a Phase I Environmental Site Assessment (ESA) of the Piraeus Point project located to the northeast of the Piraeus Street and Plato Place intersection (the Site) in Encinitas, California. Lennar (the Client) requested the Phase I ESA to provide information regarding the potential for existing hazardous substances and/or petroleum product impacts at the Site as part of their due diligence. This report describes the methodology and procedures and present the findings of the Phase I ESA.

1.1 Purpose and Objectives

The purpose of the Phase I ESA was to identify evidence or indications of 'recognized environmental conditions' (RECs) as defined by the American Society for Testing and Materials (ASTM) *Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Section 1.1.1 of *ASTM Designation E 1527-13* defines an REC as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions." De minimis conditions are those that generally do not present a threat to human health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies.

ASTM *Designation E 1527-13* also defines 'Historical' and 'Controlled' RECs. They define an 'Historical REC' (HREC) as "A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." ASTM defines a 'Controlled REC' (CREC) as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." An HREC is not an REC if a property meets current standards for unrestricted residential use. A CREC remains an REC by definition when the property does not meet the unrestricted residential use requirements unconditionally.

We also conducted the Phase I ESA in general accordance with the requirements of 40 Code of Federal Regulations (CFR) Part 312 titled *Standards and Practices for All Appropriate Inquiries*, as required under Sections 101(35)(B)(ii) and (iii) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of conducting an all appropriate inquiries investigation into the previous ownership and uses of a property is to meet the provisions necessary for the landowner, contiguous property owner, and/or bona fide prospective purchaser to qualify for certain landowner liability protections under CERCLA.

The following principles are an integral part of ASTM *Designation E1527-13*:

- **"Uncertainty Not Eliminated -** No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property, and this practice recognizes reasonable limits of time and cost."

- **"Not Exhaustive -** All Appropriate Inquiries does not mean an exhaustive assessment of a property. There is a point at which the cost of information obtained or the time required to gather it outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. One of the purposes of this practice is to identify a balance between the competing goals of limiting the costs and time demands inherent in performing an environmental site assessment and the reduction of uncertainty about unknown conditions resulting from additional information."

- **"Level of Inquiry is Variable -** Not every property will warrant the same level of assessment. Consistent with good commercial and customary practice, the appropriate level of environmental site assessment will be guided by the type of property subject to assessment, the expertise and risk tolerance of the user, and the information developed in the course of the inquiry."

1.2 Scope of Services

We performed the scope of services outlined in our Proposal No. LE-22050 dated February 2, 2022, with the exception that we did not review Sanborn fire insurance maps, as Environmental Data Resources, Inc. (EDR) indicated that there are none available for the Site or surrounding vicinity. The main components of the Phase I ESA and their objectives, as specified by the referenced standards, include the following:

- **Physical Setting Review:** we reviewed physical setting references for information concerning the topographic, geologic, and hydrogeologic characteristics of the Site and vicinity. Such information may be indicative of pathways (i.e., direction and/or extent) that a contaminant could migrate along in the event of a spill or release.

- **Regulatory Agency Records Review:** we reviewed publicly available Federal, State, and local regulatory agency records for information regarding the use, storage, and disposal of

hazardous substances and/or petroleum products at the Site and facilities and properties adjoining or within ¼ mile of the Site. Such records may identify RECs at or potentially affecting the Site.

- **Site History Review:** we reviewed information regarding the historical uses of the Site and adjoining and nearby facilities and properties back to the Site's and other properties' first use or 1940, whichever is earlier, that could have led to RECs on or near the Site. Historical sources reviewed included aerial photographs, topographic maps, and city directories. In addition, we conducted interviews with persons who were expected to be reasonably knowledgeable about historical and/or current conditions at and uses of the Site.

- **Site Reconnaissance:** we performed a site reconnaissance to observe site conditions and activities for evidence of RECs. The site reconnaissance was for the Site only. We viewed offsite properties and features solely from the vantage of the Site and public thoroughfares.

1.3 Report Limitations

We prepared this Phase I ESA report exclusively for the Client. The information obtained is only relevant for the dates of the records reviewed and the latest site visit. Therefore, the information contained herein is only valid as of the date of the report and may require an update after 180 days to reflect updated records and another reconnaissance to assess current site conditions.

The Client should recognize that a Phase I ESA is not a comprehensive site characterization and should not be construed as such. The findings and conclusions presented in this report are predicated on the site reconnaissance, information in the specified regulatory records, and information regarding the historical usage of the Site, as presented in this report. The Client should also understand that wetlands, asbestos-containing building materials, lead-containing paint, lead in drinking water, radon, mercury related to mining activities, methane, and mold surveys were not included in the scope of services for this Phase I ESA. Assessment for potential naturally occurring hazards such as asbestos and arsenic was also not included.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the Phase I ESA is implied within this report or any subsequent reports, correspondence or consultation, either express or implied. We strived to conduct the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

1.4 Data Gaps

A data gap is defined by ASTM *Designation E 1527-13* as "a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information." Data gaps could include such things as insufficient historical information, the inability to interview persons with direct site knowledge (e.g., the owner(s), past owner(s), tenants, workers,

etc.) or the lack of access to all parts of a site during the site reconnaissance. As indicated in Section 1.2, we did not review Sanborn fire insurance maps for the Site and surrounding vicinity because there are none for the Site and vicinity. We do not consider this a significant data gap however, because of other available historical information we reviewed.

2. SITE DESCRIPTION

This section provides information regarding the location and physical characteristics of the Site including its size, topography, geologic, soil, and hydrogeologic conditions.

2.1 Location and Legal Description

The 11.85-acre Site is located to the northeast of the intersection of Piraeus Street and Plato Place in Encinitas, California (Figure 1). The Site is situated south of Batiquitos Lagoon and east of Interstate (I)-5. The San Diego County assessor's parcel numbers (APNs) for the Site are 216-110-35 and 254-144-01. A copy of the parcel map is in Appendix A.

The Site is depicted in the northeastern quarter of Section 4 of Township 13 South, Range 4 West, the southwestern quarter of Section 34 of Township 12 South, Range 4 West, and the southwestern quarter of Section 33 of Township 12 South, Range 4 West San Bernardino Base and Meridian on the United States Geological Survey's (USGS) *Encinitas, California*, 7.5-minute topographic map (USGS, 2018).

2.2 Site and Vicinity General Characteristics

The majority of the Site is undeveloped land with native vegetation. The surrounding vicinity includes undeveloped land, single-family residences, and transportation (I-5). Figure 2 depicts the Site boundaries and features and surrounding properties. Further site description is provided in Sections 2.4 and 6.

2.2.1 Topography

The Site is located on a broad marine terrace with groundwater draining to the west. The USGS *Encinitas, California*, 7.5-minute topographic map (USGS, 2018), depicts the site elevation as approximately ranging between 40 and 180 feet above mean sea level.

2.2.2 Geologic and Soil Conditions

The Site is located in the Peninsular Ranges geomorphic province of Southern California (Norris and Webb, 1990). This geomorphic province extends approximately 900 miles from its northern terminus

against the Transverse Ranges and Los Angeles Basin, south to the tip of Baja California. In general, the province is characterized by rugged mountains in Mesozoic igneous and metamorphic rocks to the east, with a dissected coastal plain on Cenozoic sediments to the west. The Peninsular Ranges vary in width from approximately 30 to 100 miles, and are traversed fault zones trending roughly northwest-southeast.

Based on our recent geotechnical investigation and observations during our site reconnaissance (Geocon, 2022), the geology underlying the Site consists of surficial soil deposits, Very Old Paralic Deposits and the Santiago Formation.

Information concerning the soil conditions at and in proximity to the Site from the United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) indicates that site soil is Gaviota fine sandy loam, and Marina loamy coarse sand, which are well drained and have low infiltration rates.

2.2.3 Hydrologic and Hydrogeologic Conditions

Groundwater quality and occurrence information available from the California Department of Water Resources and the California State Water Resources Control Board (SWRCB) indicates that the Site is located in the Batiquitos Sub-Hydrologic Area (904.51) of the San Marcos Hydrologic Area (904.50) of the Carlsbad Hydrologic Unit (904.00). Groundwater in the Batiquitos Sub-Hydrologic Area has existing beneficial use designations for municipal, agricultural, and industrial supply purposes (SWRCB, 2016).

Our recent exploratory borings performed during our field investigation in 2022 encountered seepage between approximately 38 to 49 feet below the existing ground surface. However, a static groundwater table was not observed on the Site. Groundwater is estimated to be approximately 50 to 100 feet below the existing ground surface based on our experience with similar geologic conditions.

2.3 Current and Planned Uses of the Site

The majority of the Site is not currently used for any specific purpose. The Client reported that they plan to develop the majority of the Site for residential use. Further description of the Site is provided in Section 6.

2.4 Descriptions of Structures, Roads, Other Improvements on the Site

A concrete brow ditch is located on the northwestern portion of the Site. No other improvements were observed on the Site.

2.5 Current Uses of Adjoining Properties

Current uses of adjoining properties are primarily residential with transportation (I-5) to the west and undeveloped land to the north. Further information regarding adjoining properties is provided in Section 6.4.

3. USER–PROVIDED INFORMATION

This section summarizes site information provided by the Client – the "user" of this Phase I ESA. Also provided are responses to inquiries to the Client via a "user" questionnaire for information pertaining to the Site. David Shepherd with Lennar completed the questionnaire (Appendix B).

3.1 Title, Appraisal and Sale Agreement Records

Mr. Shepherd provided a Preliminary Title Report (PTR) for the Site prepared by First American Title Insurance Company and dated January 9, 2022. The PTR indicates that the site parcels are owned by Piraeus Investor, LLC. The PTR identifies no issues regarding the environmental condition of the Site.

3.2 Environmental Liens or Activity and Use Limitations

Mr. Shepherd indicated that he has no knowledge of environmental liens on or activity and use limitations for the Site.

3.3 Specialized Knowledge

Mr. Shepherd indicated he has no specialized knowledge of the Site.

3.4 Commonly Known or Reasonably Ascertainable Information

Mr. Shepherd indicated he is not aware of commonly known or reasonably ascertainable information pertaining to the Site.

3.5 Owner, Property Manager, and Occupant Information

Mr. Shepherd indicated the Site is owned by Harry Cannon.

3.6 Valuation Reduction for Environmental Issues

According to Mr. Shepherd, the monetary value of the Site has not been reduced due to environmental issues.

3.7 Reason for Performing the Phase I ESA

The Phase I ESA was requested to provide information regarding the potential for existing hazardous substance and/or petroleum product impacts at the Site for due diligence purposes by the City of Encinitas.

4. RECORDS REVIEW

This section summarizes information we obtained from readily available agency records for the Site and properties and facilities in the surrounding vicinity.

4.1 Standard Environmental Record Sources

EDR searched federal, state, and local databases regarding the use, storage, disposal, or release of hazardous substances and/or petroleum products for the Site and area within one mile of the Site. The databases that list the Site and/or properties/facilities within one mile of the Site and the number of properties/facilities listed are summarized in the table below. A copy of *The EDR Radius Map™ Report with GeoCheck*, dated February 3, 2022, is in Appendix C.

Database Name	Search Radius (Mile)	Number of Listings
FEDERAL DATABASES		
RCRA-SQG (Small Quantity Generators)	¼	1
STATE AND LOCAL DATABASES		
SWF/LF (Solid waste Facilities/Landfill Sites)	½	1
SAN DIEGO CO. SAM (Diego County Site Assessment and Mitigation Program)	½	4
LUST (Leaking Underground Storage Tanks)	½	2
CA SLIC (Spills, Leaks, Investigation, and Cleanup Program)	½	6
DEED Restriction Sites	½	1
RCRA-NonGen (Resource Conservation and Recovery Act – Non-Generators)	½	7
CORTESE	½	2

4.1.1 Site

The Site is not listed on any of the databases searched by EDR.

4.1.2 Offsite Properties

The following table summarizes information provided in the EDR report for listed properties/facilities that are located less than ¼ mile from the Site and are listed on various release-related databases[1]. Properties/facilities located within a ¼ mile and not listed on a release-related database[1] are not included in the table below and are unlikely to have caused an REC at the Site. Distances reported by EDR may differ from actual distances.

Property Name and Address	Approximate Distance, Direction, and Hydraulic Gradient Position	Databases	Pertinent Information
1540 Caudor Street	889 feet southeast Upgradient	CPS-SLIC CERS	On January 8, 2014 four soil samples were collected at this facility. OCPs were detected in three of the four borings at concentrations that did not exceed the California Human Health Screening Levels for residential use soils. The DEH concurred that the cleanup goals established for the facility were met. The distance from the Site and the DEH's closure of the case indicate that this facility is unlikely to have caused an REC at the Site.
Proposed 19 Unit Subdivision 1492 Hymettus Ave	1,270 feet southwest Downgradient	San Diego Co. SAM CPS-SLIC DEED CHMIRS CIWQS CERS	These listings are related to DEH case #H99106-002 which was opened under the Voluntary Assistance Program (VAP) for the facility located at 1492 Hymettus Ave. Soil at the property was excavated to a depth of seven feet below design finished grade, with dieldrin-impacted soil being placed at the bottom of the excavations. A geotextile liner was placed on top of the dieldrin-impacted soil as a marker in the event of any future excavation. With the additional work to provide seven feet of non-impacted soil over the entire area underlain by dieldrin-impacted soil, Stantec recommended that a no further action letter be provided, with the DEH concurring on October 24, 2011. The downgradient location, distance from the Site, and the closure of DEH case #H99106-002 suggests that this facility is unlikely to have caused an REC at the Site.

[1] "Release" refers to an unauthorized release of a petroleum product or hazardous substance to the environment - i.e. the ground surface, soil, soil vapor, groundwater, or surface water on a property. "Release-related database" refers to those which provide information regarding an unauthorized release. "Non-release-related database" refers to those that may report use, storage, or disposal of hazardous substances and/or petroleum products or other environmental conditions, but do not report releases of such.

Other properties and facilities within 1/4-mile of Site are listed on various non-release-related databases[1] and therefore are not anticipated to have caused an REC at the Site.

4.1.3 Orphan Summary

EDR's Orphan Summary identifies properties with incomplete address information and therefore cannot be accurately plotted. A single property is listed but it is greater than 1/2 mile from the Site, therefore, it is not suspected of having caused an REC at the Site.

4.2 Additional Environmental Record Sources

This section summarizes information from additional, readily available environmental record sources regarding the Site and properties/facilities within one mile from the Site.

4.2.1 GeoTracker and EnviroStor Databases

We reviewed GeoTracker and the California Department of Toxic Substance Control's (DTSC) EnviroStor online database (http://www.envirostor.dtsc.ca.gov/public/) for information regarding the Site and nearby properties/facilities that are within ¼ mile of the Site. GeoTracker lists two cleanup program properties/facilities within ¼ mile of the Site both of which have been granted regulatory closure. Information regarding these facilities is summarized in Section 4.1.2. EnviroStor does not have information pertaining to the Site any properties/facilities within ¼ mile of the Site.

4.2.2 State of California Department of Conservation, Geologic Energy Management Division

We reviewed the California Geologic Energy Management Division (CalGem) website (https://maps.conservation.ca.gov/doggr/wellfinder) to evaluate the potential for existing/former oil, gas, or geothermal wells on the Site or properties proximal to the Site. CalGem information indicates that no former or current wells are or were located within one mile of the Site.

4.2.3 County of San Diego Department of Agriculture, Weights and Measures

We submitted a request to the County of San Diego, Department of Agriculture, Weights and Measures (DAWM), Pesticide Use Enforcement Division regarding possible use of restricted pesticides/herbicides at the Site. That office maintains such records for approximately 4 years. The DAWM indicated that no record of restricted pesticide/herbicide use was reported for the site APNs for the period of 2017 through 2022.

4.2.4 San Diego Air Pollution Control District

We submitted a request to the San Diego Air Pollution Control District (APCD) for records pertaining to the Site. The APCD indicated that no records are on file for the site APNs.

4.2.5 County of San Diego Department of Environmental Health

We submitted a request to the DEH for records pertaining to the Site. A permit for eight borings and an accompanying technical report were provided. The documents provided by DEH are presented in Appendix D.

4.2.6 San Diego Gas and Electric Company

No transformers were observed onsite or were likely on the Site previously. Therefore, San Diego Gas & Electric Company was not contacted as part of this assessment.

4.3 Previous Documents/Reports

Following are summaries of documents pertaining to the Site.

Apex Companies, LLC - *Phase I Environmental Site Assessment*, *Northeast Corner of Piraeus Street and Plato Place*, *Encinitas*, *California*, dated September 19, 2019

Apex Companies, LLC performed a Phase I ESA for the Site in September of 2019. Apex concluded that their assessment revealed no current or historical RECs in connection with the Site. Apex considered the isolated inert debris observed on the Site as de minimis.

Geocon, Inc. – *Phase I and II Environmental Site Assessment Report, Piraeus Property, Encinitas, California* dated September 16, 2021.

We performed a Phase I and II ESA for the southern portion of the Site in September of 2021. The Phase II ESA was performed to assess site soils for the potential presence of pesticides and arsenic related to past agricultural use. We identified no evidence of RECs in connection with the Site.

5. HISTORICAL USE

This section summarizes information obtained from a variety of sources regarding the historical uses of the Site in an effort to identify those uses that could have led to RECs. The sources of information included historical aerial photographs, historical topographic maps, and an abstract of city directories provided by EDR.

5.1 Aerial Photographs

We reviewed historical aerial photographs for the years 1928, 1939, 1946, 1953, 1964, 1967, 1970, 1979, 1985, 1990, 1994, 1997, 2002, 2005, 2009, 2012 and 2016 (Appendix E) for indications of past land uses that had the potential to have impacted the Site through the use, storage or disposal of hazardous substances and/or petroleum products. The following table summarizes our observations of the Site and adjacent properties.

Year	Observations	
	Site	**Adjacent Properties**
1928 (1" = 500')	The Site appears to have been vacant land with natural vegetation.	Adjacent properties appear to have been vacant land with natural vegetation.
1939 (1" = 500')	Conditions appear to have been similar to those observed on the 1928 aerial photograph.	Conditions appear to have been similar to those observed on the 1928 aerial photograph.
1946 (1" = 500')	Conditions appear to have been similar to those observed on the 1939 aerial photograph.	Conditions appear to have been similar to those observed on the 1939 aerial photograph.
1953 (1" = 500')	Conditions appear to have been similar to those observed on the 1946 aerial photograph.	Conditions appear to have been similar to those observed on the 1946 aerial photograph.
1964 (1" = 500')	Conditions appear to have been similar to those observed on the 1953 aerial photograph.	Conditions appear to have been similar to those observed on the 1953 aerial photograph with the exception that the properties adjacent to the east appear to have been developed with single-family residences.
1967 (1" = 500')	Conditions appear to have been similar to those observed on the 1964 aerial photograph.	Conditions appear to have been similar to those observed on the 1964 aerial photograph with the exception that the I-5 is now depicted adjacent to the west of the Site.
1970 (1" = 500')	Conditions appear to have been similar to those observed on the 1967 aerial photograph.	Conditions appear to have been similar to those observed on the 1967 aerial photograph.
1979 (1" = 500')	Conditions appear to have been similar to those observed on the 1970 aerial photograph with the exception that numerous dirt roads are present on the southern portion of the Site.	Conditions appear to have been similar to those observed on the 1970 aerial photograph.
1985 (1" = 500')	Conditions appear to have been similar to those observed on the 1979 aerial photograph.	Conditions appear to have been similar to those observed on the 1979 aerial photograph.
1990 (1" = 500')	Conditions appear to have been similar to those observed on the 1985 aerial photograph.	Conditions appear to have been similar to those observed on the 1985 aerial photograph.
1994 (1" = 500')	Conditions appear to have been similar to those observed on the 1990 aerial photograph.	Conditions appear to have been similar to those observed on the 1990 aerial photograph.

Year	Observations	
	Site	Adjacent Properties
1997 (1" = 500')	Conditions appear to have been similar to those observed on the 1994 aerial photograph.	Conditions appear to have been similar to those observed on the 1994 aerial photograph.
2002 (1" = 500')	Conditions appear to have been similar to those observed on the 1997 aerial photograph.	Conditions appear to have been similar to those observed on the 1997 aerial photograph.
2005 (1" = 500')	Conditions appear to have been similar to those observed on the 2002 aerial photograph.	Conditions appear to have been similar to those observed on the 2002 aerial photograph.
2009 (1" = 500')	Conditions appear to have been similar to those observed on the 2005 aerial photograph.	Conditions appear to have been similar to those observed on the 2005 aerial photograph.
2012 (1" = 500')	Conditions appear to have been similar to those observed on the 2009 aerial photograph.	Conditions appear to have been similar to those observed on the 2009 aerial photograph.
2016 (1" = 500')	Conditions appear to have been similar to those observed on the 2012 aerial photograph.	Conditions appear to have been similar to those observed on the 2012 aerial photograph.

We observed no conditions on or uses of the Site or adjoining properties on the historical aerial photographs with the potential to have caused an REC at the Site.

5.2 Topographic Maps

We reviewed historical topographic maps for the years 1893, 1898, 1901, 1947, 1948, 1949, 1968, 1975, 1997 and 2012 (Appendix F). The following table summarizes observations of the Site and adjacent properties on the historical topographic maps.

Year	Observations	
	Site	Adjacent Properties
1893 (1:62,500)	No structures or land use are depicted on the Site.	No structures or land use are depicted on the adjacent properties.
1898 (1:62,500)	Conditions are similar to those depicted on the 1893 topographic map.	Conditions are similar to those depicted on the 1893 topographic map.
1901 (1:62,500)	Conditions are similar to those depicted on the 1898 topographic map.	Conditions are similar to those depicted on the 1898 topographic map.

Year	Observations	
	Site	Adjacent Properties
1947 (1:50,000)	Conditions are similar to those depicted on the 1901 topographic map.	Conditions are similar to those depicted on the 1901 topographic map.
1948 (1:24,000)	Conditions are similar to those depicted on the 1947 topographic map with the exception that the Site is shaded green indicating natural vegetation.	Conditions are similar to those depicted on the 1947 topographic map with the exception that the adjacent properties to the north and south are shaded green indicating natural vegetation.
1949 (1:24,000)	Conditions are similar to those depicted on the 1948 topographic map.	Conditions are similar to those depicted on the 1948 topographic map.
1968 (1:24,000)	Conditions are similar to those depicted on the 1949 topographic map.	Conditions are similar to those depicted on the 1949 topographic map with the exception that the I-5 is now depicted adjacent to the west of the Site, and multiple structures are now depicted to the east of the Site.
1975 (1:24,000)	Conditions are similar to those depicted on the 1968 topographic map.	Conditions are similar to those depicted on the 1968 topographic map.
1997 (1:24,000)	Conditions are similar to those depicted on the 1975 topographic map.	Conditions are similar to those depicted on the 1975 topographic map with the exception that the adjacent properties are shaded pink indicating an urban environment.
2012 (1:24,000)	No shading or structures are depicted.	No shading or structures are depicted.

The historical topographic maps depict no conditions, structures, or uses on the Site or adjacent properties that would suggest the presence of RECs.

5.3 City Directories

EDR prepared an abstract of city directories including city, cross-reference, and telephone directories summarized in the *EDR-City Directory Image Report* dated February 7, 2022. The directories were reviewed at approximately 5-year intervals, if available, from 1971 to 2017. A copy of the EDR city directory abstract including information regarding offsite facilities is in Appendix G. The city directory lists residents along Plato Place and Piraeus Street, none of which are suspected of having caused an REC at the Site.

6. SITE RECONNAISSANCE

This section summarizes observations of the Site and surrounding properties made during the site reconnaissance.

6.1 Methodology and Limiting Conditions

Cole E. Mikesell, Senior Staff Geologist with Geocon, performed the site reconnaissance unaccompanied on February 7, 2022, by walking the Site. Mr. Mikesell performed the offsite survey by observing adjacent properties from the Site and adjacent public streets. Weather on the day of the site reconnaissance was clear with temperatures in the mid-70s. Photographs of various site features and offsite properties are appended. Figure 2 is a Site Plan illustrating selected site features.

6.2 General Site Setting

The Site is located in an area of predominantly residential use with nearby transportation (I-5). The Site is surrounded by undeveloped land to the north and south.

6.3 Onsite Survey

The Site is essentially an undeveloped hillside with natural vegetation that generally slopes to the north on the southern portion of the Site and slopes to the south on the northern portion of the Site. (Photographs 1 through 11). Some de minimis debris was observed in the central portion of the Site (Photograph 12). A concrete brow ditch is located along the western boundary of the Site (Photographs 13 and 14).

We observed no odors, pools of liquid, significantly stained soil or distressed vegetation on the Site. We observed no evidence of RECs on the Site.

6.4 Offsite Survey

Properties within the site vicinity include:

- **North:** Undeveloped land (Photograph 15).
- **South:** Undeveloped land beyond which are residential homes (Photograph 16).
- **East:** Residential homes (Photographs 17 through 19).
- **West:** Piraeus Street beyond which is I-5 (Photograph 20).

We observed no evidence of RECs on the surrounding properties.

7. INTERVIEWS

The current property owner representative, Damien Mavis, reported via a site owner/occupant questionnaire (Appendix B) that the Site is vacant land. Mr. Cannon reported that the site had been used for agriculture in the past. Mr. Shepherd contacted Mr. Cannon to inquire specifically about pesticide use on the Site and was informed to assume they were applied. As discussed in Section 4.3, we performed a Phase II ESA to assess the Site for the potential presence of pesticides and arsenic in soil based on the information provided by Mr. Cannon. Our assessment identified no environmental impacts to the Site related to past agricultural use.

8. SUMMARY OF FINDINGS

The following table summarizes our findings and opinions regarding the Site, including known or suspect RECs, CRECs, HRECs, and de minimis environmental conditions.

Assessment Category	Observed (Y/N)	(REC/ CREC/ HREC/ DM or None)	Recommended Actions	Report Section(s)
Hazardous Substances/Petroleum Products	N	N	NFA	
Hazardous Wastes	N	N	NFA	
Non-Hazardous Wastes	N	N	NFA	
Aboveground/Underground Storage Tanks	N	N	NFA	
Unidentified Substance Containers	N	N	NFA	
Equipment Potentially Containing PCBs	N	N	NFA	
Wastewater Systems	N	N	NFA	
Evidence of Releases	N	N	NFA	
Pools of Liquid, Pits, Ponds, Lagoons	N	N	NFA	
Wells	N	N	NFA	
Other Site Issues	N	N	NFA	
Nearby Properties	N	N	NFA	
Historical Land Use – Site	**Y**	**N**	**NFA**	**4.3, 7**
Historical Land Use – Nearby Properties	N	N	NFA	

Recommended Action:
AA = Additional action recommended.
NFA = No further action required at this time.
DM = De minimis condition where additional activities do not appear warranted at this time.

As discussed previously in Sections 4.3 and 7, the property owner representative stated in the questionnaire that the Site had been utilized for agricultural purposes. We performed a Phase II ESA of the Site soil in relation to the past agricultural use of the Site in September of 2021. Our investigation identified no environmental impacts to the Site related to past agricultural use.

9. CONCLUSIONS AND RECOMMENDATIONS

We have performed a Phase I ESA, in general conformance with the scope and limitations of ASTM E 1527-13, of the 11.85-acre property located northeast of the intersection of Piraeus Street and Plato Place in Encinitas, California. The San Diego County APNs for the Site are 216-110-35 and 254-144-01.

This Phase I ESA identified no evidence of RECs in connection with the Site. Therefore, additional environmental assessment does not appear to be warranted at this time.

If soil staining or petroleum odors are observed during grading observations, we recommend retaining Geocon to observe and possibly sample areas of potential impact to determine if further action is warranted. Although not anticipated, any undocumented subsurface structures or areas of apparent contamination encountered during site redevelopment activities including septic tanks, USTs, wells, etc. should be properly abandoned/removed in accordance with San Diego County regulatory requirements.

10. REFERENCES

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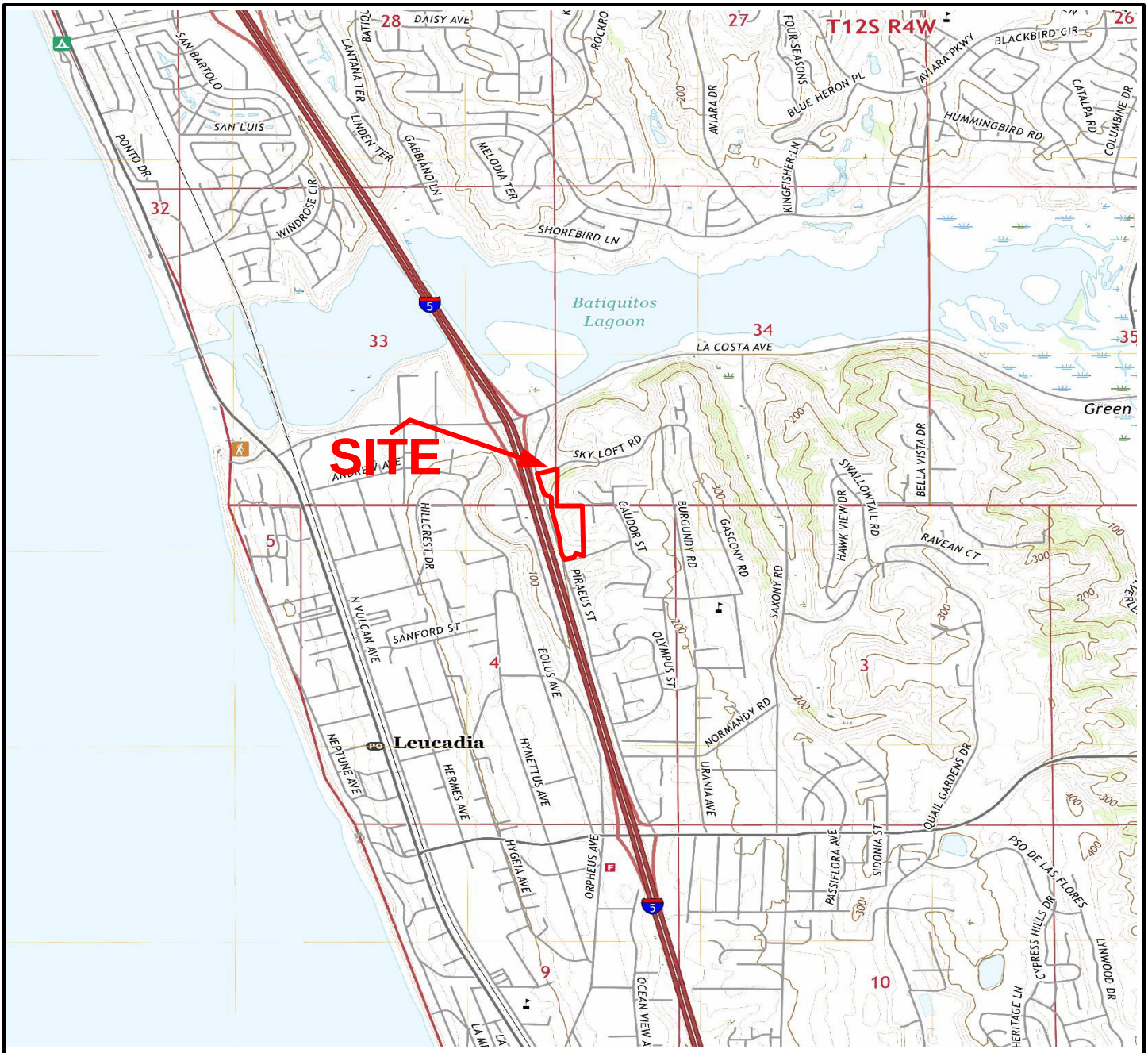
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11. QUALIFICATIONS

This Phase I ESA report was prepared by Cole E. Mikesell with oversight by Troy K. Reist, CEG. We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312. We have the specific qualifications based on education, training, and experience, to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Mr. Mikesell has a BS degree in Geology with an emphasis in Environmental Geosciences. Mr. Mikesell is a certified Geologist-In-Training in the State of California. Mr. Mikesell has 5 years of experience in the geotechnical and environmental consulting industry. He has performed exploratory drilling, infiltration testing, foundation and earthworks observation, and prepared Phase I and Phase II ESAs throughout southern California.

Mr. Reist is a Professional Geologist and Certified Engineering Geologist, with a BS degree in Geology and has over 24 years of experience in the geotechnical and environmental consulting industry in California. Mr. Reist investigates, remediates and manages geotechnical and environmental issues on residential, commercial, industrial, and agricultural properties throughout southern California.



Base Map:
USGS Topographic Map, 7.5-minute Series
Encinitas, CA
Scale 1:24,000

N

NO SCALE

VICINITY MAP

GEOCON INCORPORATED

GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858 558-6900 - FAX 558-6159

CEM		

PIRAEUS POINT
ENCINITAS, CALIFORNIA

FEBRUARY 2022	PROJECT NO. G2307-62-04A	FIG. 1

PIRAEUS POINT
ENCINITAS, CALIFORNIA

APPROXIMATE SITE BOUNDARY

UNDEVELOPED LAND

SKY LOFT ROAD

RESIDENTIAL

NOMA LANE

LEORA LANE

RESIDENTIAL

INTERSTATE 5

PIRAEUS STREET

RESIDENTIAL

UNDEVELOPED LAND / RESIDENTIAL

PLATO PLACE

Google Earth

THE GEOGRAPHICAL INFORMATION MADE AVAILABLE FOR DISPLAY WAS PROVIDED BY GOOGLE EARTH, SUBJECT TO A LICENSING AGREEMENT. THE INFORMATION IS FOR ILLUSTRATIVE PURPOSES ONLY; IT IS NOT INTENDED FOR CLIENT'S USE OR RELIANCE AND SHALL NOT BE REPRODUCED BY CLIENT. CLIENTS SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS GEOCON FROM ANY LIABILITY INCURRED AS A RESULT OF SUCH USE OR RELIANCE BY CLIENT.

GEOCON LEGEND

20 - APPROXIMATE LOCATION AND DIRECTION OF PHOTOGRAPH

N

NOT TO SCALE

SITE PLAN

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PROJECT NO. G2766-62-04A
FIGURE 2
DATE FEBRUARY 2022



Photograph #1
View to the north along the eastern boundary of the Site.



Photograph #2
View to the southwest across the southern portion of the Site.

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CEM | FEBRUARY 2022

SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A



Photograph #3
View to the north along the eastern boundary of the Site.



Photograph #4
View to the west across the central portion of the Site.

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INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
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PHONE 858.558.6900 - FAX 858.558.6159

CEM | FEBRUARY 2022

SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A



Photograph #5
View to the north across a canyon that divides the southern and northern portions of the Site.



Photograph #6
View to the west across the central portion of the Site.

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CEM | FEBRUARY 2022

SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A



Photograph #7
View to the south along the western boundary of the Site.



Photograph #8
View to the south along the western boundary of the Site.

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SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A



Photograph #9
View to the northeast across the northern portion of the Site.



Photograph #10
View to the southeast across the northern boundary of the Site.

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SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A



Photograph #11
View to the southeast across the southern portion of the Site.



Photograph #12
Debris present in the central portion of the Site.

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SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A



Photograph #13
Concrete brow ditch along the western boundary of the Site.



Photograph #14
Concrete brow ditch along the western boundary of the Site.

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SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A



Photograph #15
Undeveloped land adjacent to the north of the Site.



Photograph #16
Undeveloped land, beyond which are residential homes adjacent to the south of the Site.

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SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A



Photograph #17
Residential homes adjacent to the east of the Site.



Photograph #18
Residential homes adjacent to the east of the Site.

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SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A



Photograph #19
Residential homes adjacent to the east of the Site.



Photograph #20
Piraeus Street, beyond which is Interstate 5 adjacent to the west of the Site.

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CEM | FEBRUARY 2022

SITE PHOTOGRAPHS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04A

APPENDIX A

254-14

04/08/04 JAM

CHANGES			
BLK	OLD	NEW	YR
144	2 & POR PG 16	3 THRU 7	05
			CUT 30

254-14
SHT 2 OF 2

1''=100'

N3°34'10"E
80.78

OPEN SPACE

N86°27'2"W
299.95

345.26
N60°6'19"E

5
07
1.20 AC

271.32

16
SHT 2

40 PLATO PL

20.87

20.87

N3°55'29"W
182.32

60

4
06
0.67 AC

OPEN SPACE

40

N3°55'29"W
156

121.74

15.16

74.85

CHRISTINE PL

OPEN SPACE

N86°33'40"W 181.23

(Rad) N86°3'39"W
N86°3'05"W (Rad)

16
SHT 1

15

B319 N4°40'W

N69°7'23"E 192.56

OPEN SPACE

103.87

54.80

15

30

15

11.13

94.80

3
05
0.94 AC

2
04
0.53 AC

60

153.74(Calc)

168.90

1
03
1.23 AC
(PRIVATE ST)

85.70

N30°21'25" W

203.02

N3°42'56"W

41
SHT 2

T.12S.

T.13S.

1
6.92 AC.

144
POR LOT 2

N68°12'56"E 194.98

M14760

115.73

OPEN SPACE

240.70

M14760

N17°3'30"W

216
10

216
11
SHT 2

SE COR OF SEC 33

64.35

S0°30'57"E
51.62

S15°22'06"E
500.23

S0°58'11"E
205

S18°13'27"E
125.40

FRONTAGE RD.

PIRAEUS

N13°39'W
1625

ST

RD

OP

HWY OP

XI-SD-5

582.29

608.08

14
SHT 1

56

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.

JFL
7 20 11

SAN DIEGO COUNTY ASSESSOR'S MAP BK 254 PG 14 - SHT 2 OF 2

MAP 14760 - LEUCADIA HILLS
SEC 4 - T13S - R4W - POR N 1/4
ROS 8939

09

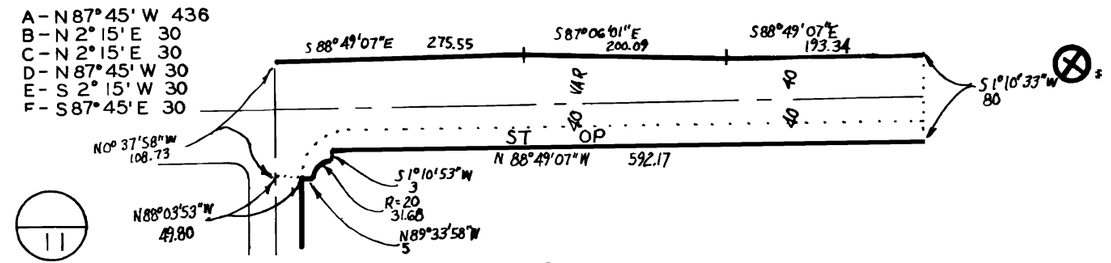
216-11
SHT 2 OF 2

1" = 400'

N

DETAIL A
NO SCALE

A - N 87° 45' W 436
B - N 2° 15' E 30
C - N 2° 15' E 30
D - N 87° 45' W 30
E - S 2° 15' W 30
F - S 87° 45' E 30



216-11

15

11
SHT 1

N. 89°18'47" W. (R.O.S. 10774)
929.78
N 39°31'47" W 257.29
N 46°58'59" W 695.63
N 68°31'17" W 239.99
311.44
128.70
243.69
N0°42'07"W 1042.07
SEC 33
SEC 34
28
10.6 i AC
POR 17
BATIQUITOS
LAGOON
19
21.49 AC
13
32
1.06 AC
5
S28°40'06"E 798.94
N50°42'37"E 1063.22
747.84
2658.04
34
0.62 AC
315.15
R=1440
457.41
N68°04'24"E
444.90
CITY
BDY
451.96
RS 516 VAC
R=1300
S 53°56'27"W 136.22
S 58°13'30"E 267.57
R=1400
R=1500
N 89°50'11"E
14
18
DC
F
A
B
43
SHT 2
587°33'02"E
N89°49'07"E
4194.45
589°57'57"E 300.06
8.86
N87°05'59"W 1390.35
15
2
4.00 AC
N83°14'07"E
1332.36
2327.35
37
CARLSBAD
ENCINITAS
AVE
C/L RS 1796
C/L RS 516
R=1000 293.80
S86°02'16"E 280.78
R=500 114.54
41
R=1798 N78°35'28"E 870.32
RS1796-65
R=1400 307.50
5/24/00 MAS
SEE DETAIL 'A'
OF
RD
110
54
42
17.00 AC
7
1203.76
1337.76
N0°28'52"W
1338.70
1182.75
N0°37'38"W (ROS)
R=500 279.85
R=673.31 295.94
36
15.20 AC
662.94
1325.48
N 89°54'55"E
N89°48'11"E
POR 9
BDY
ST
N 89°33'41"E 1322.59 (ROS)
1320.45
1322.50 (ROS)
1324.73
N89°26'42"E
N 89°36'17"E (ROS)
12
18.85AC
SKY LOFT RD
S28°01'40"W 188
33
SHT 2
35
4.93AC
R=950 541.20
1359.19
N1°17'22"W 677.03
N31°21'39"E 80.15
N 55°54'20"W R=300 229.27
N80°18'28"W 165
R=300 152.64
S70°32'24"W 133
R=300 59.55
S80°00'16"W 147
R=300 272.15
30
10
667.92 (ROS)
666.17
1315.21 (ROS)
1314.33
N89°09'10"W (ROS 1652)
R=300 47.43
PIRAEUS
N0°43'34"W 5432.35
S 38°39'34" 70.71
N 39°57'11" W 400.88
104.43
N0°30'57"W
33/34
N89°37'43"W 64.35
10
6
INTERSTATE 5
1118.59
N0°57'12"W
31
19.75 AC
33
SHT 1
14
7.63AC
SAXONY
50
R=1000 329.29
60
N85°50'W 541.11
1318.59
N89°45'52"E 2637.17
(ROS 5785)
T12S
T13S
254
20
SHT 2
254
14
SHT 2

CHANGES

BLK	OLD	NEW	YR	CUT	
110	216-080 11607	28,29	84	10011	
	7	84 254 PG 5 2015?	84	210	
	30	SAME & REA OR	86	4636	
	30	PG. 39	86	84	
	26 & 27	31-34	86	1298	TRA
	33	PG 83 JM TS 1/2	88	273	
	8, 19, 21, 22, 32, 34	SAME & ST. WID.	88	4841	
	12	SAME & ST. WID.	88	4842	
	29	356 RD. OP.	89	2228	CANC
	13	PG. 50	92	126	
	5	SAME & STOP	95	4615	
	31	SAME & ST WID	96	4671	
	5, 21 & 22	36-41	97	1896	
	40	PG-54	99	13	
	38 & 39	42	99	1796	

6-13-83
SALAS

SAN DIEGO COUNTY
ASSESSOR'S MAP
BOOK 216 PAGE 11 SHT 2 OF 2

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.

MAP 10817 - CO. OF S. D. TCT 4265
SEC 34 - T12S - R4W - POR S1/2
SEC 33 - T12S - R4W - POR E1/2 OF SE1/4
ROS 5985, 6269, 9880, 10452, 10467, 10774, 12639, 13296, 15548, 16465

APPENDIX B

CLIENT–PROVIDED INFORMATION FOR THE SITE

Site: Piraeus Point, Encinitas, CA; Project No. G2307-62-04A

***Please elaborate on any question answered "yes." If the question does not apply to the site, please answer "N/A".**

1. If possible, please provide us with the title, appraisal, or sale agreement records to review and discuss in the Phase I ESA.

Updated PTR attached to email with this completed, signed questionnaire.

2. Are you aware of any environmental liens or activity and use limitations associated with the Site?

No.

3. Do you have any specialized knowledge of the Site?

No.

4. Please provide any commonly known or reasonably ascertainable information about the Site.

N/A

5. Who currently owns, manages, and operates the Site?

Harry Cannon

6. Has the monetary value of the Site been reduced due to environmental issues associated with the Site or adjacent properties?

No.

7. Why are you requesting a Phase I ESA for the Site?

City of Encinitas requires updated Phase I with application submittal.

David W. Shepherd_____ _2/7/2022_____

NAME (IN PRINT) DATE



SIGNATURE

Director of Entitlements

COMPANY NAME AND TITLE

Please feel free to contact me if you have any questions.
When complete, return the questionnaire via email or fax:

Mr. Cole Mikesell
Geocon Incorporated
Cmikesell@geoconinc.com
(619) 788-3750 PHONE
(858) 558-6159 FAX

PROPERTY BACKGROUND INFORMATION QUESTIONNAIRE FOR SITE OWNER, OCCUPANT, OR REPRESENTATIVE

Site: Piraeus Point, Encinitas, CA; Project No. G2307-62-04A

***Please elaborate on any question answered "yes." If the question does not apply to the site, please answer "N/A".**

1) Describe the current uses of the Site. Vacant

2) How long has the Site been used for these purposes? Over 20 years

3) How long have you occupied the Site? Vacant

4) List the existing structures on the property and their age. None

5) Describe the past uses, owners, and operators of the Site. (Be as detailed as possible and note approximate time periods.) 254-144-01 – Past agricultural use
216-110-35 – Unknown

6) Utilities including electricity, natural gas, water, sewer, and trash removal are provided to the Site by which utility/companies.

Water -
Sewer -
Electricity - None
Natural Gas -
Trash –

7) What type of heating, ventilating, and air conditioning (HVAC) system is located at the Site and how is the HVAC system powered? None

8) Have the Site or adjoining properties been used for industrial activities, such the following? (Please note that an adjoining property is a property that is contiguous with, or directly across the street from the Site.)

Gasoline Station	[ ] Yes [✓] No
Printing Facility	[ ] Yes [✓] No
Metal Plating Manufacturing	[ ] Yes [✓] No
Landfill	[ ] Yes [✓] No
Motor Repair Facility	[ ] Yes [✓] No
Dry Cleaners	[ ] Yes [✓] No
Junkyard	[ ] Yes [✓] No
Waste Treatment	[ ] Yes [✓] No
Storage, Disposal, or Recycling Facility	[ ] Yes [✓] No

Describe other industrial activities, if any. None

9) Have any hazardous substances, petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or other waste materials been dumped aboveground, buried, or burned on the Site?

[ ] Yes [X] No

10) Have any of the following items been stored on the Site in containers greater than 5 gallons?

Paint [ ] Yes [X] No
Chemicals [ ] Yes [X] No
Pesticides [ ] Yes [X] No

11) Are hazardous wastes generated at the Site? If yes, describe the means of disposal and frequency of disposal.

[ ] Yes [X] No

12) Have petroleum products been stored on the Site or transferred across the Site in pipelines, either above or belowground?

[ ] Yes [X] No

13) Has fill dirt been brought onto the Site from an offsite source?

[ ] Yes [ ] No unknown, city/county graded portions of South Property due to Landslide

14) Is there evidence that the fill dirt in Question 13 may be contaminated?

[ ] Yes [N] No

15) Are there currently any pits, ponds, or lagoons on the Site?

[ ] Yes [N] No

16) Have any pits, ponds, or lagoons previously existed on the Site?

[ ] Yes [N] No

17) Are there currently areas on the Site with stained soil?

[ ] Yes [N] No

18) Have stained soils previously existed on the Site?

[ ] Yes [X] No

19) Do chemical-containing underground or aboveground storage tanks exist, or have they existed previously on the Site?

[ ] Yes [X] No

20) Do fill pipes, vent pipes, or access ways indicating the presence of current or former underground storage tanks exist on the Site?

[ ] Yes [X] No

21) Have fill pipes or vent pipes which may indicate the presence of a current or former underground storage tank been removed from the Site?

[ ] Yes [X] No

22) Are floor drains stained with anything other than water in any area on the Site?

[ ] Yes [X] No N/A

23) Do floor drains on the Site emit foul odors?

[ ] Yes [X] No N/A

24) Is the Site served by a private well or a non-public water source?

[ ] Yes [X] No

25) Are contaminants known to exist in any private well or non-public water system serving the Site?

[ ] Yes [X] No N/A

26) Does the Site discharge wastewater, other than domestic wastewater or storm water, into the sewer?

[ ] Yes [X] No

27) Other than permission for domestic hookup, have any city, county, or local permits for wastewater discharge been issued to the Site?
[ ] Yes [X] No

28) Does a septic tank exist, or has one existed previously on the Site?

[ ] Yes [N] No

29) Do cesspools or cisterns currently exist on the Site?

[ ] Yes [N] No

30) Have cesspools or cisterns previously existed on the Site?

[ ] Yes [N] No

31) Other than storm water, does the Site discharge waste water onto the neighboring Site?

[ ] Yes [N] No

32) Is there a transformer or capacitor that may contain PCBs on the Site?

[ ] Yes [N] No

33) Is there hydraulic equipment such as automobile lifts or elevators on the Site?

[ ] Yes [N] No

34) Are PCBs contained in hydraulic oil associated with hydraulic equipment located on the Site?

[ ] Yes [N] No

35) Has an asbestos and/or lead-based paint survey been conducted at the Site? If so, what were the findings?

[ ] Yes [N] No

36) Other than small quantities of legal pesticides used for landscape maintenance (e.g., Roundup), have pesticides, herbicides, or insecticides been applied on the Site?
[ ] Yes [N] No

37) Are you aware of any environmental liens against the Site that are filed or recorded under federal, tribal, state, or local law?

[ ] Yes [N] No

38) Have any environmental violations or citations associated with activities conducted on the Site been issued?

[ ] Yes [X] No

39) Has the Site been included in other environmental assessments? If so, can copies of the reports be provided?

[ ] Yes [X] No

40) Have other environmental assessments identified hazardous substances or petroleum products that exist, or may have existed on the Site?

[ ] Yes [X] No

41) Are there any pending lawsuits that involve the release or threatened release of hazardous substances associated with the Site?

[ ] Yes [X] No

42) Are you aware of any activity and land use limitations, such as engineering controls, land use restrictions or institutional controls that are in place on the Site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

[ ] Yes [X] No

43) Are you aware of any commonly known or reasonably ascertainable information about the Site that would help the environmental professional to identify conditions indicative of hazardous substance releases or threatened hazardous substance releases?

[ ] Yes [X] No

44) Do you have any specialized knowledge or experience related to the Site or nearby properties, including the knowledge of the chemicals and processes used by this type of business?

[ ] Yes [X] No

45) Based in your knowledge or experience related to the Site, are there any obvious indicators that point to the presence or likely presence of contamination at the Site?

[ ] Yes [X] No

46) If the purchase price of the Site was below fair market value, did this occur because contamination was/is known or believed to be present on the Site?

[ ] Yes [ ] No [N] N/A

Damien Mavis — NAME (IN PRINT)

2/7/22 — DATE

SIGNATURE

[ ] Owner [ ] Occupant [X] Owner Representative

Please feel free to contact me if you have any questions.
When complete, return the questionnaire via email or fax:

Mr. Cole Mikesell
Geocon Incorporated
Cmikesell@geoconinc.com
(619) 788-3750 PHONE
(858) 558-6159 FAX

APPENDIX C

Piraeus Point
Piraeus Street/Plato Place
Encinitas, CA 92024

Inquiry Number: 6844503.2s
February 03, 2022

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Detail Map	3
Map Findings Summary	4
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Orphan Summary	94
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GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527-21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

PIRAEUS STREET/PLATO PLACE
ENCINITAS, CA 92024

COORDINATES

Latitude (North):	33.0792250 - 33ˆ 4' 45.21''
Longitude (West):	117.2951480 - 117ˆ 17' 42.53''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	472452.5
UTM Y (Meters):	3659917.2
Elevation:	158 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	12015887 ENCINITAS, CA
Version Date:	2018

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
PIRAEUS STREET/PLATO PLACE
ENCINITAS, CA 92024

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	NAYLOR AUTO REPAIR	1651 CAUDOR ST	RCRA-SQG, FINDS, ECHO	Higher	640, 0.121, East
2	GEORGEANNE & ANDRES	511 NANTUCKET CT	RCRA NonGen / NLR	Lower	772, 0.146, WNW
3	1540 CAUDOR STREET	1540 CAUDOR STREET	CPS-SLIC, CERS	Higher	889, 0.168, SE
A4	MELISSA MACKEWIZZ	1499 HYMETTUS AVENUE	RCRA NonGen / NLR	Lower	1105, 0.209, SW
B5	ALAIN BAYOUD	1722 BURGUNDY ROAD	RCRA NonGen / NLR	Higher	1111, 0.210, ENE
B6	STEVE & BEVERLY ENEW	1730 BURGUNDY RD	RCRA NonGen / NLR	Higher	1142, 0.216, NE
B7	ENEWOLD, STEVEN & BE	1730 BURGUNDY ROAD	RCRA NonGen / NLR	Higher	1142, 0.216, NE
8	NATALIE CAUDILLO	408 ANDREW AVE	RCRA NonGen / NLR	Lower	1231, 0.233, WNW
9	JAIME SIMON	1714 EOLUS AVE	RCRA NonGen / NLR	Lower	1254, 0.237, West
A10	PROPOSED 19 UNIT SUB	1492 HYMETTUS AVENUE	SAN DIEGO CO. SAM, CPS-SLIC, DEED, CHMIRS, CIWQS,...	Lower	1270, 0.241, SW
C11	LA COSTA CHEVRON	540 LA COSTA AV	LUST, Cortese, NPDES	Lower	1441, 0.273, NW
C12	CHEVRON STATION #956	540 LA COSTA AVE	SAN DIEGO CO. SAM, San Diego Co. HMMD, CERS HAZ...	Lower	1441, 0.273, NW
D13	LA COSTA HOTEL	516 LA COSTA AVE	CPS-SLIC, CERS	Lower	1506, 0.285, NW
D14	WESTON FAMILY TRUST	510 LA COSTA AVENUE	CPS-SLIC, HAZNET, CERS, HWTS	Lower	1625, 0.308, NW
15	OLYMPUS ROAD BURNSIT	600 BLK OLYMPUS ROAD	SWF/LF, CERS	Lower	1775, 0.336, SSE
16	COCA COLA BOTTLING T	NONE HWY I5 NORTH OF	CPS-SLIC, CERS	Lower	1966, 0.372, NW
E17	BARRETT AMERICAN	236 ANDREW AV	LUST, SAN DIEGO CO. SAM, Cortese, SAN DIEGO CO...	Lower	2389, 0.452, WNW
E18	EATON BEACH ESTATES,	224 ANDREW AV	SAN DIEGO CO. SAM, CPS-SLIC, San Diego Co. HMMD,...	Lower	2467, 0.467, WNW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---------- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---------- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List

US INST CONTROLS ..... Institutional Controls Sites List

Federal ERNS list

ERNS ..... Emergency Response Notification System

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE ..... State Response Sites

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR ..... EnviroStor Database

Lists of state and tribal leaking storage tanks

INDIAN LUST ..... Leaking Underground Storage Tanks on Indian Land

Lists of state and tribal registered storage tanks

FEMA UST ..... Underground Storage Tank Listing
UST ..... Active UST Facilities
AST ..... Aboveground Petroleum Storage Tank Facilities
INDIAN UST ..... Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

VCP ..... Voluntary Cleanup Program Properties
INDIAN VCP ..... Voluntary Cleanup Priority Listing

Lists of state and tribal brownfield sites

BROWNFIELDS ..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT ..... Waste Management Unit Database
SWRCY ..... Recycler Database
HAULERS ..... Registered Waste Tire Haulers Listing
INDIAN ODI ..... Report on the Status of Open Dumps on Indian Lands
ODI ..... Open Dump Inventory
DEBRIS REGION 9 ..... Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ..... Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ..... Delisted National Clandestine Laboratory Register
HIST Cal-Sites ..... Historical Calsites Database

SCH ..... School Property Evaluation Program
CDL ..... Clandestine Drug Labs
San Diego Co. HMMD ..... Hazardous Materials Management Division Database
Toxic Pits ..... Toxic Pits Cleanup Act Sites
CERS HAZ WASTE ..... CERS HAZ WASTE
US CDL ..... National Clandestine Laboratory Register
AQUEOUS FOAM ..... Former Fire Training Facility Assessments Listing
PFAS ..... PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST ..... SWEEPS UST Listing
HIST UST ..... Hazardous Substance Storage Container Database
CERS TANKS ..... California Environmental Reporting System (CERS) Tanks
CA FID UST ..... Facility Inventory Database

Local Land Records

LIENS ..... Environmental Liens Listing
LIENS 2 ..... CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ..... Hazardous Materials Information Reporting System
CHMIRS ..... California Hazardous Material Incident Report System
LDS ..... Land Disposal Sites Listing
MCS ..... Military Cleanup Sites Listing
SPILLS 90 ..... SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ..... Formerly Used Defense Sites
DOD ..... Department of Defense Sites
SCRD DRYCLEANERS ..... State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ..... Financial Assurance Information
EPA WATCH LIST ..... EPA WATCH LIST
2020 COR ACTION ..... 2020 Corrective Action Program List
TSCA ..... Toxic Substances Control Act
TRIS ..... Toxic Chemical Release Inventory System
SSTS ..... Section 7 Tracking Systems
ROD ..... Records Of Decision
RMP ..... Risk Management Plans
RAATS ..... RCRA Administrative Action Tracking System
PRP ..... Potentially Responsible Parties
PADS ..... PCB Activity Database System
ICIS ..... Integrated Compliance Information System
FTTS ..... FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ..... Material Licensing Tracking System
COAL ASH DOE ..... Steam-Electric Plant Operation Data
COAL ASH EPA ..... Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ..... PCB Transformer Registration Database
RADINFO ..... Radiation Information Database
HIST FTTS ..... FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ..... Incident and Accident Data

CONSENT Superfund (CERCLA) Consent Decrees
INDIAN RESERV Indian Reservations
FUSRAP Formerly Utilized Sites Remedial Action Program
UMTRA Uranium Mill Tailings Sites
LEAD SMELTERS Lead Smelter Sites
US AIRS Aerometric Information Retrieval System Facility Subsystem
US MINES Mines Master Index File
ABANDONED MINES Abandoned Mines
FINDS Facility Index System/Facility Registry System
DOCKET HWC Hazardous Waste Compliance Docket Listing
UXO Unexploded Ordnance Sites
ECHO Enforcement & Compliance History Information
FUELS PROGRAM EPA Fuels Program Registered Listing
CA BOND EXP. PLAN Bond Expenditure Plan
CUPA Listings CUPA Resources List
DRYCLEANERS Cleaner Facilities
EMI Emissions Inventory Data
ENF Enforcement Action Listing
Financial Assurance Financial Assurance Information Listing
HAZNET Facility and Manifest Data
ICE ICE
HIST CORTESE Hazardous Waste & Substance Site List
HWP EnviroStor Permitted Facilities Listing
HWT Registered Hazardous Waste Transporter Database
MINES Mines Site Location Listing
MWMP Medical Waste Management Program Listing
NPDES NPDES Permits Listing
PEST LIC Pesticide Regulation Licenses Listing
PROC Certified Processors Database
Notify 65 Proposition 65 Records
UIC UIC Listing
UIC GEO UIC GEO (GEOTRACKER)
WASTEWATER PITS Oil Wastewater Pits Listing
WDS Waste Discharge System
WIP Well Investigation Program Case List
MILITARY PRIV SITES MILITARY PRIV SITES (GEOTRACKER)
PROJECT PROJECT (GEOTRACKER)
WDR Waste Discharge Requirements Listing
SAN DIEGO CO LOP Local Oversight Program Listing
CIWQS California Integrated Water Quality System
CERS CERS
NON-CASE INFO NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ Well Stimulation Project (GEOTRACKER)
MINES MRDS Mineral Resources Data System
HWTS Hazardous Waste Tracking System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants

EXECUTIVE SUMMARY

EDR Hist Auto---------- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner---------- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF---------- Recovered Government Archive Solid Waste Facilities List
RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal RCRA generators

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 09/13/2021 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NAYLOR AUTO REPAIR EPA ID:: CAD981451347	***1651 CAUDOR ST***	***E 0 - 1/8 (0.121 mi.)***	***1***	***9***

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there is 1 SWF/LF site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
OLYMPUS ROAD BURNSIT	***600 BLK OLYMPUS ROAD***	***SSE 1/4 - 1/2 (0.336 mi.)***	***15***	***86***
Database: SWF/LF (SWIS), Date of Government Version: 11/08/2021 Facility ID: 37-CR-0061 Operational Status: Closed Regulation Status: Pre-regulation				

Lists of state and tribal leaking storage tanks

SAN DIEGO CO. SAM: The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

A review of the SAN DIEGO CO. SAM list, as provided by EDR, and dated 03/23/2010 has revealed that there are 4 SAN DIEGO CO. SAM sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PROPOSED 19 UNIT SUB	***1492 HYMETTUS AVENUE***	***SW 1/8 - 1/4 (0.241 mi.)***	***A10***	***30***
Case Number: H99106-001 Facility Status: Preliminary Assessment				
CHEVRON STATION #956	***540 LA COSTA AVE***	***NW 1/4 - 1/2 (0.273 mi.)***	***C12***	***41***
Case Number: H12458-001 Facility Status: Closed Case				
BARRETT AMERICAN	***236 ANDREW AV***	***WNW 1/4 - 1/2 (0.452 mi.)***	***E17***	***89***
Case Number: 226452 Facility Status: Closed Case				
EATON BEACH ESTATES,	***224 ANDREW AV***	***WNW 1/4 - 1/2 (0.467 mi.)***	***E18***	***92***
Case Number: H99138-001 Facility Status: Closed Case				

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
LA COSTA CHEVRON	***540 LA COSTA AV***	***NW 1/4 - 1/2 (0.273 mi.)***	***C11***	***39***
Database: LUST, Date of Government Version: 09/07/2021 Status: Completed - Case Closed Global Id: T0607302127				
BARRETT AMERICAN	***236 ANDREW AV***	***WNW 1/4 - 1/2 (0.452 mi.)***	***E17***	***89***
Database: LUST, Date of Government Version: 09/07/2021 Status: Completed - Case Closed Global Id: T06019729886				

EXECUTIVE SUMMARY

CPS-SLIC: Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CPS-SLIC list, as provided by EDR, has revealed that there are 6 CPS-SLIC sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
1540 CAUDOR STREET	***1540 CAUDOR STREET***	***SE 1/8 - 1/4 (0.168 mi.)***	***3***	***14***
Database: CPS-SLIC, Date of Government Version: 09/07/2021 Global Id: T10000005778 Facility Status: Completed - Case Closed				

Lower Elevation	Address	Direction / Distance	Map ID	Page
PROPOSED 19 UNIT SUB	***1492 HYMETTUS AVENUE***	***SW 1/8 - 1/4 (0.241 mi.)***	***A10***	***30***
Database: CPS-SLIC, Date of Government Version: 09/07/2021 Global Id: T06019732789 Global Id: T10000003208 Facility Status: Completed - Case Closed				
LA COSTA HOTEL	***516 LA COSTA AVE***	***NW 1/4 - 1/2 (0.285 mi.)***	***D13***	***83***
Database: CPS-SLIC, Date of Government Version: 09/07/2021 Global Id: T10000012696 Facility Status: Open - Site Assessment				
WESTON FAMILY TRUST	***510 LA COSTA AVENUE***	***NW 1/4 - 1/2 (0.308 mi.)***	***D14***	***84***
Database: CPS-SLIC, Date of Government Version: 09/07/2021 Global Id: T10000010402 Facility Status: Open - Site Assessment				
COCA COLA BOTTLING T	***NONE HWY I5 NORTH OF***	***NW 1/4 - 1/2 (0.372 mi.)***	***16***	***88***
Database: CPS-SLIC, Date of Government Version: 09/07/2021 Global Id: SLT19742840 Facility Status: Completed - Case Closed				
EATON BEACH ESTATES,	***224 ANDREW AV***	***WNW 1/4 - 1/2 (0.467 mi.)***	***E18***	***92***
Database: CPS-SLIC, Date of Government Version: 09/07/2021 Global Id: T06019755099 Facility Status: Completed - Case Closed				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Land Records

DEED: The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes .

A review of the DEED list, as provided by EDR, and dated 08/30/2021 has revealed that there is 1 DEED site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
PROPOSED 19 UNIT SUB	***1492 HYMETTUS AVENUE***	***SW 1/8 - 1/4 (0.241 mi.)***	***A10***	***30***

Status: COMPLETED - CASE CLOSED
Envirostor ID: T10000003208

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 09/13/2021 has revealed that there are 7 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
ALAIN BAYOUD	1722 BURGUNDY ROAD	ENE 1/8 - 1/4 (0.210 mi.)	B5	17
STEVE & BEVERLY ENEW EPA ID:: CAC003058678	1730 BURGUNDY RD	NE 1/8 - 1/4 (0.216 mi.)	B6	20
ENEWOLD, STEVEN & BE EPA ID:: CAC002983962	1730 BURGUNDY ROAD	NE 1/8 - 1/4 (0.216 mi.)	B7	22

Lower Elevation	Address	Direction / Distance	Map ID	Page
GEORGEANNE & ANDRES	511 NANTUCKET CT	WNW 1/8 - 1/4 (0.146 mi.)	2	12
MELISSA MACKEWIZZ EPA ID:: CAC003057889	1499 HYMETTUS AVENUE	SW 1/8 - 1/4 (0.209 mi.)	A4	15
NATALIE CAUDILLO EPA ID:: CAC003032828	408 ANDREW AVE	WNW 1/8 - 1/4 (0.233 mi.)	8	25
JAIME SIMON	1714 EOLUS AVE	W 1/8 - 1/4 (0.237 mi.)	9	27

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 09/20/2021 has revealed that there are 2 Cortese sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
LA COSTA CHEVRON Cleanup Status: COMPLETED - CASE CLOSED	***540 LA COSTA AV***	***NW 1/4 - 1/2 (0.273 mi.)***	***C11***	***39***
BARRETT AMERICAN Cleanup Status: COMPLETED - CASE CLOSED	***236 ANDREW AV***	***WNW 1/4 - 1/2 (0.452 mi.)***	***E17***	***89***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
COCA COLA BOTTLING TRUCK SPIL	SAN DIEGO CO. SAM

OVERVIEW MAP - 6844503.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Piraeus Point	CLIENT: Geocon Env. Consultants, Inc.
ADDRESS: Piraeus Street/Plato Place Encinitas CA 92024	CONTACT: Cole Mikesell
LAT/LONG: 33.079225 / 117.295148	INQUIRY #: 6844503.2s DATE: February 03, 2022 8:36 am

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DETAIL MAP - 6844503.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Piraeus Point	CLIENT:	Geocon Env. Consultants, Inc.
ADDRESS:	Piraeus Street/Plato Place Encinitas CA 92024	CONTACT:	Cole Mikesell
LAT/LONG:	33.079225 / 117.295148	INQUIRY #:	6844503.2s
		DATE:	February 03, 2022 8:37 am

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		1	0	NR	NR	NR	1
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
Lists of state- and tribal (Superfund) equivalent sites								
RESPONSE	1.000		0	0	0	0	NR	0
Lists of state- and tribal hazardous waste facilities								
ENVIROSTOR	1.000		0	0	0	0	NR	0
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	1	NR	NR	1

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Lists of state and tribal leaking storage tanks								
SAN DIEGO CO. SAM	0.500		0	1	3	NR	NR	4
LUST	0.500		0	0	2	NR	NR	2
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	2	4	NR	NR	6
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
San Diego Co. HMMD	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
AQUEOUS FOAM	TP		NR	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
HIST UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	1	0	NR	NR	1
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	7	NR	NR	NR	7
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
UXO	1.000		0	0	0	0	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	2	NR	NR	2
CUPA Listings	0.250		0	0	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
SAN DIEGO CO LOP	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
HWTS	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	1	11	12	0	0	24

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
East
< 1/8
0.121 mi.
640 ft.

NAYLOR AUTO REPAIR
1651 CAUDOR ST
ENCINITAS, CA 92024

RCRA-SQG
FINDS
ECHO

1000290754
CAD981451347

Relative:
Higher

Actual:
179 ft.

RCRA-SQG:

Date Form Received by Agency:		19860305
Handler Name:	NAYLOR AUTO REPAIR	
Handler Address:		1651 CAUDOR ST
Handler City,State,Zip:		ENCINITAS, CA 92024
EPA ID:		CAD981451347
Contact Name:		ENVIRONMENTAL MANAGER
Contact Address:		1651 CAUDOR ST
Contact City,State,Zip:		ENCINITAS, CA 92024
Contact Telephone:		619-753-4237
Contact Fax:		Not reported
Contact Email:		Not reported
Contact Title:		Not reported
EPA Region:		09
Land Type:		Not reported
Federal Waste Generator Description:		Small Quantity Generator
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Handler Activities
State District Owner:		CA
State District:		4
Mailing Address:		CAUDOR ST
Mailing City,State,Zip:		ENCINITAS, CA 92024
Owner Name:		WILFORD NAYLOR
Owner Type:		Private
Operator Name:		NOT REQUIRED
Operator Type:		Private
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported
Hazardous Secondary Material Indicator:		NN
Sub-Part K Indicator:		Not reported
Commercial TSD Indicator:		No
Treatment Storage and Disposal Type:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
Permit Renewals Workload Universe:		Not reported

NAYLOR AUTO REPAIR (Continued) **1000290754**

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20000915
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	WILFORD NAYLOR
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	NOT REQUIRED
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

NAYLOR AUTO REPAIR (Continued) **1000290754**

Historic Generators:

Receive Date:	19860305
Handler Name: NAYLOR AUTO REPAIR	
Federal Waste Generator Description:	Small Quantity Generator
State District Owner:	CA
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Codes:	No NAICS Codes Found

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

FINDS:

Registry ID: 110002711664

Click Here:

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000290754
Registry ID:	110002711664
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002711664
Name:	NAYLOR AUTO REPAIR
Address:	1651 CAUDOR ST
City,State,Zip:	ENCINITAS, CA 92024

2
WNW
1/8-1/4
0.146 mi.
772 ft.

GEORGEANNE & ANDRES XAGORARAKIS
511 NANTUCKET CT
ENCINITAS, CA 92024

RCRA NonGen / NLR

1026481705
CAC003087720

Relative:
Lower

Actual:
61 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	20201009
Handler Name:	GEORGEANNE & ANDRES XAGORARAKIS
Handler Address:	511 NANTUCKET CT
Handler City,State,Zip:	ENCINITAS, CA 92024
EPA ID:	CAC003087720
Contact Name:	GEORGEANNE & ANDRES XAGORARAKIS
Contact Address:	511 NANTUCKET CT
Contact City,State,Zip:	ENCINITAS, CA 92024
Contact Telephone:	949-933-9414
Contact Fax:	Not reported
Contact Email:	VANESSABRONDSTETTER@ALLIANCE-ENVIRO.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	511 NANTUCKET CT
Mailing City,State,Zip:	ENCINITAS, CA 92024
Owner Name:	GEORGEANNE & ANDRES XAGORARAKIS
Owner Type:	Other
Operator Name:	GEORGEANNE & ANDRES XAGORARAKIS
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported

GEORGEANNE & ANDRES XAGORARAKIS (Continued) **1026481705**

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20201026
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	GEORGEANNE & ANDRES XAGORARAKIS
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	511 NANTUCKET CT
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	949-933-9414
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	GEORGEANNE & ANDRES XAGORARAKIS
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	511 NANTUCKET CT
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	949-933-9414
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

GEORGEANNE & ANDRES XAGORARAKIS (Continued) **1026481705**

Historic Generators:
Receive Date: 20201009
Handler Name: GEORGEANNE & ANDRES XAGORARAKIS
Federal Waste Generator Description: Not a generator, verified
State District Owner: Not reported
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

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3 **1540 CAUDOR STREET** **CPS-SLIC S116290522**
SE **1540 CAUDOR STREET** **CERS N/A**
1/8-1/4 **ENCINITAS, CA 92024**
0.168 mi.
889 ft.

Relative:
Higher

Actual:
173 ft.

CPS-SLIC:
Name: 1540 CAUDOR STREET
Address: 1540 CAUDOR STREET
City,State,Zip: ENCINITAS, CA 92024
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 03/25/2014
Global Id: T10000005778
Lead Agency: SAN DIEGO COUNTY LOP
Lead Agency Case Number: DEH2014-LSAM-000237
Latitude: 33.077012929127
Longitude: -117.292061262566
Case Type: Cleanup Program Site
Case Worker: JC
Local Agency: SAN DIEGO COUNTY LOP
RB Case Number: Not reported
File Location: Local Agency
Potential Media Affected: Not reported
Potential Contaminants of Concern: Not reported
Site History: Refer to "Site Maps/Documents" tab for Closure Letter.

Click here to access the California GeoTracker records for this facility:

CERS:

1540 CAUDOR STREET (Continued) **S116290522**

Name: 1540 CAUDOR STREET
Address: 1540 CAUDOR STREET
City,State,Zip: ENCINITAS, CA 92024
Site ID: 198303
CERS ID: T10000005778
CERS Description: Cleanup Program Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: JAMES CLAY - SAN DIEGO COUNTY LOP
Entity Title: Not reported
Affiliation Address: P.O. Box 129261
Affiliation City: San Diego
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

A4 **MELISSA MACKEWIZZ** **RCRA NonGen / NLR** **1026051022**
SW **1499 HYMETTUS AVENUE** **CAC003057889**
1/8-1/4 **ENCINITAS, CA 92024**
0.209 mi.
1105 ft. **Site 1 of 2 in cluster A**

Relative: **Lower**
Actual: **150 ft.**

RCRA NonGen / NLR:
Date Form Received by Agency: 20200227
Handler Name: MELISSA MACKEWIZZ
Handler Address: 1499 HYMETTUS AVENUE
Handler City,State,Zip: ENCINITAS, CA 92024
EPA ID: CAC003057889
Contact Name: MELISSA MACKEWIZZ
Contact Address: 1499 HYMETTUS AVENUE
Contact City,State,Zip: ENCINITAS, CA 92024
Contact Telephone: 760-429-5657
Contact Fax: Not reported
Contact Email: VANESSAPIZARRO@ALLIANCE-ENVIRO.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported
State District Owner: Not reported
State District: Not reported
Mailing Address: 1499 HYMETTUS AVENUE
Mailing City,State,Zip: ENCINITAS, CA 92024
Owner Name: MELISSA MACKEWIZZ
Owner Type: Other
Operator Name: MELISSA MACKEWIZZ
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No

MELISSA MACKEWIZZ (Continued) **1026051022**

Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20200306
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	MELISSA MACKEWIZZ
Legal Status:	Other
Date Became Current:	Not reported

MELISSA MACKEWIZZ (Continued) **1026051022**

Date Ended Current:	Not reported
Owner/Operator Address:	1499 HYMETTUS AVENUE
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-429-5657
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	MELISSA MACKEWIZZ
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1499 HYMETTUS AVENUE
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-429-5657
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20200227
Handler Name: MELISSA MACKEWIZZ	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

B5 **ALAIN BAYOUD** **RCRA NonGen / NLR** **1026806372**
ENE **1722 BURGUNDY ROAD** **CAC003118590**
1/8-1/4 **ENCINITAS, CA 92024**
0.210 mi.
1111 ft. **Site 1 of 3 in cluster B**

Relative: **Higher**
Actual: **197 ft.**

RCRA NonGen / NLR:

Date Form Received by Agency:		20210507
Handler Name:	ALAIN BAYOUD	
Handler Address:		1722 BURGUNDY ROAD
Handler City,State,Zip:		ENCINITAS, CA 92024

ALAIN BAYOUD (Continued) **1026806372**

EPA ID:	CAC003118590
Contact Name:	ALAIN BAYOUD
Contact Address:	1722 BURGUNDY ROAD
Contact City,State,Zip:	ENCINITAS, CA 92024
Contact Telephone:	760-634-2271
Contact Fax:	Not reported
Contact Email:	ABAYOUD@GMAIL.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	1722 BURGUNDY ROAD
Mailing City,State,Zip:	ENCINITAS, CA 92024
Owner Name:	ALAIN BAYOUD
Owner Type:	Other
Operator Name:	ALAIN BAYOUD
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No

ALAIN BAYOUD (Continued) **1026806372**

TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20210514
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Operator
Owner/Operator Name:	ALAIN BAYOUD
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1722 BURGUNDY ROAD
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-634-2271
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Owner
Owner/Operator Name:	ALAIN BAYOUD
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1722 BURGUNDY ROAD
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-634-2271
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20210507
Handler Name: ALAIN BAYOUD	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No

ALAIN BAYOUD (Continued) **1026806372**

Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B6 **STEVE & BEVERLY ENEWOLD** **RCRA NonGen / NLR** **1026051789**
NE **1730 BURGUNDY RD** **CAC003058678**
1/8-1/4 **ENCINITAS, CA 92024**
0.216 mi.
1142 ft. **Site 2 of 3 in cluster B**

Relative:
Higher

Actual:
202 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 20200304
Handler Name: STEVE & BEVERLY ENEWOLD
Handler Address: 1730 BURGUNDY RD
Handler City,State,Zip: ENCINITAS, CA 92024
EPA ID: CAC003058678
Contact Name: STEVE & BEVERLY ENEWOLD
Contact Address: 5548 SPINNAKER BAY DRIVE
Contact City,State,Zip: LONG BEACH, CA 90803
Contact Telephone: 760-529-3997
Contact Fax: Not reported
Contact Email: VANESSAPIZARRO@ALLIANCE-ENVIRO.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported
State District Owner: Not reported
State District: Not reported
Mailing Address: 5548 SPINNAKER BAY DRIVE
Mailing City,State,Zip: LONG BEACH, CA 90803
Owner Name: STEVE & BEVERLY ENEWOLD
Owner Type: Other
Operator Name: STEVE & BEVERLY ENEWOLD
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No

STEVE & BEVERLY ENEWOLD (Continued) **1026051789**

Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20200306
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	STEVE & BEVERLY ENEWOLD
Legal Status:	Other
Date Became Current:	Not reported

STEVE & BEVERLY ENEWOLD (Continued) **1026051789**

Date Ended Current:	Not reported
Owner/Operator Address:	5548 SPINNAKER BAY DRIVE
Owner/Operator City,State,Zip:	LONG BEACH, CA 90803
Owner/Operator Telephone:	760-529-3997
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	STEVE & BEVERLY ENEWOLD
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	5548 SPINNAKER BAY DRIVE
Owner/Operator City,State,Zip:	LONG BEACH, CA 90803
Owner/Operator Telephone:	760-529-3997
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20200304
Handler Name:	STEVE & BEVERLY ENEWOLD
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

B7 **ENEWOLD, STEVEN & BEVERLY** **RCRA NonGen / NLR** **1024764096**
NE **1730 BURGUNDY ROAD** **CAC002983962**
1/8-1/4 **ENCINITAS, CA 92024**
0.216 mi.
1142 ft. **Site 3 of 3 in cluster B**

Relative: **Higher**
Actual: **202 ft.**

RCRA NonGen / NLR:

Date Form Received by Agency:	20181008
Handler Name:	ENEWOLD, STEVEN & BEVERLY
Handler Address:	1730 BURGUNDY ROAD
Handler City,State,Zip:	ENCINITAS, CA 92024

ENEWOLD, STEVEN & BEVERLY (Continued) **1024764096**

EPA ID:	CAC002983962
Contact Name:	ENEWOLD, STEVEN & BEVERLY
Contact Address:	1730 BURGUNDY ROAD
Contact City,State,Zip:	ENCINITAS, CA 92024
Contact Telephone:	760-616-9792
Contact Fax:	Not reported
Contact Email:	VANESSAPIZARRO@ALLIANCE-ENVIRO.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	1730 BURGUNDY ROAD
Mailing City,State,Zip:	ENCINITAS, CA 92024
Owner Name:	ENEWOLD, STEVEN & BEVERLY
Owner Type:	Other
Operator Name:	ENEWOLD, STEVEN & BEVERLY
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No

ENEWOLD, STEVEN & BEVERLY (Continued) **1024764096**

TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20181120
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	ENEWOLD, STEVEN & BEVERLY
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1730 BURGUNDY ROAD
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-616-9792
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	ENEWOLD, STEVEN & BEVERLY
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1730 BURGUNDY ROAD
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-616-9792
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20181008
Handler Name: ENEWOLD, STEVEN & BEVERLY	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No

ENEWOLD, STEVEN & BEVERLY (Continued) **1024764096**

Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

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8 NATALIE CAUDILLO **RCRA NonGen / NLR** **1025852655**
WNW 408 ANDREW AVE **CAC003032828**
1/8-1/4 ENCINITAS, CA 92024
0.233 mi.
1231 ft.

Relative: **Lower**
Actual: **122 ft.**

RCRA NonGen / NLR:
Date Form Received by Agency: 20190909
Handler Name: NATALIE CAUDILLO
Handler Address: 408 ANDREW AVE
Handler City,State,Zip: ENCINITAS, CA 92024-1146
EPA ID: CAC003032828
Contact Name: NATALIE CAUDILLO
Contact Address: 408 ANDREW AVE
Contact City,State,Zip: ENCINITAS, CA 92024-1146
Contact Telephone: 760-450-5916
Contact Fax: Not reported
Contact Email: RTRIM@HSABATEMENT.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Not reported
State District Owner: Not reported
State District: Not reported
Mailing Address: 408 ANDREW AVE
Mailing City,State,Zip: ENCINITAS, CA 92024-1146
Owner Name: NATALIE CAUDILLO
Owner Type: Other
Operator Name: NATALIE CAUDILLO
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No

NATALIE CAUDILLO (Continued) **1025852655**

Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20190910
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	NATALIE CAUDILLO
Legal Status:	Other
Date Became Current:	Not reported

NATALIE CAUDILLO (Continued) **1025852655**

Date Ended Current:	Not reported
Owner/Operator Address:	408 ANDREW AVE
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024-1146
Owner/Operator Telephone:	760-550-7739
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	NATALIE CAUDILLO
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	408 ANDREW AVE
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024-1146
Owner/Operator Telephone:	760-450-5916
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20190909
Handler Name: NATALIE CAUDILLO	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

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9 **JAIME SIMON** **RCRA NonGen / NLR** **1026808092**
West **1714 EOLUS AVE** **CAC003120394**
1/8-1/4 **ENCINITAS, CA 92024**
0.237 mi.
1254 ft.

Relative: **Lower**

Actual: **139 ft.**

RCRA NonGen / NLR:

Date Form Received by Agency:		20210519
Handler Name:	JAIME SIMON	
Handler Address:		1714 EOLUS AVE
Handler City,State,Zip:		ENCINITAS, CA 92024

JAIME SIMON (Continued) **1026808092**

EPA ID:	CAC003120394
Contact Name:	JAIME SIMON
Contact Address:	1714 EOLUS AVE
Contact City,State,Zip:	ENCINITAS, CA 92024
Contact Telephone:	760-420-3578
Contact Fax:	Not reported
Contact Email:	HBACCOUNTING@ECOMINDEDSOLUTIONS.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	1714 EOLUS AVE
Mailing City,State,Zip:	ENCINITAS, CA 92024
Owner Name:	JAIME SIMON
Owner Type:	Other
Operator Name:	JAIME SIMON
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No

JAIME SIMON (Continued) **1026808092**

TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20210521
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	JAIME SIMON
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1714 EOLUS AVE
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-420-3578
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	JAIME SIMON
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1714 EOLUS AVE
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-420-3578
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20210519
Handler Name: JAIME SIMON	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No

JAIME SIMON (Continued) **1026808092**

Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: No
Electronic Manifest Broker: No

List of NAICS Codes and Descriptions:
NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

A10 **PROPOSED 19 UNIT SUBDIVISION** **SAN DIEGO CO. SAM** **S108087033**
SW **1492 HYMETTUS AVENUE** **CPS-SLIC** **N/A**
1/8-1/4 **ENCINITAS, CA 92024** **DEED**
0.241 mi. **CHMIRS**
1270 ft. **Site 2 of 2 in cluster A** **CIWQS**
CERS

Relative:
Lower

Actual:
145 ft.

SAN DIEGO CO. SAM:
Name: HYMETTUS ESTATE
Address: 1492 HYMETTUS AV
City,State,Zip: ENCINITAS, CA 92024
Case Number: H99106-001
Agency: DEH Site Assessment & Mitigation
Funding: **Private - VAP**
Facility Type: Soils Only
Facility Status: Preliminary Assessment
Date: 3/22/2006
Date Began: Not reported

CPS-SLIC:
Name: HYMETTUS ESTATE
Address: 1492 HYMETTUS AV
City,State,Zip: ENCINITAS, CA 92024
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 07/19/2011
Global Id: T06019732789
Lead Agency: SAN DIEGO COUNTY LOP
Lead Agency Case Number: H99106-001
Latitude: 33.076143
Longitude: -117.299341
Case Type: Cleanup Program Site
Case Worker: CF
Local Agency: SAN DIEGO COUNTY LOP
RB Case Number: Not reported
File Location: Local Agency
Potential Media Affected: Soil
Potential Contaminants of Concern: Chlordane, DDD / DDE / DDT, Other Insecticides / Pesticide / Fumigants / Herbicides

PROPOSED 19 UNIT SUBDIVISION (Continued) **S108087033**

Site History: The property at 1492 Hymettus Avenue in Encinitas, California, was formerly used for agricultural purposes (i.e., citrus groves and row crops) in the 1930s and 1940s. Although aerial photographs indicate that the land was unused in the 1950s, greenhouses were constructed on the property in the 1960s or early 1970s for growing flowers. The flowering-growing activities continued until June 2007, when the property was sold to a prospective developer. Past agricultural use of the property is inferred to have involved the application of pesticides to site soils. Site investigations were performed in 2005 and 2006 by Vinje & Middleton in anticipation of residential development that indicated the presence of minor concentrations of the following pesticides: 4,4-DDD, 4,4-DDE, 4,4-DDT, endosulfan, and methoxychlor. However, the pesticide dieldrin was detected in soil samples at concentrations that exceed the California Health Soil Screening Level (CHSSL) for the compound (i.e., 35 micrograms per kilogram [a%g/kg]) and the U.S. EPA Region IX Residential Preliminary Remediation Goal of 30 a%g/kg. The maximum detected concentration of dieldrin in the 66 soil samples analyzed was 920 a%g/kg. The arithmetic mean concentration was for soil to a depth of 5.5 feet was calculated by Vinje & Middleton to be 114.3 a%g/kg for the area investigated. A geotechnical investigation was also performed by Vinje & Middleton in 2005 that identified fill materials in the central area of the property. The fill materials were described as occurring from the ground surface to a depth of approximately five feet. The lateral extent of the fill was not determined due to access limitations (i.e., greenhouses covered nearly 98% of the property). Noting that past agricultural practices usually introduced pesticides to the top 2 to 3 feet of soil, Vinje & Middleton surmised that soils previously impacted with pesticides had been graded and used to fill a drainage swale prior to construction of the greenhouses. [A topographic low does appear on a 1949 map on the western side of the property]. A Revised Remedial Action Work Plan to bury the dieldrin-impacted soil and cover it with clean soil excavated at the site, as well as imported fill, was approved on October 26, 2010. Grading operations in association with redevelopment of the site for construction of residential units began March 1, 2011.

Click here to access the California GeoTracker records for this facility:

Name:	PROPOSED 19 UNIT SUBDIVISION
Address:	1492 HYMETTUS AVENUE
City,State,Zip:	ENCINITAS, CA 92024
Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	10/24/2011
Global Id:	T10000003208
Lead Agency:	SAN DIEGO COUNTY LOP
Lead Agency Case Number:	H99106-002
Latitude:	33.076078
Longitude:	-117.299296
Case Type:	Cleanup Program Site
Case Worker:	CF
Local Agency:	SAN DIEGO COUNTY LOP
RB Case Number:	Not reported
File Location:	Local Agency
Potential Media Affected:	Soil
Potential Contaminants of Concern:	Other Insecticides / Pesticide / Fumigants / Herbicides

PROPOSED 19 UNIT SUBDIVISION (Continued) **S108087033**

Site History: DEH Case #H99106-002 was opened under the Voluntary Assistance Program (VAP) to address additional remedial work required at 1492 Hymettus Avenue in Encinitas following the closure of Case #H99106-001. Site characterization activities performed in 2006 indicated that the detected concentrations of the pesticide dieldrin in soil beneath the site exceeded its California Human Health Screening Level (CHHSL). Under the original case (#H99106-001), remediation of the dieldrin-impacted soil at the site was performed under a work plan approved by DEH on October 26, 2010. Dieldrin-impacted soil underlying the foundation footprints, front-yards and side-yards of the proposed 19-lot subdivision was excavated to an initial depth of seven feet below design finished grade. The impacted soil was temporarily stockpiled onsite while the excavated areas were deepened to approximately 14 feet. Non-impacted soil removed from the lower portion of the excavated areas was also temporarily stockpiled. [Note; non-impacted soil is used here to designate soil in which organochlorine pesticides were not detected or where analytical results indicated concentrations below CHHSLs]. After the collection of confirmation samples from the base of the excavated areas, the dieldrin-impacted soil was placed in the bottom portions of the excavated areas up to a depth of seven feet below design finished grade. A geotextile liner was placed on top of the dieldrin-impacted soil as a marker in the event any future excavation was performed. Following placement of the liner, stockpiled, non-impacted soil was used to fill the upper portion of the excavated areas. Additional non-impacted soil was imported from offsite locations and placed to augment the final cover at the site. Grading of the site to achieve design final grade was performed under a permit issued by the City of Encinitas to the developer (City Ventures). During the Citys review of the final grading map, it was found that the top of the dieldrin-impacted soil, which was covered with a geotextile marker, was less than seven feet below designed finish grade at front-yard locations of Lots 1 through 10. The sloping front-yards featured drainage swales to channel runoff into planned sediment retention basins. The retention basins were located in an easement between these lots and the road within the interior of the subdivision (Halia Court). Case #H99106-002 was opened to provide regulatory oversight for the additional work needed to provide a uniform, seven-foot-thick, cover fill of non-impacted soil over the entire remediated area. Borings were advanced by the consultant (Stantec) near the drainage swales or planned retention basins to allow collection of soil samples for analysis of organochlorine pesticides, including dieldrin. Detection of dieldrin at concentrations above the remedial action level (35 micrograms per kilogram) at depths of less than seven feet below design finished grade served to indicate the areas requiring additional remedial work. On August 3, 2011, City Ventures began excavating soils from the front-yards of Lots 6 through10. The area immediately adjoining the easement was excavated a maximum of one-to-three feet below the existing geotextile marker to achieve the required depth. Diedrin-impacted soils were reburied in the disposal area established beneath Lots 15 and 16 and covered with a seven-foot-thick layer of non-impacted soil. A new geotextile marker was placed at the bottom of the excavated front-yard areas at a depth of seven feet, which were then filled with non-impacted soil up to design finished grade. Soil was removed near three sediment retention basins in the easement between the front-yards of Lots 1 through 5 and Halia Court from

PROPOSED 19 UNIT SUBDIVISION (Continued) **S108087033**

September 14 through 26, 2011. The excavation terminated at a depth approximately 0.5 feet below the existing geotextile marker. The excavated soil was temporarily stockpiled onsite. Following placement of a new geotextile marker, non-impacted soil was then placed in the excavated areas to provide a seven-foot-thick cap. The excavated, stockpiled soil was then transported under manifest to an offsite disposal facility. The existing environmental covenant addressing the remediated dieldrin-impacted soil at the site was re-recorded with a revised map that shows the surveyed elevations of the top of the dieldrin-impacted soil in the subsurface. The additional work performed at the site to provide seven feet of non-impacted soil over the entire area underlain by dieldrin-impacted soil brings the site into conformance with the work plan approved in October 2010. Stantec has recommended no further action at the site and case closure. DEH concurs with these recommendations.

Click here to access the California GeoTracker records for this facility:

DEED:

Name:	PROPOSED 19 UNIT SUBDIVISION
Address:	1492 HYMETTUS AVENUE
City,State,Zip:	ENCINITAS, CA 92024
Envirostor ID:	T10000003208
Area:	Not reported
Sub Area:	Not reported
Site Type:	SLIC
Status:	COMPLETED - CASE CLOSED
Agency:	SWRCB
Covenant Uploaded:	Y
Deed Date(s):	10/17/2011
File Name:	Geotracker Land Use/Deed Restrictions

CHMIRS:

Name:	Not reported
Address:	1492 HYMETTUS AVE
City,State,Zip:	ENCINITAS, CA 92024
OES Incident Number:	1-2302
OES notification:	04/11/2011
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported

PROPOSED 19 UNIT SUBDIVISION (Continued) **S108087033**

Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Unknown
Waterway:	None Given
Spill Site:	Other
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Lbs.
Other:	Not reported
Date/Time:	1200
Year:	2011
Agency:	NRC
Incident Date:	3/2/2011
Admin Agency:	San Diego County Health Services Department
Amount:	Not reported
Contained:	Unknown
Site Type:	None Given
E Date:	Not reported
Substance:	Heavy Metals
Quantity Released:	UNK
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	********HISTORICAL SPILL********** THE DESTRUCTION OF A GREENHOUSE AND THE GRADING OF THE PROPERTY CAUSED ILLNESS TO MEMBERS OF THE NEARBY NEIGHBORHOOD. CALLER STATED THAT THE LAND THAT THE GREENHOUSE STOOD ON IS CONTAMINATED BY PESTICIDES. SHE BELIEVES THAT STORM RUNOFF FROM THE SITE WAS CONTAMINATED WITH PESTICIDES. SHE ALSO BELIEVES THAT SHE AND THE NEIGHBORS HAVE BEEN EXPOSED TO HEAVY METALS FROM UTILITY LINES. SHE STATED THAT VIDEO OF ACTIVITY IN THE NEIGHBORHOOD IS AVAILABLE ON HTTPS://PICASAWEB.GOOGLE.

PROPOSED 19 UNIT SUBDIVISION (Continued) **S108087033**

COM-JSTRATTMAN-CAMERA?AUTHKEY=
GB1SRGCKXQUPBBHCLEAQ#

Name:	Not reported
Address:	1492 HYMETTUS AVENUE
City,State,Zip:	ENCINITAS, CA 92024
OES Incident Number:	1-2013
OES notification:	03/29/2011
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Yes
Waterway:	Storm Drain, runs to Batiguitos Lagoon at the border of Encinitas and Carlbad
Spill Site:	Other
Cleanup By:	None
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Lbs.
Other:	Not reported
Date/Time:	800
Year:	2011
Agency:	Private Citizen
Incident Date:	3/2/2011
Admin Agency:	San Diego County Health Services Department
Amount:	Not reported
Contained:	Unknown
Site Type:	Storm Drain, runs to Batiguitos Lagoon at the border of Encinitas and Carlbad
E Date:	Not reported
Substance:	Volatile Organic Compound
Quantity Released:	Unknown
Unknown:	Not reported

PROPOSED 19 UNIT SUBDIVISION (Continued) **S108087033**

Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	16
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	ONGOING RELEASE - Caller states she is concerned about dust clouds in the area for two weeks from a construction site of an old green house. Caller states there is a high Dieldren count in the soil as well as other pesticides and due to the rain weather event, there was free standing water on-site. Last week, a neighbor advised they noticed the responsible party vacuuming up the water and dumping it into a storm drain off of Parkwood Lane. In addition, 16 people have been fallen ill and 25 people are complaining of symptoms in the area.

Name:	Not reported
Address:	1492 HYMETTUS AVE
City,State,Zip:	LEUCADIA, CA 92024
OES Incident Number:	1-3605
OES notification:	06/16/2011
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported

PROPOSED 19 UNIT SUBDIVISION (Continued) **S108087033**

Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Merchant/Business
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Unknown
Other:	Not reported
Date/Time:	800
Year:	2011
Agency:	NRC
Incident Date:	2/14/2011
Admin Agency:	San Diego County Health Services Department
Amount:	Not reported
Contained:	Unknown
Site Type:	Not reported
E Date:	Not reported
Substance:	Dieldrin
Quantity Released:	Unknown
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	Per NRC #979854 "Caller stated that there known high levels of Dieldren, into the atmosphere due to grading of the soil in the area, the neighbors of the area were complaining because of all of the dust in the area." Remedial actions: "None."

CIWQS:

Name:	NORTH POINTE
Address:	1492 HYMETTUS AVENUE
City,State,Zip:	ENCINITAS, CA 92024
Agency:	City Ventures Homebuilding LLC
Agency Address:	2850 red hill ave suite 200, Santa Ana, CA 92705
Place/Project Type:	Construction - Residential
SIC/NAICS:	Not reported
Region:	9
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction

PROPOSED 19 UNIT SUBDIVISION (Continued) **S108087033**

Order Number:	2009-0009-DWQ
WDID:	9 37C359957
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	11/30/2010
Termination Date:	09/26/2013
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	33.07642
Longitude:	-117.29934

CERS:

Name:	PROPOSED 19 UNIT SUBDIVISION
Address:	1492 HYMETTUS AVENUE
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	187027
CERS ID:	T10000003208
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	CAROL FENNER - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

Name:	HYMETTUS ESTATE
Address:	1492 HYMETTUS AV
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	256070
CERS ID:	T06019732789
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	CAROL FENNER - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

C11 **LA COSTA CHEVRON** **LUST** **S111760418**
NW **540 LA COSTA AV** **Cortese** **N/A**
1/4-1/2 **ENCINITAS, CA 92024** **NPDES**
0.273 mi.
1441 ft. **Site 1 of 2 in cluster C**

Relative:
Lower

Actual:
67 ft.

LUST:

Name:	LA COSTA CHEVRON
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 920241115
Lead Agency:	SAN DIEGO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607302127
Global Id:	T0607302127
Latitude:	33.0842136
Longitude:	-117.2995927
Status:	Completed - Case Closed
Status Date:	01/04/2001
Case Worker:	SW
RB Case Number:	9UT3365
Local Agency:	SAN DIEGO COUNTY LOP
File Location:	Local Agency
Local Case Number:	H12458-001
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0607302127
Contact Type:	Local Agency Caseworker
Contact Name:	SCOTT WELDON
Organization Name:	SAN DIEGO COUNTY LOP
Address:	P.O. Box 129261
City:	San Diego
Email:	scott.weldon@sdcounty.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0607302127
Action Type:	Other
Date:	03/02/1995
Action:	Leak Began
Global Id:	T0607302127
Action Type:	Other
Date:	03/02/1995
Action:	Leak Stopped
Global Id:	T0607302127
Action Type:	ENFORCEMENT
Date:	12/26/2000
Action:	Closure/No Further Action Letter
Global Id:	T0607302127
Action Type:	Other
Date:	03/02/1995
Action:	Leak Discovery
Global Id:	T0607302127

LA COSTA CHEVRON (Continued) **S111760418**

Action Type: Other
Date: 03/07/1995
Action: Leak Reported

LUST:
Global Id: T0607302127
Status: Open - Case Begin Date
Status Date: 03/02/1995

Global Id: T0607302127
Status: Completed - Case Closed
Status Date: 01/04/2001

CORTESE:
Name: LA COSTA CHEVRON
Address: 540 LA COSTA AV
City,State,Zip: ENCINITAS, CA 920241115
Region: CORTESE
Envirostor Id: Not reported
Global ID: T0607302127
Site/Facility Type: LUST CLEANUP SITE
Cleanup Status: COMPLETED - CASE CLOSED
Status Date: Not reported
Site Code: Not reported
Latitude: Not reported
Longitude: Not reported
Owner: Not reported
Enf Type: Not reported
Swat R: Not reported
Flag: active
Order No: Not reported
Waste Discharge System No: Not reported
Effective Date: Not reported
Region 2: Not reported
WID Id: Not reported
Solid Waste Id No: Not reported
Waste Management Uit Name: Not reported
File Name: Active Open

NPDES:
Name: CHEVRON SERVICES STATION
Address: 540 LA COSTA AVE
City,State,Zip: ENCINITAS, CA 92024
Facility Status: Not reported
NPDES Number: Not reported
Region: Not reported
Agency Number: Not reported
Regulatory Measure ID: Not reported
Place ID: Not reported
Order Number: Not reported
WDID: Not reported
Regulatory Measure Type: Construction
Program Type: Not reported
Adoption Date Of Regulatory Measure: Not reported
Effective Date Of Regulatory Measure: Not reported

LA COSTA CHEVRON (Continued) **S111760418**

Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Returned
Status Date:	04/18/2007
Operator Name:	Chevron
Operator Address:	145 S State College Blvd Ste 400
Operator City:	Brea
Operator State:	California
Operator Zip:	92821

C12 **CHEVRON STATION #95664/1943** **SAN DIEGO CO. SAM** **S104747343**
NW **540 LA COSTA AVE** **San Diego Co. HMMD** **N/A**
1/4-1/2 **ENCINITAS, CA 92024** **CERS HAZ WASTE**
0.273 mi. **CERS TANKS**
1441 ft. **Site 2 of 2 in cluster C** **CERS**
HWTS

Relative:
Lower

Actual:
67 ft.

SAN DIEGO CO. SAM:

Name:	LA COSTA CHEVRON
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 920241115
Case Number:	H12458-001
Agency:	DEH Site Assessment & Mitigation
Funding:	**LOP - Federal Fund**
Facility Type:	GW With No Beneficial Use Designation
Facility Status:	Closed Case
Date:	1/4/2001
Date Began:	3/2/1995

HMMD SAN DIEGO:

Name:	LA COSTA CHEVRON
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 92024
Permit Number:	112458
Business Type:	6HK29
EPA Id Number:	CAL000007354
APN:	216-030-51-00
Last HMMD Inspection:	08/06/2001
Facility Telephone:	760-436-9513
Permit Status:	CHNG
Permit Expiration:	04/30/2003
Date Last Updated:	11/02/2012
Facility Owner:	FREDUN HOJABRI
Facility Mailing Address:	PO BOX 6004
Facility Mailing City:	SAN RAMON
Facility Mailing State:	CA
Facility Mailing Zip:	94583-
UST Owner:	CHEVRON USA INC
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Y
Subject To APSA:	Not reported
Generate Haz Waste:	Y

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Treat Haz Waste: Not reported
Generate Medical Waste: Not reported

UST:

UST Name: UNDERGROUND TANK 112458 T001
Last Update: 2012-11-02 14:17:38
Permit Number: 112458
Tank Type: SINGLE WALL
Additional Id: 1
Capacity Gallons: 10000
UST Contents: Not reported
Other Content Info: SEE FILE FOR CONTENTS
Reg Status: REMOVED
Remove Close Date: 1986-11-08 00:00:00
Year Installed: 1967-01-01 00:00:00
Pipe Type: Not reported
Delivery System: Not reported
Monitor Code: 90
UST Monitor Method: NO MONITORING ALTERNATIVE SELECTED. VERIFY AND ENTER MONITORING ALTERNATIVE DURING INSPECTION.

UST Name: UNDERGROUND TANK 112458 T002
Last Update: 2012-11-02 14:17:38
Permit Number: 112458
Tank Type: SINGLE WALL
Additional Id: 2
Capacity Gallons: 10000
UST Contents: Not reported
Other Content Info: SEE FILE FOR CONTENTS
Reg Status: REMOVED
Remove Close Date: 1986-11-08 00:00:00
Year Installed: 1967-01-01 00:00:00
Pipe Type: Not reported
Delivery System: Not reported
Monitor Code: 90
UST Monitor Method: NO MONITORING ALTERNATIVE SELECTED. VERIFY AND ENTER MONITORING ALTERNATIVE DURING INSPECTION.

UST Name: UNDERGROUND TANK 112458 T003
Last Update: 2012-11-02 14:17:38
Permit Number: 112458
Tank Type: SINGLE WALL
Additional Id: 3
Capacity Gallons: 5000
UST Contents: Not reported
Other Content Info: SEE FILE FOR CONTENTS
Reg Status: REMOVED
Remove Close Date: 1986-11-08 00:00:00
Year Installed: 1967-01-01 00:00:00
Pipe Type: Not reported
Delivery System: Not reported
Monitor Code: 90
UST Monitor Method: NO MONITORING ALTERNATIVE SELECTED. VERIFY AND ENTER MONITORING ALTERNATIVE DURING INSPECTION.

UST Name: UNDERGROUND TANK 112458 T004
Last Update: 2012-11-02 14:17:38
Permit Number: 112458

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Tank Type:	SINGLE WALL
Additional Id:	4
Capacity Gallons:	1000
UST Contents:	Not reported
Other Content Info:	SEE FILE FOR CONTENTS
Reg Status:	REMOVED
Remove Close Date:	1986-11-08 00:00:00
Year Installed:	1967-01-01 00:00:00
Pipe Type:	Not reported
Delivery System:	Not reported
Monitor Code:	90
UST Monitor Method:	NO MONITORING ALTERNATIVE SELECTED. VERIFY AND ENTER MONITORING ALTERNATIVE DURING INSPECTION.

UST Name:	UNDERGROUND TANK 201007 T005
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 T3
Capacity Gallons:	10000
UST Contents:	REGULAR UNLEADED
Other Content Info:	REGULAR UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	SINGLE WALL
Delivery System:	PRESSURE
Monitor Code:	18
UST Monitor Method:	DW TNK SW PRESSURE PIPE W/ SHUTOFF LLD: INTERSTITIAL, PIPE TEST ANNUALLY 0.1 GAL/HR OR MONTHLY 0.2 GAL/HR.

UST Name:	UNDERGROUND TANK 201007 T004
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 T2
Capacity Gallons:	10000
UST Contents:	MIDGRADE UNLEADED
Other Content Info:	MIDGRADE UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	SINGLE WALL
Delivery System:	PRESSURE
Monitor Code:	18
UST Monitor Method:	DW TNK SW PRESSURE PIPE W/ SHUTOFF LLD: INTERSTITIAL, PIPE TEST ANNUALLY 0.1 GAL/HR OR MONTHLY 0.2 GAL/HR.

UST Name:	UNDERGROUND TANK 201007 T003
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 T1
Capacity Gallons:	10000
UST Contents:	PREMIUM UNLEADED
Other Content Info:	PREMIUM UNLEADED
Reg Status:	ACTIVE

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	SINGLE WALL
Delivery System:	PRESSURE
Monitor Code:	18
UST Monitor Method:	DW TNK SW PRESSURE PIPE W/ SHUTOFF LLD: INTERSTITIAL, PIPE TEST ANNUALLY 0.1 GAL/HR OR MONTHLY 0.2 GAL/HR.
UST Name:	UNDERGROUND TANK 112458 T008
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 T4/AT4809
Capacity Gallons:	1000
UST Contents:	Not reported
Other Content Info:	WASTE OIL
Reg Status:	REMOVED
Remove Close Date:	2002-12-27 00:00:00
Year Installed:	1985-10-16 00:00:00
Pipe Type:	Not reported
Delivery System:	GRAVITY
Monitor Code:	21
UST Monitor Method:	DW TANK DW SUCTION AND/ OR GRAVITY PIPING WITH INTERSTITIAL MONITORS: INTERSTITIAL.
Name:	CHEVRON STATION #95664/1943
Address:	540 LA COSTA AVE
City,State,Zip:	ENCINITAS, CA 92024
Permit Number:	Not reported
Business Type:	Not reported
EPA Id Number:	CAR000119198
APN:	Not reported
Last HMMD Inspection:	Not reported
Facility Telephone:	760-479-0826
Permit Status:	Permit Renewed
Permit Expiration:	Not reported
Date Last Updated:	06/02/2021
Facility Owner:	Not reported
Facility Mailing Address:	P.O. BOX 6004, ATTN: PERMIT DESK, SAN RAMON, CA 94583
Facility Mailing City:	Not reported
Facility Mailing State:	Not reported
Facility Mailing Zip:	Not reported
UST Owner:	Y
Handle Regulated Hazmat:	Not reported
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	N
Generate Medical Waste:	Not reported

Inspection Violation:

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Inspection Number:	4112118
Return To Compliance Date:	2013-05-09
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	214659
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2013-03-13
Violation Code:	2030033 Failure to maintain on site an approved monitoring plan. 23 CCR 16 2632, 2634, 2711, 2712(i)

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	6244738
Return To Compliance Date:	2020-03-30
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	21469
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2019-09-11
Violation Code:	2060020 (TCR 9a) Failure to meet one or more of the following requirements: Install or maintain a liquid-tight spill container. Have a minimum capacity of 5 gallons. Have a functional drain valve or other method for the removal of liquid from the spill container. Be resistant to galvanic corrosion. Perform a tightness test at installation, every 12 months thereafter, or within 30 days after a repair to the spill container, tested using applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer. Tested by a certified UST service technician. Maintain records of spill containment testing for 36 months. 23 CCR 2635(b), 2637.1(a-c), 2665(a-b), 2712(b)(1)(F); HSC 25284.2

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5499121
Return To Compliance Date:	2016-10-28
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	21471
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2016-09-28
Violation Code:	2030025 (RD) Failure of the pressurized piping to meet one or more of the following requirements: monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour, and will restrict the flow or product through the piping or trigger an alarm when a release occurs. 23 CCR 2636(f)(2)

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5727689
Return To Compliance Date:	2017-09-25
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	21469
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2017-09-25
Violation Code:	2060020 (RP) Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket, have a minimum capacity of 5 gallons, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5727689
Return To Compliance Date:	2017-09-26
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	88166
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2017-09-25
Violation Code:	2060023 Failure of a UST system installed on or after July 1, 2004 to be designed and constructed with a monitoring system capable of detecting the entry of the liquid or vapor-phase of the hazardous substance stored in the primary containment into the secondary containment and capable of detecting water intrusion into the secondary containment. HSC 25290.1(d)

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5984868
Return To Compliance Date:	2018-09-21
Nov:	No
Violation Classification:	Class II
Underground Storage Tank Id:	21469
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2018-09-21
Violation Code:	2060020 (RP) Failure to comply with one or more of the following:

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Failure to install or maintain a liquid-tight spill bucket, have a minimum capacity of 5 gallons, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5984868
Return To Compliance Date:	2018-09-21
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	86186
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2018-09-21
Violation Code:	2030025 (RD) Failure of the line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly. with the capability of detecting a release of 3.0 gallons per hour leak at 10 p.s.i.g. and restrict or shut off the flow of product through the piping when a leak is detected. 23 CCR 2636(f)(2)

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5157313
Return To Compliance Date:	2015-11-19
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	88166
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2015-09-28
Violation Code:	2030001 (RD) Failure to maintain leak detection alarm logs and/or maintain records of appropriate follow-up actions. 23 CCR 2632, 2634

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	4112118
Return To Compliance Date:	2013-05-09
Nov:	Not reported
Violation Classification:	Not reported
Underground Storage Tank Id:	0
Container/Tank Id:	Not reported
Last Update:	2021-06-02

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Inspection Date:	2013-03-13
Violation Code:	2030013 Failure to comply with one or more of the designated operator monthly inspection requirements: failed to inspect the monthly alarm history report; attach a copy of the alarm history; failed to inspect for the presence of liquid or debris in the spill container/spill bucket and under dispenser containment; failed to inspect the under dispenser containment to ensure that monitoring equipment is placed in the proper position; failure to inspect for liquid or debris in the containment sump where an alarm occurred or for which there is no record of a service visit; or failure to check that all testing and maintenance has been completed and documented. 23 CCR 16 2715
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5157313
Return To Compliance Date:	2015-10-02
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	21470
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2015-09-28
Violation Code:	2060020 (RP) Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	4811849
Return To Compliance Date:	2013-10-02
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	87
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2013-10-02
Violation Code:	2060020 Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Inspection Number:	5121186
Return To Compliance Date:	2014-10-02
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	87
Container/Tank Id:	Not reported
Last Update:	2021-06-02
Inspection Date:	2014-10-02
Violation Code:	2060020 Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.

UST DTL:

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	21469
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	1a
Piping System Type:	Pressure
Last Updated:	2021-06-02
Tank Capacityin Gallons:	10000
Tank Contents:	Regular Unleaded
Type Of Tank:	Double Wall

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	21470
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	1a
Piping System Type:	Pressure
Last Updated:	2021-06-02
Tank Capacityin Gallons:	10000
Tank Contents:	Regular Unleaded
Type Of Tank:	Double Wall

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	21471
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	1a
Piping System Type:	Pressure

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Last Updated:	2021-06-02
Tank Capacityin Gallons:	10000
Tank Contents:	Premium Unleaded
Type Of Tank:	Double Wall
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	86186
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	1a
Piping System Type:	Pressure
Last Updated:	2021-06-02
Tank Capacityin Gallons:	8000
Tank Contents:	Diesel
Type Of Tank:	Double Wall
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	88166
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	99
Piping System Type:	Gravity
Last Updated:	2021-06-02
Tank Capacityin Gallons:	1500
Tank Contents:	Other Non-Petroleum
Type Of Tank:	Double Wall

Waste and Materials:

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2017-HCHEM-0144885
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2018-05-09
Chemical Name:	PREMIUM UNLEADED
Common Name:	UNDERGROUND TANK 112458 T007 - SUPREME UNLEADED
Case Number:	86290-81-5
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2017-HCHEM-0144886
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2018-05-09
Chemical Name:	DIESEL FUEL

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Common Name: DIESEL UNDERGROUND TANK 201007 T001
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2017-HWAST-0123530
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2018-05-09
Chemical Name: WASTE 223 UNSPEC OIL CONTAINING WASTE
Common Name: STORMWATER TANK / WASTE WATER
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2017-HWAST-0123531
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2018-05-09
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2017-HWAST-0123532
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2018-05-09
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HCHEM-0230466
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-04-14
Chemical Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Common Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HCHEM-0230467
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-04-14
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2019-HWAST-0200548
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2020-04-14
Chemical Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2019-HWAST-0200549
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2020-04-14
Chemical Name:	Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name:	Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2021-HCHEM-0298074
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2021-05-06
Chemical Name:	Unleaded Gasoline - Petroleum Hydrocarbons
Common Name:	Unleaded Gasoline - Petroleum Hydrocarbons
Case Number:	86290-81-5

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2021-HCHEM-0298075
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2021-05-06
Chemical Name:	Diesel Fuel - Middle Distillates
Common Name:	Diesel Fuel - Middle Distillates
Case Number:	68476-34-6

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2021-HWAST-0265968
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2021-05-06
Chemical Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Active Permit: Y
Child Record Id: DEH2021-HWAST-0265969
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-05-06
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0265970
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-05-06
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2017-HCHEM-0144884
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2018-05-09
Chemical Name: 87 REGULAR UNLEADED
Common Name: UNDERGROUND TANK 112458 T004 REGULAR UNLEADED
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HCHEM-0290320
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2021-03-11
Chemical Name: Unleaded Gasoline - Petroleum Hydrocarbons
Common Name: Unleaded Gasoline - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HCHEM-0290321
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2021-03-11
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0259214

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-03-11
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0259215
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-03-11
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0259216
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-03-11
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2017-HWAST-0123533
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2018-05-09
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HCHEM-0185741
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2019-03-19
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HCHEM-0185740
Trade Secret: N
Hazardous Material Type: Mixture

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Last Updated: 2019-03-19
Chemical Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Common Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HWAST-0160479
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2019-03-19
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0265727
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-09-30
Chemical Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Common Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0265728
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-09-30
Chemical Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Common Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HCHEM-0185739
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2019-03-19
Chemical Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Common Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HWAST-0160478
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2019-03-19
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HCHEM-0230465
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-04-14
Chemical Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Common Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HWAST-0160480
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2019-03-19
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2016-HCHEM-0103678
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2017-02-14
Chemical Name: PREMIUM UNLEADED
Common Name: UNDERGROUND TANK 112458 T007 - SUPREME UNLEADED
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2016-HWAST-0085599
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2017-02-14
Chemical Name: WASTE 223 UNSPEC OIL CONTAINING WASTE
Common Name: STORMWATER TANK / WASTE WATER
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2016-HWAST-0085600
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2017-02-14
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2016-HWAST-0085601
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2017-02-14
Chemical Name:	Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name:	Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2016-HWAST-0085602
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2017-02-14
Chemical Name:	Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name:	Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2021-HWAST-0268428
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2021-06-02
Chemical Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2021-HCHEM-0300719
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2021-06-02
Chemical Name:	Unleaded Gasoline - Petroleum Hydrocarbons
Common Name:	Unleaded Gasoline - Petroleum Hydrocarbons
Case Number:	86290-81-5

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2021-HCHEM-0300720
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2021-06-02
Chemical Name:	Diesel Fuel - Middle Distillates
Common Name:	Diesel Fuel - Middle Distillates
Case Number:	68476-34-6

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Active Permit: Y
Child Record Id: DEH2021-HWAST-0268429
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-06-02
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0268430
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-06-02
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HWAST-0200550
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-04-14
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0262142
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-05-01
Chemical Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Common Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0262143
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-05-01
Chemical Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Common Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0262144

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-05-01
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0233078
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-05-01
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0233079
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-05-01
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0233080
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-05-01
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0265729
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-09-30
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0236164
Trade Secret: N
Hazardous Material Type: Not reported

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Last Updated:	2020-09-30
Chemical Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number:	Not reported
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2020-HWAST-0236165
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2020-09-30
Chemical Name:	Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name:	Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number:	Not reported
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2020-HWAST-0236166
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2020-09-30
Chemical Name:	Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name:	Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number:	Not reported
Name:	CHEVRON #95664
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 92024
Permit Number:	201007
Business Type:	6HK28
EPA Id Number:	CAR000119198
APN:	216-030-51-00
Last HMMD Inspection:	03/02/2012
Facility Telephone:	760-479-0826
Permit Status:	OPEN
Permit Expiration:	04/30/2013
Date Last Updated:	11/02/2012
Facility Owner:	CHEVRON PRODUCTS COMPANY
Facility Mailing Address:	PO BOX 6004
Facility Mailing City:	SAN RAMON
Facility Mailing State:	CA
Facility Mailing Zip:	94583
UST Owner:	CHEVRON PRODUCTS COMPANY
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Y
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	Y

Inventory Active Permits (not SQG Medical):

Permit Number:	201007
Update Date:	11/02/2012
Case Number:	86290-81-5
Name:	87 REGULAR UNLEADED

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Other Information:	UNDERGROUND TANK 112458 T004 REGULAR UNLEADED
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	68476-34-6
Name:	DIESEL FUEL
Other Information:	DIESEL UNDERGROUND TANK 201007 T001
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	86290-81-5
Name:	PREMIUM UNLEADED
Other Information:	UNDERGROUND TANK 112458 T007 - SUPREME UNLEADED
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	86290-81-5
Name:	REGULAR UNLEADED
Other Information:	UNDERGROUND TANK 112458 T005
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	Not reported
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 134 AQUEOUS SOL'N W/LESS 10% ORG
Other Information:	WATER & FUEL / SUMP WATER
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 223 UNSPEC OIL CONTAINING WASTE
Other Information:	STORMWATER TANK / WASTE WATER
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 352 ORGANIC SOLIDS (OTHER)
Other Information:	GAS FILTERS/HOSES/PADS
Material Waste:	Waste
Hazardous Categories 1:	Not reported

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Hazardous Categories 2: Not reported

Violations Active Permits:

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 03/16/2010
Violation Code: 6HV3254
Violation: UST SYSTEM W/O APPROVED OVERFILL PROTECT
Violation Citation: UST system does not have an approved overfill protection system. 2635(b)(2)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 03/16/2010
Violation Code: 6HV3164
Violation: MONITOR EQUIP NOT PER MANUF. SPECS
Violation Citation: All monitoring equipment not installed, calibrated, operated, and/or maintained per manufacturer instructions. 2638(a), 2641(j)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 11/15/2006
Violation Code: 6HV3263
Violation: MONITOR SYSTEM NOT ALL FUNCTIONAL
Violation Citation: Monitoring system components &/or devices are not all functional. 2630, 2641(j), 2632
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 11/15/2006
Violation Code: 6HV0135
Violation: MANIFESTS/RECEIPTS FOR 3 YEARS NOT ONSIT
Violation Citation: Hazardous waste manifests/receipts for 3 years are not maintained onsite to document proper disposal of hazardous waste. CCR 66262.40(a) & 25160.2(b)(3)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 03/11/2009
Violation Code: 6HV3256
Violation: NO FUNCTIONAL DRAIN BOX/BACKUP
Violation Citation: Fill box drain not functional and backup system is not available. 2635(b)(1)(C)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 03/11/2009
Violation Code: 6HV3411
Violation: LLD NOT INSTALLED/NOT FUNCTIONAL
Violation Citation: DOUBLE WALLED PRESSURIZED PIPING-Including Under Dispenser Containment (UDC):Line leak detector is not installed, not functional, or not tested. 2636(f)(2), 25284.1(a)(4)(C), 2641(j)

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/02/2012
Violation Code:	6HV0138
Violation:	NO TSDF SIGNED MANIFEST ONSITE
Violation Citation:	Generator has not maintained the required signed copy of the hazardous waste manifest from the TSD facility on site for review. CCR 66262.40(a)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3152
Violation:	ALL MAINT/MONITOR RECORDS NOT AVAILABLE
Violation Citation:	All maintenance/monitoring/calibration/ repair records not available. 25293; 2712 (b)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3258
Violation:	SENSORS NOT AT LOW POINT OR ADEQUATELY
Violation Citation:	Sensors not placed adequately and/or at low point in sumps. 2641(a), 25291(a)(7)(C)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3263
Violation:	MONITOR SYSTEM NOT ALL FUNCTIONAL
Violation Citation:	Monitoring system components &/or devices are not all functional. 2630, 2641(j), 2632
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV0202
Violation:	WASTE CONTAINER W/O LABELS
Violation Citation:	Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2); 66262.34(a)(3) & 66262.34(f)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV3158
Violation:	ALL OPERATING CONDITIONS NOT MET
Violation Citation:	All permit operating conditions not met. 25284; 2712
Activity:	ACTIVE

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 11/09/2005
Violation Code: 6HV3255
Violation: SPILL CONTAIN. NOT DRY/IN GOOD CONDITION
Violation Citation: Spill container is not in good condition and/or liquid free. 2635(b)(1), 2636(a)(1)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 11/09/2005
Violation Code: 6HV3255
Violation: SPILL CONTAIN. NOT DRY/IN GOOD CONDITION
Violation Citation: Spill container is not in good condition and/or liquid free. 2635(b)(1), 2636(a)(1)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 11/09/2005
Violation Code: 6HV0201
Violation: WASTE CONTAINER NOT CLOSED
Violation Citation: Hazardous waste containers are not kept closed while in storage. CCR 66265.173(a)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 03/22/2011
Violation Code: 6HV3411
Violation: LLD NOT INSTALLED/NOT FUNCTIONAL
Violation Citation: DOUBLE WALLED PRESSURIZED PIPING-Including Under Dispenser Containment (UDC):Line leak detector is not installed, not functional, or not tested. 2636(f)(2), 25284.1(a)(4)(C), 2641(j)
Activity: ACTIVE

UST:
UST Name: UNDERGROUND TANK 201007 T005
Last Update: 2012-11-02 14:17:38
Permit Number: 201007
Tank Type: DOUBLE WALL
Additional Id: RT0851 TANK ID#1/RT3681, RT3827,RT5077,RT5553
Capacity Gallons: 10000
UST Contents: REGULAR UNLEADED
Other Content Info: REGULAR UNLEADED
Reg Status: ACTIVE
Remove Close Date: Not reported
Year Installed: 1985-10-16 00:00:00
Pipe Type: DOUBLE WALL
Delivery System: PRESSURE
Monitor Code: 31A
UST Monitor Method: DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF

UST Name: UNDERGROUND TANK 201007 T004
Last Update: 2012-11-02 14:17:38

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#2/RT3681,RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	REGULAR UNLEADED
Other Content Info:	REGULAR UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF

UST Name:	UNDERGROUND TANK 201007 T003
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#3/RT3681, RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	PREMIUM UNLEADED
Other Content Info:	SUPREME UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF

UST Name:	UNDERGROUND TANK 112458 T008
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#4; AT4809
Capacity Gallons:	1000
UST Contents:	OTHER
Other Content Info:	USED OIL
Reg Status:	REMOVED
Remove Close Date:	2001-09-17 00:00:00
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	21
UST Monitor Method:	DW TANK DW SUCTION AND/ OR GRAVITY PIPING WITH INTERSTITIAL MONITORS: INTERSTITIAL

UST Name:	UNDERGROUND TANK 201007 T002
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	NT2483 (POST JULY 2004 INSTALLATION),RT5077,RT5553
Capacity Gallons:	1500
UST Contents:	OTHER
Other Content Info:	WASTE WATER

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	2007-10-03 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	GRAVITY
Monitor Code:	41
UST Monitor Method:	DW TANK DW PRESSURIZED PIPE W/INTERSTITIAL HYDROSTATIC TANK; PIPING, SUMPS & UDCS UNDER CONSTANT VACUUM, WITH SHUT-OFF & ALARM
UST Name:	UNDERGROUND TANK 201007 T001
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	NT2483 (POST JULY 1, 2004 INSTALLATION), RT4189,RT
Capacity Gallons:	8000
UST Contents:	DIESEL
Other Content Info:	DIESEL
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	Not reported
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	41
UST Monitor Method:	DW TANK DW PRESSURIZED PIPE W/INTERSTITIAL HYDROSTATIC TANK; PIPING, SUMPS & UDCS UNDER CONSTANT VACUUM, WITH SHUT-OFF & ALARM

Name:	CHEVRON #95664
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 92024
Permit Number:	201007
Business Type:	6HK28
EPA Id Number:	CAR000119198
APN:	216-030-51-00
Last HMMD Inspection:	03/02/2012
Facility Telephone:	760-479-0826
Permit Status:	OPEN
Permit Expiration:	04/30/2013
Date Last Updated:	11/02/2012
Facility Owner:	CHEVRON PRODUCTS COMPANY
Facility Mailing Address:	PO BOX 6004
Facility Mailing City:	SAN RAMON
Facility Mailing State:	CA
Facility Mailing Zip:	94583
UST Owner:	CHEVRON PRODUCTS COMPANY
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Y
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	Y

Inventory Active Permits (not SQG Medical):

Permit Number:	201007
Update Date:	11/02/2012
Case Number:	86290-81-5
Name:	87 REGULAR UNLEADED
Other Information:	UNDERGROUND TANK 112458 T004 REGULAR UNLEADED

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	68476-34-6
Name:	DIESEL FUEL
Other Information:	DIESEL UNDERGROUND TANK 201007 T001
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	86290-81-5
Name:	PREMIUM UNLEADED
Other Information:	UNDERGROUND TANK 112458 T007 - SUPREME UNLEADED
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	86290-81-5
Name:	REGULAR UNLEADED
Other Information:	UNDERGROUND TANK 112458 T005
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	Not reported
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 134 AQUEOUS SOL'N W/LESS 10% ORG
Other Information:	WATER & FUEL / SUMP WATER
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 223 UNSPEC OIL CONTAINING WASTE
Other Information:	STORMWATER TANK / WASTE WATER
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	Not reported
Name:	WASTE 352 ORGANIC SOLIDS (OTHER)
Other Information:	GAS FILTERS/HOSES/PADS
Material Waste:	Waste
Hazardous Categories 1:	Not reported
Hazardous Categories 2:	Not reported

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Violations Active Permits:

Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/16/2010
Violation Code:	6HV3254
Violation:	UST SYSTEM W/O APPROVED OVERFILL PROTECT
Violation Citation:	UST system does not have an approved overfill protection system. 2635(b)(2)
Activity:	ACTIVE

Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/16/2010
Violation Code:	6HV3164
Violation:	MONITOR EQUIP NOT PER MANUF. SPECS
Violation Citation:	All monitoring equipment not installed, calibrated, operated, and/or maintained per manufacturer instructions. 2638(a), 2641(j)
Activity:	ACTIVE

Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2006
Violation Code:	6HV3263
Violation:	MONITOR SYSTEM NOT ALL FUNCTIONAL
Violation Citation:	Monitoring system components &/or devices are not all functional. 2630, 2641(j), 2632
Activity:	ACTIVE

Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2006
Violation Code:	6HV0135
Violation:	MANIFESTS/RECEIPTS FOR 3 YEARS NOT ONSIT
Violation Citation:	Hazardous waste manifests/receipts for 3 years are not maintained onsite to document proper disposal of hazardous waste. CCR 66262.40(a) & 25160.2(b)(3)
Activity:	ACTIVE

Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/11/2009
Violation Code:	6HV3256
Violation:	NO FUNCTIONAL DRAIN BOX/BACKUP
Violation Citation:	Fill box drain not functional and backup system is not available. 2635(b)(1)(C)
Activity:	ACTIVE

Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/11/2009
Violation Code:	6HV3411
Violation:	LLD NOT INSTALLED/NOT FUNCTIONAL
Violation Citation:	DOUBLE WALLED PRESSURIZED PIPING-Including Under Dispenser Containment (UDC):Line leak detector is not installed, not functional, or not tested. 2636(f)(2), 25284.1(a)(4)(C), 2641(j)
Activity:	ACTIVE

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/02/2012
Violation Code:	6HV0138
Violation:	NO TSDF SIGNED MANIFEST ONSITE
Violation Citation:	Generator has not maintained the required signed copy of the hazardous waste manifest from the TSD facility on site for review. CCR 66262.40(a)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3152
Violation:	ALL MAINT/MONITOR RECORDS NOT AVAILABLE
Violation Citation:	All maintenance/monitoring/calibration/ repair records not available. 25293; 2712 (b)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3258
Violation:	SENSORS NOT AT LOW POINT OR ADEQUATELY
Violation Citation:	Sensors not placed adequately and/or at low point in sumps. 2641(a), 25291(a)(7)(C)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3263
Violation:	MONITOR SYSTEM NOT ALL FUNCTIONAL
Violation Citation:	Monitoring system components &/or devices are not all functional. 2630, 2641(j), 2632
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV0202
Violation:	WASTE CONTAINER W/O LABELS
Violation Citation:	Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2); 66262.34(a)(3) & 66262.34(f)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV3158
Violation:	ALL OPERATING CONDITIONS NOT MET
Violation Citation:	All permit operating conditions not met. 25284; 2712
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Inspection Date: 11/09/2005
Violation Code: 6HV3255
Violation: SPILL CONTAIN. NOT DRY/IN GOOD CONDITION
Violation Citation: Spill container is not in good condition and/or liquid free. 2635(b)(1), 2636(a)(1)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 11/09/2005
Violation Code: 6HV3255
Violation: SPILL CONTAIN. NOT DRY/IN GOOD CONDITION
Violation Citation: Spill container is not in good condition and/or liquid free. 2635(b)(1), 2636(a)(1)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 11/09/2005
Violation Code: 6HV0201
Violation: WASTE CONTAINER NOT CLOSED
Violation Citation: Hazardous waste containers are not kept closed while in storage. CCR 66265.173(a)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 03/22/2011
Violation Code: 6HV3411
Violation: LLD NOT INSTALLED/NOT FUNCTIONAL
Violation Citation: DOUBLE WALLED PRESSURIZED PIPING-Including Under Dispenser Containment (UDC):Line leak detector is not installed, not functional, or not tested. 2636(f)(2), 25284.1(a)(4)(C), 2641(j)
Activity: ACTIVE

UST:
UST Name: UNDERGROUND TANK 201007 T005
Last Update: 2012-11-02 14:17:38
Permit Number: 201007
Tank Type: DOUBLE WALL
Additional Id: RT0851 TANK ID#1/RT3681, RT3827,RT5077,RT5553
Capacity Gallons: 10000
UST Contents: REGULAR UNLEADED
Other Content Info: REGULAR UNLEADED
Reg Status: ACTIVE
Remove Close Date: Not reported
Year Installed: 1985-10-16 00:00:00
Pipe Type: DOUBLE WALL
Delivery System: PRESSURE
Monitor Code: 31A
UST Monitor Method: DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF

UST Name: UNDERGROUND TANK 201007 T004
Last Update: 2012-11-02 14:17:38
Permit Number: 201007
Tank Type: DOUBLE WALL

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Additional Id:	RT0851 TANK ID#2/RT3681,RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	REGULAR UNLEADED
Other Content Info:	REGULAR UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF

UST Name:	UNDERGROUND TANK 201007 T003
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#3/RT3681, RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	PREMIUM UNLEADED
Other Content Info:	SUPREME UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF

UST Name:	UNDERGROUND TANK 112458 T008
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#4; AT4809
Capacity Gallons:	1000
UST Contents:	OTHER
Other Content Info:	USED OIL
Reg Status:	REMOVED
Remove Close Date:	2001-09-17 00:00:00
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	21
UST Monitor Method:	DW TANK DW SUCTION AND/ OR GRAVITY PIPING WITH INTERSTITIAL MONITORS: INTERSTITIAL

UST Name:	UNDERGROUND TANK 201007 T002
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	NT2483 (POST JULY 2004 INSTALLATION),RT5077,RT5553
Capacity Gallons:	1500
UST Contents:	OTHER
Other Content Info:	WASTE WATER
Reg Status:	ACTIVE
Remove Close Date:	Not reported

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Year Installed:	2007-10-03 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	GRAVITY
Monitor Code:	41
UST Monitor Method:	DW TANK DW PRESSURIZED PIPE W/INTERSTITIAL HYDROSTATIC TANK; PIPING, SUMPS & UDCS UNDER CONSTANT VACUUM, WITH SHUT-OFF & ALARM
UST Name:	UNDERGROUND TANK 201007 T001
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	NT2483 (POST JULY 1, 2004 INSTALLATION), RT4189,RT
Capacity Gallons:	8000
UST Contents:	DIESEL
Other Content Info:	DIESEL
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	Not reported
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	41
UST Monitor Method:	DW TANK DW PRESSURIZED PIPE W/INTERSTITIAL HYDROSTATIC TANK; PIPING, SUMPS & UDCS UNDER CONSTANT VACUUM, WITH SHUT-OFF & ALARM

CERS HAZ WASTE:

Name:	CHEVRON STATION #95664/1943
Address:	540 LA COSTA AVE
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	104963
CERS ID:	10367323
CERS Description:	Hazardous Waste Generator

CERS TANKS:

Name:	CHEVRON STATION #95664/1943
Address:	540 LA COSTA AVE
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	104963
CERS ID:	10367323
CERS Description:	Underground Storage Tank

CERS:

Name:	CHEVRON STATION #95664/1943
Address:	540 LA COSTA AVE
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	104963
CERS ID:	10367323
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	10-02-2014
Citation:	23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description:	Failure to comply with one or more of the following: failure to

CHEVRON STATION #95664/1943 (Continued) **S104747343**

	install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Violation Notes:	Returned to compliance on 10/02/2014. Inspection Sequence ID:5121186;Tank ID:87,87,91;Violation Description: Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS,
Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	09-21-2018
Citation:	23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description:	Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container. Be resistant to galvanic corrosion.
Violation Notes:	Returned to compliance on 09/21/2018. Inspection Sequence ID:5984868;Tank ID:21469,21470;Violation Description:(RP) Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket, have a minimum capacity of 5 gallons, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS,
Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	09-25-2017
Citation:	HSC 6.7 25290.1(d) - California Health and Safety Code, Chapter 6.7, Section(s) 25290.1(d)
Violation Description:	Failure of a UST system installed on or after July 1, 2004 to be designed and constructed with a monitoring system capable of detecting the entry of the liquid or vapor-phase of the hazardous substance stored in the primary containment into the secondary containment and capable of detecting water intrusion into the secondary containment.
Violation Notes:	Returned to compliance on 09/26/2017.
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS,
Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	09-11-2019
Citation:	HSC 6.7 25284.2 - California Health and Safety Code, Chapter 6.7, Section(s) 25284.2
Violation Description:	"Failure to meet one or more of the following requirements: Install or maintain a liquid-tight spill container. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the

CHEVRON STATION #95664/1943 (Continued) **S104747343**

removal of liquid from the spill container. Be resistant to galvanic corrosion. Perform a tightness test at installation, every 12 months thereafter, or within 30 days after a repair to the spill container. Tested using applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer. Tested by a certified UST service technician. Maintain records of spill containment testing for 36 months. "

Violation Notes: Returned to compliance on 03/30/2020. Inspection Sequence ID:6244738;Tank ID:21469,21470,21471,86186;Violation Description:(TCR 9a) Failure to meet one or more of the following requirements: Install or maintain a liquid-tight spill container. Have a minimum capacity of 5 gallons. Have a functional drain valve or other method for the removal of liquid from the spill container. Be resistant to galvanic corrosion. Perform a tightness test at installation, every 12 months thereafter, or within 30 days after a repair to the spill container, tested using applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer. Tested by a certified UST service technician. Maintain records of spill containment testing for 36 months. 23 CCR 2635(b), 2637.1(a-c), 2665(a-b), 2712(b)(1)(F); HSC 25284.2
Violation Division: San Diego County Department of Env Health
Violation Program: UST
Violation Source: CERS,

Site ID: 104963
Site Name: CHEVRON STATION #95664/1943
Violation Date: 09-25-2017
Citation: 23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description: Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container. Be resistant to galvanic corrosion.
Violation Notes: Returned to compliance on 09/25/2017.
Violation Division: San Diego County Department of Env Health
Violation Program: UST
Violation Source: CERS,

Site ID: 104963
Site Name: CHEVRON STATION #95664/1943
Violation Date: 09-28-2016
Citation: 23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description: Failure of the line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements:Monitor at least hourly.Be capable of detecting a release of 3.0 gallons per hour at 10 p.s.i.g. Restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes: Returned to compliance on 10/28/2016.
Violation Division: San Diego County Department of Env Health
Violation Program: UST
Violation Source: CERS,

Site ID: 104963
Site Name: CHEVRON STATION #95664/1943
Violation Date: 09-28-2015

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Citation:	23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description:	Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Violation Notes:	Returned to compliance on 10/02/2015. Inspection Sequence ID:5157313;Tank ID:21470,21471,86186;Violation Description:(RP) Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS,
Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	09-28-2015
Citation:	23 CCR 16 2712(b) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)
Violation Description:	Failure to maintain leak detection alarm logs and/or maintain records of appropriate follow-up actions
Violation Notes:	Returned to compliance on 11/19/2015. Inspection Sequence ID:5157313;Tank ID:88166;Violation Description:(RD) Failure to maintain leak detection alarm logs and/or maintain records of appropriate follow-up actions. 23 CCR 2632, 2634
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS,
Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	10-02-2013
Citation:	23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description:	Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Violation Notes:	Returned to compliance on 10/02/2013. Inspection Sequence ID:4811849;Tank ID:87,87,91,03;Violation Description: Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS,
Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	09-21-2018
Citation:	23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description:	Failure of the functional line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements:

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour leak at 10 p.s.i.g. and restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes: Returned to compliance on 09/21/2018. Inspection Sequence ID:5984868;Tank ID:86186;Violation Description:(RD) Failure of the line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly. with the capability of detecting a release of 3.0 gallons per hour leak at 10 p.s.i.g. and restrict or shut off the flow of product through the piping when a leak is detected. 23 CCR 2636(f)(2)
Violation Division: San Diego County Department of Env Health
Violation Program: UST
Violation Source: CERS,

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-11-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:6244738
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-25-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5727689
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5157313
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5499121
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-02-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Tank HT202 Inspection ID:5121186
Eval Division: San Diego County Department of Env Health

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-25-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5727689
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-25-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5727689
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Other/Unknown
Eval Date: 09-10-2020
Violations Found: No
Eval Type: Other, not routine, done by local agency
Eval Notes: "No On-site Inspection" Inspector: Fernandez Juan Inspection ID:6493756
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-11-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:6244738
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-11-2019
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:6244738
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5157313
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS,

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5499121
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-02-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:4811849
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-02-2014
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Tank HT202 Inspection ID:5121186
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-21-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5984868
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5157313
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5499121
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-02-2013
Violations Found: Yes

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:4811849
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-02-2014
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Tank HT202 Inspection ID:5121186
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-01-2021
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Halsey Christopher Inspection ID:6797687
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-21-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5984868
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-21-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5984868
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS,

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-02-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:4811849
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS,

Coordinates:
Site ID: 104963
Facility Name: CHEVRON STATION #95664/1943
Env Int Type Code: HWG
Program ID: 10367323
Coord Name: Not reported

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Ref Point Type Desc: Center of a facility or station.,
Latitude: 33.084120
Longitude: -117.299420

Affiliation:
Affiliation Type Desc: Document Preparer
Entity Name: Pedro R Carranza
Entity Title: Not reported
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Identification Signer
Entity Name: Pedro R Carranza
Entity Title: RETAIL HES SPECIALIST
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

Affiliation Type Desc: Property Owner
Entity Name: CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title: Not reported
Affiliation Address: P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City: SAN RAMON
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94583
Affiliation Phone: (925) 842-9002,

Affiliation Type Desc: UST Permit Applicant
Entity Name: CHARLES BITTLE - 12/1/2016
Entity Title: RETAIL HES
Affiliation Address: Not reported
Affiliation City: Not reported
Affiliation State: Not reported
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: (925) 842-9002,

Affiliation Type Desc: UST Tank Operator
Entity Name: CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title: Not reported
Affiliation Address: P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City: SAN RAMON
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94583
Affiliation Phone: (925) 842-9002,

Affiliation Type Desc: CUPA District
Entity Name: San Diego County Env Health Qlty

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Entity Title:	Not reported
Affiliation Address:	PO Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92112-9261
Affiliation Phone:	(858) 505-6880,
Affiliation Type Desc:	Environmental Contact
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94583
Affiliation Phone:	,
Affiliation Type Desc:	Parent Corporation
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	UST Property Owner Name
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94583
Affiliation Phone:	(925) 842-9002,
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94583
Affiliation Phone:	,
Affiliation Type Desc:	Legal Owner
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	TX
Affiliation Country:	United States
Affiliation Zip:	77001
Affiliation Phone:	(925) 842-9002,

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Affiliation Type Desc:	Operator
Entity Name:	CHEVRON STATION# 95664/1943
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(760) 479-0826,

Affiliation Type Desc:	UST Tank Owner
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94583
Affiliation Phone:	(925) 842-9002,

Name:	LA COSTA CHEVRON
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 920241115
Site ID:	234109
CERS ID:	T0607302127
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	SCOTT WELDON - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,

HWTS:

Name:	CHEVRON 95664
Address:	540 LA COSTA AVE
Address 2:	Not reported
City,State,Zip:	ENCINITAS, CA 920241115
EPA ID:	CAR000119198
Inactive Date:	Not reported
Create Date:	09/23/2002
Last Act Date:	07/28/2020
Mailing Name:	Not reported
Mailing Address:	PO BOX 6004
Mailing Address 2:	Not reported
Mailing City,State,Zip:	SAN RAMON, CA 945830000
Owner Name:	CHEVRON
Owner Address:	PO BOX 6004
Owner Address 2:	Not reported
Owner City,State,Zip:	SAN RAMON, CA 945830000

CHEVRON STATION #95664/1943 (Continued) **S104747343**

Contact Name: KWAME AWUKU
Contact Address: 6001 BOLLINGER CANYON RD.
Contact Address 2: Not reported
City,State,Zip: SAN RAMON, CA 94583

NAICS:
EPA ID: CAR000119198
Create Date: 2002-09-23 07:27:48.530
NAICS Code: 44711
NAICS Description: Gasoline Stations with Convenience Stores
Issued EPA ID Date: 2002-09-23 07:27:48.51300
Inactive Date: Not reported
Facility Name: CHEVRON 95664
Facility Address: 540 LA COSTA AVE
Facility Address 2: Not reported
Facility City: ENCINITAS
Facility County: Not reported
Facility State: CA
Facility Zip: 920241115

EPA ID: CAR000119198
Create Date: 2011-08-17 14:36:26.000
NAICS Code: 447110
NAICS Description: Gasoline Stations with Convenience Stores
Issued EPA ID Date: 2002-09-23 07:27:48.51300
Inactive Date: Not reported
Facility Name: CHEVRON 95664
Facility Address: 540 LA COSTA AVE
Facility Address 2: Not reported
Facility City: ENCINITAS
Facility County: Not reported
Facility State: CA
Facility Zip: 920241115

D13 **LA COSTA HOTEL** **CPS-SLIC S123531209**
NW **516 LA COSTA AVE** **CERS N/A**
1/4-1/2 **ENCINITAS, CA 92024**
0.285 mi.
1506 ft. **Site 1 of 2 in cluster D**

Relative:
Lower

Actual:
78 ft.

CPS-SLIC:
Name: LA COSTA HOTEL
Address: 516 LA COSTA AVE
City,State,Zip: ENCINITAS, CA 92024
Region: STATE
Facility Status: **Open - Site Assessment**
Status Date: 01/31/2019
Global Id: T10000012696
Lead Agency: SAN DIEGO COUNTY LOP
Lead Agency Case Number: DEH2019-LSAM-000534
Latitude: 33.0845946373618
Longitude: -117.300229755685
Case Type: Cleanup Program Site
Case Worker: EM
Local Agency: SAN DIEGO COUNTY LOP
RB Case Number: Not reported
File Location: Not reported

LA COSTA HOTEL (Continued) **S123531209**

Potential Media Affected: Not reported
Potential Contaminants of Concern: Not reported
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

CERS:
Name: LA COSTA HOTEL
Address: 516 LA COSTA AVE
City,State,Zip: ENCINITAS, CA 92024
Site ID: 515704
CERS ID: T10000012696
CERS Description: Cleanup Program Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: EWAN MOFFAT - SAN DIEGO COUNTY LOP
Entity Title: Not reported
Affiliation Address: P.O. Box 129261
Affiliation City: San Diego
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

D14 **WESTON FAMILY TRUST** **CPS-SLIC** **S120762622**
NW **510 LA COSTA AVENUE** **HAZNET** **N/A**
1/4-1/2 **ENCINITAS, CA 92024** **CERS**
0.308 mi. **HWTS**
1625 ft. **Site 2 of 2 in cluster D**

Relative: **Lower**
Actual: **80 ft.**

CPS-SLIC:
Name: LA COSTA 48
Address: 510 LA COSTA AVENUE
City,State,Zip: ENCINITAS, CA 92024
Region: STATE
Facility Status: **Open - Site Assessment**
Status Date: 05/19/2017
Global Id: T10000010402
Lead Agency: SAN DIEGO COUNTY LOP
Lead Agency Case Number: DEH2017-LSAM-000439
Latitude: 33.08668
Longitude: -117.30141
Case Type: Cleanup Program Site
Case Worker: EM
Local Agency: SAN DIEGO COUNTY LOP
RB Case Number: Not reported
File Location: Not reported
Potential Media Affected: Not reported
Potential Contaminants of Concern: Not reported
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

HAZNET:
Name: WESTON FAMILY TRUST

WESTON FAMILY TRUST (Continued) **S120762622**

Address:	510 LA COSTA AVENUE
Address 2:	Not reported
City,State,Zip:	ENCINITAS, CA 92024
Contact:	DAVID MEYER
Telephone:	7603108836
Mailing Name:	Not reported
Mailing Address:	P.O. BOX 234293
Year:	2017
Gepaid:	CAC002897558
TSD EPA ID:	CAT080013352
CA Waste Code:	133 - Aqueous solution with total organic residues 10 percent or more
Disposal Method:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.834

Additional Info:

Year:	2017
Gen EPA ID:	CAC002897558
Shipment Date:	20170224
Creation Date:	5/19/2017 18:30:21
Receipt Date:	20170303
Manifest ID:	009712137FLE
Trans EPA ID:	CAT080016116
Trans Name:	NIETO AND SONS TRUCKING INC
Trans 2 EPA ID:	Not reported
Trans 2 Name:	Not reported
TSDF EPA ID:	CAT080013352
Trans Name:	DEMENNO KERDOON
TSDF Alt EPA ID:	Not reported
TSDF Alt Name:	Not reported
Waste Code Description:	133 - Aqueous solution with 10% or more total organic residues
RCRA Code:	Not reported
Meth Code:	H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Quantity Tons:	0.834
Waste Quantity:	200
Quantity Unit:	G
Additional Code 1:	Not reported
Additional Code 2:	Not reported
Additional Code 3:	Not reported
Additional Code 4:	Not reported
Additional Code 5:	Not reported

CERS:

Name:	LA COSTA 48
Address:	510 LA COSTA AVENUE
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	421732
CERS ID:	T10000010402
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	JAMES CLAY - SAN DIEGO COUNTY LOP

WESTON FAMILY TRUST (Continued) **S120762622**

Entity Title: Not reported
Affiliation Address: P.O. Box 129261
Affiliation City: San Diego
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

HWTS:
Name: WESTON FAMILY TRUST
Address: 510 LA COSTA AVENUE
Address 2: Not reported
City,State,Zip: ENCINITAS, CA 92024
EPA ID: CAC002897558
Inactive Date: 05/18/2017
Create Date: 02/15/2017
Last Act Date: 05/18/2017
Mailing Name: Not reported
Mailing Address: P.O. BOX 234293
Mailing Address 2: Not reported
Mailing City,State,Zip: ENCINITAS, CA 92024
Owner Name: WESTON FAMILY TRUST C/O DAVID MEYER
Owner Address: 510 LA COSTA AVENUE
Owner Address 2: Not reported
Owner City,State,Zip: ENCINITAS, CA 92024
Contact Name: DAVID MEYER
Contact Address: P.O. BOX 234293
Contact Address 2: Not reported
City,State,Zip: ENCINITAS, CA 92024

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15 **OLYMPUS ROAD BURNSITE** **SWF/LF** **S109821572**
SSE **600 BLK OLYMPUS ROAD** **CERS** **N/A**
1/4-1/2 **LEUCADIA (IN ENCINITAS), CA 92024**
0.336 mi.
1775 ft.

Relative:
Lower

Actual:
142 ft.

SWF/LF (SWIS):
Name: OLYMPUS ROAD BURNSITE
Address: 600 BLK OLYMPUS ROAD
City,State,Zip: LEUCADIA (IN ENCINITAS), CA 92024
Region: STATE
Facility ID: 37-CR-0061
SWIS Number: 37-CR-0061
Point of Contact: Abel Martinez-Centeno
Is Archived: No
Is Closed Illegal Abandoned: Yes
Is Site Inert Debris Engineered Fill: No
Is Financial Assurances Responsible: No
Absorbed On: Not reported
Operational Status: Closed
Absorbed By: Not reported
Closed Illegal Abandoned Category: C1
EPA Federal Registry ID: Not reported
ARB District: San Diego
SWRCB Region: San Diego
Local Government: San Diego County (Unincorporated)

OLYMPUS ROAD BURNSITE (Continued) **S109821572**

Reporting Agency Legal Name:	County of San Diego
Reporting Agency Department:	Department of Environmental Health
Enforcing Agency Legal Name:	County of San Diego
Enforcing Agency Department:	Department of Environmental Health
Regulation Status:	Pre-regulation

Activity:

SWIS Number:	37-CR-0061
Site Name:	Olympus Road Burnsite
Activity:	Solid Waste Disposal Site
Activity Is Archived:	No
Category:	Disposal
Activity Classification:	Solid Waste Disposal Site
WDR Number:	Not reported
WDR Landfill Class:	Not reported
Cease Operation:	Not reported
Cease Operation Type:	Not reported
Inspection Frequency:	None
Throughput:	Not reported
Throughput Units:	Not reported
Remaining Capacity:	Not reported
Remaining Capacity Date:	Not reported
Capacity:	Not reported
Capacity Units:	Not reported
Total Acreage:	0
Disposal Acreage:	0
Permitted Elevation:	Not reported
Permitted Elevation Type:	Not reported
Permitted Depth:	Not reported
Permitted Depth Type:	Not reported
Point of Contact:	Abel Martinez-Centeno
Site Operational Status:	Closed
Site Regulatory Status:	Pre-regulation
Site Is Archived:	No
Is Closed Illegal Abandoned:	Yes
Is Site Inert Debris Engineered Fill:	No
Is Financial Assurances Responsible:	No
Absorbed On:	Not reported
Absorbed By:	Not reported
Closed Illegal Abandoned Category:	C1
EPA Federal Registry ID:	Not reported
County:	San Diego
ARB District:	San Diego
SWRCB Region:	San Diego
Local Government:	San Diego County (Unincorporated)
Street Address:	600 Blk Olympus Road
City:	Leucadia (In Encinitas)
State:	CA
ZIP Code:	92024
Reporting Agency Legal Name:	County of San Diego
Reporting Agency Department:	Department of Environmental Health
Enforcing Agency Legal Name:	County of San Diego
Enforcing Agency Department:	Department of Environmental Health

CERS:

Name:	OLYMPUS ROAD BURNSITE

OLYMPUS ROAD BURNSITE (Continued) **S109821572**

Address:	600 BLK OLYMPUS ROAD
City,State,Zip:	LEUCADIA (IN ENCINITAS), CA
Site ID:	510664
CERS ID:	37-CR-0061
CERS Description:	Solid Waste and Recycle Sites

16
NW
1/4-1/2
0.372 mi.
1966 ft.

COCA COLA BOTTLING TRUCK SPILL
NONE HWY I5 NORTH OF LA COSTA EXIT,
CARLSBAD, CA 92011

CPS-SLIC **S121475965**
CERS **N/A**

Relative:
Lower

Actual:
68 ft.

CPS-SLIC:

Name:	COCA COLA BOTTLING TRUCK SPILL
Address:	NONE HWY I5 NORTH OF LA COSTA EXIT,
City,State,Zip:	CARLSBAD, CA 92011
Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	07/19/2017
Global Id:	SLT19742840
Lead Agency:	SAN DIEGO COUNTY LOP
Lead Agency Case Number:	H39722-001
Latitude:	33.0857167353842
Longitude:	-117.300939559937
Case Type:	Cleanup Program Site
Case Worker:	JC
Local Agency:	SAN DIEGO COUNTY LOP
RB Case Number:	Not reported
File Location:	Local Agency
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	The case involves a release of diesel fuel from a tractor trailer owned by Coca Cola Company of Southern California that veered off Highway 5 in Carlsbad, and crashed on the embankment beside Highway 5. The location was about 200 feet from the edge of Batiquitos Lagoon. Two saddle tanks of about 70 gallons each lost their contents of diesel fuel. A Notice was issued to Coca Cola Company to clean up the impacted soil so that diesel concentrations were less than 1,000 ppm in soil. A clean-up company excavated about 20 yards of contaminated soil and hauled it away. Two soil samples were collected about a foot below finish grade of the excavation. The estimated amount of soil excavated for disposal and recycling is approximately 37 tons. The soil was sent to Filter Recycling in Rialto, CA. A Voluntary Assistance Program (VAP) application was submitted to DEH on February 19. 2008 and case H39722-001 was opened. Even though an official report was never submitted documenting the clean-up, the data submitted demonstrates that diesel contamination was removed to acceptable levels. Provided that the information presented to DEH was complete, accurate, and representative of existing site conditions, this agency concurs that the cleanup goals established for the subject site have been met.

Click here to access the California GeoTracker records for this facility:

CERS:

Name:	COCA COLA BOTTLING TRUCK SPILL
Address:	NONE HWY I5 NORTH OF LA COSTA EXIT,

COCA COLA BOTTLING TRUCK SPILL (Continued) **S121475965**

City,State,Zip: CARLSBAD, CA 92011
Site ID: 257298
CERS ID: SLT19742840
CERS Description: Cleanup Program Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: JAMES CLAY - SAN DIEGO COUNTY LOP
Entity Title: Not reported
Affiliation Address: P.O. Box 129261
Affiliation City: San Diego
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

E17 **BARRETT AMERICAN** **LUST** **S107619741**
WNW **236 ANDREW AV** **SAN DIEGO CO. SAM** **N/A**
1/4-1/2 **ENCINITAS, CA 92024** **Cortese**
0.452 mi. **SAN DIEGO CO LOP**
2389 ft. **Site 1 of 2 in cluster E** **CERS**

Relative: **Lower**
Actual: **76 ft.**

LUST:
Name: BARRETT AMERICAN
Address: 236 ANDREW AV
City,State,Zip: ENCINITAS, CA 92024
Lead Agency: SAN DIEGO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T06019729886
Global Id: T06019729886
Latitude: 33.082392
Longitude: -117.30424
Status: Completed - Case Closed
Status Date: 05/04/2006
Case Worker: EM
RB Case Number: Not reported
Local Agency: SAN DIEGO COUNTY LOP
File Location: Local Agency
Local Case Number: 199128-001
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T06019729886
Contact Type: Local Agency Caseworker
Contact Name: EWAN MOFFAT
Organization Name: SAN DIEGO COUNTY LOP
Address: P.O. Box 129261
City: San Diego
Email: ewan.moffat@sdcounty.ca.gov
Phone Number: Not reported

LUST:
Global Id: T06019729886
Action Type: Other
Date: 06/07/2005

BARRETT AMERICAN (Continued) **S107619741**

Action: Leak Began

Global Id: T06019729886
Action Type: Other
Date: 08/04/2005
Action: Leak Reported

Global Id: T06019729886
Action Type: ENFORCEMENT
Date: 08/05/2005
Action: Notice of Responsibility

Global Id: T06019729886
Action Type: Other
Date: 06/07/2005
Action: Leak Stopped

Global Id: T06019729886
Action Type: ENFORCEMENT
Date: 05/04/2006
Action: Closure/No Further Action Letter

Global Id: T06019729886
Action Type: Other
Date: 06/07/2005
Action: Leak Discovery

LUST:
Global Id: T06019729886
Status: Open - Case Begin Date
Status Date: 06/07/2005

Global Id: T06019729886
Status: Completed - Case Closed
Status Date: 05/04/2006

SAN DIEGO CO. SAM:
Name: BARRETT AMERICAN
Address: 236 ANDREW AV
City,State,Zip: ENCINITAS, CA 92024
Case Number: 226452
Agency: DEH Site Assessment & Mitigation
Funding: **LOP - Federal Fund**
Facility Type: Soils Only
Facility Status: Closed Case
Date: 5/4/2006
Date Began: 6/7/2005

CORTESE:
Name: BARRETT AMERICAN
Address: 236 ANDREW AV
City,State,Zip: ENCINITAS, CA 92024
Region: CORTESE
Envirostor Id: Not reported
Global ID: T06019729886

BARRETT AMERICAN (Continued) **S107619741**

Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

SAN DIEGO CO LOP:

Name:	BARRETT AMERICAN
Address:	236 ANDREW AVE
City,State,Zip:	ENCINITAS, CA 92024
Record ID:	DEH2005-LSAM-199128-001
Record Status:	Completed
Opened Date:	08/04/2005
Parcel Number:	216-052-09-00
Case Type:	LOP - Local Oversight Program
Historical Name:	BARRETT AMERICAN
SWRCB Global ID:	T06019729886
Funding:	F - LOP Federal Fund
Lead Agency:	DEH/SAM
Lead Agency Date:	08/04/2005
Census Tract:	Not reported
Community:	Not reported
Jurisdiction:	Not reported
Watershed Basin Number:	Not reported
Water Purveyor:	Not reported
Fire Agency:	Not reported
Latitude:	Not reported
Longitude:	Not reported
X MapCoord:	Not reported
Y MapCoord:	Not reported

CERS:

Name:	BARRETT AMERICAN
Address:	236 ANDREW AV
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	226498
CERS ID:	T06019729886
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	EWAN MOFFAT - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261

BARRETT AMERICAN (Continued) **S107619741**

Affiliation City: San Diego
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: ,

E18 **EATON BEACH ESTATES, INC.** **SAN DIEGO CO. SAM** **S104761204**
WNW **224 ANDREW AV** **CPS-SLIC** **N/A**
1/4-1/2 **ENCINITAS, CA 92024** **San Diego Co. HMMD**
0.467 mi. **CIWQS**
2467 ft. **Site 2 of 2 in cluster E** **CERS**

Relative:
Lower

Actual:
74 ft.

SAN DIEGO CO. SAM:
Name: EATON BEACH ESTATES, INC.
Address: 224 ANDREW AV
City,State,Zip: ENCINITAS, CA 92024
Case Number: H99138-001
Agency: DEH Site Assessment & Mitigation
Funding: **Private - VAP**
Facility Type: Soils Only
Facility Status: Closed Case
Date: 9/6/2006
Date Began: 3/15/2005

CPS-SLIC:
Name: EATON BEACH ESTATES, INC.
Address: 224 ANDREW AV
City,State,Zip: ENCINITAS, CA 92024
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 09/06/2006
Global Id: T06019755099
Lead Agency: SAN DIEGO COUNTY LOP
Lead Agency Case Number: H99138-001
Latitude: 33.082185
Longitude: -117.304957
Case Type: Cleanup Program Site
Case Worker: Not reported
Local Agency: Not reported
RB Case Number: Not reported
File Location: Local Agency
Potential Media Affected: Soil
Potential Contaminants of Concern: Not reported
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

HMMD SAN DIEGO:
Name: HAGEN-RENAKER
Address: 224 ANDREW AV
City,State,Zip: ENCINITAS, CA 92024
Permit Number: 199138
Business Type: 6HKAG
EPA Id Number: Not reported
APN: 216-052-10-00
Last HMMD Inspection: 07/12/1989

EATON BEACH ESTATES, INC. (Continued) **S104761204**

Facility Telephone:	619-753-1495
Permit Status:	INAC
Permit Expiration:	07/12/1989
Date Last Updated:	11/02/2012
Facility Owner:	JOHN RENAKER
Facility Mailing Address:	351 UNION ST
Facility Mailing City:	ENCINITAS
Facility Mailing State:	CA
Facility Mailing Zip:	92024-2640
UST Owner:	Not reported
Handle Regulated Hazmat:	Not reported
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Not reported
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

CIWQS:

Name:	EATON BEACH ESTATES
Address:	224 ANDREW AVENUE
City,State,Zip:	LEUCADIA, CA 92024
Agency:	Shea Homes Limited Partnership
Agency Address:	9990 Mesa Rim Road Suite 200, San Diego, CA 92121
Place/Project Type:	Construction - Residential
SIC/NAICS:	Not reported
Region:	9
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	9 37C368212
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	11/12/2013
Termination Date:	03/10/2016
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	33.08219
Longitude:	-117.30496

CERS:

Name:	EATON BEACH ESTATES, INC.
Address:	224 ANDREW AV
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	209825
CERS ID:	T06019755099
CERS Description:	Cleanup Program Site

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CARLSBAD	S109348922	COCA COLA BOTTLING TRUCK SPIL	0 HWY I5 NORTH OF LA COSTA EXI	92011	SAN DIEGO CO. SAM

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: EPA
Telephone: N/A
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: EPA
Telephone: N/A
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: EPA
Telephone: N/A
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 06/24/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 12/29/2021
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 07/12/2021
Date Data Arrived at EDR: 08/06/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 77

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/08/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/23/2021
Date Data Arrived at EDR: 08/23/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/18/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 08/23/2021
Date Data Arrived at EDR: 08/23/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 81

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/19/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/21/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 85

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/16/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 10/25/2021
Date Data Arrived at EDR: 10/26/2021
Date Made Active in Reports: 01/14/2022
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/25/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/25/2021
Date Data Arrived at EDR: 10/26/2021
Date Made Active in Reports: 01/14/2022
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/25/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/08/2021
Date Data Arrived at EDR: 11/09/2021
Date Made Active in Reports: 01/28/2022
Number of Days to Update: 80

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 11/09/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Quarterly

Lists of state and tribal leaking storage tanks

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)

Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks

California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/06/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 06/22/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 90
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 06/01/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 10/14/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 02/01/2022
Number of Days to Update: 88
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/20/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/30/2021
Number of Days to Update: 84
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases

UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 08/18/2021
Date Data Arrived at EDR: 09/08/2021
Date Made Active in Reports: 12/03/2021
Number of Days to Update: 86

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)

Military ust sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities

A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/08/2021
Next Scheduled EDR Contact: 03/28/2022
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 06/01/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/06/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 06/22/2021
Date Made Active in Reports: 09/20/2021
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 06/11/2021
Date Made Active in Reports: 09/07/2021
Number of Days to Update: 88

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/25/2021
Date Data Arrived at EDR: 10/26/2021
Date Made Active in Reports: 01/14/2022
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/25/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Quarterly

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/14/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 09/20/2021
Date Data Arrived at EDR: 09/21/2021
Date Made Active in Reports: 12/08/2021
Number of Days to Update: 78

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/16/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/10/2021
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 68

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/08/2021
Next Scheduled EDR Contact: 03/28/2022
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/08/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 82

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 09/14/2021
Date Data Arrived at EDR: 11/11/2021
Date Made Active in Reports: 11/23/2021
Number of Days to Update: 12

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/25/2021
Date Data Arrived at EDR: 10/26/2021
Date Made Active in Reports: 01/14/2022
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/25/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 10/18/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/12/2022
Number of Days to Update: 85

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 01/19/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/08/2021
Date Made Active in Reports: 12/01/2021
Number of Days to Update: 84

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing

Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 12/01/2019
Date Data Arrived at EDR: 08/19/2021
Date Made Active in Reports: 10/28/2021
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 12/10/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 11/04/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 80

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 10/18/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/12/2022
Number of Days to Update: 85

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/19/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 08/25/2021
Date Data Arrived at EDR: 09/03/2021
Date Made Active in Reports: 11/22/2021
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/22/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 08/30/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/12/2021
Date Data Arrived at EDR: 09/13/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 15

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/16/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 09/30/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/12/2022
Number of Days to Update: 85

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 01/19/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 10/12/2021
Number of Days to Update: 27

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 08/10/2021
Date Data Arrived at EDR: 08/17/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 66

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 01/14/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 01/07/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/08/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/13/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/01/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 03/28/2022
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 10/18/2021
Date Data Arrived at EDR: 10/20/2021
Date Made Active in Reports: 01/10/2022
Number of Days to Update: 82

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/19/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/01/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 40
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/19/2020
Date Data Arrived at EDR: 01/08/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 73
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/07/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/29/2021
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 07/29/2021
Date Data Arrived at EDR: 08/24/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 87
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 70
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/02/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/14/2022
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 12/27/2021
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/08/2022
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2021
Date Data Arrived at EDR: 10/13/2021
Date Made Active in Reports: 01/10/2022
Number of Days to Update: 89

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/03/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 12/14/2021
Number of Days to Update: 90

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/04/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 07/26/2021
Date Data Arrived at EDR: 07/27/2021
Date Made Active in Reports: 10/22/2021
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/31/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 12/09/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 10/20/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/09/2021
Date Data Arrived at EDR: 08/24/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 87

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 11/22/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/28/2021
Number of Days to Update: 89

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 12/20/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/22/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/22/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/14/2021
Date Data Arrived at EDR: 09/15/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 91

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/14/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 05/05/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 91

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 11/22/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77
Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/11/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 01/01/2022
Date Data Arrived at EDR: 01/04/2022
Date Made Active in Reports: 01/10/2022
Number of Days to Update: 6
Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 01/04/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/15/2021
Date Data Arrived at EDR: 11/15/2021
Date Made Active in Reports: 02/01/2022
Number of Days to Update: 78
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 09/20/2021
Date Data Arrived at EDR: 09/21/2021
Date Made Active in Reports: 12/08/2021
Number of Days to Update: 78
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 12/16/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 11/19/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/27/2021
Date Data Arrived at EDR: 09/01/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 79

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Annually

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 08/18/2021
Date Data Arrived at EDR: 08/23/2021
Date Made Active in Reports: 11/12/2021
Number of Days to Update: 81

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 08/24/2021
Date Data Arrived at EDR: 08/25/2021
Date Made Active in Reports: 11/17/2021
Number of Days to Update: 84

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 78

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 03/28/2022
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/16/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/07/2021
Number of Days to Update: 78

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 10/05/2021
Date Data Arrived at EDR: 10/06/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 84

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 11/05/2021
Number of Days to Update: 84

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/07/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 87

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 08/13/2021
Date Data Arrived at EDR: 08/13/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 87

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 10/04/2021
Date Data Arrived at EDR: 10/05/2021
Date Made Active in Reports: 12/22/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/04/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing

A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing

The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Varies

NPDES: NPDES Permits Listing

A listing of NPDES permits, including stormwater.

Date of Government Version: 11/09/2021
Date Data Arrived at EDR: 11/09/2021
Date Made Active in Reports: 01/27/2022
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 11/09/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing

A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 08/30/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Quarterly

PROC: Certified Processors Database

A listing of certified processors.

Date of Government Version: 06/04/2021
Date Data Arrived at EDR: 06/04/2021
Date Made Active in Reports: 08/27/2021
Number of Days to Update: 84

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 11/29/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records

Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/12/2021
Date Data Arrived at EDR: 03/16/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 77

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/08/2021
Next Scheduled EDR Contact: 03/28/2022
Data Release Frequency: No Update Planned

UIC: UIC Listing

A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 06/03/2021
Date Data Arrived at EDR: 06/03/2021
Date Made Active in Reports: 08/25/2021
Number of Days to Update: 83

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83
Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 90
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/07/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 11/15/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/14/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/08/2021
Date Made Active in Reports: 12/01/2021
Number of Days to Update: 84

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 08/30/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 10/18/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/12/2022
Number of Days to Update: 85

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 01/19/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)

Produced water ponds sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)

Sampling point - public sites

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)

Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/07/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 83

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Varies

PCS INACTIVE: Listing of Inactive PCS Permits

An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 12/29/2021
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Semi-Annually

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 12/29/2021
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Semi-Annually

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 07/13/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 10/06/2021
Number of Days to Update: 84

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System

Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 12/29/2021
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/28/2021
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 09/30/2021
Date Data Arrived at EDR: 10/01/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 75

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 12/28/2021
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List

Cupa Facility List

Date of Government Version: 11/01/2021
Date Data Arrived at EDR: 11/02/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 83

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 12/28/2021
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 09/15/2021
Date Data Arrived at EDR: 09/16/2021
Date Made Active in Reports: 12/09/2021
Number of Days to Update: 84

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/28/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 10/22/2021
Date Data Arrived at EDR: 10/26/2021
Date Made Active in Reports: 01/19/2022
Number of Days to Update: 85

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 10/01/2021
Date Data Arrived at EDR: 11/02/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 83

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 08/03/2021
Date Made Active in Reports: 10/26/2021
Number of Days to Update: 84

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 04/09/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 09/17/2021
Number of Days to Update: 86

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 12/21/2021
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 10/18/2021
Date Data Arrived at EDR: 10/20/2021
Date Made Active in Reports: 01/12/2022
Number of Days to Update: 84

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 11/10/2021
Date Data Arrived at EDR: 11/12/2021
Date Made Active in Reports: 02/02/2022
Number of Days to Update: 82

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 11/10/2021
Date Data Arrived at EDR: 11/12/2021
Date Made Active in Reports: 02/02/2022
Number of Days to Update: 82

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 12/22/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 11/04/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 80

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/10/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 12/08/2021
Next Scheduled EDR Contact: 03/28/2022
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/14/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 86

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 10/08/2021
Date Data Arrived at EDR: 10/08/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 82

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/11/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2021
Date Data Arrived at EDR: 02/18/2021
Date Made Active in Reports: 05/10/2021
Number of Days to Update: 81

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/07/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/16/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills

This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 10/12/2021
Date Data Arrived at EDR: 10/13/2021
Date Made Active in Reports: 01/04/2022
Number of Days to Update: 83

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 01/07/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory

A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 06/28/2021
Number of Days to Update: 11

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory

A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 09/14/2021
Number of Days to Update: 89

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 12/17/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List

Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 05/26/2021
Date Data Arrived at EDR: 07/09/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 82

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 04/24/2022
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank

Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/07/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank

Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/02/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 12/20/2021
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/22/2021
Date Data Arrived at EDR: 11/18/2021
Date Made Active in Reports: 11/22/2021
Number of Days to Update: 4

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/11/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/04/2021
Date Data Arrived at EDR: 10/06/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 84

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 01/07/2022
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 10/26/2021
Date Data Arrived at EDR: 10/27/2021
Date Made Active in Reports: 01/20/2022
Number of Days to Update: 85

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 10/08/2021
Date Data Arrived at EDR: 11/04/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 81

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 01/31/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 10/08/2021
Date Data Arrived at EDR: 11/02/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 01/31/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 10/29/2021
Date Data Arrived at EDR: 10/29/2021
Date Made Active in Reports: 01/20/2022
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 10/29/2021
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/07/2021
Date Data Arrived at EDR: 09/09/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 81

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 09/29/2021
Date Data Arrived at EDR: 09/30/2021
Date Made Active in Reports: 12/14/2021
Number of Days to Update: 75

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/08/2021
Next Scheduled EDR Contact: 03/28/2022
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 09/29/2021
Date Data Arrived at EDR: 09/30/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 76
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/08/2021
Next Scheduled EDR Contact: 03/28/2022
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 06/18/2021
Date Data Arrived at EDR: 09/28/2021
Date Made Active in Reports: 12/14/2021
Number of Days to Update: 77
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/29/2021
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 08/02/2021
Date Data Arrived at EDR: 08/04/2021
Date Made Active in Reports: 11/02/2021
Number of Days to Update: 90
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 12/29/2021
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 11/04/2021
Date Data Arrived at EDR: 11/05/2021
Date Made Active in Reports: 01/24/2022
Number of Days to Update: 80
Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 08/11/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88
Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 01/31/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 08/30/2021
Date Data Arrived at EDR: 08/31/2021
Date Made Active in Reports: 11/19/2021
Number of Days to Update: 80

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 11/30/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 86

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 08/05/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversite Facilities

A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/10/2021
Date Data Arrived at EDR: 11/11/2021
Date Made Active in Reports: 02/02/2022
Number of Days to Update: 83

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/09/2021
Next Scheduled EDR Contact: 12/27/2021
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 08/10/2021
Date Data Arrived at EDR: 08/11/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 89

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/10/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/02/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 08/04/2021
Date Data Arrived at EDR: 08/05/2021
Date Made Active in Reports: 10/29/2021
Number of Days to Update: 85

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 11/18/2021
Next Scheduled EDR Contact: 02/27/2022
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 11/16/2021
Next Scheduled EDR Contact: 03/07/2022
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 11/11/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/15/2021
Date Data Arrived at EDR: 09/16/2021
Date Made Active in Reports: 12/09/2021
Number of Days to Update: 84

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/14/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 12/14/2021
Next Scheduled EDR Contact: 04/04/2022
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 11/09/2021
Date Data Arrived at EDR: 11/11/2021
Date Made Active in Reports: 02/02/2022
Number of Days to Update: 83

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/10/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 08/23/2021
Date Data Arrived at EDR: 08/25/2021
Date Made Active in Reports: 11/17/2021
Number of Days to Update: 84

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 11/23/2021
Next Scheduled EDR Contact: 03/14/2022
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 04/06/2021
Number of Days to Update: 82

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 10/18/2021
Date Data Arrived at EDR: 10/20/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 04/26/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/16/2022
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/13/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/29/2021
Date Data Arrived at EDR: 10/26/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 79
Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/20/2021
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 11/05/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/29/2021
Date Data Arrived at EDR: 10/21/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 84
Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/18/2022
Next Scheduled EDR Contact: 05/02/2022
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 07/26/2021
Date Data Arrived at EDR: 09/08/2021
Date Made Active in Reports: 11/29/2021
Number of Days to Update: 82
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/07/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 09/23/2021
Date Data Arrived at EDR: 09/28/2021
Date Made Active in Reports: 12/15/2021
Number of Days to Update: 78
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 12/20/2021
Next Scheduled EDR Contact: 04/11/2022
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 10/26/2021
Date Data Arrived at EDR: 10/27/2021
Date Made Active in Reports: 01/20/2022
Number of Days to Update: 85

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/24/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/11/2021
Date Data Arrived at EDR: 11/12/2021
Date Made Active in Reports: 02/01/2022
Number of Days to Update: 81

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/12/2021
Next Scheduled EDR Contact: 02/21/2022
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/07/2022
Next Scheduled EDR Contact: 04/18/2022
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 10/29/2021
Date Made Active in Reports: 01/19/2022
Number of Days to Update: 82

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/28/2022
Next Scheduled EDR Contact: 05/09/2022
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/10/2022
Next Scheduled EDR Contact: 04/25/2022
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 02/24/2021
Number of Days to Update: 13

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/29/2021
Next Scheduled EDR Contact: 02/28/2022
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/06/2021
Next Scheduled EDR Contact: 03/21/2022
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

PIRAEUS POINT
PIRAEUS STREET/PLATO PLACE
ENCINITAS, CA 92024

TARGET PROPERTY COORDINATES

Latitude (North):	33.079225 - 33ˆ 4’ 45.21’’
Longitude (West):	117.295148 - 117ˆ 17’ 42.53’’
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	472452.5
UTM Y (Meters):	3659917.2
Elevation:	158 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	12015887 ENCINITAS, CA
Version Date:	2018

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

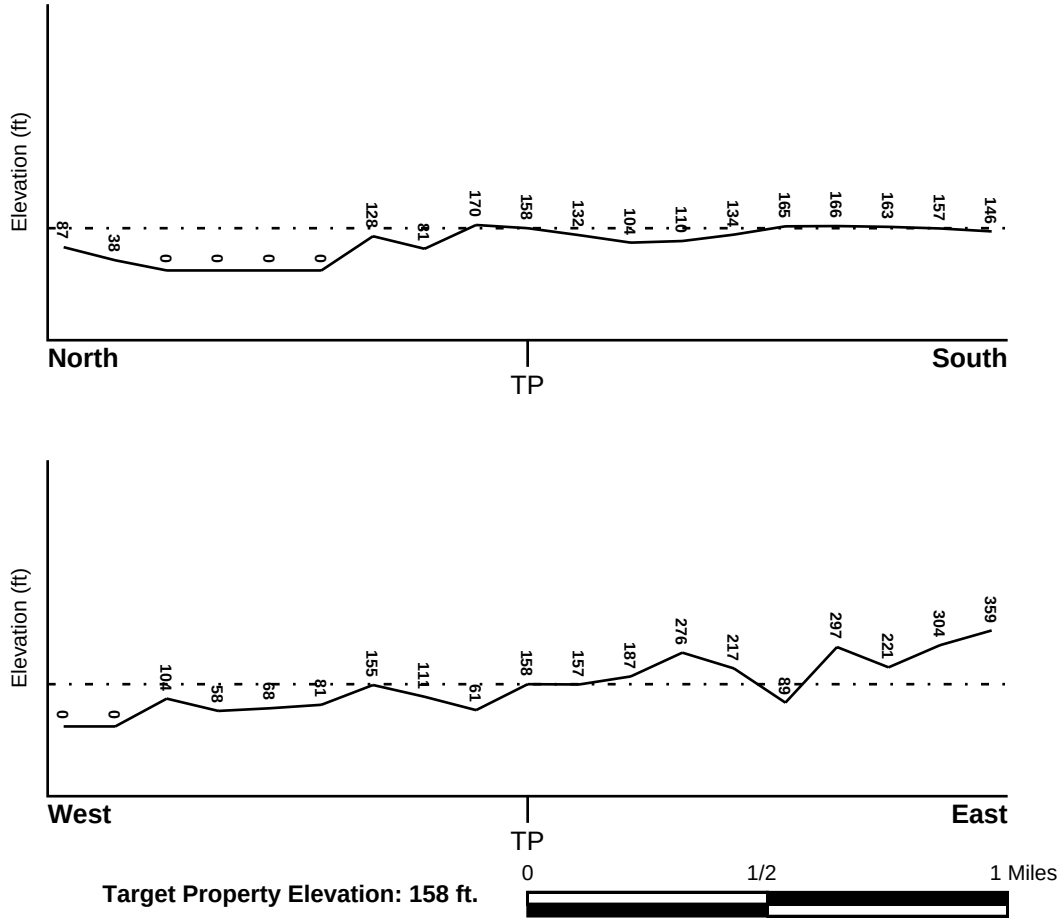
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 158 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06073C1035G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ENCINITAS	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

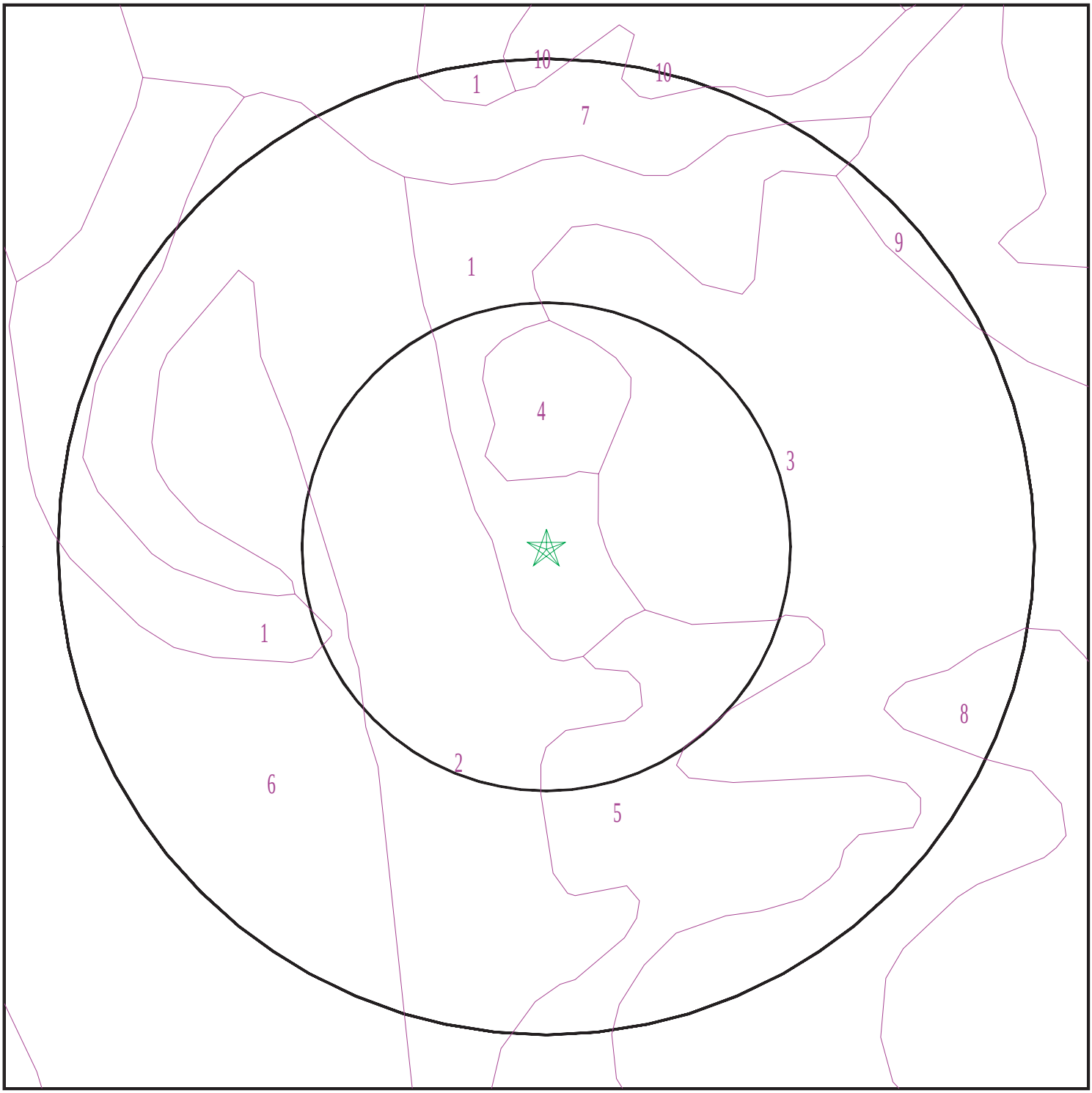
Era:	Cenozoic
System:	Tertiary
Series:	Eocene
Code:	Te *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 6844503.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Piraeus Point	CLIENT:	Geocon Env. Consultants, Inc.
ADDRESS:	Piraeus Street/Plato Place Encinitas CA 92024	CONTACT:	Cole Mikesell
LAT/LONG:	33.079225 / 117.295148	INQUIRY #:	6844503.2s
		DATE:	February 03, 2022 8:37 am

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: GAVIOTA

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 41 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	16 inches	20 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 2

Soil Component Name: MARINA

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat excessively drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	9 inches	57 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4
3	57 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4

Soil Map ID: 3

Soil Component Name: CIENEBA

Soil Surface Texture: coarse sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	coarse sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: Min:	Max: Min:
2	9 inches	14 inches	weathered bedrock	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 4

Soil Component Name: ROUGH BROKEN LAND

Soil Surface Texture: unweathered bedrock

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	unweathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 5

Soil Component Name: GAVIOTA

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 41 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	16 inches	20 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 6

Soil Component Name: MARINA

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	9 inches	57 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4
3	57 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 7

Soil Component Name: CORRALITOS

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.6
2	9 inches	42 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.6
3	42 inches	72 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.6

Soil Map ID: 8

Soil Component Name: CHESTERTON

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0 Min: 0	Max: Min:
2	18 inches	33 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0 Min: 0	Max: Min:
3	33 inches	59 inches	indurated	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0 Min: 0	Max: Min:

Soil Map ID: 9

Soil Component Name: HUERHUERO

Soil Surface Texture: loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4
2	9 inches	50 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4
3	50 inches	59 inches	stratified sand to sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

Soil Map ID: 10

Soil Component Name: LOAMY ALLUVIAL LAND

Soil Surface Texture: variable

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	59 inches	variable	Not reported	Not reported	Max: Min:	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	CAEDF0000013266	1/2 - 1 Mile WNW
A2	CAEDF0000121349	1/2 - 1 Mile WNW
3	CADWR0000024818	1/2 - 1 Mile ENE
A4	CAEDF0000112429	1/2 - 1 Mile WNW
5	CADWR0000011881	1/2 - 1 Mile West

PHYSICAL SETTING SOURCE MAP - 6844503.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Piraeus Point	CLIENT:	Geocon Env. Consultants, Inc.
ADDRESS:	Piraeus Street/Plato Place Encinitas CA 92024	CONTACT:	Cole Mikesell
LAT/LONG:	33.079225 / 117.295148	INQUIRY #:	6844503.2s
		DATE:	February 03, 2022 8:37 am

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
WNW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000013266**

Well ID:	T06019729886-MW-1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T06019729886&assigned_name=MW-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T06019729886&assigned_name=MW-1		

A2
WNW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000121349**

Well ID:	T06019729886-MW-3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T06019729886&assigned_name=MW-3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T06019729886&assigned_name=MW-3		

3
ENE
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000024818**

Well ID:	12S04W34K001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	12S04W34K001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=12S04W34K001S&store_num=		
GeoTracker Data:	Not Reported		

A4
WNW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000112429**

Well ID:	T06019729886-MW-2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T06019729886&assigned_name=MW-2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T06019729886&assigned_name=MW-2		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

Database	EDR ID Number
CA WELLS	**CADWR0000011881**

5
West
1/2 - 1 Mile
Lower

Well ID:	12S04W33P001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	12S04W33P001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=12S04W33P001S&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92024	42	5

Federal EPA Radon Zone for SAN DIEGO County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 92024

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.700 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX D

PERMIT #: LMWP-003948
A.P.N.: 254-144-01
EST #: None

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: PIRAEUS STREET

SITE ADDRESS: 0 PIRAEUS STREET, ENCINITAS 92024

PERMIT FOR: **CONSTRUCTION OF GEOTECHINCAL BORINGS (8)**

PERMIT APPROVAL DATE: 4/29/2019

PERMIT EXPIRES ON: 8/27/2019

RESPONSIBLE PARTY: COVELOP INCORPORATED

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material. Bentonite slurries are not an acceptable fill material in the unsaturated zone.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, D-4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html) In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 24-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.**

APPROVED BY: Jon Senaha DATE: 4/29/2019

Jon Senaha

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMWP# 003948
SAM CASE Y/N # None
DATE RECEIVED: 4/24/2019
FEE PAID: $669.00
CHECK # Online

A. RESPONSIBLE PARTY Covelop Incorporated E-mail dmavis@covelop.net
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address PO Box 12910 City San Luis Obisbo State CA Zip 93406
Contact Person Damien Mavis Phone 805-781-3133 Ext.____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM Geocon Incorporated
Mailing Address 6960 Flanders Drive City San Diego State CA Zip 92121
Registered Professional Lilian Rodriguez Phone 858-558-6900 Registration # 83227 (RCE)
E-mail lrodriguez@geoconinc.com
Contact Person SAME Phone____ Ext____ Email ____

D. DRILLING COMPANY Tri-County Drilling C57# 547737
Contact Name Dave Maske E-mail dmaske@tcdrilling.com
Mailing Address 6931 Candida Street City San Diego State CA Zip 92126
Phone 858-271-0099 Ext.____

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	8
☐ Soil Vapor	___
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ Destruction ___

MATERIALS TO BE USED

CASING

Not Applicable X
Type ____
Gauge____
Diameter ____
Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL

☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter 8-30"

Drilling Method

☒ Auger
☐ Direct Push
☐ Other ____
☐ Air Rotary
☐ Sonic
☐ Percussion

PROPOSED CONSTRUCTION
Estimated Groundwater Depth: 50 ft.
Estimated Depth of Boring: 100 ft.
Concrete Seal: 0 to 3
Annular Seal: ____to____
Filter Pack: ____to____
Perforation: ____to____

NOTE: Attach a well construction diagram

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 4/24/19

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk (858) 505-6688 with a complete well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE/CEG SIGNATURE _____ DATE 4/24/19

F. SITE INFORMATION - A Property Owner Consent agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties. Submit a separate sheet for additional parcels.

1. **ASSESSOR'S PARCEL NUMBER** 254-144-01-00

Site Name _____

Site Address Piraeus Street City Encinitas Zip 92024

PROPERTY OWNER Piraeus Investor LLC

Phone _____ Ext. _____ Fax _____

Mailing Address 158 N Melrose Drive City Vista State CA Zip92083

NUMBER OF WELLS 8 **TYPE OF WELLS** Geotechnical Borings

2. **ASSESSOR'S PARCEL NUMBER** _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. QUESTIONNAIRE: Please answer all applicable questions completely *and submit any required supportive documentation*.

1. What is the purpose of the well/boring investigation?

☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

DEH _____ RWQCB _____ DTSC _____

☐ b. Part of a Phase I investigation for property ownership transfer.

☒ c. Geotechnical investigation for proposed construction or land stabilization.

☐ d. Other: _____

2. If wells are to be destroyed, provide a description of method of destruction NA

3. Are you proposing a variation from current SAM Manual Requirements for the construction or destruction of borings, Vadose and/or Groundwater Monitoring Wells? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines. Yes ☐ No ☒

_____

H. FEES

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only *(Groundwater Monitoring Wells, Vapor Extraction Wells)*	$351.00 for the first monitoring well	**$351.00** _____
	$224.00 for each additional well installation	_____**x $224.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$235.00 for the first boring	**$235.00** **235.00**
	$62.00 for each additional boring	7**x $ 62.00** **434.00**
Permit for Well Destructions Only	$235.00 for the first destruction	**$235.00** _____
	$143.00 for each additional destruction	_____**x $143.00** _____
Permit for any Combination of Well Installations, Borings, & Destructions *(Except Enhanced Leak Detection & Soil Vapor Survey)*	First Activity: $351.00 (if monitoring wells will be installed) OR $235.00 (for borings and destructions only)	**$351.00** _____ **OR** **$235.00** _____
	$224.00 for each additional well	_____**x $224.00** _____
	$ 62.00 for each additional boring	_____**x $ 62.00** _____
	$143.00 for each additional well destruction	_____**x $143.00** _____
Permit for Soil Vapor Survey *(Vadose Monitoring Wells)*	$388.00 (flat fee per site)	**$388.00** _____
Permit for Enhanced Leak Detection	$235.00 for the first boring	**$368.00** _____
	TOTAL COST OF PERMIT	**$669.00**

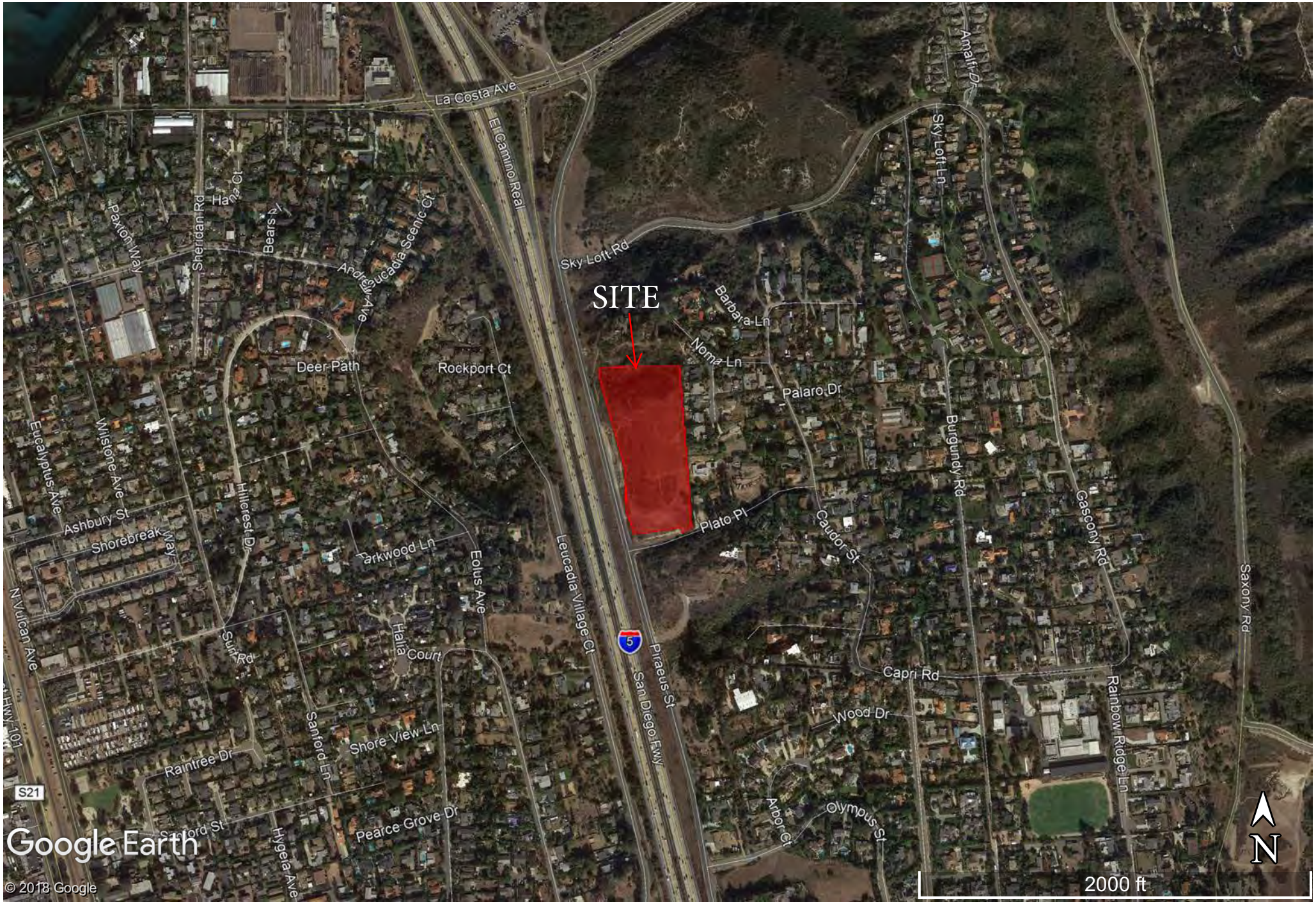


Figure 1 - Vicinity Map



Figure 2 - Boring Location Plan

Geocon Legend

B-8 ... Approx. Location of Planned Boring

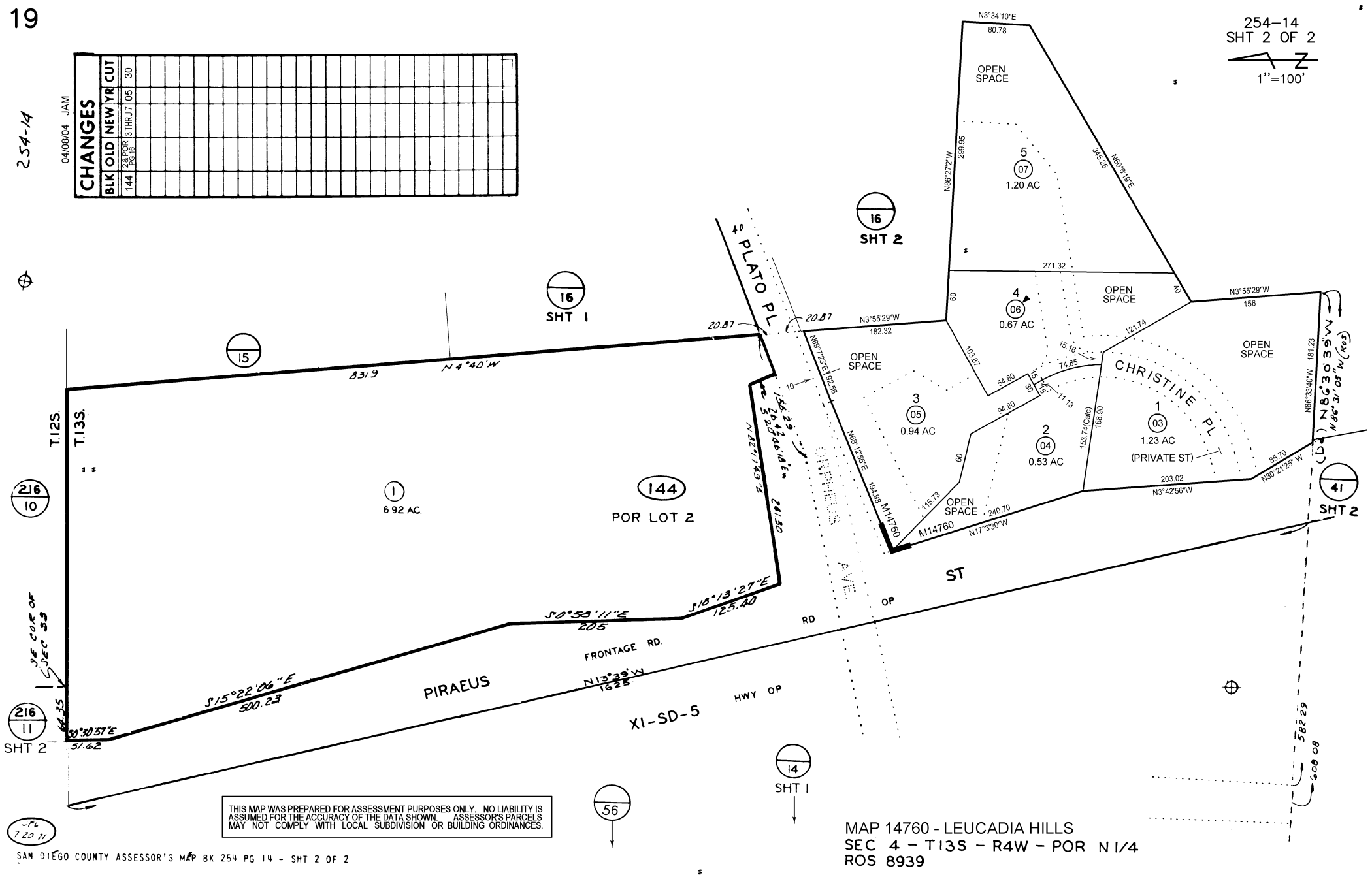


Figure 3 - Parcel Map

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858)505-6688
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:	**Assessor's Parcel Number (APN):**
Piraeus Street	254-144-01-00
Encinitas, CA	_____

I, PIRAEUS INVESTOR LLC, owner of the property/properties listed above, give my permission to Geocon Incorporated (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 8 soil borings

I understand that Lilian Rodriguez (registered professional) of Geocon Incorporated (consulting company) and an authorized signer for Tri-County Drilling Incorporated (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: _____ Date: _____ 4.23.19

Print Name: _____ Title: _____ HARRINGTON C. CANNON OWNER

Company: _____ PIRAEUS INVESTOR LLC

Mailing Address: _____ 158 N MELROSE DR. VISTA CA. 92083

HARRINGTONCANNON@ icloud.com

760. 500. 7039

GEOCON
INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. G2307-11-02
May 24, 2019

Well Permitting Clerk
County of San Diego
Department of Environmental Health
Site Assessment and Mitigation Division
5500 Overland Avenue, Suite 110
San Diego, California 92123

Subject: SUBMITTAL OF FIGURES AND BORING LOGS FOR PERMIT CLOSURE
DEH PERMIT NO. LMWP-003948
APN NO: 254-144-01-00
ENCINITAS, CALIFORNIA

To Whom It May Concern:

On behalf of Covelop Incorporated, we prepared this letter regarding 3 small-diameter and 4 large-diameter geotechnical borings (SB-1 through SB-3 and LB-1 through LB-4, respectively) advanced at the subject site under DEH Permit No. LMWP-003984. The subsurface materials encountered consist of undocumented fill, alluvium, Terrace Deposits, and Santiago Formation. We encountered perched groundwater in the small diameter borings at depths ranging from approximately 38 to 49 feet below the existing ground surface, and we encountered seepage in the large diameter borings at depths ranging from approximately 40 to 44 feet below the existing groundwater surface. The Vicinity Map, Figure 1, depicts the approximate location of the site. The Boring Location Map, Figure 2, presents the approximate locations of the borings. The site is also depicted on the Parcel Map, Figure 3. The small and large diameter borings were 8 and 30-inches in diameter, respectively, and the borings were terminated at depths ranging from approximately 52½ and 84 feet. We backfilled the small-diameter borings with a bentonite-grout mix, and the large-diameter borings with bentonite in accordance with the requirements of the permit following the completion of the drilling, sampling, and logging operations. Details of subsurface materials encountered in the borings and backfill materials are indicated on the attached boring logs.

Please contact the undersigned if you have any questions.

Very truly yours,

GEOCON INCORPORATED





Lilian E. Rodriguez
RCE 83227

LER:dmc

Enclosures: Figure 1, Vicinity Map
Figure 2, Boring Location Map
Figure 3, Parcel Map
Boring Logs SB-1 through SB-3 and LB-1 through LB-4

(e-mail) Addressee

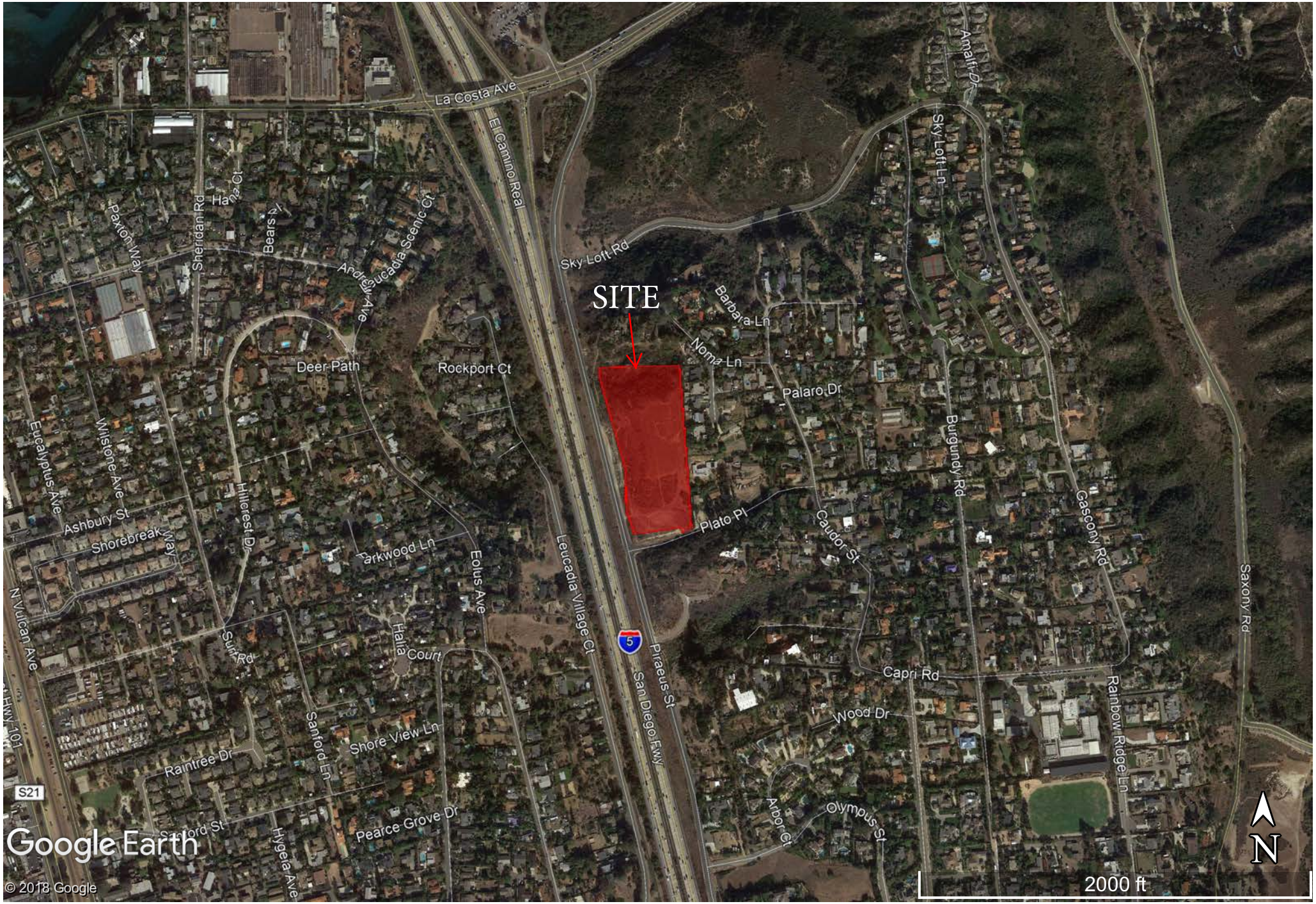


Figure 1 - Vicinity Map



Geocon Legend

LB-4 ... Approx. Location of Large-Diameter Boring

SB-3 ... Approx. Location of Small-Diameter Boring

Figure 2 - Boring Location Map

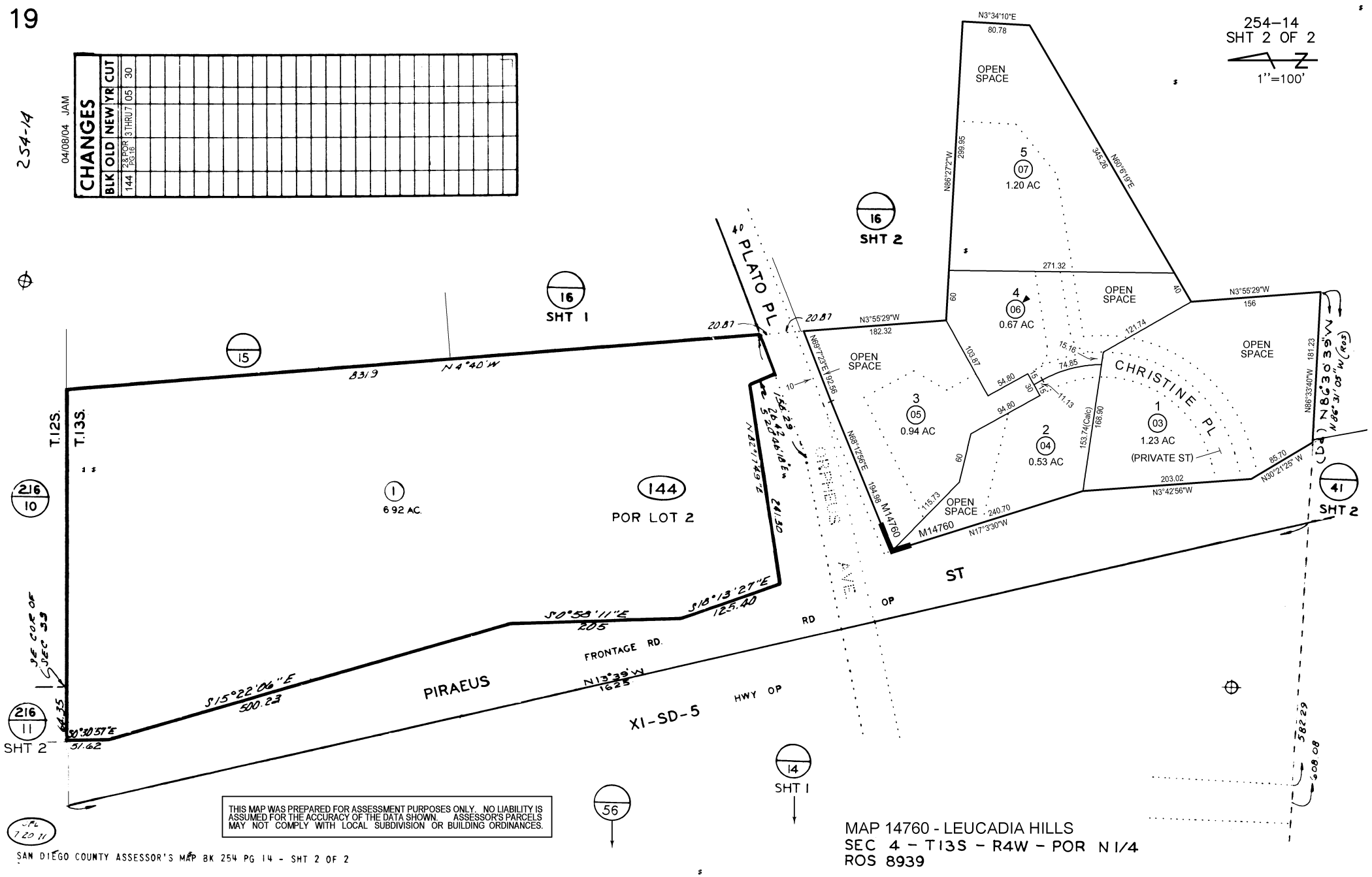


Figure 3 - Parcel Map

PROJECT NO. G2307-11-02

BORING LB 1

ELEV. (MSL.) **156'** DATE COMPLETED **05-06-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**TERRACE DEPOSITS (Qt)** Medium dense, damp to moist, reddish brown, Silty, fine to coarse SAND			
2								
4								
6	LB1-1				-Becomes very dense		124.9	5.4
8	LB1-2				-Becomes fine- to medium-grained			
10	LB1-3				-Becomes moist -Cobble up to 5 inches		117.7	8.6
12								
14								
16	LB1-4 LB1-5			SM	Dense, moist, brown to yellowish brown, Silty, fine to coarse SAND		116.3	10.1
18	LB1-6			SM	-Cobble up to 8 inches -Erosional, undulatory contact			
20	LB1-7				**SANTIAGO FORMATION (Tsa)** Dense to very dense, moist, olive to yellowish brown, Silty, fine- to coarse-grained SANDSTONE; massive and very weakly laminated single undulatory sub vertical sand filled fracture 1/8"-1/4" wide, fracture is completely filled, trace claystone rip up clasts; rounded less than 3/4"			
22								
24					-Oxidation			
26	LB1-8			CL	-Bioturbated contact Hard, moist, grayish olive, CLAYSTONE; oxidation			
28								
30	LB1-9				-Shear, thin, 1/4" thick soft plastic clay gouge remolded, flat, moderately polished bounding surface with weak strike continuous around hole 1º at N30W DDD		107.5	20.3

Figure A-1,
Log of Boring LB 1, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING LB 1

ELEV. (MSL.) **156'** DATE COMPLETED **05-06-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32					-Few, close, iron stained fractures, sub vertical with N_S strike with 1/16" gypsum filling _Few gypsum veins sub-parallel to bedding			
34								
36	LB1-10						100.8	23.1
38	LB1-11							
40	LB1-12		▼		-Open fractures 1/8"-1/4", moderate to heavy seepage			
42								
44					-Shear 1/4"-1/2" thick, bluish-gray remolded clay gouge, soft plastic, continuous around hole			
46	LB1-13 LB1-14			SM	-Shear 1/2"-2" thick, bluish-gray and brown, fully remolded plastic clay gouge; soft, internally sheared with numerous polished parting surfaces			
				SP	Dense to very dense, wet, bluish-gray, Silty, fine- to medium-grained SANDSTONE; laminated			
48					Very dense, wet, reddish brown and gray, fine- to coarse-grained SANDSTONE; crossbedded, gunbarrel			
50								
52								
54								
56					-End of log due to standing water			
58					BORING TERMINATED AT 58 FEET Groundwater encountered at 40.5 feet Backfilled with bentonite chips per manufacturing recommendations			

Figure A-1,
Log of Boring LB 1, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 2** ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				SM/SC	**TERRACE DEPOSITS (Qt)** Medium dense to dense, moist, Silty to Clayey, fine to coarse SAND			
2								
4					-Vertical fractions, 1/4"-3" wide; completely sand filled with roots			
6								
8								
10								
12								
14				SM	Dense, moist, brown to yellowish brown, Silty, fine to coarse SAND			
16					-Lenses of yellowish brown, fine to coarse sand			
18								
20					-Less cohesion			
22								
24				SP	Dense, damp, light brown, fine- to medium-grained SANDSTONE; oxidized and micaceous planer laminate			
26					-Belling of hole, logged cuttings only below			
28				SM	Medium dense, damp, yellowish brown, Silty, fine to coarse SANDSTONE; cobble up to 8"			
30				SP	**SANTIAGO FORMATION (Tsa)** Dense to very dense, moist, yellowish brown, fine- to coarse-grained SANDSTONE			

Figure A-2,
Log of Boring LB 2, Page 1 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING LB 2

ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32								
34								
36								
38								
40				ML/CL	Very stiff to hard, moist, bluish gray, SILTSTONE to CLAYSTONE; oxidized in areas			
42								
44								
46								
48								
50								
52								
54								
56	LB2-1				-Approximately bedding plane shear			
58								
60								
62								
				SP	Very dense, damp to moist, light yellowish brown, fine- to coarse-grained			

Figure A-2,
Log of Boring LB 2, Page 2 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 2** ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
64					SANDSTONE; cobble up to 6 inches			
66								
68								
70								
72								
74								
76								
78								
80								
82								
84					BORING TERMINATED AT 84 FEET Groundwater not encountered Backfilled with bentonite chips per manufacturing recommendations			

Figure A-2,
Log of Boring LB 2, Page 3 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING LB 3

ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**TERRACE DEPOSITS (Qt)** Loose to medium dense, dry to damp, Silty, fine- to medium-grained SAND			
2								
					-Vertical fractures, 1/2" to 3" wide, sand infilled			
4				SC	Medium dense, moist, reddish brown, Clayey, fine to medium SAND			
6	LB3-1				Vertical fractures, 1/4" to 2 1/2" wide, sand infilled			
8								
10					-Less fractures			
12					-Becomes dense			
14								
16	LB3-2						116.1	5.9
				SP	Dense, moist, brown, fine to medium SAND			
18								
20					-Yellowish brown, fine to coarse SAND lenses			
22								
24				SC	Dense, moist, reddish brown, Clayey, fine to coarse SAND			
26					-Dark brown, sandy clay rip-up clasts			
28								
30					-Cobble lag up to 8"			
	LB3-3						101.5	7.5

Figure A-3,
Log of Boring LB 3, Page 1 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING LB 3

ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32		SP	**SANTIAGO FORMATION (Tsa)** Dense, moist, yellowish brown, fine- to coarse-grained SANDSTONE			
34			-Lamination, fine to coarse cross-bedding			
36	LB3-4	SM	Dense, moist, olive gray, Silty, fine- to coarse-grained SANDSTONE		117.1	9.1
38						
40		SM	Very dense, moist, dark gray, Silty, fine- to coarse-grained SANDSTONE; mottled yellowish brown oxidation			
42						
44		CL	-Low seepage along contact Hard, damp to moist, light bluish gray, CLAYSTONE			
46	LB3-5					
48			-Vertical and horizontal fracturing, oxidized with gypsum in fill			
50	LB3-6					
52			-Sub-vertical fractures controlled seepage			
54						
56						
58			-Weakly fissured claystone beds with discontinuous, poorly developed clay gouge; fissile polished parting surfaces in some areas (58'-59.5')			
60	LB3-7				101.5	19.4
62	LB3-8		-Bedding plane shear-1/2" to 1" thick, soft and stiff, gray, fully developed, plastic clay bed 2º at N10W DDD			

G2307-11-02.GPJ

Figure A-3,
Log of Boring LB 3, Page 2 of 3

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 3** ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
64				SM	-Bedding plane shear-1" to 1 1/4" thick, soft and stiff, gray, fully developed, moderately to fully remolded, plastic clay bed; numerous polished internal parting surfaces, 1º at N10W DDD			
66					Very dense, moist, bluish gray, fine- to medium-grained SANDSTONE			
68				SM	-Contact interbedded Very dense, moist, olive to yellowish brown, Silty, fine- to medium-grained SANDSTONE			
70	LB3-9							
72								
74					-Concretion			
76								
78								
80					-Becomes finer grained			
82								
84					BORING TERMINATED AT 84 FEET Groundwater encountered at 44 feet Backfilled with bentonite chips per manufacturing recommendations			

Figure A-3,
Log of Boring LB 3, Page 3 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. G2307-11-02

BORING LB 4

ELEV. (MSL.) **154'** DATE COMPLETED **05-09-2019**

EQUIPMENT **EZ BORE E-120** BY: **R. ADAMS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SC	**TERRACE DEPOSITS (Qt)** Dense, damp to moist, reddish brown to dark brown, Clayey, fine to coarse SAND; massive to very weakly bedded, few brown paleosol horizons			
10					-Paleosol, 2"-6" thick, reddish to dark brown sand with trace silt			
12				SC	Medium dense to dense, moist, brown to reddish brow, Clayey, fine to coarse SAND; gravel and cobble up to 6 inches			
14				SM	**SANTIAGO FORMATION (Tsa)** Dense to very dense, damp, grayish to yellowish brown, Silty, fine- to coarse-grained SANDSTONE; massive to very weakly laminated, some cross bedding, few sand filled fractures extending down from contact, narrowing with increasing depth			
20					-Coarse grained			
22					-Mottled			
24					-Sharp, bioturbated contact			
26				CL	Stiff to very stiff, damp, bluish gray to mottled orangish gray, CLAYSTONE; interbedded siltstone, oxidated laminae, short closed fractures			
28								
30								

Figure A-4,
Log of Boring LB 4, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING LB 4

ELEV. (MSL.) **154'** DATE COMPLETED **05-09-2019**

EQUIPMENT **EZ BORE E-120** BY: **R. ADAMS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32				ML	Stiff to hard, damp, gray to grayish brown, Clayey, SILTSTONE; massive, occasional closed fracture			
34								
36								
38					-Transitional contact			
				CL	Stiff to hard, moist, bluish gray, CLAYSTONE; very weakly fissured, oxidized laminae, little seepage, few closed fractures, few thin, 1/8" thick, gypsum veins parallel to bedding			
40			▼					
42					-Shear, 3/4" to 1" thick, gray, weak to moderately remolded, soft to very soft, plastic clay gouge; increase fissuring above shear			
44				SM	-Shear, 1 1/2" thick, gayish brown, weakly remolded, fully developed, soft plastic, clay bed, internally sheared with numerous parting surfaces, 1º N63W DDD			
46					very dense, damp, bluish gray, Silty, medium- to coarse-grained SANDSTONE			
				SP	-1/4" TO 1/2" sub-horizontal fractures with seepage; 40% TO 60% gypsum filled			
48					Very dense, damp, yellowish gray, medium- to coarse-grained SANDSTONE; very weakly laminated			
50								
52					-Concretion bed			
54								
56								
58								
60					BORING TERMINATED AT 60 FEET Groundwater encountered at 40 feet Backfilled with bentonite chips per manufacturing recommendations			

Figure A-4,
Log of Boring LB 4, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING SB 1

ELEV. (MSL.) **115'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB1-1			SC	**UNDOCUMENTED FILL (Qudf)** Loose to medium dense, moist, yellowish to grayish brown, Clayey, fine to coarse SAND; trace gravel			
2					-Becomes medium dense			
4								
6	SB1-2				-Becomes damp; chunks of gray siltstone	46	113.3	8.1
8								
10	SB1-3				-Becomes moist, dark brown	38	123.0	11.1
12								
14								
16	SB1-4			SC	**ALLUVIUM (Qal)** Loose, damp, dark yellowish brown, Clayey, fine to coarse SAND	16	123.0	6.5
18								
20	SB1-5				Becomes medium dense; finer-grained	18	106.1	5.3
22	SB1-6							
24								
26	SB1-7				-Becomes moist; clay content increases	27	114.0	11.8
28								
30	SB1-8					19	108.8	10.8

Figure A-5,
Log of Boring SB 1, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING SB 1

ELEV. (MSL.) **115'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32								
34								
36	SB1-9				Becomes loose, wet	15	110.2	15.0
38			▼		-Measured after leaving hole open for 15 min.			
40	SB1-10					17		
42								
44								
46	SB1-11					16	109.6	20.5
48								
50	SB1-12			SM	**SANTIAGO FORMATION (Tsa)** Very dense, damp, light yellowish to grayish brown, Silty, fine-grained SANDSTONE	80/10"		
52	SB1-13					50/5"		
					BORING TERMINATED AT 52.5 FEET Groundwater encountered at 38 feet Backfilled with 18.3 ft³ of bentonite grout			

Figure A-5,
Log of Boring SB 1, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING SB 2

ELEV. (MSL.) **111'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB2-1			SC	**UNDOCUMENTED FILL (Qudf)** Loose to medium dense, moist, yellowish to grayish brown, Clayey, fine to coarse SAND; trace organics, trace gravel			
2								
4								
6	SB2-2				-Becomes dense; chunks of gray siltstone and sandstone	61	120.2	11.4
8								
10	SB2-3				-Becomes medium dense	32	112.4	16.4
12								
14								
16	SB2-4			SC/SW	**ALLUVIUM (Qal)** Medium dense, moist, dark yellowish brown, Clayey, fine to medium SAND to well-graded, fine to medium SAND	19	115.0	9.1
18								
20	SB2-5			SC	Medium dense, moist, dark yellowish brown, Clayey, fine to medium SAND	22	115.2	10.0
22								
24								
26	SB2-6					18	107.1	6.5
28								
30	SB2-7					16	110.8	12.2

Figure A-6,
Log of Boring SB 2, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING SB 2

ELEV. (MSL.) **111'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32								
34								
36	SB2-8			SM/SP	Medium dense, moist, dark yellowish brown, Silty, fine SAND to poorly-graded fine SAND	19	112.4	9.6
38			▼					
40	SB2-9			SC	Medium dense, saturated, yellowish brown, Clayey, fine SAND	18	115.4	17.0
42								
44								
46	SB2-10					18		
48								
50	SB2-11				-Becomes light reddish brown	24	114.5	19.5
52								
54								
56	SB2-12			SM	**SANTIAGO FORMATION (Tsa)** Very dense, damp, light yellowish brown to gray, Silty, fine-grained SANDSTONE	82/8"		
	SB2-13					50/6"		

BORING TERMINATED AT 56.5 FEET
Groundwater encountered at 40 feet
Backfilled with 19.7 ft³ of bentonite grout

Figure A-6,
Log of Boring SB 2, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING SB 3

ELEV. (MSL.) **107'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB3-1			SM	**UNDOCUMENTED FILL (Qudf)** Loose to medium dense, damp, yellowish brown, Silty, fine to coarse SAND; trace organics; trace gravel -Becomes medium dense			
4	SB3-2				-Becomes dense, dark yellowish brown	56	120.9	3.7
10	SB3-3				-Becomes medium dense, yellowish brown to gray	25	110.8	9.3
16	SB3-4			SC/CL	**ALLUVIUM (Qal)** Loose, moist, dark brown to yellowish brown, Clayey, fine to medium SAND to Sandy CLAY	16	121.1	11.5
20	SB3-5			SC	Loose, moist, dark brown, Clayey, fine to medium SAND	14	116.1	9.4
30	SB3-6				-Becomes light yellowish brown; clay content increases	15	112.6	11.8

Figure A-7,
Log of Boring SB 3, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING SB 3

ELEV. (MSL.) **107'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32								
34								
36	SB3-7					17	109.8	14.4
38								
40	SB3-8			SM	Loose, damp, light yellowish to grayish brown, Silty, fine SAND	14	97.8	5.7
42								
44								
46	SB3-9			SC	Loose, moist, light yellowish to grayish brown, Clayey, fine SAND	13	96.0	14.4
48			▼		-Becomes saturated			
50	SB3-10			SM	**SANTIAGO FORMATION (Tsa)** Very dense, moist, light yellowish to grayish brown, Silty, fine-grained SANDSTONE	30		
52								
54	SB3-11					50/6"		
					BORING TERMINATED AT 55.5 FEET Groundwater encountered at 49 feet Backfilled with 19.4 ft³ of bentonite grout			

Figure A-7,
Log of Boring SB 3, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

APPENDIX E

Piraeus Point

Piraeus Street/Plato Place

Encinitas, CA 92024

Inquiry Number: 6844503.8

February 02, 2022

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

02/02/22

Site Name:

Piraeus Point
Piraeus Street/Plato Place
Encinitas, CA 92024
EDR Inquiry # 6844503.8

Client Name:

Geocon Env. Consultants, Inc.
6960 Flanders Drive
San Diego, CA 92121-0000
Contact: Cole Mikesell

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2002	1"=500'	Acquisition Date: January 01, 2002	USGS/DOQQ
1997	1"=500'	Acquisition Date: October 16, 1997	USGS/DOQQ
1994	1"=500'	Acquisition Date: January 01, 1994	USGS/DOQQ
1990	1"=500'	Flight Date: September 06, 1990	USDA
1985	1"=500'	Flight Date: September 13, 1985	USDA
1979	1"=500'	Flight Date: February 13, 1979	EDR Proprietary Landiscor
1970	1"=500'	Flight Date: March 06, 1970	EDR Proprietary Landiscor
1967	1"=500'	Flight Date: May 07, 1967	USGS
1964	1"=500'	Flight Date: April 09, 1964	USDA
1953	1"=500'	Flight Date: April 14, 1953	USDA
1947	1"=500'	Flight Date: January 15, 1947	USGS
1939	1"=500'	Flight Date: April 16, 1939	USDA
1928	1"=500'	Flight Date: November 01, 1928	EDR Proprietary Landiscor

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INQUIRY #: 6844503.8

YEAR: 2016

= 500'

N

EDR


INQUIRY #: 6844503.8
YEAR: 2012
= 500'
N
EDR



INQUIRY #: 6844503.8

YEAR: 2009

= 500'

N

EDR



INQUIRY #: 6844503.8

YEAR: 2005

= 500'

N

EDR



INQUIRY #: 6844503.8

YEAR: 2002

= 500'

N

EDR



INQUIRY #: 6844503.8

YEAR: 1997

= 500'

N

EDR



INQUIRY #: 6844503.8

YEAR: 1994

= 500'

N

EDR


INQUIRY #: 6844503.8
YEAR: 1990
= 500'
N
EDR



INQUIRY #: 6844503.8

YEAR: 1985

= 500'

N

EDR


INQUIRY #: 6844503.8
YEAR: 1979
= 500'
N
EDR


INQUIRY #: 6844503.8
YEAR: 1970
= 500'
N
EDR



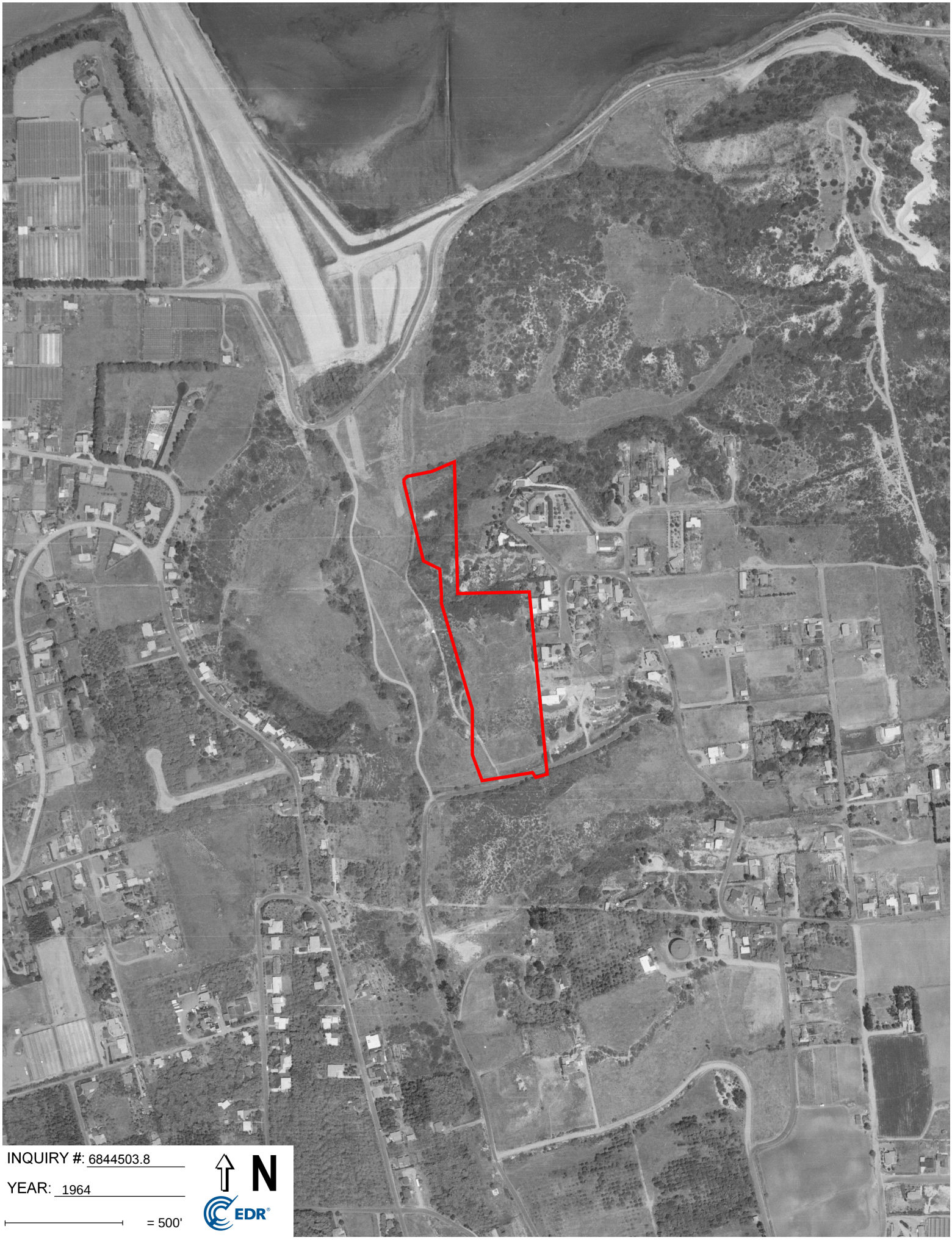
INQUIRY #: 6844503.8

YEAR: 1967

= 500'

N

EDR



INQUIRY #: 6844503.8

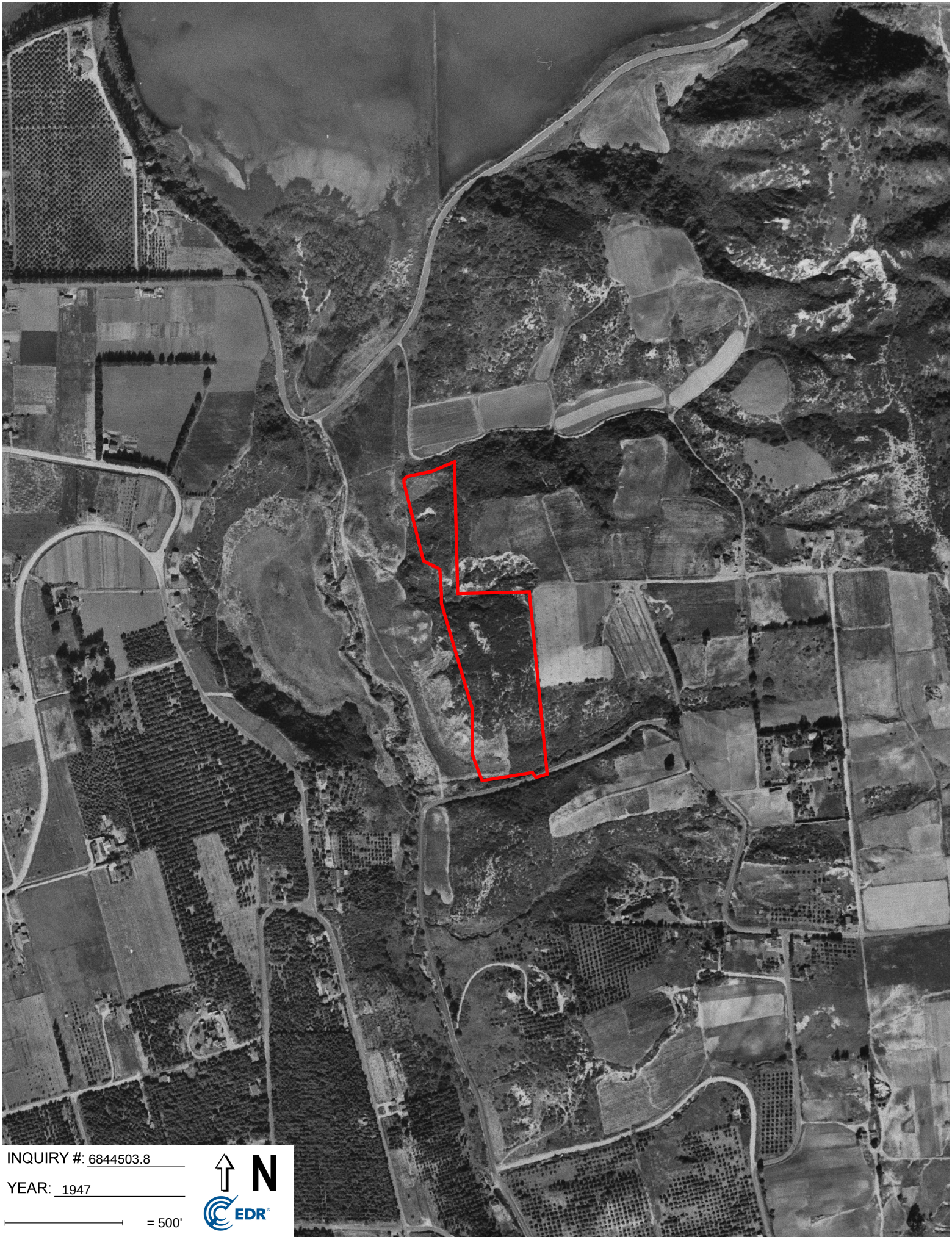
YEAR: 1964

= 500'

N

EDR


INQUIRY #: 6844503.8
YEAR: 1953
= 500'
N
EDR


INQUIRY #: 6844503.8
YEAR: 1947
= 500'
N
EDR


INQUIRY #: 6844503.8
YEAR: 1939
= 500'
N
EDR



INQUIRY #: 6844503.8

YEAR: 1928

= 500'

N

EDR

APPENDIX F

Piraeus Point

Piraeus Street/Plato Place

Encinitas, CA 92024

Inquiry Number: 6844503.4

February 02, 2022

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

02/02/22

Site Name:

Piraeus Point
Piraeus Street/Plato Place
Encinitas, CA 92024
EDR Inquiry # 6844503.4

Client Name:

Geocon Env. Consultants, Inc.
6960 Flanders Drive
San Diego, CA 92121-0000
Contact: Cole Mikesell

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Geocon Env. Consultants, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# G2307-62-04A
Project: Piraeus Point

Coordinates:

Latitude:	33.079225 33° 4' 45" North
Longitude:	-117.295148 -117° 17' 43" West
UTM Zone:	Zone 11 North
UTM X Meters:	472453.12
UTM Y Meters:	3660108.62
Elevation:	156.12' above sea level

Maps Provided:

2018
2015
2012
1997
1975
1968
1949
1948
1947
1901
1898
1893

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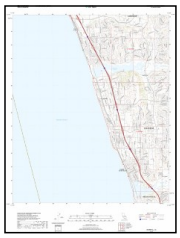
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Topo Sheet Key

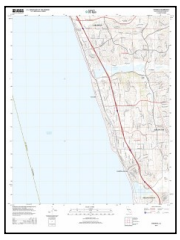
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2018 Source Sheets



Encinitas
2018
7.5-minute, 24000

2015 Source Sheets



Encinitas
2015
7.5-minute, 24000

2012 Source Sheets



Encinitas
2012
7.5-minute, 24000

1997 Source Sheets



Encinitas
1997
7.5-minute, 24000
Aerial Photo Revised 1997

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1975 Source Sheets



Encinitas
1975
7.5-minute, 24000
Aerial Photo Revised 1975

1968 Source Sheets



Encinitas
1968
7.5-minute, 24000
Aerial Photo Revised 1967

1949 Source Sheets



Encinitas
1949
7.5-minute, 24000
Aerial Photo Revised 1947

1948 Source Sheets



Encinitas
1948
7.5-minute, 24000
Aerial Photo Revised 1947

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1947 Source Sheets



OCEANSIDE
1947
15-minute, 50000

1901 Source Sheets



Oceanside
1901
15-minute, 62500

1898 Source Sheets



Oceanside
1898
15-minute, 62500

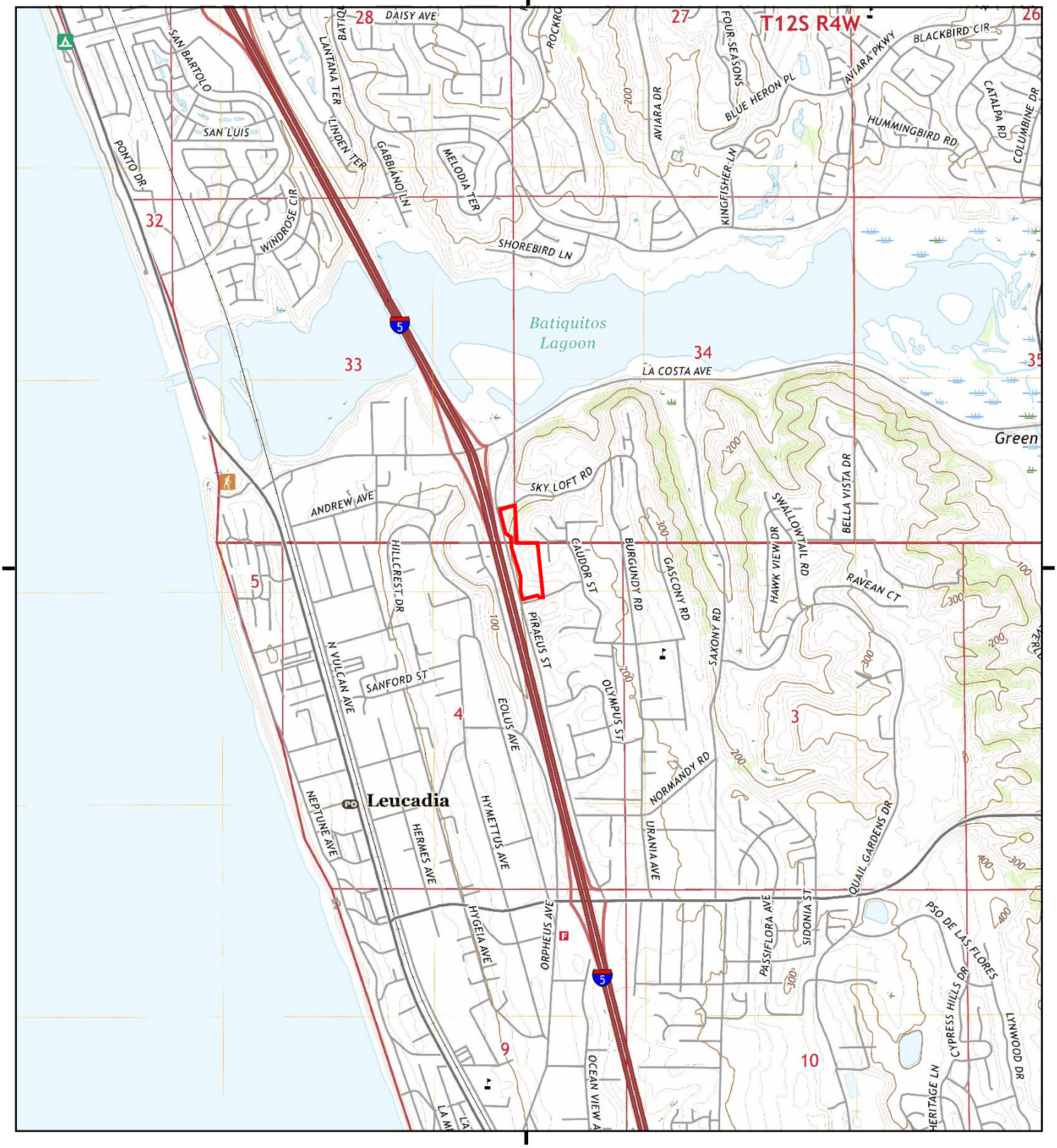
1893 Source Sheets



Oceanside
1893
15-minute, 62500

Historical Topo Map

2018



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

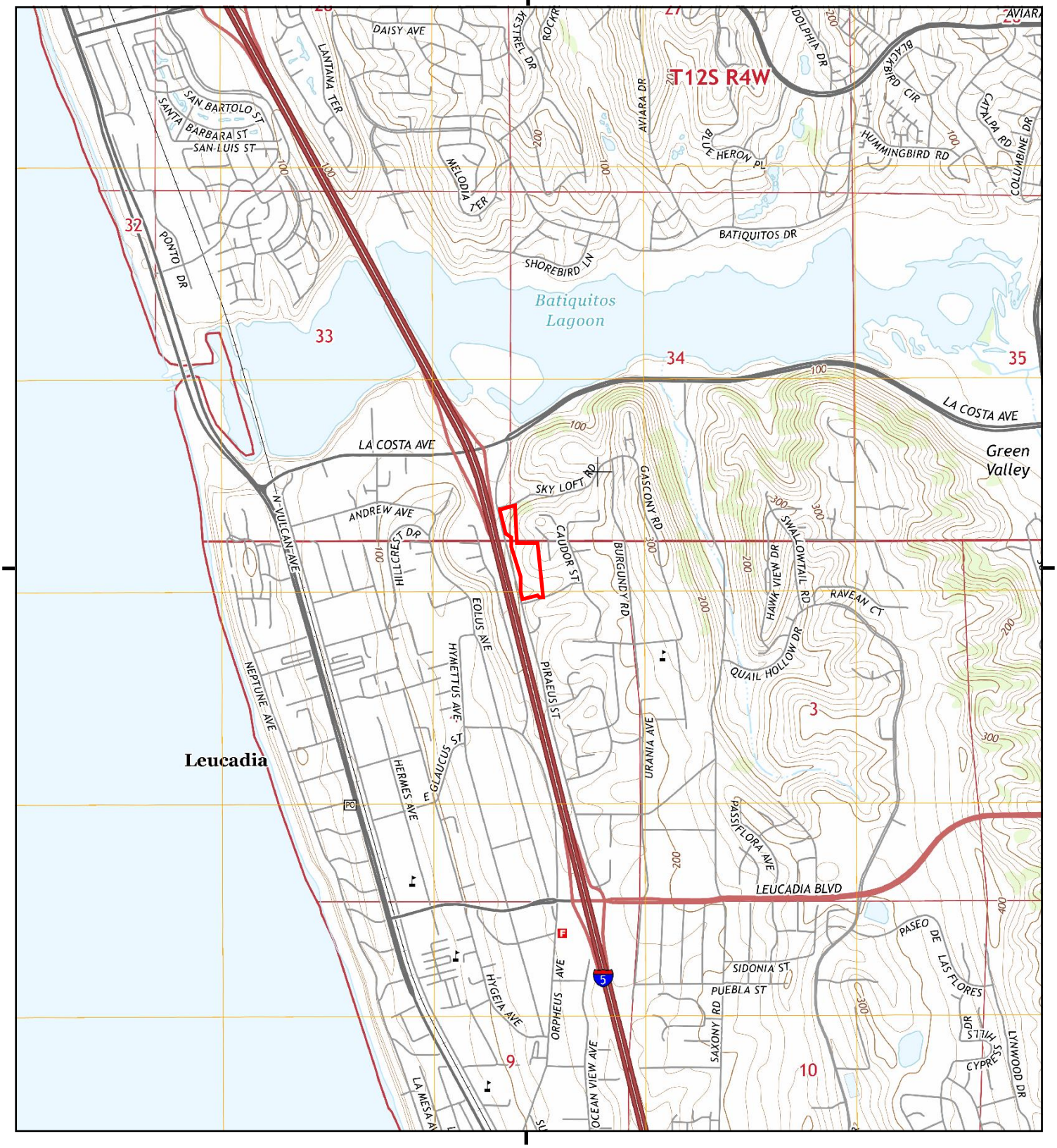
TP, Encinitas, 2018, 7.5-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

Historical Topo Map

2015



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

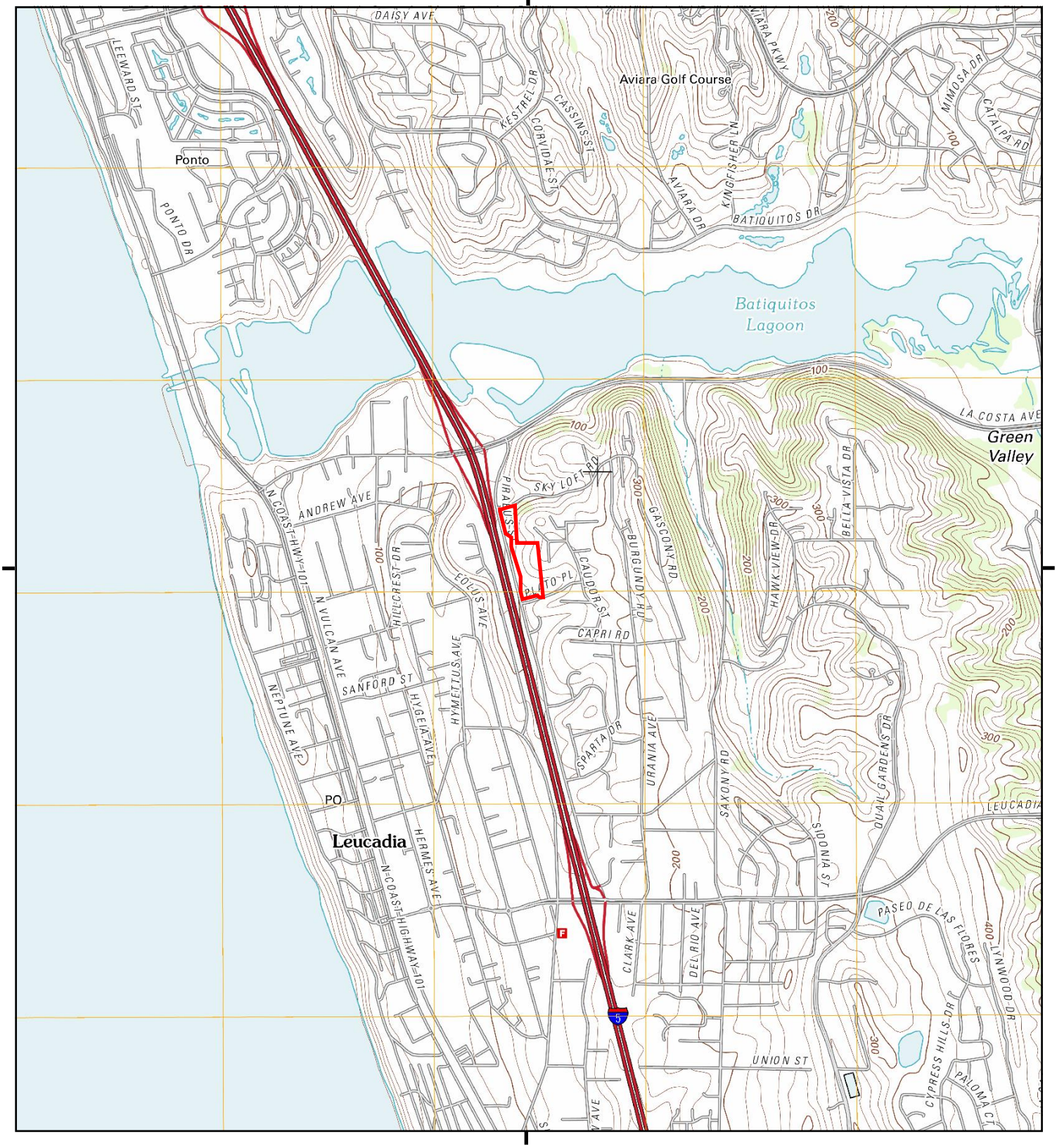
TP, Encinitas, 2015, 7.5-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

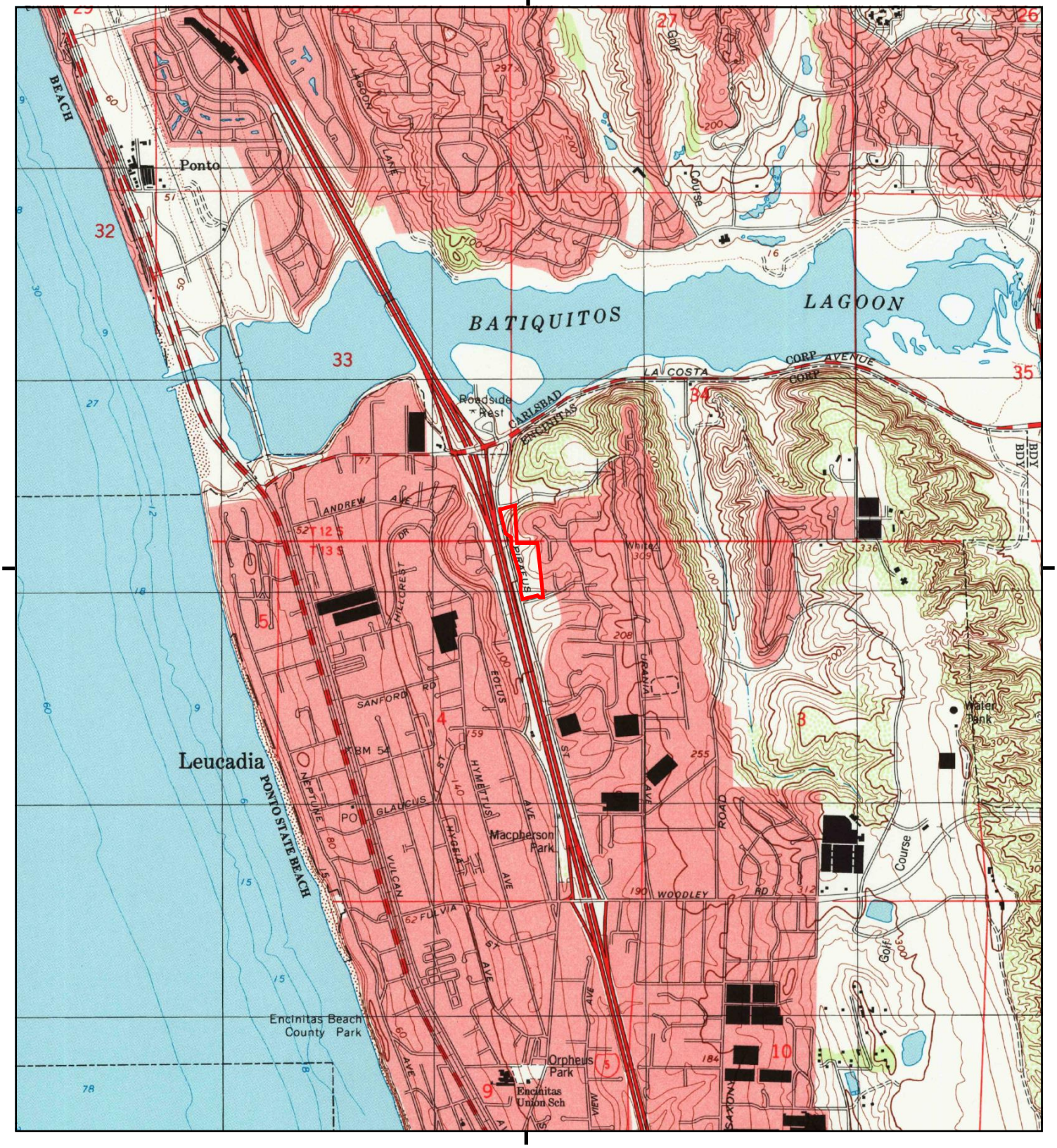
TP, Encinitas, 2012, 7.5-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

Historical Topo Map

1997



This report includes information from the following map sheet(s).

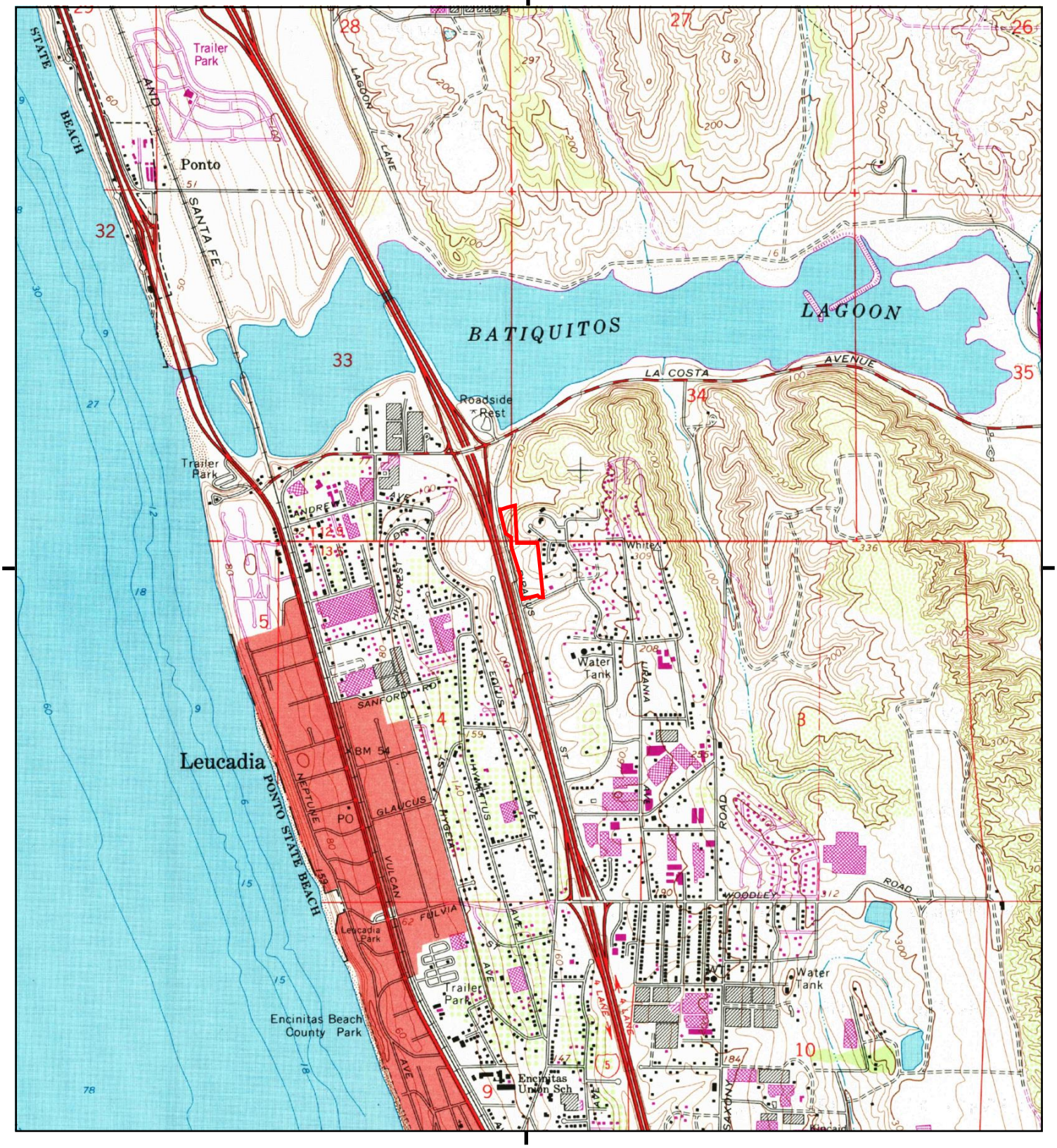
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Encinitas, 1997, 7.5-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

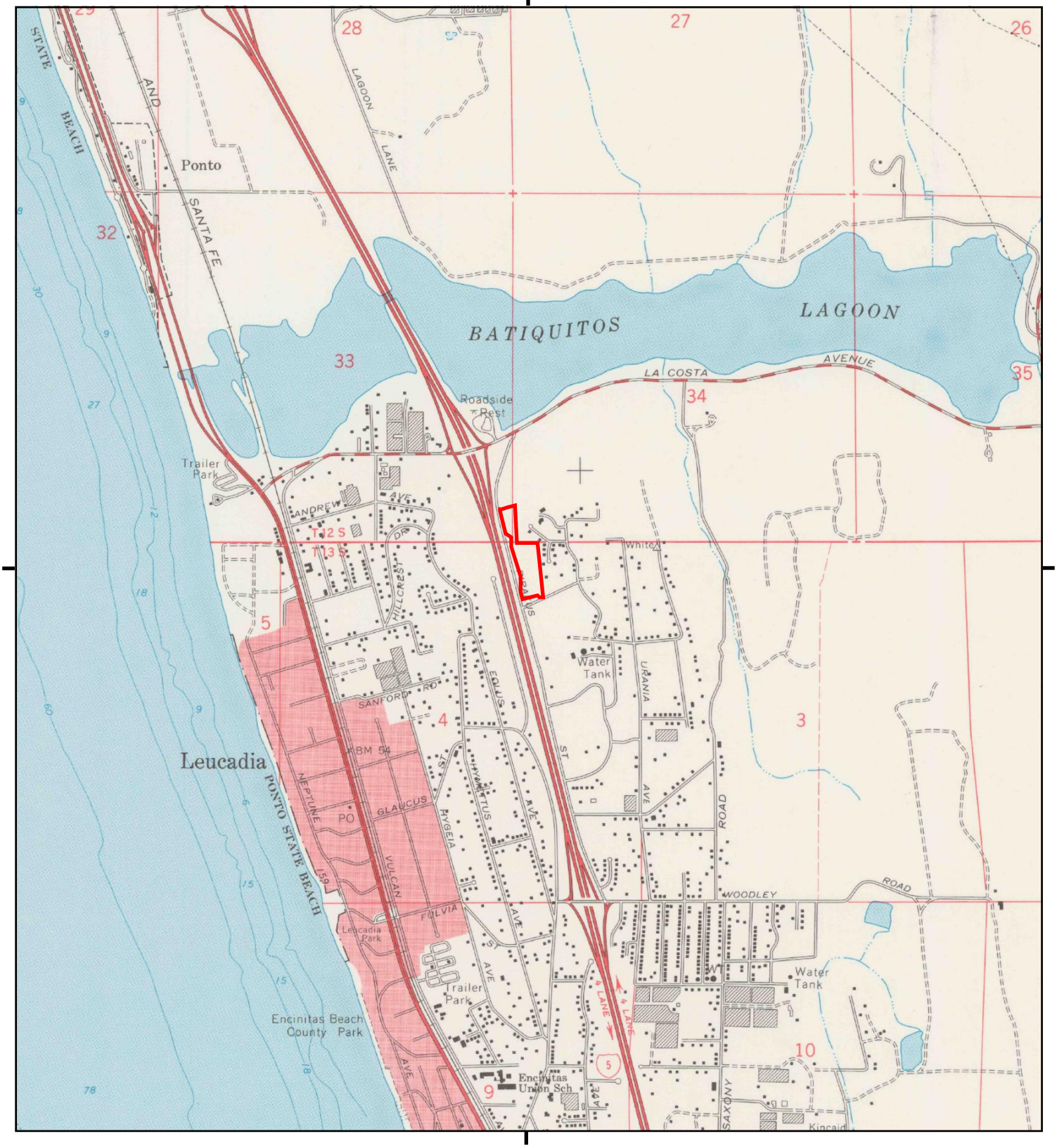
TP, Encinitas, 1975, 7.5-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

Historical Topo Map

1968



This report includes information from the following map sheet(s).

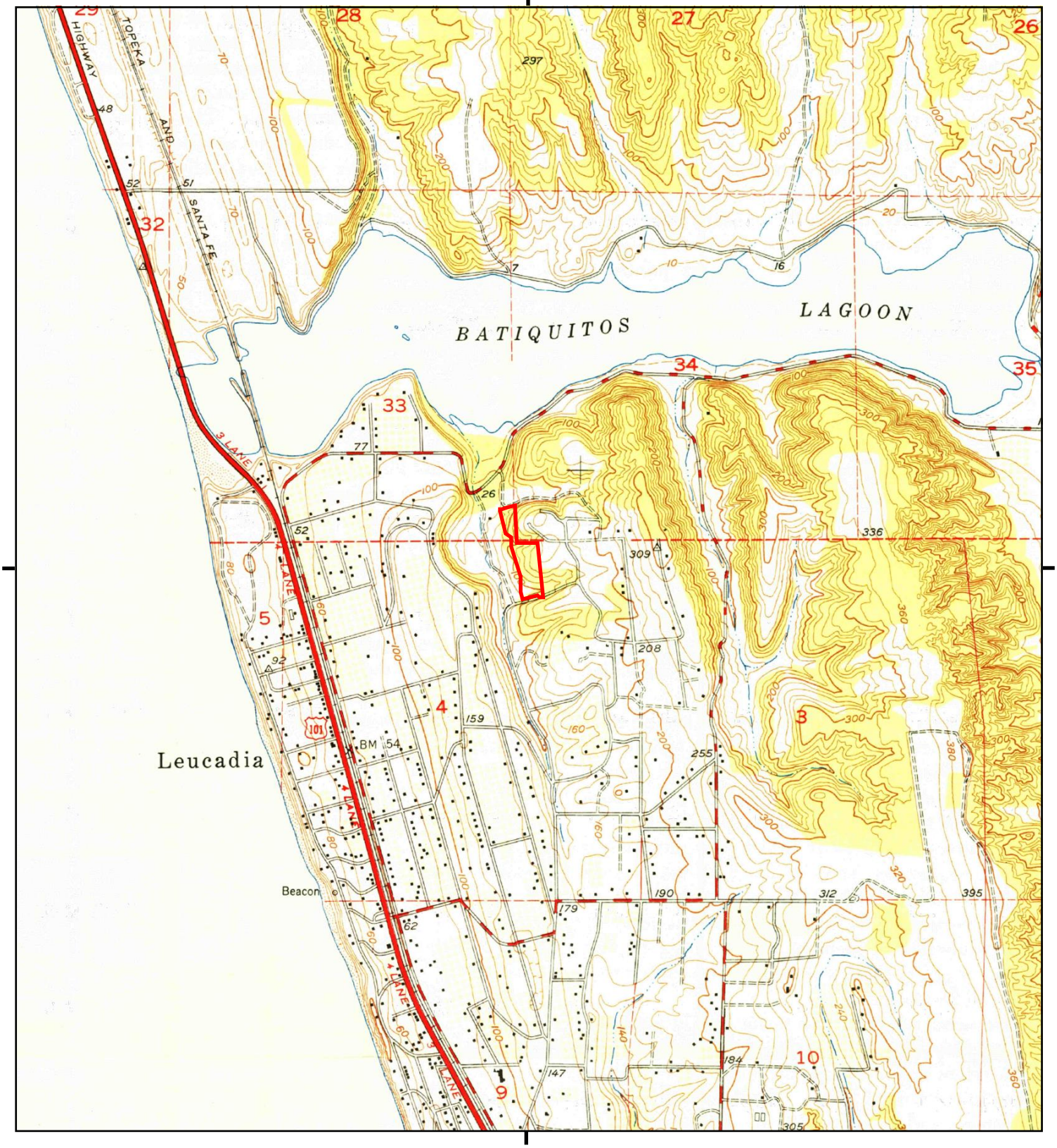
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Encinitas, 1968, 7.5-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

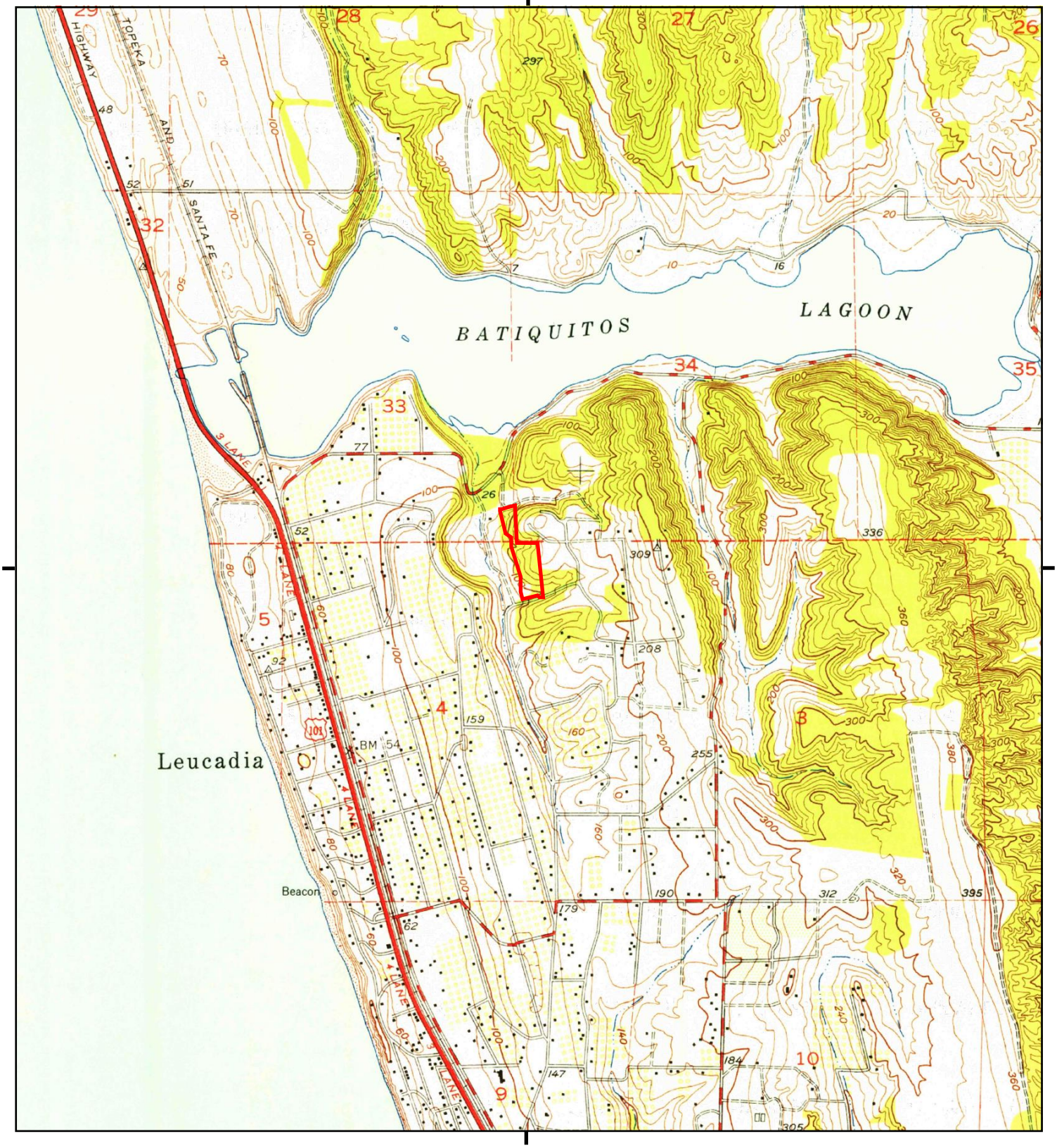
TP, Encinitas, 1949, 7.5-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

Historical Topo Map

1948



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Encinitas, 1948, 7.5-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

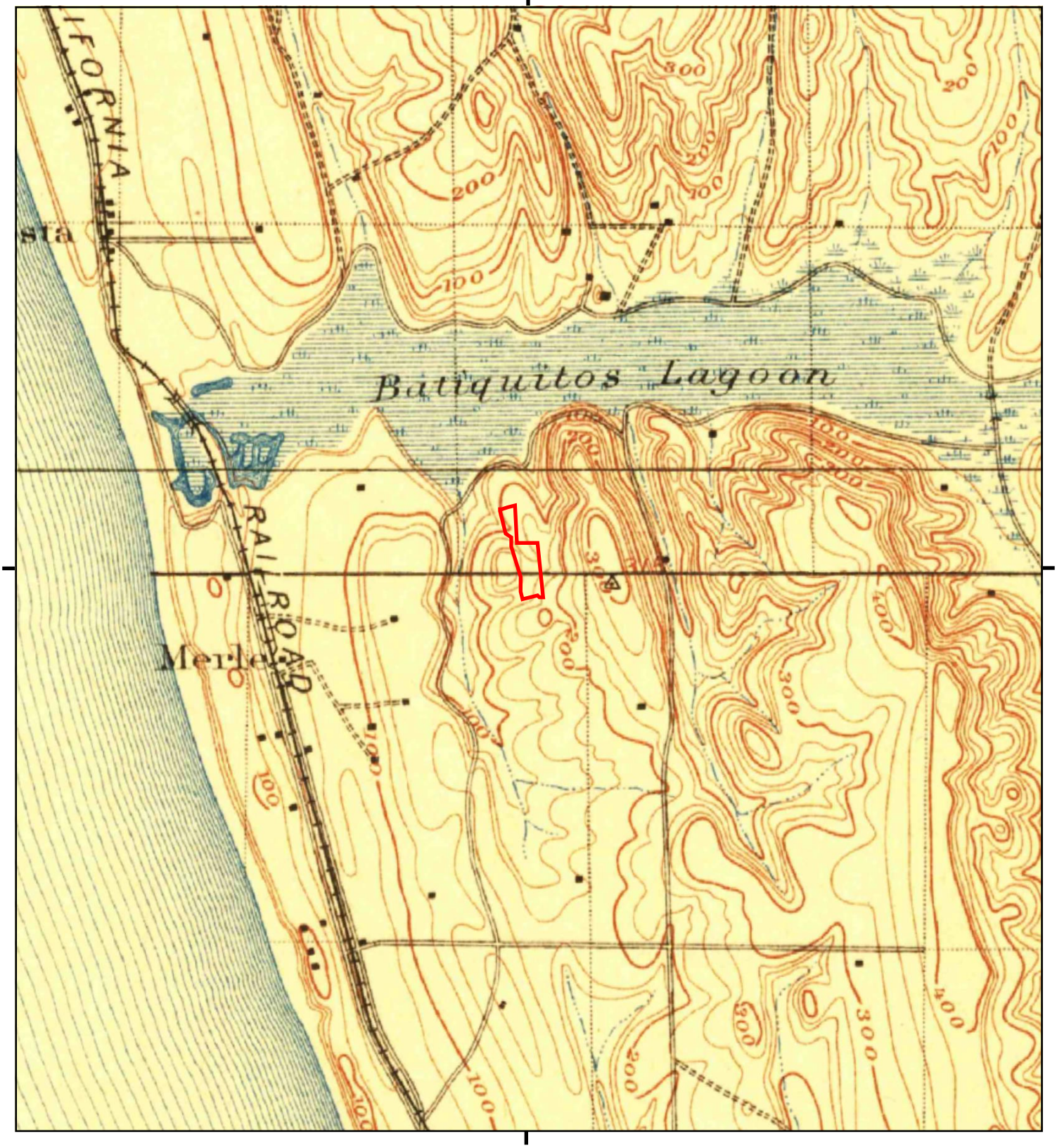
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, OCEANSIDE, 1947, 15-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

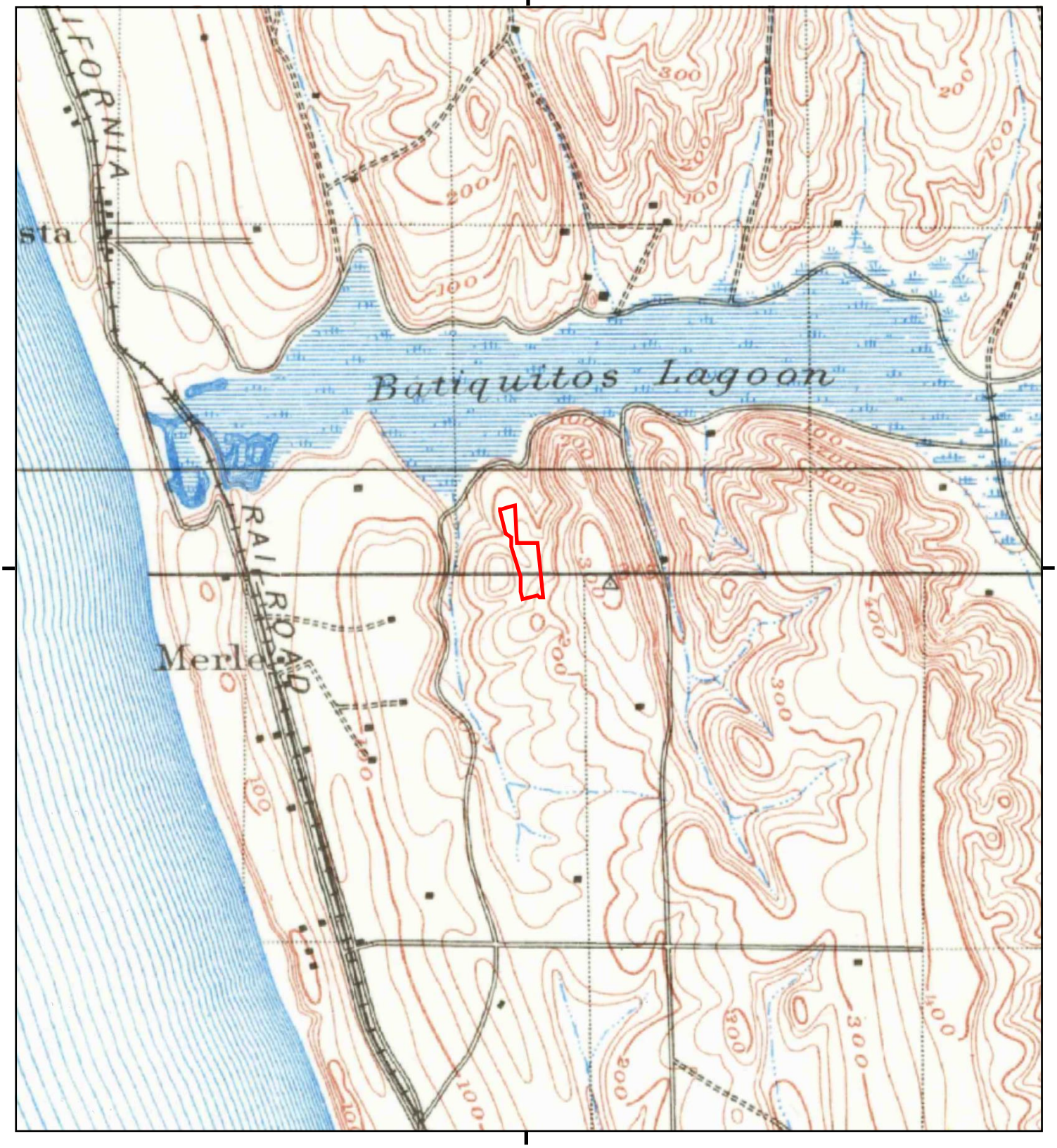
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Oceanside, 1901, 15-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

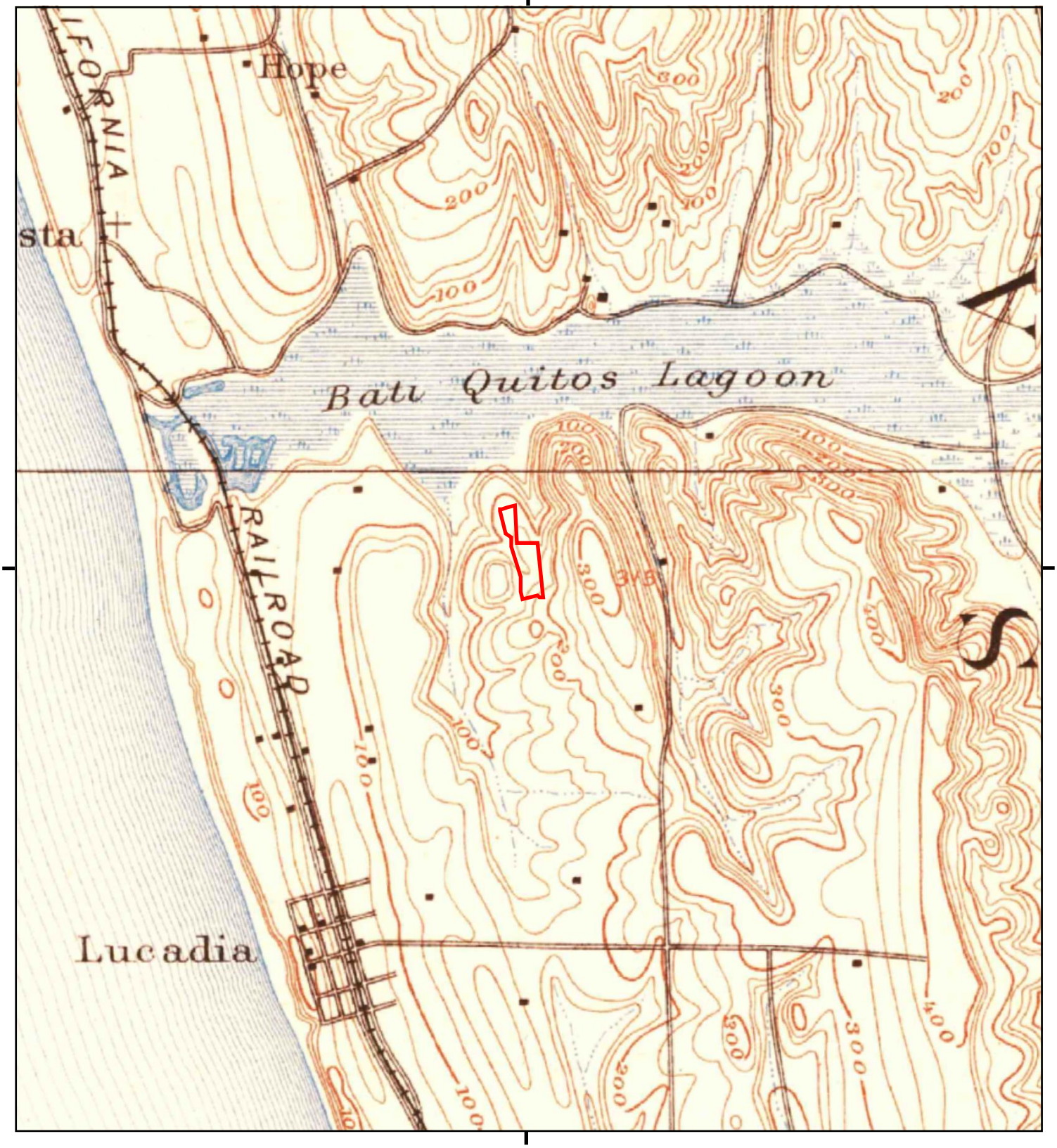
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Oceanside, 1898, 15-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Oceanside, 1893, 15-minute

SITE NAME: Piraeus Point
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

APPENDIX G

Piraeus Point
Piraeus Street/Plato Place
Encinitas, CA 92024

Inquiry Number: 6844503.5
February 07, 2022

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Thank you for your business.
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with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2017	☑	☑	EDR Digital Archive
2014	☑	☑	EDR Digital Archive
2010	☑	☑	EDR Digital Archive
2005	☑	☑	EDR Digital Archive
2000	☑	☑	EDR Digital Archive
1995	☑	☑	EDR Digital Archive
1992	☑	☑	EDR Digital Archive
1986	☑	☑	Haines Criss-Cross Directory
1982	☑	☑	Haines Criss-Cross Directory
1979	☑	☑	Haines Criss-Cross Directory
1975	☑	☑	Haines Criss-Cross Directory
1971	☑	☑	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

Piraeus Street/Plato Place
Encinitas, CA 92024

Year	*CD Image*	*Source*
PIRAEUS ST		
2017	pg A1	EDR Digital Archive
2014	pg A3	EDR Digital Archive
2010	pg A5	EDR Digital Archive
2005	pg A7	EDR Digital Archive
2000	pg A9	EDR Digital Archive
1995	pg A11	EDR Digital Archive
1992	pg A13	EDR Digital Archive
1986	pg A15	Haines Criss-Cross Directory
1982	pg A17	Haines Criss-Cross Directory
1979	pg A19	Haines Criss-Cross Directory
1975	pg A21	Haines Criss-Cross Directory
1971	pg A23	Haines Criss-Cross Directory

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*
PLATO PL		
2017	pg. A2	EDR Digital Archive
2014	pg. A4	EDR Digital Archive
2010	pg. A6	EDR Digital Archive
2005	pg. A8	EDR Digital Archive
2000	pg. A10	EDR Digital Archive
1995	pg. A12	EDR Digital Archive
1992	pg. A14	EDR Digital Archive
1986	pg. A16	Haines Criss-Cross Directory
1982	pg. A18	Haines Criss-Cross Directory
1979	pg. A20	Haines Criss-Cross Directory
1975	pg. A22	Haines Criss-Cross Directory
1971	pg. A24	Haines Criss-Cross Directory

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2017

949	SEIFF, KEVIN
975	ARMS, WENDY R
1411	GUNTHER, EARL L
1419	STOCKHAM, JORDAN N
1437	LARA, FRED D
	SUNDANCE RESEARCH INTERNATL
1441	GUTOSKI, RAYMOND

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2017

746	BELMONTE, PHIL P
748	WILLIAMSON, VICTORIA D
750	MILLER, DOUGLAS R
754	TURNER, EDWIN W
786	SAVILLE, SHAUN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2014

949	DEROGY, JEAN R
963	OCCUPANT UNKNOWN,
975	ARMS, JIM C
1411	GUNTHER, EARL L
1417	STOCKHAM, JORDAN N
1419	OCCUPANT UNKNOWN,
1433	MORENO, RODRIGO
1437	LARA, FRED D
	SUNDANCE RESEARCH INTERNATL
1441	GUTOSKI, RAYMOND

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2014

746	BELMONTE, PHIL A
748	WILLIAMSON, VICTORIA D
754	TURNER, EDWIN W
773	CHARRETTE, CHRISTOPHER G
786	SAVILLE, SHAUN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2010

949	DEROGY, JEAN R
975	ARMS, JIM C
1411	GUNTHER, EARL L
1417	ORTMAN, SUSAN
1419	STOCKHAM, JORDAN N
1433	SOLANO, SONIA
1437	LARA, FRED D
1441	GUTOSKI, RAYMOND F

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2010

746	BELMONTE, PHIL A
748	WILLIAMSON, DAVID M
750	OCCUPANT UNKNOWN,
754	TURNER, EDWIN W
773	CHARRETTE, CHRISTOPHER G
786	SAVILLE, SHAUN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2005

949	DEROGY, JEAN R
963	RODRIGUEZ, CESAREO G
1411	GUNTHER, EARL L
1417	STOCKHAM, JORDAN N
1419	STOCKHAM, JEROME C
1433	MARTINEZ, IGNACIA
1437	LARA, ALFREDO D
1441	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2005

746	BELMONTE, PHIL
	MATTESONS FLORIST
748	WILLIAMSON, DAVID M
750	MATTESON, GLORIA M
754	TURNER, EDWIN W
773	CHARRETTE, CHRISTOPHER
786	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2000

1411 GUNTHER, EARL
1417 OCCUPANT UNKNOWN,
1419 STOCKHAM, JEROME C
1437 LARA, ALFREDO D
SUNDANCE RESEARCH INTERNATL

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2000

746	BELMONTE, PHIL
748	WILLIAMSON, DAVID
750	OCCUPANT UNKNOWN,
754	TURNER, EDWIN W
773	CHARRETTE, C G
786	VASQUEZ, CHRIS J

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 1995

1411	GUNTHER, EARL
1417	FENTIMAN, THOMAS H
1419	STOCKHAM, JEROME C
1433	OCCUPANT UNKNOWNN
1437	DIETSCHE, ANTHONY
	OKAWA, MICHIO

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 1995

746	BELMONTE, PHIL
748	MULLEN, JAMES
754	TURNER, EDWIN W

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 1992

1411 GUNTHER, EARL
1419 FENTIMAN, THOMAS H
1433 MALDONADO, RAMONA R
1437 DIETSCHE, ANTHONY
1441 OTO, SHIGERU

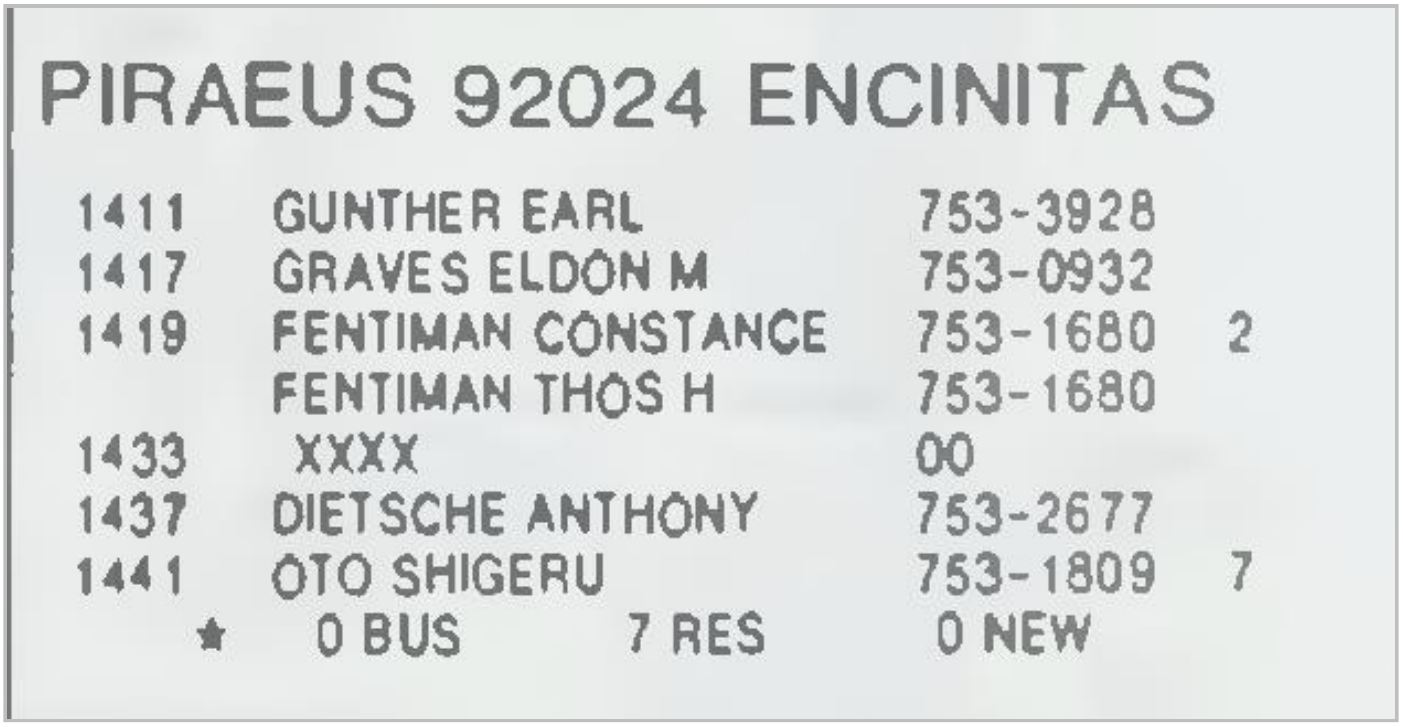
Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 1992

746 BELMONTE, PHIL
754 TURNER, EDWIN W

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PIRAEUS ST 1986

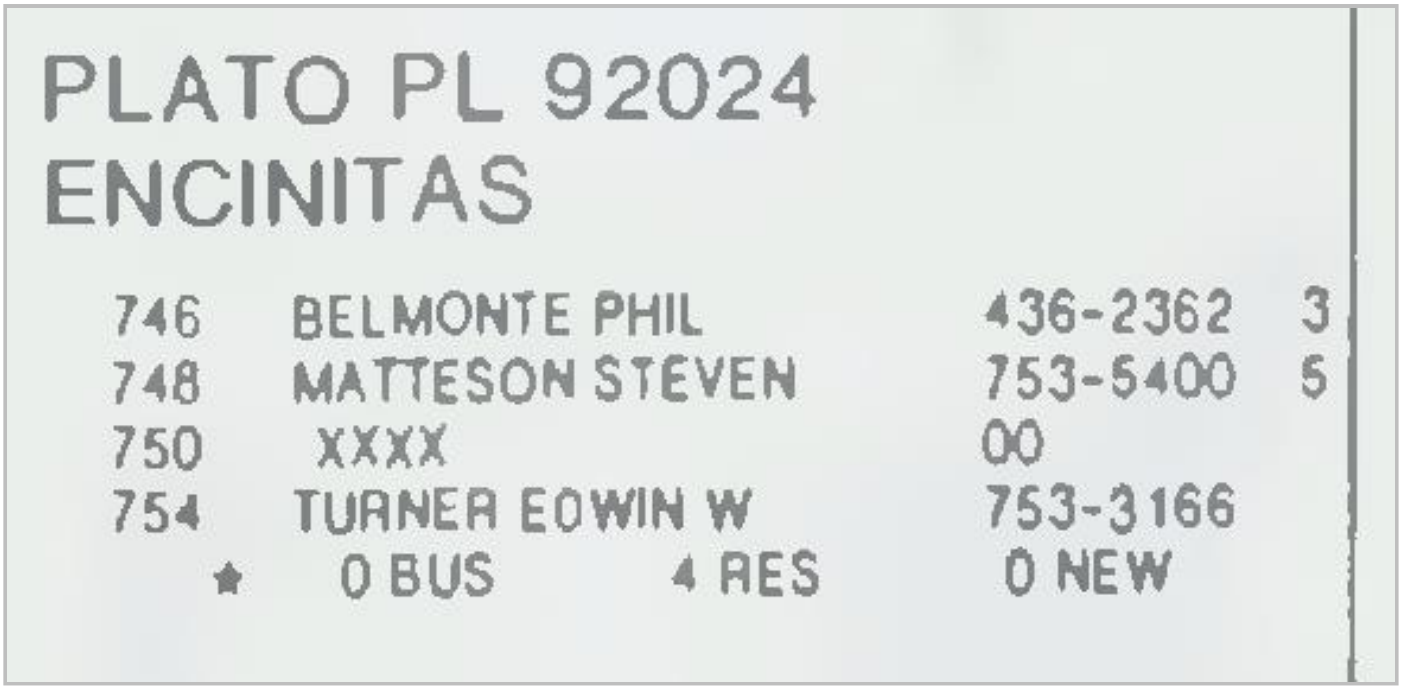


PIRAEUS 92024 ENCINITAS

1411	GUNTHER EARL	753-3928	
1417	GRAVES ELDON M	753-0932	
1419	FENTIMAN CONSTANCE	753-1680	2
	FENTIMAN THOS H	753-1680	
1433	XXXX	00	
1437	DIETSCHE ANTHONY	753-2677	
1441	OTO SHIGERU	753-1809	7
★	0 BUS 7 RES	0 NEW	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1986

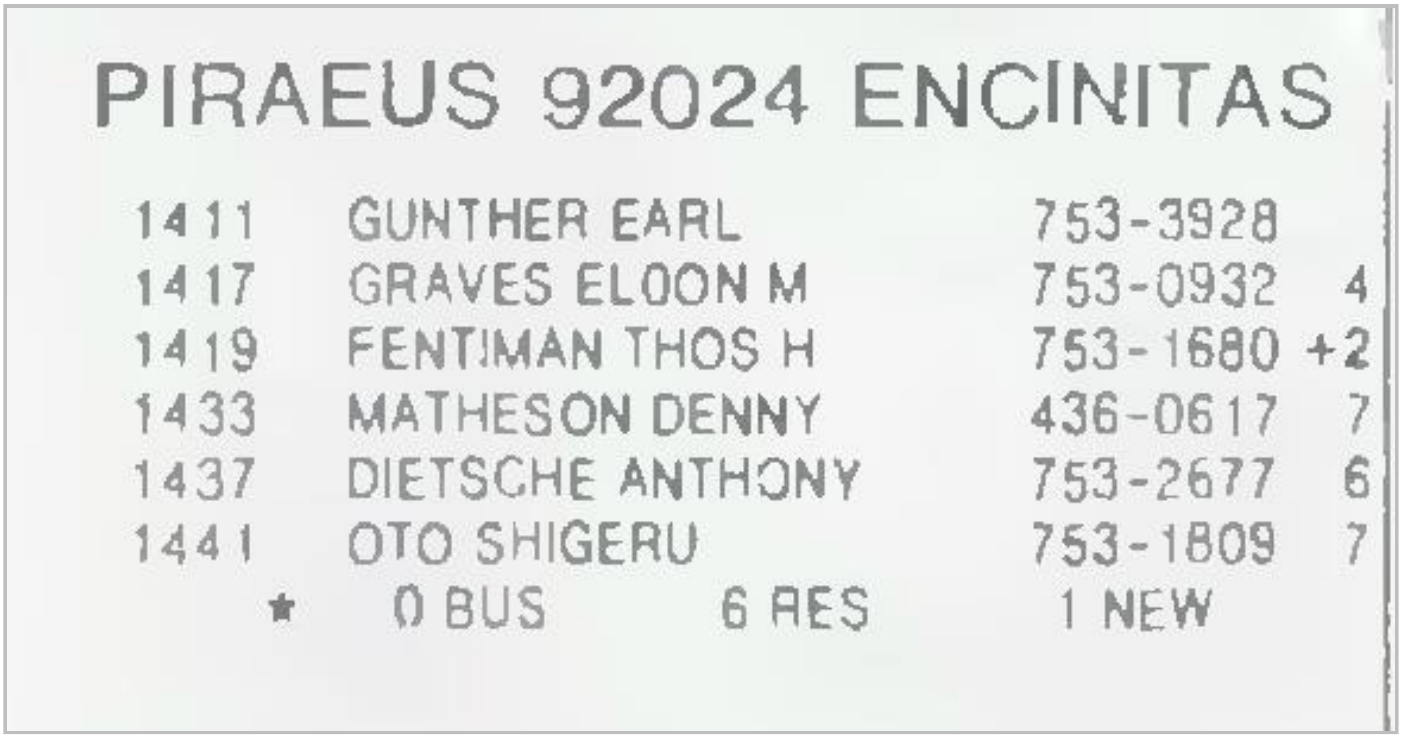


PLATO PL 92024
ENCINITAS

746	BELMONTE PHIL	436-2362	3
748	MATTESON STEVEN	753-5400	5
750	XXXX	00	
754	TURNER EOWIN W	753-3166	
★	0 BUS 4 RES	0 NEW	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PIRAEUS ST 1982

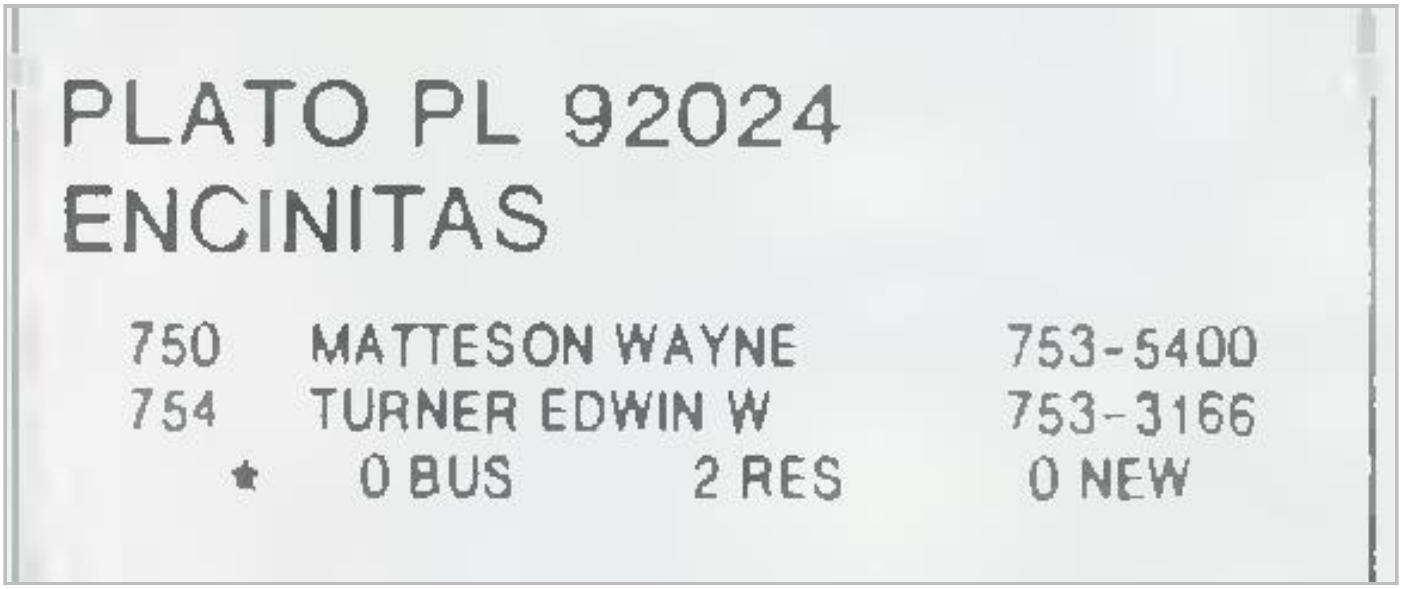


PIRAEUS 92024 ENCINITAS

1411	GUNTHER EARL	753-3928	
1417	GRAVES ELOON M	753-0932	4
1419	FENTIMAN THOS H	753-1680	+2
1433	MATHESON DENNY	436-0617	7
1437	DIETSCHE ANTHONY	753-2677	6
1441	OTO SHIGERU	753-1809	7
★	0 BUS 6 RES	1 NEW	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1982



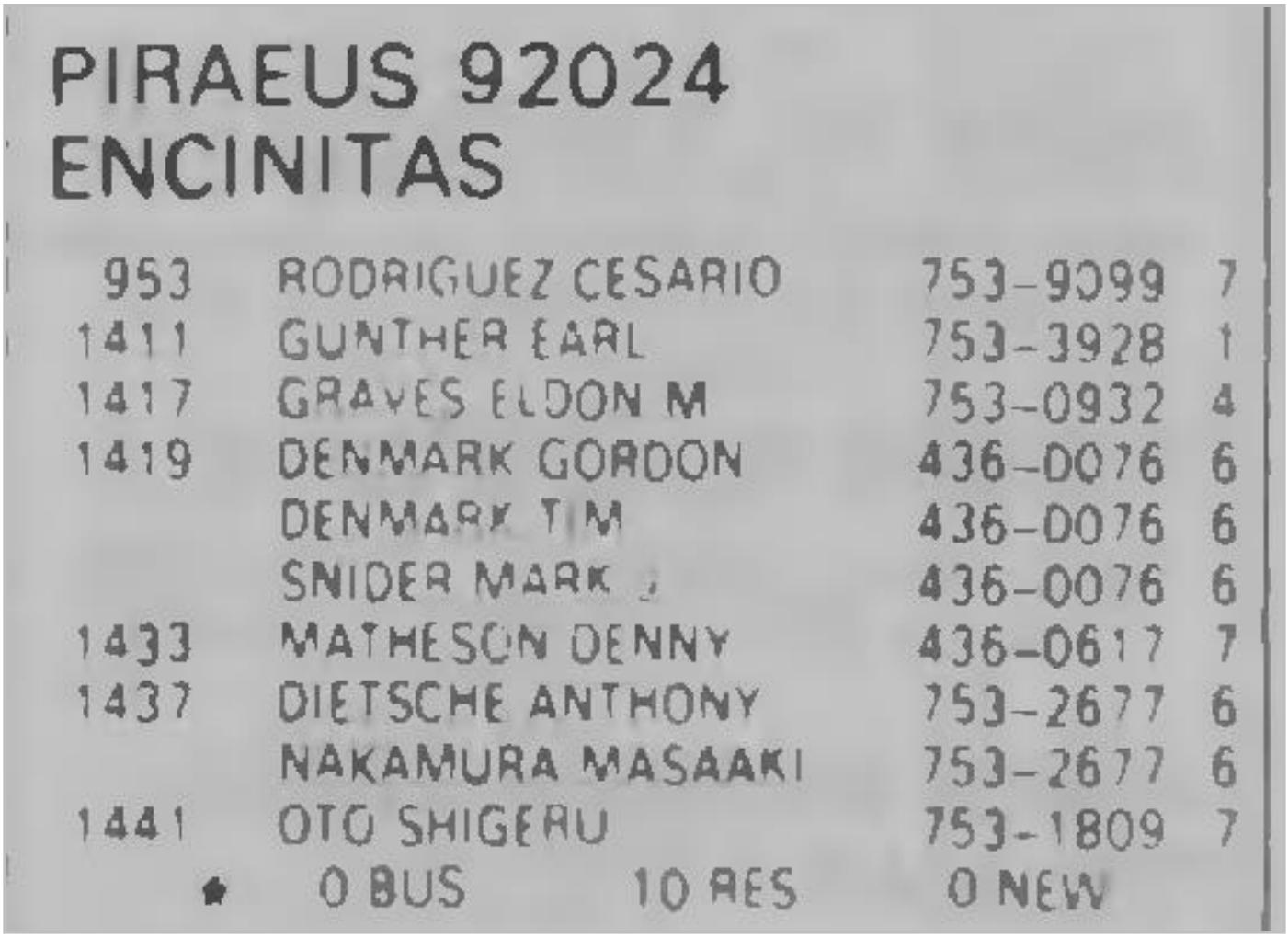
PLATO PL 92024
ENCINITAS

750	MATTESON WAYNE	753-5400
754	TURNER EDWIN W	753-3166

* 0 BUS 2 RES 0 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PIRAEUS ST 1979



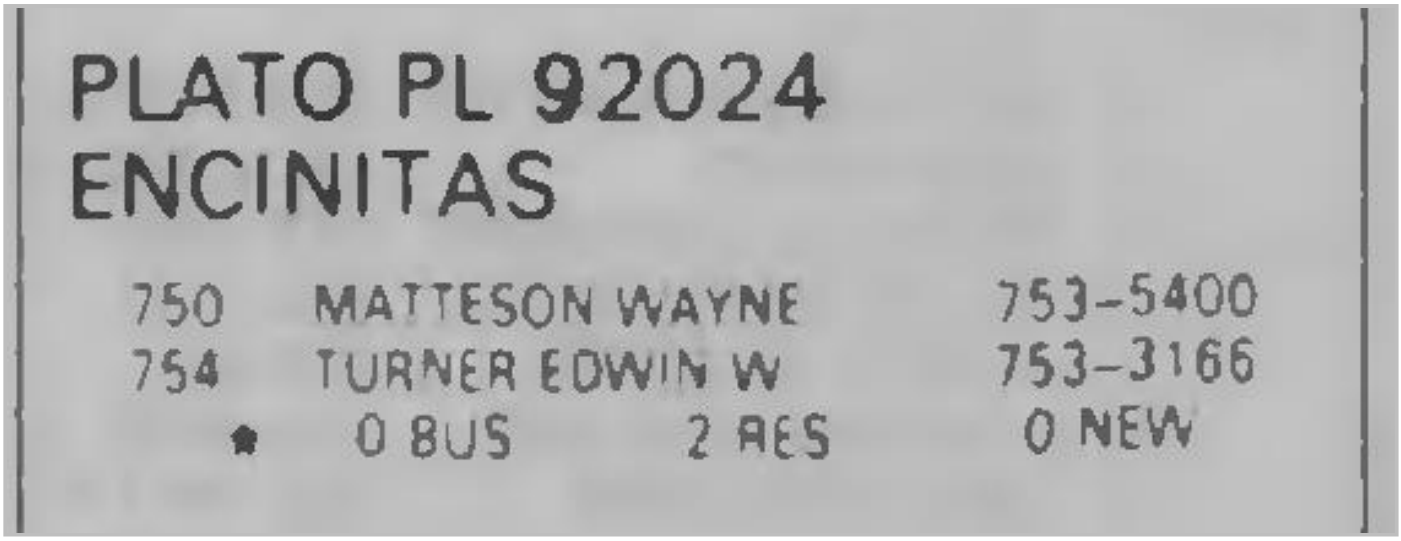
PIRAEUS 92024
ENCINITAS

953	RODRIGUEZ CESARIO	753-9099	7
1411	GUNTHER EARL	753-3928	1
1417	GRAVES ELDON M	753-0932	4
1419	DENMARK GORDON	436-0076	6
	DENMARK TIM	436-0076	6
	SNIDER MARK	436-0076	6
1433	MATHESON DENNY	436-0617	7
1437	DIETSCHE ANTHONY	753-2677	6
	NAKAMURA MASAAKI	753-2677	6
1441	OTO SHIGERU	753-1809	7

* 0 BUS 10 RES 0 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1979



PLATO PL 92024
ENCINITAS

750	MATTESON WAYNE	753-5400
754	TURNER EDWIN W	753-3166
*	0 BUS 2 RES	0 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PIRAEUS ST 1975

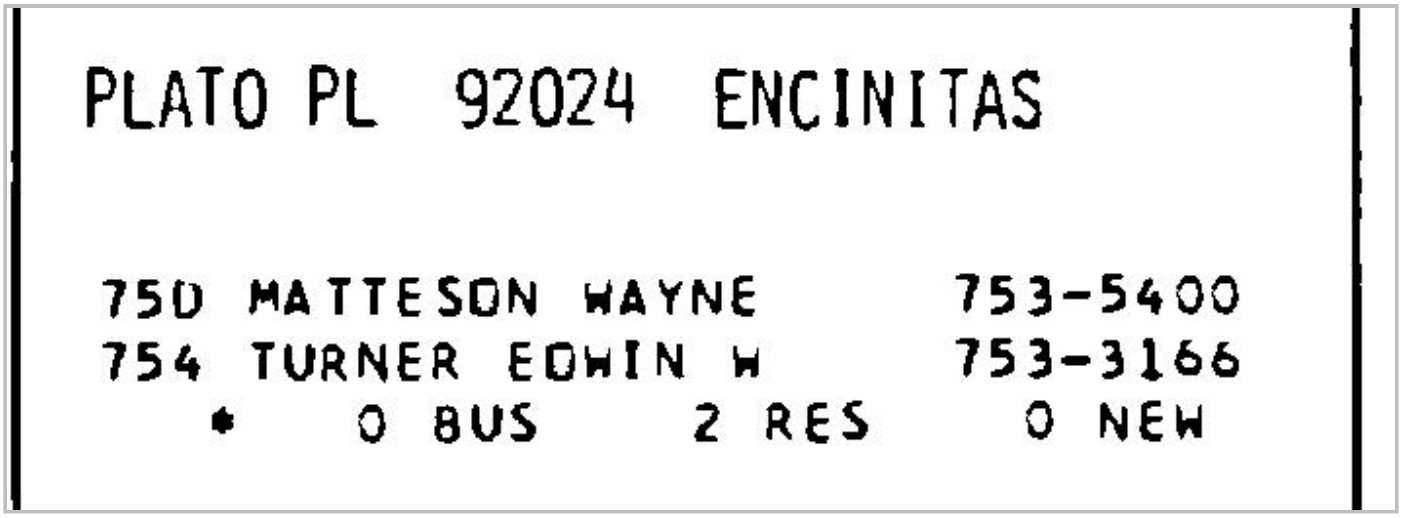
PIRAEUS 92024 ENCINITAS

963	STACHO STEVE G	753-0812 3
1411	GUNTHER EARL	753-3928 1
1417	GRAVES ELDON M	753-0932 4
1419	OENMARK GORDON	436-0271+5
1437	SCOTT GREGORY P	753-8157+5

* 0 BUS 5 RES 2 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1975



PLATO PL 92024 ENCINITAS

750	MATTESON WAYNE	753-5400
754	TURNER EDWIN W	753-3166

* 0 BUS 2 RES 0 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

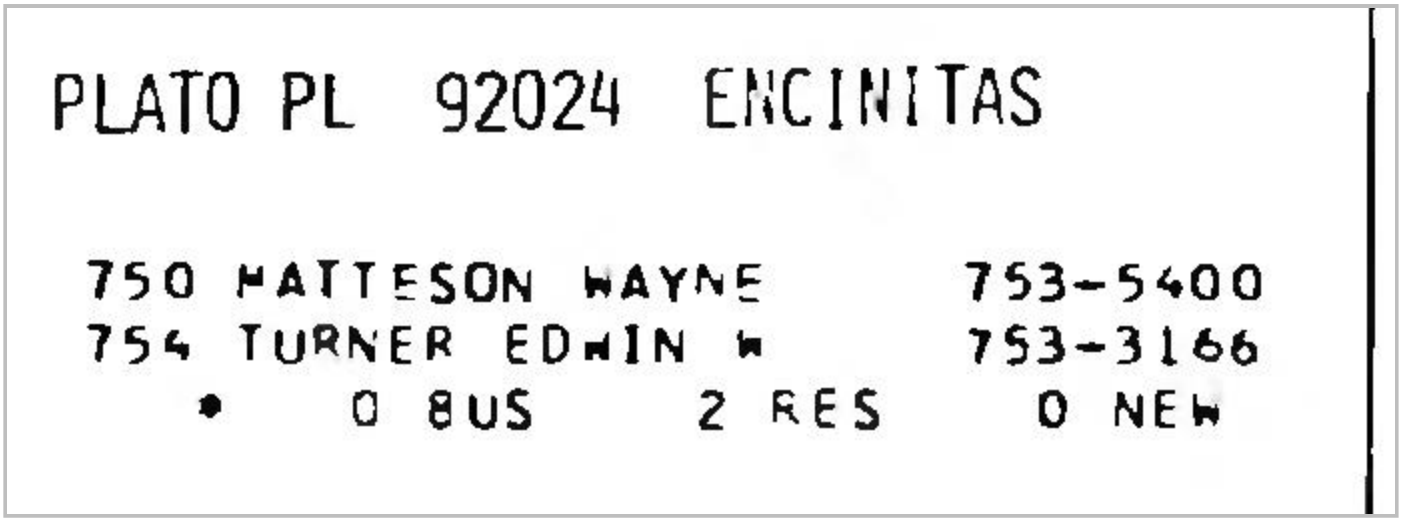
PIRAEUS ST 1971

PIRAEUS 92024 ENCINITAS

963 STEPHENS MAPY E 753-8641+1
1411 GUNTHER EARL 753-3928+1
* 0 BUS 2 RES 2 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1971



PLATO PL 92024 ENCINITAS

750 MATTESON WAYNE 753-5400
754 TURNER EDWIN W 753-3166
• 0 BUS 2 RES 0 NEW

APPENDIX H-2.
PHASE I AND II ESA SITE ASSESSMENT REPORT

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PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT REPORT

PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

LENNAR
SAN DIEGO, CALIFORNIA

SEPTEMBER 16, 2021
PROJECT NO. G2307-62-04

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Project No. G2307-62-04
September 16, 2021

Lennar
16465 Via Esprillo, Suite 150
San Diego, California 92127

Attention: Mr. David Shepherd

Subject: PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT REPORT
PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

Dear Mr. Shepherd:

In accordance with your request and our Proposal No. LE-21404 dated August 20, 2021, we have performed a Phase I and II Environmental Site Assessment (ESA) of the property located to the northeast of the intersection of Piraeus Street and Plato Place (the Site) in Encinitas, California.

We performed the Phase I ESA to provide information regarding the potential for existing hazardous substances and/or petroleum product impacts at the Site as part of Lennar's due diligence prior to purchasing the Site. Based on the findings of our Phase I ESA, we also performed a Phase II ESA to assess the potential presence of pesticides and arsenic (commonly associated with pesticides) in soil at the Site. The accompanying report presents the details of our Phase I and II ESA.

We appreciate the opportunity to have performed this Phase I ESA for Lennar. Please contact us if you have any questions concerning this report or if we may be of further service.

Very truly yours,

GEOCON INCORPORATED

Cole E. Mikesell
Staff Geologist

Troy K. Reist, CEG
Senior Geologist

CEM:TKR:arm

(e-mail) Addressee

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PHASE I AND II ENVIRONMENTAL SITE ASSESSMENT REPORT

1. INTRODUCTION

We have performed a Phase I and II Environmental Site Assessment (ESA) of the Piraeus property located to the northeast of the Piraeus Street and Plato Place intersection (the Site) in Encinitas, California. Lennar (the Client) requested the Phase I ESA to provide information regarding the potential for existing hazardous substances and/or petroleum product impacts at the Site as part of their due diligence prior to purchasing the Site. This report describes the methodology and procedures and present the findings of the Phase I ESA.

1.1 Purpose and Objectives

The purpose of the Phase I ESA was to identify evidence or indications of 'recognized environmental conditions' (RECs) as defined by the American Society for Testing and Materials (ASTM) *Designation E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Section 1.1.1 of *ASTM Designation E 1527-13* defines an REC as "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions." De minimis conditions are those that generally do not present a threat to human health or the environment and that generally would not be the subject of enforcement action if brought to the attention of appropriate governmental agencies.

ASTM *Designation E 1527-13* also defines 'Historical' and 'Controlled' RECs. They define an 'Historical REC' (HREC) as "A past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." ASTM defines a 'Controlled REC' (CREC) as "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)." An HREC is not an REC if a property meets current standards for unrestricted residential use. A CREC remains an REC by definition when the property does not meet the unrestricted residential use requirements unconditionally.

We also conducted the Phase I ESA in general accordance with the requirements of 40 Code of Federal Regulations (CFR) Part 312 titled *Standards and Practices for All Appropriate Inquiries*, as required under Sections 101(35)(B)(ii) and (iii) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of conducting an all appropriate inquiries investigation into the previous ownership and uses of a property is to meet the provisions necessary for the landowner, contiguous property owner, and/or bona fide prospective purchaser to qualify for certain landowner liability protections under CERCLA.

The following principles are an integral part of ASTM *Designation E1527-13*:

- **"Uncertainty Not Eliminated -** No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property, and this practice recognizes reasonable limits of time and cost."

- **"Not Exhaustive -** All Appropriate Inquiries does not mean an exhaustive assessment of a property. There is a point at which the cost of information obtained or the time required to gather it outweighs the usefulness of the information and, in fact, may be a material detriment to the orderly completion of transactions. One of the purposes of this practice is to identify a balance between the competing goals of limiting the costs and time demands inherent in performing an environmental site assessment and the reduction of uncertainty about unknown conditions resulting from additional information."

- **"Level of Inquiry is Variable -** Not every property will warrant the same level of assessment. Consistent with good commercial and customary practice, the appropriate level of environmental site assessment will be guided by the type of property subject to assessment, the expertise and risk tolerance of the user, and the information developed in the course of the inquiry."

1.2 Scope of Services

We performed the scope of services outlined in our Proposal No. LE-21404 dated August 20, 2021, with the exception that we did not review Sanborn fire insurance maps, as Environmental Data Resources, Inc. (EDR) indicated that there are none available for the Site or surrounding vicinity. The main components of the Phase I ESA and their objectives, as specified by the referenced standards, include the following:

- **Physical Setting Review:** we reviewed physical setting references for information concerning the topographic, geologic, and hydrogeologic characteristics of the Site and vicinity. Such information may be indicative of pathways (i.e., direction and/or extent) that a contaminant could migrate along in the event of a spill or release.

- **Regulatory Agency Records Review:** we reviewed publicly available Federal, State, and local regulatory agency records for information regarding the use, storage, and disposal of

hazardous substances and/or petroleum products at the Site and facilities and properties adjoining or within ¼ mile of the Site. Such records may identify RECs at or potentially affecting the Site.

- **Site History Review:** we reviewed information regarding the historical uses of the Site and adjoining and nearby facilities and properties back to the Site's and other properties' first use or 1940, whichever is earlier, that could have led to RECs on or near the Site. Historical sources reviewed included aerial photographs, topographic maps, and city directories. In addition, we conducted interviews with persons who were expected to be reasonably knowledgeable about historical and/or current conditions at and uses of the Site.

- **Site Reconnaissance:** we performed a site reconnaissance to observe site conditions and activities for evidence of RECs. The site reconnaissance was for the Site only. We viewed offsite properties and features solely from the vantage of the Site and public thoroughfares.

1.3 Report Limitations

We prepared this Phase I ESA report exclusively for the Client. The information obtained is only relevant for the dates of the records reviewed and the latest site visit. Therefore, the information contained herein is only valid as of the date of the report and may require an update after 180 days to reflect updated records and another reconnaissance to assess current site conditions.

The Client should recognize that a Phase I ESA is not a comprehensive site characterization and should not be construed as such. The findings and conclusions presented in this report are predicated on the site reconnaissance, information in the specified regulatory records, and information regarding the historical usage of the Site, as presented in this report. The Client should also understand that wetlands, asbestos-containing building materials, lead-containing paint, lead in drinking water, radon, mercury related to mining activities, methane, and mold surveys were not included in the scope of services for this Phase I ESA. Assessment for potential naturally occurring hazards such as asbestos and arsenic was also not included.

Therefore, the report should only be deemed conclusive with respect to the information obtained. No guarantee or warranty of the results of the Phase I ESA is implied within this report or any subsequent reports, correspondence or consultation, either express or implied. We strived to conduct the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

1.4 Data Gaps

A data gap is defined by ASTM *Designation E 1527-13* as "a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information." Data gaps could include such things as insufficient historical information, the inability to interview persons with direct site knowledge (e.g., the owner(s), past owner(s), tenants, workers,

etc.) or the lack of access to all parts of a site during the site reconnaissance. As indicated in Section 1.2, we did not review Sanborn fire insurance maps for the Site and surrounding vicinity because there are none for the Site and vicinity. We do not consider this a significant data gap however, because of other available historical information we reviewed.

2. SITE DESCRIPTION

This section provides information regarding the location and physical characteristics of the Site including its size, topography, geologic, soil, and hydrogeologic conditions.

2.1 Location and Legal Description

The 6.92-acre Site is located to the northeast of the intersection of Piraeus Street and Plato Place in Encinitas, California (Figure 1). The Site is situated south of Batiquitos Lagoon and east of Interstate (I)-5. The San Diego County assessor's parcel number (APN) for the Site is 254-144-01. A copy of the parcel map is in Appendix A.

The Site is depicted in the northeastern quarter of Section 4 of Township 13 South, Range 4 West, San Bernardino Base and Meridian on the United States Geological Survey's (USGS) *Encinitas, California,* 7.5-minute topographic map (USGS, 2015).

2.2 Site and Vicinity General Characteristics

The majority of the Site is undeveloped land with native vegetation. The surrounding vicinity includes undeveloped land, single-family residences and transportation (I-5). Figure 2 depicts the site boundaries and features and surrounding properties. Further site description is provided in Sections 2.4 and 6.

2.2.1 Topography

The Site is located on a broad marine terrace with groundwater draining to the west. The USGS *Encinitas, California,* 7.5-minute topographic map (USGS, 2015), depicts the site elevation as approximately ranging between 100 and 180 feet above mean sea level.

2.2.2 Geologic and Soil Conditions

The Site is located in the Peninsular Ranges geomorphic province of Southern California (Norris and Webb, 1990). This geomorphic province extends approximately 900 miles from its northern terminus against the Transverse Ranges and Los Angeles Basin, south to the tip of Baja California. In general, the province is characterized by rugged mountains in Mesozoic igneous and metamorphic rocks to the east, with a dissected coastal plain on Cenozoic sediments to the west. The Peninsular Ranges vary in

width from approximately 30 to 100 miles, and are traversed fault zones trending roughly northwest-southeast.

Based on our previous geotechnical investigation and observations during our reconnaissance performed in June 2019 (Geocon, 2019), the geology underlying the Site consists of surficial soil deposits, Terrace Deposits and the Santiago Formation.

Information concerning the soil conditions at and in proximity to the Site from the United States Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) indicates that site soil is Gaviota fine sandy loam, and Marina loamy coarse sand, which are well drained and have low infiltration rates.

2.2.3 Hydrologic and Hydrogeologic Conditions

Groundwater quality and occurrence information available from the California Department of Water Resources and the California State Water Resources Control Board (SWRCB) indicates that the Site is located in the Batiquitos Sub-Hydrologic Area (904.51) of the San Marcos Hydrologic Area (904.50) of the Carlsbad Hydrologic Unit (904.00). Groundwater in the Batiquitos Sub-Hydrologic Area has existing beneficial use designations for municipal, agricultural, and industrial supply purposes (SWRCB, 2016).

Our previous exploratory borings performed during our field investigation in 2019 encountered groundwater between approximately 38 to 49 feet below the existing ground surface.

2.3 Current and Planned Uses of the Site

The majority of the Site is not currently used for any specific purpose. The Client reported that they plan to develop the majority of the Site for residential use. Further description of the Site is provided in Section 6.

2.4 Descriptions of Structures, Roads, Other Improvements on the Site

No structures, roads, or other improvements are present on the Site.

2.5 Current Uses of Adjoining Properties

Current uses of adjoining properties are primarily residential with transportation (I-5) to the west and undeveloped land to the north. Further information regarding adjoining properties is provided in Section 6.4.

3. USER–PROVIDED INFORMATION

This section summarizes site information provided by the Client – the "user" of this Phase I ESA. Also provided are responses to inquiries to the Client via a "user" questionnaire for information pertaining to the Site. David Shepherd with Lennar completed the questionnaire (Appendix B).

3.1 Title, Appraisal and Sale Agreement Records

Mr. Shepherd provided a Preliminary Title Report (PTR) for the Site prepared by First American Title Insurance Company and dated July 27, 2019. The PTR indicates that the site parcels are owned by Piraeus Investor, LLC. The PTR identifies no issues regarding the environmental condition of the Site.

3.2 Environmental Liens or Activity and Use Limitations

Mr. Shepherd indicated that he has no knowledge of environmental liens on or activity and use limitations for the Site.

3.3 Specialized Knowledge

Mr. Shepherd indicated he has no specialized knowledge of the Site.

3.4 Commonly Known or Reasonably Ascertainable Information

Mr. Shepherd indicated he is not aware of commonly known or reasonably ascertainable information pertaining to the Site.

3.5 Owner, Property Manager, and Occupant Information

Mr. Shepherd indicated the Site is owned by Harrington Carrington, Piraeus Investor, LLC.

3.6 Valuation Reduction for Environmental Issues

According to Mr. Shepherd, the monetary value of the Site has not been reduced due to environmental issues.

3.7 Reason for Performing the Phase I ESA

The Phase I ESA was requested to provide information regarding the potential for existing hazardous substance and/or petroleum product impacts at the Site for pre-acquisition due diligence purposes.

4. RECORDS REVIEW

This section summarizes information we obtained from readily available agency records for the Site and properties and facilities in the surrounding vicinity.

4.1 Standard Environmental Record Sources

EDR searched federal, state, and local databases regarding the use, storage, disposal, or release of hazardous substances and/or petroleum products for the Site and area within one mile of the Site. The databases that list the Site and/or properties/facilities within one mile of the Site and the number of properties/facilities listed are summarized in the table below. A copy of *The EDR Radius Map™ Report with GeoCheck*, dated August 23, 2021, is in Appendix C.

Database Name	Search Radius (Mile)	Number of Listings
FEDERAL DATABASES		
RCRA-SQG (Small Quantity Generators)	¼	1
STATE AND LOCAL DATABASES		
SWF/LF (Solid waste Facilities/Landfill Sites)	½	1
SAN DIEGO CO. SAM (Diego County Site Assessment and Mitigation Program)	½	3
LUST (Leaking Underground Storage Tanks)	½	2
CA SLIC (Spills, Leaks, Investigation, and Cleanup Program)	½	5
DEED Restriction Sites	½	1
RCRA-NonGen (Resource Conservation and Recovery Act – Non-Generators)	½	4
CORTESE	½	2

4.1.1 Site

The Site is not listed on any of the databases searched by EDR.

4.1.2 Offsite Properties

The following table summarizes information provided in the EDR report for listed properties/facilities that are located less than ¼ mile from the Site and are listed on various release-related databases[1]. Properties/facilities located within a ¼ mile and not listed on a release-related database[1] are not

[1] "Release" refers to an unauthorized release of a petroleum product or hazardous substance to the environment - i.e. the ground surface, soil, soil vapor, groundwater, or surface water on a property. "Release-related database" refers to those which provide information regarding an unauthorized release. "Non-release-related database" refers to those that may report use, storage, or disposal of hazardous substances and/or petroleum products or other environmental conditions, but do not report releases of such.

included in the table below and are unlikely to have caused an REC at the Site. Distances reported by EDR may differ from actual distances.

Property Name and Address	Approximate Distance, Direction, and Hydraulic Gradient Position	Databases	Pertinent Information
1540 Caudor Street 1540 Caudor Street	891 feet southeast Upgradient	CPS-SLIC CERS	On January 8, 2014 four soil samples were collected at this facility. OCPs were detected in three of the four borings at concentrations that did not exceed the California Human Health Screening Levels for residential use soils. The DEH concurred that the cleanup goals established for the facility were met. The distance from the Site and the DEH's closure of the case indicate that this facility is unlikely to have caused an REC at the Site.
Hymettus Estate 1492 Hymettus Ave	1,272 feet southwest Downgradient	San Diego Co. SAM CPS-SLIC DEED CHMIRS CIWQS CERS	These listings are related to DEH case #H99106-002 which was opened under the Voluntary Assistance Program (VAP) for the facility located at 1492 Hymettus Ave. Soil at the Site was excavated to a depth of seven feet below design finished grade, with dieldrin-impacted soil being placed at the bottom of the excavations. A geotextile liner was placed on top of the dieldrin-impacted soil as a marker in the event of any future excavation. With the additional work to provide seven feet of non-impacted soil over the entire area underlain by dieldrin-impacted soil, Stantec recommended that a no further action letter be provided, with the DEH concurring on October 24, 2011. The downgradient location, distance from the Site, and the closure of DEH case #H99106-002 suggests that this facility is unlikely to have caused an REC at the Site.

Other properties and facilities within 1/4-mile of Site are listed on various non-release-related databases[1] and therefore are not anticipated to have caused an REC at the Site.

4.1.3 Orphan Summary

EDR's Orphan Summary identifies properties with incomplete address information and therefore cannot be accurately plotted. One property is listed but because it is greater than 1/2 mile from the Site it is not suspected of having caused an REC at the Site.

4.2 Additional Environmental Record Sources

This section summarizes information from additional, readily available environmental record sources regarding the Site and properties/facilities within one mile from the Site.

4.2.1 GeoTracker and EnviroStor Databases

We reviewed GeoTracker and the California Department of Toxic Substance Control's (DTSC) EnviroStor online database (http://www.envirostor.dtsc.ca.gov/public/) for information regarding the Site and nearby properties/facilities that are within ¼ mile of the Site. GeoTracker lists two cleanup program properties/facilities within ¼ mile of the Site both of which have been granted regulatory closure. Information regarding these facilities is summarized in Section 4.1.2. EnviroStor does not have information pertaining to the Site any properties/facilities within ¼ mile of the Site.

4.2.2 State of California Department of Conservation, Geologic Energy Management Division

We reviewed the California Geologic Energy Management Division (CalGem) website (https://maps.conservation.ca.gov/doggr/wellfinder) to evaluate the potential for existing/former oil, gas, or geothermal wells on the Site or properties proximal to the Site. CalGem information indicates that no former or current wells are or were located within one mile of the Site.

4.2.3 County of San Diego Department of Agriculture, Weights and Measures

We submitted a request to the County of San Diego, Department of Agriculture, Weights and Measures (DAWM), Pesticide Use Enforcement Division regarding possible use of restricted pesticides/herbicides at the Site. That office maintains such records for approximately 4 years. The DAWM indicated that no record of restricted pesticide/herbicide use was reported for the site APNs for the period of 2017 through 2021.

4.2.4 San Diego Air Pollution Control District

We submitted a request to the San Diego Air Pollution Control District (APCD) for records pertaining to the Site. The APCD indicated that no records are on file for the site APNs.

4.2.5 County of San Diego Department of Environmental Health

We submitted a request to the DEH for records pertaining to the Site. A permit for 8 borings and an accompanying technical report were provided. The documents provided by DEH are presented in Appendix D.

4.2.6 San Diego Gas and Electric Company

No transformers were observed onsite or were likely on the Site previously. Therefore, San Diego Gas & Electric Company was not contacted as part of this assessment.

4.3 Previous Documents/Reports

Following are summaries of documents pertaining to the Site.

Apex Companies, LLC - *Phase I Environmental Site Assessment, Northeast Corner of Piraeus Street and Plato Place, Encinitas, California*, dated September 19, 2019

Apex Companies, LLC performed a Phase I ESA for the Site in September of 2019. Apex concluded that their assessment revealed no current or historical RECs in connection with the Site. Apex considered the isolated inert debris observed on the Site as de minimis.

5. HISTORICAL USE

This section summarizes information obtained from a variety of sources regarding the historical uses of the Site in an effort to identify those uses that could have led to RECs. The sources of information included historical aerial photographs, historical topographic maps, and an abstract of city directories provided by EDR.

5.1 Aerial Photographs

We reviewed historical aerial photographs for the years 1928, 1939, 1946, 1953, 1964, 1967, 1970, 1979, 1985, 1990, 1994, 1997, 2002, 2005, 2009, 2012 and 2016 (Appendix E) for indications of past land uses that had the potential to have impacted the Site through the use, storage or disposal of hazardous substances and/or petroleum products. The following table summarizes our observations of the Site and adjacent properties.

Year	Observations	
	Site	**Adjacent Properties**
1928 (1" = 500')	The Site appears to have been vacant land with natural vegetation.	Adjacent properties appear to have been vacant land with natural vegetation.
1939 (1" = 500')	Conditions appear to have been similar to those observed on the 1928 aerial photograph.	Conditions appear to have been similar to those observed on the 1928 aerial photograph.
1946 (1" = 500')	Conditions appear to have been similar to those observed on the 1939 aerial photograph.	Conditions appear to have been similar to those observed on the 1939 aerial photograph.
1953 (1" = 500')	Conditions appear to have been similar to those observed on the 1946 aerial photograph.	Conditions appear to have been similar to those observed on the 1946 aerial photograph.
1964 (1" = 500')	Conditions appear to have been similar to those observed on the 1953 aerial photograph.	Conditions appear to have been similar to those observed on the 1953 aerial photograph with the exception that the properties adjacent to the east appear to have been developed with single-family residences.
1967 (1" = 500')	Conditions appear to have been similar to those observed on the 1964 aerial photograph.	Conditions appear to have been similar to those observed on the 1964 aerial photograph with the exception that the I-5 is now depicted adjacent to the west of the Site.
1970 (1" = 500')	Conditions appear to have been similar to those observed on the 1967 aerial photograph.	Conditions appear to have been similar to those observed on the 1967 aerial photograph.
1979 (1" = 500')	Conditions appear to have been similar to those observed on the 1970 aerial photograph with the exception that numerous dirt roads are present on the southern portion of the Site.	Conditions appear to have been similar to those observed on the 1970 aerial photograph.
1985 (1" = 500')	Conditions appear to have been similar to those observed on the 1979 aerial photograph.	Conditions appear to have been similar to those observed on the 1979 aerial photograph.
1990 (1" = 500')	Conditions appear to have been similar to those observed on the 1985 aerial photograph.	Conditions appear to have been similar to those observed on the 1985 aerial photograph.
1994 (1" = 500')	Conditions appear to have been similar to those observed on the 1990 aerial photograph.	Conditions appear to have been similar to those observed on the 1990 aerial photograph.
1997 (1" = 500')	Conditions appear to have been similar to those observed on the 1994 aerial photograph.	Conditions appear to have been similar to those observed on the 1994 aerial photograph.
2002 (1" = 500')	Conditions appear to have been similar to those observed on the 1997 aerial photograph.	Conditions appear to have been similar to those observed on the 1997 aerial photograph.
2005 (1" = 500')	Conditions appear to have been similar to those observed on the 2002 aerial photograph.	Conditions appear to have been similar to those observed on the 2002 aerial photograph.
2009 (1" = 500')	Conditions appear to have been similar to those observed on the 2005 aerial photograph.	Conditions appear to have been similar to those observed on the 2005 aerial photograph.
2012 (1" = 500')	Conditions appear to have been similar to those observed on the 2009 aerial photograph.	Conditions appear to have been similar to those observed on the 2009 aerial photograph.
2016 (1" = 500')	Conditions appear to have been similar to those observed on the 2012 aerial photograph.	Conditions appear to have been similar to those observed on the 2012 aerial photograph.

We observed no conditions on or uses of the Site or adjoining properties on the historical aerial photographs with the potential to have caused an REC at the Site.

5.2 Topographic Maps

We reviewed historical topographic maps for the years 1893, 1898, 1901, 1947, 1948, 1949, 1968, 1975, 1997 and 2012 (Appendix F). The following table summarizes observations of the Site and adjacent properties on the historical topographic maps.

Year	Observations	
	Site	**Adjacent Properties**
1893 (1:62,500)	No structures or land use are depicted on the Site.	No structures or land use are depicted on the adjacent properties.
1898 (1:62,500)	Conditions are similar to those depicted on the 1893 topographic map.	Conditions are similar to those depicted on the 1893 topographic map.
1901 (1:62,500)	Conditions are similar to those depicted on the 1898 topographic map.	Conditions are similar to those depicted on the 1898 topographic map.
1947 (1:50,000)	Conditions are similar to those depicted on the 1901 topographic map.	Conditions are similar to those depicted on the 1901 topographic map.
1948 (1:24,000)	Conditions are similar to those depicted on the 1947 topographic map with the exception that the Site is shaded green indicating natural vegetation.	Conditions are similar to those depicted on the 1947 topographic map with the exception that the adjacent properties to the north and south are shaded green indicating natural vegetation.
1949 (1:24,000)	Conditions are similar to those depicted on the 1948 topographic map.	Conditions are similar to those depicted on the 1948 topographic map.
1968 (1:24,000)	Conditions are similar to those depicted on the 1949 topographic map.	Conditions are similar to those depicted on the 1949 topographic map with the exception that the I-5 is now depicted adjacent to the west of the Site, and multiple structures are now depicted to the east of the Site.
1975 (1:24,000)	Conditions are similar to those depicted on the 1968 topographic map.	Conditions are similar to those depicted on the 1968 topographic map.
1997 (1:24,000)	Conditions are similar to those depicted on the 1975 topographic map.	Conditions are similar to those depicted on the 1975 topographic map with the exception that the adjacent properties are shaded pink indicating an urban environment.
2012 (1:24,000)	No shading or structures are depicted.	No shading or structures are depicted.

The historical topographic maps depict no conditions, structures, or uses on the Site or adjacent properties that would suggest the presence of RECs.

5.3 City Directories

EDR prepared an abstract of city directories including city, cross-reference, and telephone directories summarized in the *EDR-City Directory Image Report* dated August 27, 2021. The directories were reviewed at approximately 5-year intervals, if available, from 1971 to 2017. A copy of the EDR city directory abstract including information regarding offsite facilities is in Appendix G. The city directory lists residents along Plato Place and Piraeus Street, none of which are suspected of having caused an REC at the Site.

6. SITE RECONNAISSANCE

This section summarizes observations of the Site and surrounding properties made during the site reconnaissance.

6.1 Methodology and Limiting Conditions

Cole E. Mikesell, Staff Geologist with Geocon, performed the site reconnaissance unaccompanied on September 3, 2021, by walking the Site. Mr. Mikesell performed the offsite survey by observing adjacent properties from the Site and adjacent public streets. Weather on the day of the site reconnaissance was slightly cloudy with temperatures in the mid-70s. Photographs of various site features and offsite properties are appended. Figure 2 is a Site Plan illustrating selected site features.

6.2 General Site Setting

The Site is located in an area of predominantly residential use with nearby transportation (I-5). The Site is surrounded by undeveloped land to the north and south.

6.3 Onsite Survey

The Site is an undeveloped hillside with natural vegetation which slopes to the north (Photographs 1 through 9). We observed no odors, pools of liquid, significantly stained soil or distressed vegetation on the Site. We observed no evidence of RECs on the Site.

6.4 Offsite Survey

Properties within the site vicinity include:

- **North:** Undeveloped land beyond which are residential homes (Photograph 10).
- **South:** Undeveloped land beyond which are residential homes (Photograph 11).
- **East:** Residential homes (Photographs 12 and 13).
- **West:** Piraeus Street beyond which is I-5 (Photograph 14).

We observed no evidence of RECs on the surrounding properties.

7. INTERVIEWS

The current property owner representative, Harrington Cannon, reported via a site owner/occupant questionnaire (Appendix B) that the Site is vacant land. Mr. Cannon reported that the site had been used for agriculture in the past. Mr. Shepherd contacted Mr. Cannon to inquire specifically about pesticide use on the Site and was informed to assume they were applied.

8. SUMMARY OF FINDINGS

The following table summarizes our findings and opinions regarding the Site, including known or suspect RECs, CRECs, HRECs, and de minimis environmental conditions.

Assessment Category	Observed (Y/N)	(REC/ CREC/ HREC/ DM or None)	Recommended Actions	Report Section(s)
Hazardous Substances/Petroleum Products	N	N	NFA	
Hazardous Wastes	N	N	NFA	
Non-Hazardous Wastes	N	N	NFA	
Aboveground/Underground Storage Tanks	N	N	NFA	
Unidentified Substance Containers	N	N	NFA	
Equipment Potentially Containing PCBs	N	N	NFA	
Wastewater Systems	N	N	NFA	
Evidence of Releases	N	N	NFA	
Pools of Liquid, Pits, Ponds, Lagoons	N	N	NFA	
Wells	N	N	NFA	
Other Site Issues	N	N	NFA	
Nearby Properties	N	N	NFA	
Historical Land Use – Site	**Y**	**N**	**NFA**	**7, 9**
Historical Land Use – Nearby Properties	N	N	NFA	

Recommended Action:
AA = Additional action recommended.
NFA = No further action required at this time.
DM = De minimis condition where additional activities do not appear warranted at this time.

As discussed previously in Section 7, the property owner representative stated in the questionnaire that the Site had been utilized for agricultural purposes in the past and to assume pesticides had been applied. Although, no photographic evidence or documents indicated that sustained agricultural use had occurred on Site, we collected soil samples to assess for the presence of pesticides and arsenic in the soil as discussed in Section 9.

9. PHASE II ESA

We performed a Phase II ESA to assess the Site for the potential presence of pesticides and arsenic in soil based on the information provided by the owner's representative.

9.1 Scope of Investigation

The scope of the Phase II ESA consisted of the following tasks:

- Retaining Enthalpy Analytical, LLC, a state-certified laboratory, to perform laboratory analysis of soil samples and planned soil sample locations;
- Collecting soil samples from the planned locations;
- Performing laboratory analysis of soil samples; and
- Preparing this report describing the assessment and its findings.

9.2 Soil Sample Collection and Analysis

On September 9, 2021, we collected 6 discrete soil samples (S1 to S6) from the locations shown on Figure 2. We collected each sample from between the ground surface and a depth of 6 inches. The soil samples were collected using a decontaminated trowel then transferred into laboratory-provided 8-ounce jars. The jars were capped with Teflon-lined lids, labeled, and placed in a chilled cooler for transport to the laboratory under chain-of-custody protocol. The samples were analyzed for organochlorine pesticides (OCPs) by United States Environmental Protection Agency (USEPA) Test Method 8081A and arsenic by USEPA Test Method 6010B.

9.3 Results

A copy of the laboratory analysis report is in Appendix H and the results are summarized below.

OCPs

OCPs were detected in four of the six discrete soil samples analyzed.

The OCP dichlorodiphenyldichloroethylene (DDE), was detected at concentrations ranging from 5.7 to 79 micrograms per kilogram (ug/kg), which does not exceed the San Francisco Bay Regional Water Quality Control Board Environmental Screening Level (ESL) for DDE in residential soil of 1,800 ug/kg.

The OCP dichlorodiphenyltrichloroethane (DDT), was detected at concentrations ranging from 6.1 to 12 ug/kg, which does not exceed the ESL for DDT in residential soil of 1,900 ug/kg.

Arsenic

Arsenic was detected in two of the six discrete soil samples analyzed at concentrations of 3.8 and 6.5 milligrams per kilogram (mg/kg) respectively. Arsenic is a natural mineralogical component of soil and its naturally occurring or "background" concentrations in California soils typically range from 0.6 to 12 mg/kg and much higher in some areas depending on the mineralogy of the soil's parent material. Therefore, regulatory agencies allow comparison of arsenic concentrations in soil to naturally occurring background arsenic concentrations instead of calculated screening levels. The arsenic concentrations of the six samples are within the range of naturally occurring arsenic concentrations for soil.

10. CONCLUSIONS AND RECOMMENDATIONS

We have performed a Phase I and II ESA, in general conformance with the scope and limitations of ASTM E 1527-13, of the 6.92-acre property located northeast of the intersection of Piraeus Street and Plato Place in Encinitas, California. The San Diego County APN for the Site is 254-144-01.

This Phase I and II ESA identified no evidence of RECs in connection with the Site. Therefore, additional environmental assessment does not appear to be warranted at this time.

If soil staining or petroleum odors are observed during grading observations, we recommend retaining Geocon to observe and possibly sample areas of potential impact to determine if further action is warranted. Although not anticipated, any undocumented subsurface structures or areas of apparent contamination encountered during site redevelopment activities including septic tanks, USTs, wells, etc. should be properly abandoned/removed in accordance with San Diego County regulatory requirements.

11. REFERENCES

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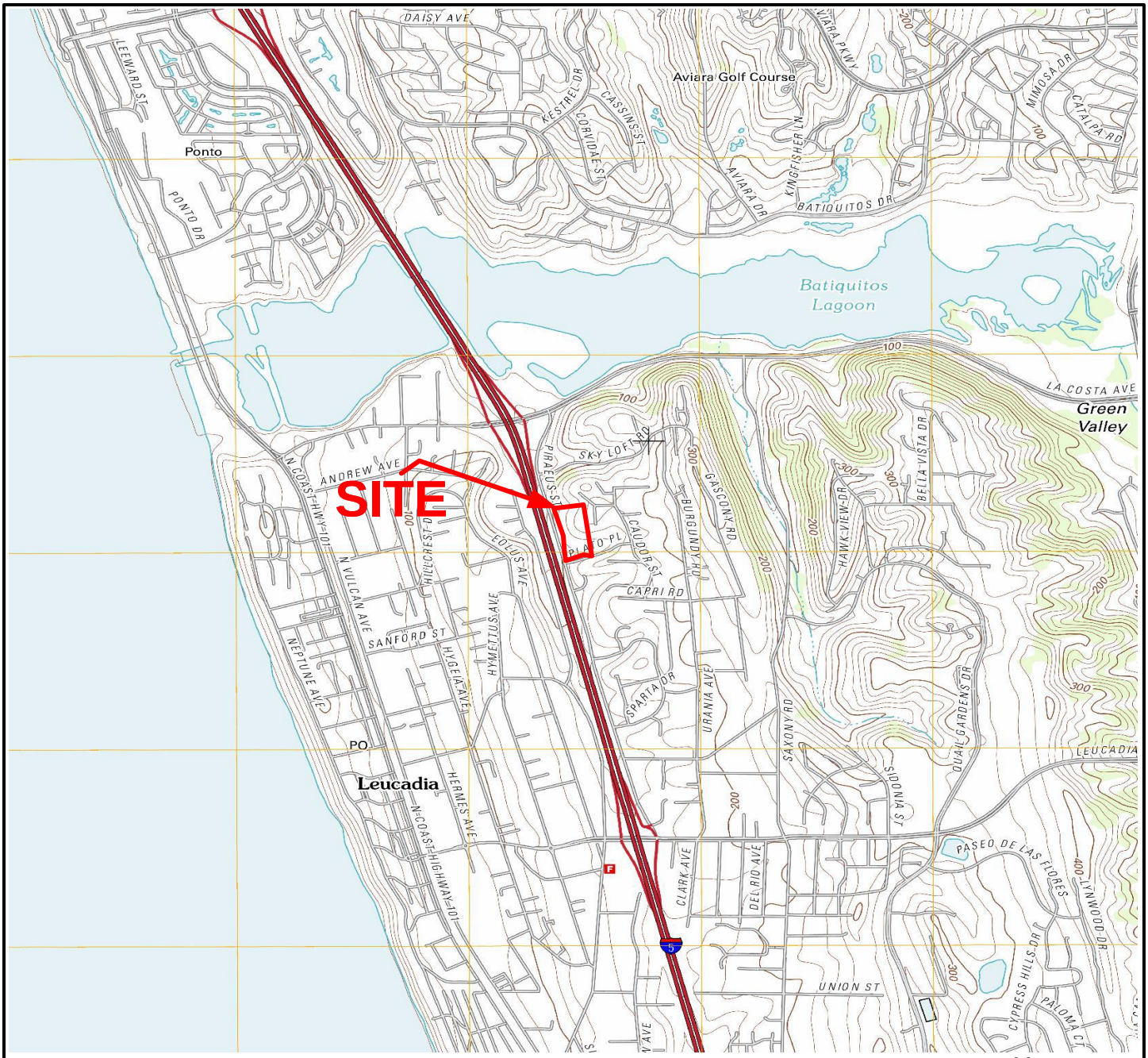
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12. QUALIFICATIONS

This Phase I ESA report was prepared by Cole E. Mikesell with oversight by Troy K. Reist, CEG. We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312. We have the specific qualifications based on education, training, and experience, to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Mr. Mikesell has a BS degree in Geology with an emphasis in Environmental Geosciences. Mr. Mikesell is a certified Geologist-In-Training in the State of California. Mr. Mikesell has 5 years of experience in the geotechnical and environmental consulting industry. He has performed exploratory drilling, infiltration testing, foundation and earthworks observation, and prepared Phase I and Phase II ESAs throughout southern California.

Mr. Reist is a Professional Geologist and Certified Engineering Geologist, with a BS degree in Geology and has over 23 years of experience in the geotechnical and environmental consulting industry in California. Mr. Reist investigates, remediates and manages geotechnical and environmental issues on residential, commercial, industrial, and agricultural properties throughout southern California.



Base Map:
USGS Topographic Map, 7.5-minute Series
Encinitas, CA
Scale 1:24,000

N

NO SCALE

VICINITY MAP

GEOCON INCORPORATED

GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
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CEM		

PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

SEPTEMBER 2021	PROJECT NO. G2307-62-04	FIG. 1

PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

APPROXIMATE SITE BOUNDARY

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

RESIDENTIAL

INTERSTATE 5

PIRAEUS STREET

PLATO PLACE

S1 S2 S3 S4 S5 S6

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Google Earth

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GEOCON LEGEND

S6 - APPROXIMATE SOIL SAMPLE LOCATION

14 - APPROXIMATE LOCATION AND DIRECTION OF PHOTOGRAPH

N

NOT TO SCALE

SITE PLAN

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FIGURE 2
DATE SEPTEMBER 2021



Photograph #1
View to the west-southwest along the southern boundary of the Site.



Photograph #2
View to the north along the eastern boundary of the Site.

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SITE PHOTOGRAPHS

PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04



Photograph #3
View to the north along the eastern boundary of the Site.



Photograph #4
View to the north along the eastern boundary of the Site.



Photograph #5
View to the west across the northern portion of the Site.



Photograph #6
View to the south along the western portion of the Site.

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SITE PHOTOGRAPHS

PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04



Photograph #7
View to the south along the western boundary of the Site.



Photograph #8
View to the southeast across the southern portion of the Site.

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SITE PHOTOGRAPHS

PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04



Photograph #9
View to the north from the southern portion of the Site.



Photograph #10
View of the canyon in the northern portion of the Site beyond which are residential homes.

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PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04



Photograph #11
Undeveloped land adjacent to the south of the Site beyond which are residential homes.



Photograph #12
Residential homes adjacent to the east of the Site.

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PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04



Photograph #13
Residential homes adjacent to the east of the Site.



Photograph #14
Piraeus Street, beyond which is Interstate 5.

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CEM | SEPTEMBER 2021

SITE PHOTOGRAPHS

PIRAEUS PROPERTY
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-62-04

APPENDIX A

254-14

04/08/04 JAM

CHANGES			
BLK	OLD	NEW	YR
144	2 & POR PG 16	3 THRU 7	05
			CUT 30

254-14
SHT 2 OF 2

1''=100'

N3°34'10"E
80.78

OPEN SPACE

N86°27'2"W
299.95

345.26
N60°6'19"E

5
07
1.20 AC

271.32

16
SHT 2

40 PLATO PL

20.87

20.87

N3°55'29"W
182.32

60

4
06
0.67 AC

OPEN SPACE

40

N3°55'29"W
156

121.74

15.16

74.85

CHRISTINE PL

OPEN SPACE

N86°33'40"W 181.23

(Rad) N86°3'39"W
N86°3'05"W (Rad)

16
SHT 1

15

B319 N4°40'W

N69°7'23"E 192.56

OPEN SPACE

103.87

54.80

15

30

15

11.13

94.80

3
05
0.94 AC

2
04
0.53 AC

60

153.74(Calc)

168.90

1
03
1.23 AC
(PRIVATE ST)

85.70

N30°21'25" W

203.02

N3°42'56"W

41
SHT 2

T.12S.

T.13S.

1
6.92 AC.

144
POR LOT 2

N68°12'56"E 194.98

M14760

115.73

OPEN SPACE

240.70

M14760

N17°3'30"W

216
10

216
11
SHT 2

SE COR OF SEC 33

64.35

S0°30'57"E
51.62

S15°22'06"E
500.23

S0°58'11"E
205

S18°13'27"E
125.40

FRONTAGE RD.

PIRAEUS

N13°39'W
1625

ST

RD

OP

HWY OP

XI-SD-5

582.29

608.08

14
SHT 1

56

THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL SUBDIVISION OR BUILDING ORDINANCES.

JFL
7 20 11

SAN DIEGO COUNTY ASSESSOR'S MAP BK 254 PG 14 - SHT 2 OF 2

MAP 14760 - LEUCADIA HILLS
SEC 4 - T13S - R4W - POR N 1/4
ROS 8939

APPENDIX B

CLIENT–PROVIDED INFORMATION FOR THE SITE

Site: Piraeus Property, Encinitas, CA; Project No. G2307-62-04

***Please elaborate on any question answered "yes." If the question does not apply to the site, please answer "N/A".**

1. If possible, please provide us with the title, appraisal, or sale agreement records to review and discuss in the Phase I ESA.
   PTR attached with email including this questionnaire.

2. Are you aware of any environmental liens or activity and use limitations associated with the Site?
NO

3. Do you have any specialized knowledge of the Site?
   NO

4. Please provide any commonly known or reasonably ascertainable information about the Site.
None

5. Who currently owns, manages, and operates the Site?
Harrington Carrington, Piraeus Investor, LLC

6. Has the monetary value of the Site been reduced due to environmental issues associated with the Site or adjacent properties?
   NO

7. Why are you requesting a Phase I ESA for the Site?
   Part of due diligence to evaluate the property for potential acquisition to build homes.

David W. Shepherd — 8/31/2021
NAME (IN PRINT) — DATE



SIGNATURE

Lennar Homes, Director of Entitlements
COMPANY NAME AND TITLE

Please feel free to contact me if you have any questions.
When complete, return the questionnaire via email or fax:

Mr. Cole Mikesell
Geocon Incorporated
Cmikesell@geoconinc.com
(619) 788-3750 PHONE
(858) 558-6159 FAX

PROPERTY BACKGROUND INFORMATION QUESTIONNAIRE FOR SITE OWNER, OCCUPANT, OR REPRESENTATIVE

Site: Piraeus Property, Encinitas, CA; Project No. G2307-62-04

***Please elaborate on any question answered "yes." If the question does not apply to the site, please answer "N/A".**

1) Describe the current uses of the Site. VACANT Site

2) How long has the Site been used for these purposes? 20 Plus YEARS

3) How long have you occupied the Site? VACANT Site

4) List the existing structures on the property and their age. No Structures

5) Describe the past uses, owners, and operators of the Site. (Be as detailed as possible and note approximate time periods.) SITE USED For Agriculture, SAME OWNERS 30plus yrs

6) Utilities including electricity, natural gas, water, sewer, and trash removal are provided to the Site by which utility/companies.

Water -
Sewer -
Electricity - NONE
Natural Gas -
Trash –

7) What type of heating, ventilating, and air conditioning (HVAC) system is located at the Site and how is the HVAC system powered? NONE

8) Have the Site or adjoining properties been used for industrial activities, such the following? (Please note that an adjoining property is a property that is contiguous with, or directly across the street from the Site.)

Gasoline Station	[ ] Yes [✓] No
Printing Facility	[ ] Yes [✓] No
Metal Plating Manufacturing	[ ] Yes [✓] No
Landfill	[ ] Yes [✓] No
Motor Repair Facility	[ ] Yes [✓] No
Dry Cleaners	[ ] Yes [✓] No
Junkyard	[ ] Yes [✓] No
Waste Treatment	[ ] Yes [✓] No

Storage, Disposal, or Recycling Facility [ ] Yes [/] No

Describe other industrial activities, if any. NONE

9) Have any hazardous substances, petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or other waste materials been dumped aboveground, buried, or burned on the Site?

[ ] Yes [/] No

10) Have any of the following items been stored on the Site in containers greater than 5 gallons?

Paint [ ] Yes [/] No
Chemicals [ ] Yes [/] No
Pesticides [ ] Yes [/] No

11) Are hazardous wastes generated at the Site? If yes, describe the means of disposal and frequency of disposal.

[ ] Yes [/] No

12) Have petroleum products been stored on the Site or transferred across the Site in pipelines, either above or belowground?

[ ] Yes [/] No

13) Has fill dirt been brought onto the Site from an offsite source?

[ ] Yes [/] No

14) Is there evidence that the fill dirt in Question 13 may be contaminated?

[ ] Yes [/] No

15) Are there currently any pits, ponds, or lagoons on the Site?

[ ] Yes [/] No

16) Have any pits, ponds, or lagoons previously existed on the Site?

[ ] Yes [/] No

17) Are there currently areas on the Site with stained soil? NONE

[ ] Yes [ ] No

18) Have stained soils previously existed on the Site?

[ ] Yes [✓] No

19) Do chemical-containing underground or aboveground storage tanks exist, or have they existed previously on the Site?

[ ] Yes [✓] No

20) Do fill pipes, vent pipes, or access ways indicating the presence of current or former underground storage tanks exist on the Site?

[ ] Yes [✓] No

21) Have fill pipes or vent pipes which may indicate the presence of a current or former underground storage tank been removed from the Site?

[ ] Yes [✓] No

22) Are floor drains stained with anything other than water in any area on the Site?

[ ] Yes [✓] No

23) Do floor drains on the Site emit foul odors?

[ ] Yes [✓] No

24) Is the Site served by a private well or a non-public water source?

[ ] Yes [✓] No

25) Are contaminants known to exist in any private well or non-public water system serving the Site?

[ ] Yes [✓] No

26) Does the Site discharge wastewater, other than domestic wastewater or storm water, into the sewer?

[ ] Yes [✓] No

27) Other than permission for domestic hookup, have any city, county, or local permits for wastewater discharge been issued to the Site?
[ ] Yes [ ] No

28) Does a septic tank exist, or has one existed previously on the Site?

[ ] Yes [ ] No

29) Do cesspools or cisterns currently exist on the Site?

[ ] Yes [ ] No

30) Have cesspools or cisterns previously existed on the Site?

[ ] Yes [ ] No

31) Other than storm water, does the Site discharge waste water onto the neighboring Site?

[ ] Yes [ ] No

32) Is there a transformer or capacitor that may contain PCBs on the Site?

[ ] Yes [ ] No

33) Is there hydraulic equipment such as automobile lifts or elevators on the Site?

[ ] Yes [ ] No

34) Are PCBs contained in hydraulic oil associated with hydraulic equipment located on the Site?

[ ] Yes [ ] No

35) Has an asbestos and/or lead-based paint survey been conducted at the Site? If so, what were the findings?

[ ] Yes [ ] No

36) Other than small quantities of legal pesticides used for landscape maintenance (e.g., Roundup), have pesticides, herbicides, or insecticides been applied on the Site?
[ ] Yes [ ] No

37) Are you aware of any environmental liens against the Site that are filed or recorded under federal, tribal, state, or local law?

[ ] Yes [/] No

38) Have any environmental violations or citations associated with activities conducted on the Site been issued?

[ ] Yes [/] No

39) Has the Site been included in other environmental assessments? If so, can copies of the reports be provided?

[/] Yes [ ] No

40) Have other environmental assessments identified hazardous substances or petroleum products that exist, or may have existed on the Site?

[ ] Yes [/] No

41) Are there any pending lawsuits that involve the release or threatened release of hazardous substances associated with the Site?

[ ] Yes [/] No

42) Are you aware of any activity and land use limitations, such as engineering controls, land use restrictions or institutional controls that are in place on the Site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

[ ] Yes [/] No

43) Are you aware of any commonly known or reasonably ascertainable information about the Site that would help the environmental professional to identify conditions indicative of hazardous substance releases or threatened hazardous substance releases?

[/] Yes [ ] No

44) Do you have any specialized knowledge or experience related to the Site or nearby properties, including the knowledge of the chemicals and processes used by this type of business?

[ ] Yes [/] No

45) Based in your knowledge or experience related to the Site, are there any obvious indicators that point to the presence or likely presence of contamination at the Site?

[ ] Yes [✓] No

46) If the purchase price of the Site was below fair market value, did this occur because contamination was/is known or believed to be present on the Site?

[ ] Yes [✓] No [ ] N/A

HARRINGTON CANNON 8-26-21

NAME (IN PRINT) DATE

SIGNATURE

[ ] Owner [ ] Occupant [ ] Owner Representative

Please feel free to contact me if you have any questions.
When complete, return the questionnaire via email or fax:

Mr. Cole Mikesell
Geocon Incorporated
Cmikesell@geoconinc.com
(619) 788-3750 PHONE
(858) 558-6159 FAX

APPENDIX C

Piraeus Property
Piraeus Street/Plato Place
Encinitas, CA 92024

Inquiry Number: 6632347.2s
August 23, 2021

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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GEOCHECK ADDENDUM

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

PIRAEUS STREET/PLATO PLACE
ENCINITAS, CA 92024

COORDINATES

Latitude (North):	33.0792250 - 33° 4' 45.21''
Longitude (West):	117.2951480 - 117° 17' 42.53''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	472452.5
UTM Y (Meters):	3659917.2
Elevation:	158 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5641296 ENCINITAS, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140603
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
PIRAEUS STREET/PLATO PLACE
ENCINITAS, CA 92024

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
1	NAYLOR AUTO REPAIR	1651 CAUDOR ST	RCRA-SQG, FINDS, ECHO	Higher	641, 0.121, East
2	GEORGEANNE & ANDRES	511 NANTUCKET CT	RCRA NonGen / NLR	Lower	785, 0.149, WNW
3	1540 CAUDOR STREET	1540 CAUDOR STREET	CPS-SLIC, CERS	Higher	891, 0.169, SE
A4	MELISSA MACKEWIZZ	1499 HYMETTUS AVENUE	RCRA NonGen / NLR	Lower	1107, 0.210, SW
B5	STEVE & BEVERLY ENEW	1730 BURGUNDY RD	RCRA NonGen / NLR	Higher	1144, 0.217, NE
B6	ENEWOLD, STEVEN & BE	1730 BURGUNDY ROAD	RCRA NonGen / NLR	Higher	1144, 0.217, NE
A7	HYMETTUS ESTATE	1492 HYMETTUS AV	SAN DIEGO CO. SAM, CPS-SLIC, DEED, CHMIRS, CIWQS,...	Lower	1272, 0.241, SW
8	OLYMPUS ROAD BURNSIT	600 BLK OLYMPUS ROAD	SWF/LF, CERS	Lower	1777, 0.337, SSE
C9	CHEVRON 95664	540 LA COSTA AVE	SAN DIEGO CO. SAM, San Diego Co. HMMD, CERS HAZ...	Lower	1954, 0.370, NW
C10	CHEVRON SERVICES STA	540 LA COSTA AVE	LUST, Cortese, NPDES	Lower	1954, 0.370, NW
D11	LA COSTA HOTEL	516 LA COSTA AVE	CPS-SLIC, CERS	Lower	1972, 0.373, NW
D12	WESTON FAMILY TRUST	510 LA COSTA AVENUE	CPS-SLIC, HAZNET, CERS, HWTS	Lower	2075, 0.393, NW
13	COCA COLA BOTTLING T	NONE HWY I5 NORTH OF	CPS-SLIC, CERS	Lower	2479, 0.470, NW
14	BARRETT AMERICAN	236 ANDREW AV	LUST, SAN DIEGO CO. SAM, Cortese, SAN DIEGO CO...	Lower	2618, 0.496, WNW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List

US INST CONTROLS Institutional Controls Sites List

Federal ERNS list

ERNS Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE State Response Sites

State- and tribal - equivalent CERCLIS

ENVIROSTOR EnviroStor Database

State and tribal leaking storage tank lists

INDIAN LUST Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST Underground Storage Tank Listing
UST Active UST Facilities
AST Aboveground Petroleum Storage Tank Facilities
INDIAN UST Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP Voluntary Cleanup Priority Listing
VCP Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT Waste Management Unit Database
SWRCY Recycler Database
HAULERS Registered Waste Tire Haulers Listing
INDIAN ODI Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 Torres Martinez Reservation Illegal Dump Site Locations
ODI Open Dump Inventory
IHS OPEN DUMPS Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL Delisted National Clandestine Laboratory Register
HIST Cal-Sites Historical Calsites Database

SCH ---- School Property Evaluation Program
CDL ---- Clandestine Drug Labs
San Diego Co. HMMD ---- Hazardous Materials Management Division Database
Toxic Pits ---- Toxic Pits Cleanup Act Sites
CERS HAZ WASTE ---- CERS HAZ WASTE
US CDL ---- National Clandestine Laboratory Register
PFAS ---- PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

SWEEPS UST ---- SWEEPS UST Listing
HIST UST ---- Hazardous Substance Storage Container Database
CERS TANKS ---- California Environmental Reporting System (CERS) Tanks
CA FID UST ---- Facility Inventory Database

Local Land Records

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CHMIRS ---- California Hazardous Material Incident Report System
LDS ---- Land Disposal Sites Listing
MCS ---- Military Cleanup Sites Listing
SPILLS 90 ---- SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees

INDIAN RESERV---- Indian Reservations
FUSRAP---- Formerly Utilized Sites Remedial Action Program
UMTRA---- Uranium Mill Tailings Sites
LEAD SMELTERS---- Lead Smelter Sites
US AIRS---- Aerometric Information Retrieval System Facility Subsystem
US MINES---- Mines Master Index File
ABANDONED MINES---- Abandoned Mines
FINDS---- Facility Index System/Facility Registry System
UXO---- Unexploded Ordnance Sites
DOCKET HWC---- Hazardous Waste Compliance Docket Listing
ECHO---- Enforcement & Compliance History Information
FUELS PROGRAM---- EPA Fuels Program Registered Listing
CA BOND EXP. PLAN---- Bond Expenditure Plan
CUPA Listings---- CUPA Resources List
DRYCLEANERS---- Cleaner Facilities
EMI---- Emissions Inventory Data
ENF---- Enforcement Action Listing
Financial Assurance---- Financial Assurance Information Listing
HAZNET---- Facility and Manifest Data
ICE---- ICE
HIST CORTESE---- Hazardous Waste & Substance Site List
HWP---- EnviroStor Permitted Facilities Listing
HWT---- Registered Hazardous Waste Transporter Database
MINES---- Mines Site Location Listing
MWMP---- Medical Waste Management Program Listing
NPDES---- NPDES Permits Listing
PEST LIC---- Pesticide Regulation Licenses Listing
PROC---- Certified Processors Database
Notify 65---- Proposition 65 Records
UIC---- UIC Listing
UIC GEO---- UIC GEO (GEOTRACKER)
WASTEWATER PITS---- Oil Wastewater Pits Listing
WDS---- Waste Discharge System
WIP---- Well Investigation Program Case List
MILITARY PRIV SITES---- MILITARY PRIV SITES (GEOTRACKER)
PROJECT---- PROJECT (GEOTRACKER)
WDR---- Waste Discharge Requirements Listing
SAN DIEGO CO LOP---- Local Oversight Program Listing
CIWQS---- California Integrated Water Quality System
CERS---- CERS
NON-CASE INFO---- NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS---- OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS---- PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT---- SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ---- Well Stimulation Project (GEOTRACKER)
HWTS---- Hazardous Waste Tracking System
MINES MRDS---- Mineral Resources Data System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP---- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto---- EDR Exclusive Historical Auto Stations

EXECUTIVE SUMMARY

EDR Hist Cleaner..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF..... Recovered Government Archive Solid Waste Facilities List
RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal RCRA generators list

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/22/2021 has revealed that there is 1 RCRA-SQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
NAYLOR AUTO REPAIR	***1651 CAUDOR ST***	***E 0 - 1/8 (0.121 mi.)***	***1***	***9***
EPA ID:: CAD981451347				

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there is 1 SWF/LF site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
OLYMPUS ROAD BURNSIT	***600 BLK OLYMPUS ROAD***	***SSE 1/4 - 1/2 (0.337 mi.)***	***8***	***31***
Database: SWF/LF (SWIS), Date of Government Version: 05/10/2021				

Facility ID: 37-CR-0061
Operational Status: Closed
Regulation Status: Pre-regulation

State and tribal leaking storage tank lists

SAN DIEGO CO. SAM: The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

A review of the SAN DIEGO CO. SAM list, as provided by EDR, and dated 03/23/2010 has revealed that there are 3 SAN DIEGO CO. SAM sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
HYMETTUS ESTATE	***1492 HYMETTUS AV***	***SW 1/8 - 1/4 (0.241 mi.)***	***A7***	***22***
Case Number: H99106-001 Facility Status: Preliminary Assessment				
CHEVRON 95664	***540 LA COSTA AVE***	***NW 1/4 - 1/2 (0.370 mi.)***	***C9***	***33***
Case Number: H12458-001 Facility Status: Closed Case				
BARRETT AMERICAN	***236 ANDREW AV***	***WNW 1/4 - 1/2 (0.496 mi.)***	***14***	***80***
Case Number: 226452 Facility Status: Closed Case				

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 2 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CHEVRON SERVICES STA	***540 LA COSTA AVE***	***NW 1/4 - 1/2 (0.370 mi.)***	***C10***	***74***
Database: LUST, Date of Government Version: 03/08/2021 Status: Completed - Case Closed Global Id: T0607302127				
BARRETT AMERICAN	***236 ANDREW AV***	***WNW 1/4 - 1/2 (0.496 mi.)***	***14***	***80***
Database: LUST, Date of Government Version: 03/08/2021 Status: Completed - Case Closed Global Id: T06019729886				

CPS-SLIC: Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CPS-SLIC list, as provided by EDR, has revealed that there are 5 CPS-SLIC sites

within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
1540 CAUDOR STREET	***1540 CAUDOR STREET***	***SE 1/8 - 1/4 (0.169 mi.)***	***3***	***14***
Database: CPS-SLIC, Date of Government Version: 03/08/2021 Facility Status: Completed - Case Closed Global Id: T10000005778				

Lower Elevation	Address	Direction / Distance	Map ID	Page
HYMETTUS ESTATE	***1492 HYMETTUS AV***	***SW 1/8 - 1/4 (0.241 mi.)***	***A7***	***22***
Database: CPS-SLIC, Date of Government Version: 03/08/2021 Facility Status: Completed - Case Closed Global Id: T10000003208 Global Id: T06019732789				
LA COSTA HOTEL	***516 LA COSTA AVE***	***NW 1/4 - 1/2 (0.373 mi.)***	***D11***	***76***
Database: CPS-SLIC, Date of Government Version: 03/08/2021 Facility Status: Open - Site Assessment Global Id: T10000012696				
WESTON FAMILY TRUST	***510 LA COSTA AVENUE***	***NW 1/4 - 1/2 (0.393 mi.)***	***D12***	***77***
Database: CPS-SLIC, Date of Government Version: 03/08/2021 Facility Status: Open - Site Assessment Global Id: T10000010402				
COCA COLA BOTTLING T	***NONE HWY I5 NORTH OF***	***NW 1/4 - 1/2 (0.470 mi.)***	***13***	***79***
Database: CPS-SLIC, Date of Government Version: 03/08/2021 Facility Status: Completed - Case Closed Global Id: SLT19742840				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Land Records

DEED: The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes .

A review of the DEED list, as provided by EDR, and dated 05/28/2021 has revealed that there is 1 DEED site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
HYMETTUS ESTATE	***1492 HYMETTUS AV***	***SW 1/8 - 1/4 (0.241 mi.)***	***A7***	***22***
Status: COMPLETED - CASE CLOSED Envirostor ID: T10000003208				

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA)

of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/22/2021 has revealed that there are 4 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
STEVE & BEVERLY ENEW EPA ID:: CAC003058678	1730 BURGUNDY RD	NE 1/8 - 1/4 (0.217 mi.)	B5	17
ENEWOLD, STEVEN & BE EPA ID:: CAC002983962	1730 BURGUNDY ROAD	NE 1/8 - 1/4 (0.217 mi.)	B6	20

Lower Elevation	Address	Direction / Distance	Map ID	Page
GEORGEANNE & ANDRES	511 NANTUCKET CT	WNW 1/8 - 1/4 (0.149 mi.)	2	12
MELISSA MACKEWIZZ EPA ID:: CAC003057889	1499 HYMETTUS AVENUE	SW 1/8 - 1/4 (0.210 mi.)	A4	15

Cortese: The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

A review of the Cortese list, as provided by EDR, and dated 03/22/2021 has revealed that there are 2 Cortese sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CHEVRON SERVICES STA Cleanup Status: COMPLETED - CASE CLOSED	***540 LA COSTA AVE***	***NW 1/4 - 1/2 (0.370 mi.)***	***C10***	***74***
BARRETT AMERICAN Cleanup Status: COMPLETED - CASE CLOSED	***236 ANDREW AV***	***WNW 1/4 - 1/2 (0.496 mi.)***	***14***	***80***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
COCA COLA BOTTLING TRUCK SPIL	SAN DIEGO CO. SAM

OVERVIEW MAP - 6632347.2S



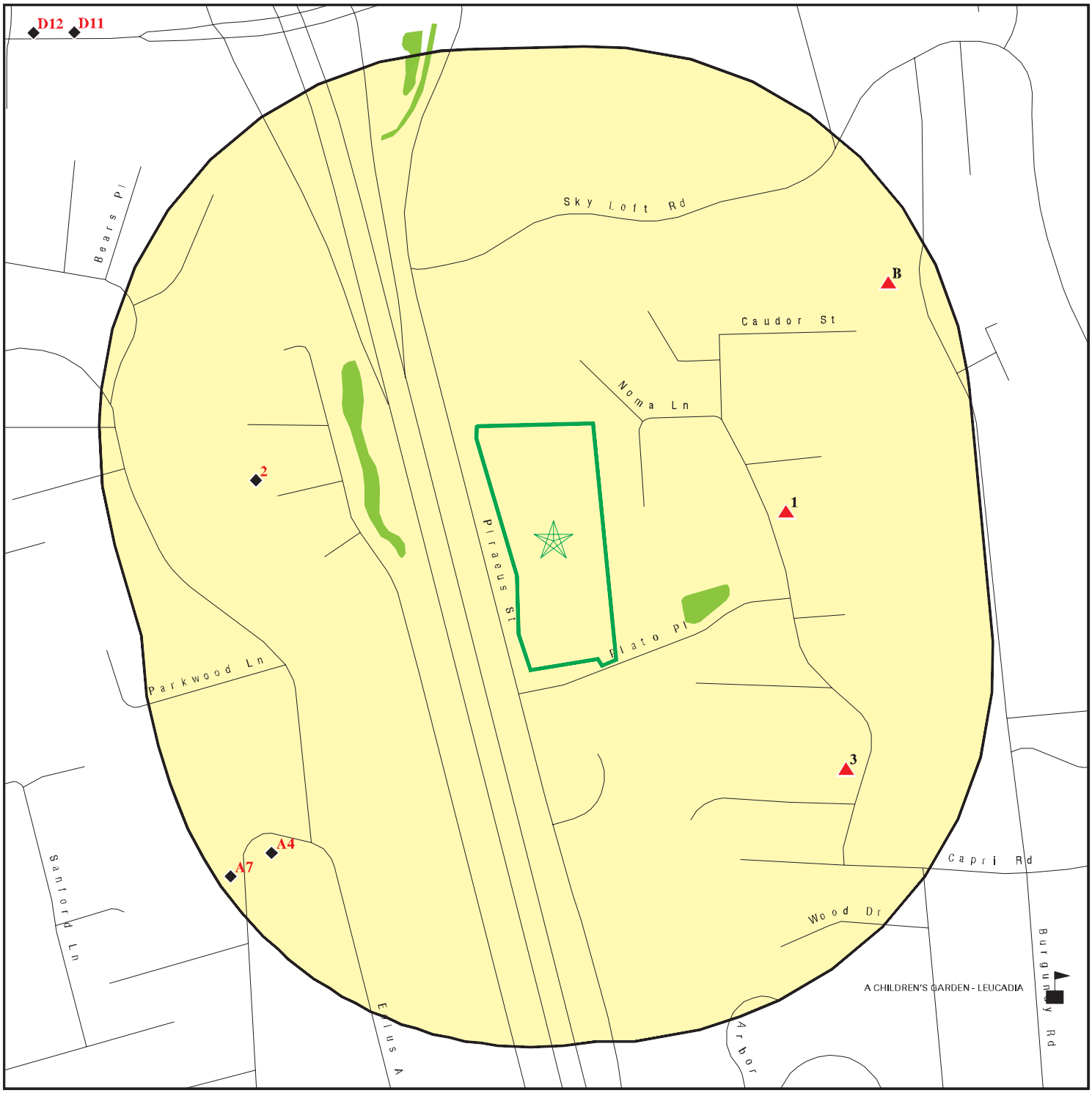
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	Piraeus Property	CLIENT:	Geocon Env. Consultants, Inc.
ADDRESS:	Piraeus Street/Plato Place Encinitas CA 92024	CONTACT:	Cole Mikesell
LAT/LONG:	33.079225 / 117.295148	INQUIRY #:	6632347.2s
		DATE:	August 23, 2021 8:23 pm

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DETAIL MAP - 6632347.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Piraeus Property	CLIENT: Geocon Env. Consultants, Inc.
ADDRESS: Piraeus Street/Plato Place Encinitas CA 92024	CONTACT: Cole Mikesell
LAT/LONG: 33.079225 / 117.295148	INQUIRY #: 6632347.2s DATE: August 23, 2021 8:24 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		1	0	NR	NR	NR	1
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	1	NR	NR	1
State and tribal leaking storage tank lists								
SAN DIEGO CO. SAM	0.500		0	1	2	NR	NR	3

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LUST	0.500		0	0	2	NR	NR	2
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	2	3	NR	NR	5
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
San Diego Co. HMMD	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
PFAS	0.500		0	0	0	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	1	0	NR	NR	1
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	4	NR	NR	NR	4
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	0.001		0	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		0	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	2	NR	NR	2
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001		0	NR	NR	NR	NR	0
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001		0	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
WDR	0.001		0	NR	NR	NR	NR	0
SAN DIEGO CO LOP	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
HWTS	TP		NR	NR	NR	NR	NR	0
MINES MRDS	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		0	1	8	10	0	0	19

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

1
East
< 1/8
0.121 mi.
641 ft.

NAYLOR AUTO REPAIR
1651 CAUDOR ST
ENCINITAS, CA 92024

RCRA-SQG
FINDS
ECHO

1000290754
CAD981451347

Relative:
Higher

Actual:
179 ft.

RCRA-SQG:

Date Form Received by Agency:		1986-03-05 00:00:00.0
Handler Name:	NAYLOR AUTO REPAIR	
Handler Address:		1651 CAUDOR ST
Handler City,State,Zip:		ENCINITAS, CA 92024
EPA ID:		CAD981451347
Contact Name:		ENVIRONMENTAL MANAGER
Contact Address:		1651 CAUDOR ST
Contact City,State,Zip:		ENCINITAS, CA 92024
Contact Telephone:		619-753-4237
Contact Fax:		Not reported
Contact Email:		Not reported
Contact Title:		Not reported
EPA Region:		09
Land Type:		Not reported
Federal Waste Generator Description:		Small Quantity Generator
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Handler Activities
State District Owner:		CA
State District:		4
Mailing Address:		CAUDOR ST
Mailing City,State,Zip:		ENCINITAS, CA 92024
Owner Name:		WILFORD NAYLOR
Owner Type:		Private
Operator Name:		NOT REQUIRED
Operator Type:		Private
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No
Recycler Activity with Storage:		No
Small Quantity On-Site Burner Exemption:		No
Smelting Melting and Refining Furnace Exemption:		No
Underground Injection Control:		No
Off-Site Waste Receipt:		No
Universal Waste Indicator:		No
Universal Waste Destination Facility:		No
Federal Universal Waste:		No
Active Site Fed-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site Converter Treatment storage and Disposal Facility:		Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:		Not reported
Active Site State-Reg Handler:		---
Federal Facility Indicator:		Not reported
Hazardous Secondary Material Indicator:		NN
Sub-Part K Indicator:		Not reported
Commercial TSD Indicator:		No
Treatment Storage and Disposal Type:		Not reported
2018 GPRA Permit Baseline:		Not on the Baseline
2018 GPRA Renewals Baseline:		Not on the Baseline
Permit Renewals Workload Universe:		Not reported

NAYLOR AUTO REPAIR (Continued) **1000290754**

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2000-09-15 17:29:41.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	Not reported
Manifest Broker:	Not reported
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	WILFORD NAYLOR
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	NOT REQUIRED
Legal Status:	Private
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	NOT REQUIRED
Owner/Operator City,State,Zip:	NOT REQUIRED, ME 99999
Owner/Operator Telephone:	415-555-1212
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

NAYLOR AUTO REPAIR (Continued) **1000290754**

Historic Generators:
Receive Date: 1986-03-05 00:00:00.0
Handler Name: NAYLOR AUTO REPAIR
Federal Waste Generator Description: Small Quantity Generator
State District Owner: CA
Large Quantity Handler of Universal Waste: No
Recognized Trader Importer: No
Recognized Trader Exporter: No
Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Codes: No NAICS Codes Found

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

FINDS:
Registry ID: 110002711664

Click Here:

Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000290754
Registry ID: 110002711664
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002711664
Name: NAYLOR AUTO REPAIR
Address: 1651 CAUDOR ST
City,State,Zip: ENCINITAS, CA 92024

2
WNW
1/8-1/4
0.149 mi.
785 ft.

GEORGEANNE & ANDRES XAGORARAKIS
511 NANTUCKET CT
ENCINITAS, CA 92024

RCRA NonGen / NLR

1026481705
CAC003087720

Relative:
Lower

Actual:
61 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	2020-10-09 00:00:00.0
Handler Name:	GEORGEANNE & ANDRES XAGORARAKIS
Handler Address:	511 NANTUCKET CT
Handler City,State,Zip:	ENCINITAS, CA 92024
EPA ID:	CAC003087720
Contact Name:	GEORGEANNE & ANDRES XAGORARAKIS
Contact Address:	511 NANTUCKET CT
Contact City,State,Zip:	ENCINITAS, CA 92024
Contact Telephone:	949-933-9414
Contact Fax:	Not reported
Contact Email:	VANESSABRONDSTETTER@ALLIANCE-ENVIRO.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	511 NANTUCKET CT
Mailing City,State,Zip:	ENCINITAS, CA 92024
Owner Name:	GEORGEANNE & ANDRES XAGORARAKIS
Owner Type:	Other
Operator Name:	GEORGEANNE & ANDRES XAGORARAKIS
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported

GEORGEANNE & ANDRES XAGORARAKIS (Continued) **1026481705**

Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2020-10-26 14:55:15.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	GEORGEANNE & ANDRES XAGORARAKIS
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	511 NANTUCKET CT
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	949-933-9414
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	GEORGEANNE & ANDRES XAGORARAKIS
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	511 NANTUCKET CT
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	949-933-9414
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

GEORGEANNE & ANDRES XAGORARAKIS (Continued) **1026481705**

Historic Generators:
- Receive Date: 2020-10-09 00:00:00.0
- Handler Name: GEORGEANNE & ANDRES XAGORARAKIS
- Federal Waste Generator Description: Not a generator, verified
- State District Owner: Not reported
- Large Quantity Handler of Universal Waste: No
- Recognized Trader Importer: No
- Recognized Trader Exporter: No
- Spent Lead Acid Battery Importer: No
- Spent Lead Acid Battery Exporter: No
- Current Record: Yes
- Non Storage Recycler Activity: Not reported
- Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
- NAICS Code: 56299
- NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
- Violations: No Violations Found

Evaluation Action Summary:
- Evaluations: No Evaluations Found

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3 **1540 CAUDOR STREET** **CPS-SLIC** **S116290522**
SE **1540 CAUDOR STREET** **CERS** **N/A**
1/8-1/4 **ENCINITAS, CA 92024**
0.169 mi.
891 ft.

Relative:
Higher

Actual:
173 ft.

CPS-SLIC:
- Name: 1540 CAUDOR STREET
- Address: 1540 CAUDOR STREET
- City,State,Zip: ENCINITAS, CA 92024
- Region: STATE
- **Facility Status: Completed - Case Closed**
- Status Date: 03/25/2014
- Global Id: T10000005778
- Lead Agency: SAN DIEGO COUNTY LOP
- Lead Agency Case Number: DEH2014-LSAM-000237
- Latitude: 33.077012929127
- Longitude: -117.292061262566
- Case Type: Cleanup Program Site
- Case Worker: JC
- Local Agency: SAN DIEGO COUNTY LOP
- RB Case Number: Not reported
- File Location: Local Agency
- Potential Media Affected: Not reported
- Potential Contaminants of Concern: Not reported
- Site History: Refer to "Site Maps/Documents" tab for Closure Letter.

Click here to access the California GeoTracker records for this facility:

CERS:

1540 CAUDOR STREET (Continued) **S116290522**

Name:	1540 CAUDOR STREET
Address:	1540 CAUDOR STREET
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	198303
CERS ID:	T10000005778
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	JAMES CLAY - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

A4 **MELISSA MACKEWIZZ** **RCRA NonGen / NLR** **1026051022**
SW **1499 HYMETTUS AVENUE** **CAC003057889**
1/8-1/4 **ENCINITAS, CA 92024**
0.210 mi.
1107 ft. **Site 1 of 2 in cluster A**

Relative: **Lower**
Actual: **150 ft.**

RCRA NonGen / NLR:

Date Form Received by Agency:		2020-02-27 00:00:00.0
Handler Name:	MELISSA MACKEWIZZ	
Handler Address:		1499 HYMETTUS AVENUE
Handler City,State,Zip:		ENCINITAS, CA 92024
EPA ID:		CAC003057889
Contact Name:		MELISSA MACKEWIZZ
Contact Address:		1499 HYMETTUS AVENUE
Contact City,State,Zip:		ENCINITAS, CA 92024
Contact Telephone:		760-429-5657
Contact Fax:		Not reported
Contact Email:		VANESSAPIZARRO@ALLIANCE-ENVIRO.COM
Contact Title:		Not reported
EPA Region:		09
Land Type:		Not reported
Federal Waste Generator Description:		Not a generator, verified
Non-Notifier:		Not reported
Biennial Report Cycle:		Not reported
Accessibility:		Not reported
Active Site Indicator:		Not reported
State District Owner:		Not reported
State District:		Not reported
Mailing Address:		1499 HYMETTUS AVENUE
Mailing City,State,Zip:		ENCINITAS, CA 92024
Owner Name:		MELISSA MACKEWIZZ
Owner Type:		Other
Operator Name:		MELISSA MACKEWIZZ
Operator Type:		Other
Short-Term Generator Activity:		No
Importer Activity:		No
Mixed Waste Generator:		No
Transporter Activity:		No
Transfer Facility Activity:		No

MELISSA MACKEWIZZ (Continued) **1026051022**

Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2020-03-06 18:11:18.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	MELISSA MACKEWIZZ
Legal Status:	Other
Date Became Current:	Not reported

MELISSA MACKEWIZZ (Continued) **1026051022**

Date Ended Current:	Not reported
Owner/Operator Address:	1499 HYMETTUS AVENUE
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-429-5657
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	MELISSA MACKEWIZZ
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1499 HYMETTUS AVENUE
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-429-5657
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	2020-02-27 00:00:00.0
Handler Name: MELISSA MACKEWIZZ	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

B5 **STEVE & BEVERLY ENEWOLD** **RCRA NonGen / NLR** **1026051789**
NE **1730 BURGUNDY RD** **CAC003058678**
1/8-1/4 **ENCINITAS, CA 92024**
0.217 mi.
1144 ft. **Site 1 of 2 in cluster B**

Relative:
Higher

Actual:
202 ft.

RCRA NonGen / NLR:

Date Form Received by Agency:	2020-03-04 00:00:00.0
Handler Name:	STEVE & BEVERLY ENEWOLD
Handler Address:	1730 BURGUNDY RD
Handler City,State,Zip:	ENCINITAS, CA 92024

STEVE & BEVERLY ENEWOLD (Continued) **1026051789**

EPA ID:	CAC003058678
Contact Name:	STEVE & BEVERLY ENEWOLD
Contact Address:	5548 SPINNAKER BAY DRIVE
Contact City,State,Zip:	LONG BEACH, CA 90803
Contact Telephone:	760-529-3997
Contact Fax:	Not reported
Contact Email:	VANESSAPIZARRO@ALLIANCE-ENVIRO.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Not reported
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	5548 SPINNAKER BAY DRIVE
Mailing City,State,Zip:	LONG BEACH, CA 90803
Owner Name:	STEVE & BEVERLY ENEWOLD
Owner Type:	Other
Operator Name:	STEVE & BEVERLY ENEWOLD
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	No
Universal Waste Destination Facility:	No
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No

STEVE & BEVERLY ENEWOLD (Continued) **1026051789**

TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2020-03-06 18:11:31.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	STEVE & BEVERLY ENEWOLD
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	5548 SPINNAKER BAY DRIVE
Owner/Operator City,State,Zip:	LONG BEACH, CA 90803
Owner/Operator Telephone:	760-529-3997
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name:	STEVE & BEVERLY ENEWOLD
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	5548 SPINNAKER BAY DRIVE
Owner/Operator City,State,Zip:	LONG BEACH, CA 90803
Owner/Operator Telephone:	760-529-3997
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	2020-03-04 00:00:00.0
Handler Name: STEVE & BEVERLY ENEWOLD	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No

STEVE & BEVERLY ENEWOLD (Continued) **1026051789**

Spent Lead Acid Battery Importer: No
Spent Lead Acid Battery Exporter: No
Current Record: Yes
Non Storage Recycler Activity: Not reported
Electronic Manifest Broker: Not reported

List of NAICS Codes and Descriptions:
NAICS Code: 56299
NAICS Description: ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B6 **ENEWOLD, STEVEN & BEVERLY** **RCRA NonGen / NLR** **1024764096**
NE **1730 BURGUNDY ROAD** **CAC002983962**
1/8-1/4 **ENCINITAS, CA 92024**
0.217 mi.
1144 ft. **Site 2 of 2 in cluster B**

Relative:
Higher

Actual:
202 ft.

RCRA NonGen / NLR:
Date Form Received by Agency: 2018-10-08 00:00:00.0
Handler Name: ENEWOLD, STEVEN & BEVERLY
Handler Address: 1730 BURGUNDY ROAD
Handler City,State,Zip: ENCINITAS, CA 92024
EPA ID: CAC002983962
Contact Name: ENEWOLD, STEVEN & BEVERLY
Contact Address: 1730 BURGUNDY ROAD
Contact City,State,Zip: ENCINITAS, CA 92024
Contact Telephone: 760-616-9792
Contact Fax: Not reported
Contact Email: VANESSAPIZARRO@ALLIANCE-ENVIRO.COM
Contact Title: Not reported
EPA Region: 09
Land Type: Not reported
Federal Waste Generator Description: Not a generator, verified
Non-Notifier: Not reported
Biennial Report Cycle: Not reported
Accessibility: Not reported
Active Site Indicator: Handler Activities
State District Owner: Not reported
State District: Not reported
Mailing Address: 1730 BURGUNDY ROAD
Mailing City,State,Zip: ENCINITAS, CA 92024
Owner Name: ENEWOLD, STEVEN & BEVERLY
Owner Type: Other
Operator Name: ENEWOLD, STEVEN & BEVERLY
Operator Type: Other
Short-Term Generator Activity: No
Importer Activity: No
Mixed Waste Generator: No
Transporter Activity: No
Transfer Facility Activity: No

ENEWOLD, STEVEN & BEVERLY (Continued) **1024764096**

Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site Fed-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site Converter Treatment storage and Disposal Facility:	Not reported
Active Site State-Reg Treatment Storage and Disposal Facility:	Not reported
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
Commercial TSD Indicator:	No
Treatment Storage and Disposal Type:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
Permit Renewals Workload Universe:	Not reported
Permit Workload Universe:	Not reported
Permit Progress Universe:	Not reported
Post-Closure Workload Universe:	Not reported
Closure Workload Universe:	Not reported
202 GPRA Corrective Action Baseline:	No
Corrective Action Workload Universe:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
TSDFs Potentially Subject to CA Under 3004 (u)/(v) Universe:	No
TSDFs Only Subject to CA under Discretionary Auth Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No
Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Operating TSDF Universe:	Not reported
Full Enforcement Universe:	Not reported
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	2018-11-20 16:29:29.0
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name:	ENEWOLD, STEVEN & BEVERLY
Legal Status:	Other
Date Became Current:	Not reported

ENEWOLD, STEVEN & BEVERLY (Continued) **1024764096**

Date Ended Current:	Not reported
Owner/Operator Address:	1730 BURGUNDY ROAD
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-616-9792
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported
Owner/Operator Indicator:	Operator
Owner/Operator Name:	ENEWOLD, STEVEN & BEVERLY
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1730 BURGUNDY ROAD
Owner/Operator City,State,Zip:	ENCINITAS, CA 92024
Owner/Operator Telephone:	760-616-9792
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	2018-10-08 00:00:00.0
Handler Name:	ENEWOLD, STEVEN & BEVERLY
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

List of NAICS Codes and Descriptions:

NAICS Code:	56299
NAICS Description:	ALL OTHER WASTE MANAGEMENT SERVICES

Facility Has Received Notices of Violations:

Violations:	No Violations Found

Evaluation Action Summary:

Evaluations:	No Evaluations Found

A7 **HYMETTUS ESTATE** **SAN DIEGO CO. SAM** **S108087033**
SW **1492 HYMETTUS AV** **CPS-SLIC** **N/A**
1/8-1/4 **ENCINITAS, CA 92024** **DEED**
0.241 mi. **CHMIRS**
1272 ft. **Site 2 of 2 in cluster A** **CIWQS**
CERS

Relative:
Lower

Actual:
145 ft.

SAN DIEGO CO. SAM:

Name:	HYMETTUS ESTATE
Address:	1492 HYMETTUS AV
City,State,Zip:	ENCINITAS, CA 92024

HYMETTUS ESTATE (Continued) **S108087033**

Case Number:	H99106-001
Agency:	DEH Site Assessment & Mitigation
Funding:	**Private - VAP**
Facility Type:	Soils Only
Facility Status:	Preliminary Assessment
Date:	3/22/2006
Date Began:	Not reported

CPS-SLIC:

Name:	PROPOSED 19 UNIT SUBDIVISION
Address:	1492 HYMETTUS AVENUE
City,State,Zip:	ENCINITAS, CA 92024
Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	10/24/2011
Global Id:	T10000003208
Lead Agency:	SAN DIEGO COUNTY LOP
Lead Agency Case Number:	H99106-002
Latitude:	33.076078
Longitude:	-117.299296
Case Type:	Cleanup Program Site
Case Worker:	CF
Local Agency:	SAN DIEGO COUNTY LOP
RB Case Number:	Not reported
File Location:	Local Agency
Potential Media Affected:	Soil
Potential Contaminants of Concern:	Other Insecticides / Pesticide / Fumigants / Herbicides
Site History:	DEH Case #H99106-002 was opened under the Voluntary Assistance Program (VAP) to address additional remedial work required at 1492 Hymettus Avenue in Encinitas following the closure of Case #H99106-001. Site characterization activities performed in 2006 indicated that the detected concentrations of the pesticide dieldrin in soil beneath the site exceeded its California Human Health Screening Level (CHHSL). Under the original case (#H99106-001), remediation of the dieldrin-impacted soil at the site was performed under a work plan approved by DEH on October 26, 2010. Dieldrin-impacted soil underlying the foundation footprints, front-yards and side-yards of the proposed 19-lot subdivision was excavated to an initial depth of seven feet below design finished grade. The impacted soil was temporarily stockpiled onsite while the excavated areas were deepened to approximately 14 feet. Non-impacted soil removed from the lower portion of the excavated areas was also temporarily stockpiled. [Note; non-impacted soil is used here to designate soil in which organochlorine pesticides were not detected or where analytical results indicated concentrations below CHHSLs]. After the collection of confirmation samples from the base of the excavated areas, the dieldrin-impacted soil was placed in the bottom portions of the excavated areas up to a depth of seven feet below design finished grade. A geotextile liner was placed on top of the dieldrin-impacted soil as a marker in the event any future excavation was performed. Following placement of the liner, stockpiled, non-impacted soil was used to fill the upper portion of the excavated areas. Additional non-impacted soil was imported from offsite locations and placed to augment the final cover at the site. Grading of the site to achieve design final grade was performed under a permit issued by the City of Encinitas to the developer (City Ventures). During the Citys review of the final grading map, it was

HYMETTUS ESTATE (Continued) **S108087033**

found that the top of the dieldrin-impacted soil, which was covered with a geotextile marker, was less than seven feet below designed finish grade at front-yard locations of Lots 1 through 10. The sloping front-yards featured drainage swales to channel runoff into planned sediment retention basins. The retention basins were located in an easement between these lots and the road within the interior of the subdivision (Halia Court). Case #H99106-002 was opened to provide regulatory oversight for the additional work needed to provide a uniform, seven-foot-thick, cover fill of non-impacted soil over the entire remediated area. Borings were advanced by the consultant (Stantec) near the drainage swales or planned retention basins to allow collection of soil samples for analysis of organochlorine pesticides, including dieldrin. Detection of dieldrin at concentrations above the remedial action level (35 micrograms per kilogram) at depths of less than seven feet below design finished grade served to indicate the areas requiring additional remedial work. On August 3, 2011, City Ventures began excavating soils from the front-yards of Lots 6 through10. The area immediately adjoining the easement was excavated a maximum of one-to-three feet below the existing geotextile marker to achieve the required depth. Diedrin-impacted soils were reburied in the disposal area established beneath Lots 15 and 16 and covered with a seven-foot-thick layer of non-impacted soil. A new geotextile marker was placed at the bottom of the excavated front-yard areas at a depth of seven feet, which were then filled with non-impacted soil up to design finished grade. Soil was removed near three sediment retention basins in the easement between the front-yards of Lots 1 through 5 and Halia Court from September 14 through 26, 2011. The excavation terminated at a depth approximately 0.5 feet below the existing geotextile marker. The excavated soil was temporarily stockpiled onsite. Following placement of a new geotextile marker, non-impacted soil was then placed in the excavated areas to provide a seven-foot-thick cap. The excavated, stockpiled soil was then transported under manifest to an offsite disposal facility. The existing environmental covenant addressing the remediated dieldrin-impacted soil at the site was re-recorded with a revised map that shows the surveyed elevations of the top of the dieldrin-impacted soil in the subsurface. The additional work performed at the site to provide seven feet of non-impacted soil over the entire area underlain by dieldrin-impacted soil brings the site into conformance with the work plan approved in October 2010. Stantec has recommended no further action at the site and case closure. DEH concurs with these recommendations.

Click here to access the California GeoTracker records for this facility:

Name:	HYMETTUS ESTATE
Address:	1492 HYMETTUS AV
City,State,Zip:	ENCINITAS, CA 92024
Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	07/19/2011
Global Id:	T06019732789
Lead Agency:	SAN DIEGO COUNTY LOP
Lead Agency Case Number:	H99106-001
Latitude:	33.076143
Longitude:	-117.299341
Case Type:	Cleanup Program Site

HYMETTUS ESTATE (Continued) **S108087033**

Case Worker: CF
Local Agency: SAN DIEGO COUNTY LOP
RB Case Number: Not reported
File Location: Local Agency
Potential Media Affected: Soil
Potential Contaminants of Concern: Chlordane, DDD / DDE / DDT, Other Insecticides / Pesticide / Fumigants / Herbicides
Site History: The property at 1492 Hymettus Avenue in Encinitas, California, was formerly used for agricultural purposes (i.e., citrus groves and row crops) in the 1930s and 1940s. Although aerial photographs indicate that the land was unused in the 1950s, greenhouses were constructed on the property in the 1960s or early 1970s for growing flowers. The flowering-growing activities continued until June 2007, when the property was sold to a prospective developer. Past agricultural use of the property is inferred to have involved the application of pesticides to site soils. Site investigations were performed in 2005 and 2006 by Vinje & Middleton in anticipation of residential development that indicated the presence of minor concentrations of the following pesticides: 4,4-DDD, 4,4-DDE, 4,4-DDT, endosulfan, and methoxychlor. However, the pesticide dieldrin was detected in soil samples at concentrations that exceed the California Health Soil Screening Level (CHSSL) for the compound (i.e., 35 micrograms per kilogram [a%g/kg]) and the U.S. EPA Region IX Residential Preliminary Remediation Goal of 30 a%g/kg. The maximum detected concentration of dieldrin in the 66 soil samples analyzed was 920 a%g/kg. The arithmetic mean concentration was for soil to a depth of 5.5 feet was calculated by Vinje & Middleton to be 114.3 a%g/kg for the area investigated. A geotechnical investigation was also performed by Vinje & Middleton in 2005 that identified fill materials in the central area of the property. The fill materials were described as occurring from the ground surface to a depth of approximately five feet. The lateral extent of the fill was not determined due to access limitations (i.e., greenhouses covered nearly 98% of the property). Noting that past agricultural practices usually introduced pesticides to the top 2 to 3 feet of soil, Vinje & Middleton surmised that soils previously impacted with pesticides had been graded and used to fill a drainage swale prior to construction of the greenhouses. [A topographic low does appear on a 1949 map on the western side of the property]. A Revised Remedial Action Work Plan to bury the dieldrin-impacted soil and cover it with clean soil excavated at the site, as well as imported fill, was approved on October 26, 2010. Grading operations in association with redevelopment of the site for construction of residential units began March 1, 2011.

Click here to access the California GeoTracker records for this facility:

DEED:
Name: PROPOSED 19 UNIT SUBDIVISION
Address: 1492 HYMETTUS AVENUE
City,State,Zip: ENCINITAS, CA 92024
Envirostor ID: T10000003208
Area: Not reported
Sub Area: Not reported
Site Type: SLIC
Status: COMPLETED - CASE CLOSED
Agency: SWRCB
Covenant Uploaded: Y

HYMETTUS ESTATE (Continued) **S108087033**

Deed Date(s): 10/17/2011
File Name: Geotracker Land Use/Deed Restrictions

CHMIRS:

Name:	Not reported
Address:	1492 HYMETTUS AVENUE
City,State,Zip:	ENCINITAS, CA 92024
OES Incident Number:	1-2013
OES notification:	03/29/2011
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Yes
Waterway:	Storm Drain, runs to Batiguitos Lagoon at the border of Encinitas and Carlbad
Spill Site:	Other
Cleanup By:	None
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Lbs.
Other:	Not reported
Date/Time:	800
Year:	2011
Agency:	Private Citizen
Incident Date:	3/2/2011
Admin Agency:	San Diego County Health Services Department
Amount:	Not reported
Contained:	Unknown
Site Type:	Storm Drain, runs to Batiguitos Lagoon at the border of Encinitas and Carlbad
E Date:	Not reported
Substance:	Volatile Organic Compound
Quantity Released:	Unknown

HYMETTUS ESTATE (Continued) **S108087033**

Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	16
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	ONGOING RELEASE - Caller states she is concerned about dust clouds in the area for two weeks from a construction site of an old green house. Caller states there is a high Dieldren count in the soil as well as other pesticides and due to the rain weather event, there was free standing water on-site. Last week, a neighbor advised they noticed the responsible party vacuuming up the water and dumping it into a storm drain off of Parkwood Lane. In addition, 16 people have been fallen ill and 25 people are complaining of symptoms in the area.
Name:	Not reported
Address:	1492 HYMETTUS AVE
City,State,Zip:	ENCINITAS, CA 92024
OES Incident Number:	1-2302
OES notification:	04/11/2011
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported

HYMETTUS ESTATE (Continued) **S108087033**

Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Unknown
Waterway:	None Given
Spill Site:	Other
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Lbs.
Other:	Not reported
Date/Time:	1200
Year:	2011
Agency:	NRC
Incident Date:	3/2/2011
Admin Agency:	San Diego County Health Services Department
Amount:	Not reported
Contained:	Unknown
Site Type:	None Given
E Date:	Not reported
Substance:	Heavy Metals
Quantity Released:	UNK
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	********HISTORICAL SPILL********** THE DESTRUCTION OF A GREENHOUSE AND THE GRADING OF THE PROPERTY CAUSED ILLNESS TO MEMBERS OF THE NEARBY NEIGHBORHOOD. CALLER STATED THAT THE LAND THAT THE GREENHOUSE STOOD ON IS CONTAMINATED BY PESTICIDES. SHE BELIEVES THAT STORM RUNOFF FROM THE SITE WAS CONTAMINATED WITH PESTICIDES. SHE ALSO BELIEVES THAT SHE AND THE NEIGHBORS HAVE BEEN EXPOSED TO HEAVY METALS FROM UTILITY LINES. SHE STATED THAT VIDEO OF ACTIVITY IN THE NEIGHBORHOOD IS AVAILABLE ON HTTPS://PICASAWEB.GOOGLE. COM-JSTRATTMAN-CAMERA?AUTHKEY= GB1SRGCKXQUPBBHCLEAQ#
Name:	Not reported
Address:	1492 HYMETTUS AVE

HYMETTUS ESTATE (Continued) **S108087033**

City,State,Zip:	LEUCADIA, CA 92024
OES Incident Number:	1-3605
OES notification:	06/16/2011
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Merchant/Business
Cleanup By:	Unknown
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Unknown
Other:	Not reported
Date/Time:	800
Year:	2011
Agency:	NRC
Incident Date:	2/14/2011
Admin Agency:	San Diego County Health Services Department
Amount:	Not reported
Contained:	Unknown
Site Type:	Not reported
E Date:	Not reported
Substance:	Dieldrin
Quantity Released:	Unknown
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported

HYMETTUS ESTATE (Continued) **S108087033**

#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	Per NRC #979854 "Caller stated that there known high levels of Dieldren, into the atmosphere due to grading of the soil in the area, the neighbors of the area were complaining because of all of the dust in the area." Remedial actions: "None."

CIWQS:

Name:	NORTH POINTE
Address:	1492 HYMETTUS AVENUE
City,State,Zip:	ENCINITAS, CA 92024
Agency:	City Ventures Homebuilding LLC
Agency Address:	2850 red hill ave suite 200, Santa Ana, CA 92705
Place/Project Type:	Construction - Residential
SIC/NAICS:	Not reported
Region:	9
Program:	CONSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	9 37C359957
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	11/30/2010
Termination Date:	09/26/2013
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	33.07642
Longitude:	-117.29934

CERS:

Name:	HYMETTUS ESTATE
Address:	1492 HYMETTUS AV
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	256070
CERS ID:	T06019732789
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	CAROL FENNER - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego

HYMETTUS ESTATE (Continued) **S108087033**

Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Name: PROPOSED 19 UNIT SUBDIVISION
Address: 1492 HYMETTUS AVENUE
City,State,Zip: ENCINITAS, CA 92024
Site ID: 187027
CERS ID: T10000003208
CERS Description: Cleanup Program Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: CAROL FENNER - SAN DIEGO COUNTY LOP
Entity Title: Not reported
Affiliation Address: P.O. Box 129261
Affiliation City: San Diego
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

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8 **OLYMPUS ROAD BURNSITE** **SWF/LF** **S109821572**
SSE **600 BLK OLYMPUS ROAD** **CERS** **N/A**
1/4-1/2 **LEUCADIA (IN ENCINITAS), CA 92024**
0.337 mi.
1777 ft.

Relative:
Lower

Actual:
142 ft.

SWF/LF (SWIS):
Name: OLYMPUS ROAD BURNSITE
Address: 600 BLK OLYMPUS ROAD
City,State,Zip: LEUCADIA (IN ENCINITAS), CA 92024
Region: STATE
Facility ID: 37-CR-0061
SWIS Number: 37-CR-0061
Point of Contact: Abel Martinez-Centeno
Is Archived: No
Is Closed Illegal Abandoned: Yes
Is Site Inert Debris Engineered Fill: No
Is Financial Assurances Responsible: No
Absorbed On: Not reported
Operational Status: Closed
Absorbed By: Not reported
Closed Illegal Abandoned Category: C1
EPA Federal Registry ID: Not reported
ARB District: San Diego
SWRCB Region: San Diego
Local Government: San Diego County (Unincorporated)
Reporting Agency Legal Name: County of San Diego
Reporting Agency Department: Department of Environmental Health
Enforcing Agency Legal Name: County of San Diego
Enforcing Agency Department: Department of Environmental Health
Regulation Status: Pre-regulation

Activity:
SWIS Number: 37-CR-0061

OLYMPUS ROAD BURNSITE (Continued) **S109821572**

Site Name:	Olympus Road Burnsite
Activity:	Solid Waste Disposal Site
Activity Is Archived:	No
Category:	Disposal
Activity Classification:	Solid Waste Disposal Site
WDR Number:	Not reported
WDR Landfill Class:	Not reported
Cease Operation:	Not reported
Cease Operation Type:	Not reported
Inspection Frequency:	None
Throughput:	Not reported
Throughput Units:	Not reported
Remaining Capacity:	Not reported
Remaining Capacity Date:	Not reported
Capacity:	Not reported
Capacity Units:	Not reported
Total Acreage:	0
Disposal Acreage:	0
Permitted Elevation:	Not reported
Permitted Elevation Type:	Not reported
Permitted Depth:	Not reported
Permitted Depth Type:	Not reported
Point of Contact:	Abel Martinez-Centeno
Site Operational Status:	Closed
Site Regulatory Status:	Pre-regulation
Site Is Archived:	No
Is Closed Illegal Abandoned:	Yes
Is Site Inert Debris Engineered Fill:	No
Is Financial Assurances Responsible:	No
Absorbed On:	Not reported
Absorbed By:	Not reported
Closed Illegal Abandoned Category:	C1
EPA Federal Registry ID:	Not reported
County:	San Diego
ARB District:	San Diego
SWRCB Region:	San Diego
Local Government:	San Diego County (Unincorporated)
Street Address:	600 Blk Olympus Road
City:	Leucadia (In Encinitas)
State:	CA
ZIP Code:	92024
Reporting Agency Legal Name:	County of San Diego
Reporting Agency Department:	Department of Environmental Health
Enforcing Agency Legal Name:	County of San Diego
Enforcing Agency Department:	Department of Environmental Health

CERS:

Name:	OLYMPUS ROAD BURNSITE
Address:	600 BLK OLYMPUS ROAD
City,State,Zip:	LEUCADIA (IN ENCINITAS), CA
Site ID:	510664
CERS ID:	37-CR-0061
CERS Description:	Solid Waste and Recycle Sites

C9
NW
1/4-1/2
0.370 mi.
1954 ft.

Relative:
Lower

Actual:
67 ft.

CHEVRON 95664
540 LA COSTA AVE
ENCINITAS, CA 92024

Site 1 of 2 in cluster C

SAN DIEGO CO. SAM
San Diego Co. HMMD
CERS HAZ WASTE
CERS TANKS
CERS
HWTS

S104747343
N/A

SAN DIEGO CO. SAM:

Name:	LA COSTA CHEVRON
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 920241115
Case Number:	H12458-001
Agency:	DEH Site Assessment & Mitigation
Funding:	**LOP - Federal Fund**
Facility Type:	GW With No Beneficial Use Designation
Facility Status:	Closed Case
Date:	1/4/2001
Date Began:	3/2/1995

HMMD SAN DIEGO:

Name:	LA COSTA CHEVRON
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 92024
Permit Number:	112458
Business Type:	6HK29
EPA Id Number:	CAL000007354
APN:	216-030-51-00
Last HMMD Inspection:	08/06/2001
Facility Telephone:	760-436-9513
Permit Status:	CHNG
Permit Expiration:	04/30/2003
Date Last Updated:	11/02/2012
Facility Owner:	FREDUN HOJABRI
Facility Mailing Address:	PO BOX 6004
Facility Mailing City:	SAN RAMON
Facility Mailing State:	CA
Facility Mailing Zip:	94583-
UST Owner:	CHEVRON USA INC
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Y
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	Not reported

UST:

UST Name:	UNDERGROUND TANK 112458 T001
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	SINGLE WALL
Additional Id:	1
Capacity Gallons:	10000
UST Contents:	Not reported
Other Content Info:	SEE FILE FOR CONTENTS
Reg Status:	REMOVED
Remove Close Date:	1986-11-08 00:00:00
Year Installed:	1967-01-01 00:00:00
Pipe Type:	Not reported
Delivery System:	Not reported

CHEVRON 95664 (Continued) **S104747343**

Monitor Code:	90
UST Monitor Method:	NO MONITORING ALTERNATIVE SELECTED. VERIFY AND ENTER MONITORING ALTERNATIVE DURING INSPECTION.
UST Name:	UNDERGROUND TANK 112458 T002
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	SINGLE WALL
Additional Id:	2
Capacity Gallons:	10000
UST Contents:	Not reported
Other Content Info:	SEE FILE FOR CONTENTS
Reg Status:	REMOVED
Remove Close Date:	1986-11-08 00:00:00
Year Installed:	1967-01-01 00:00:00
Pipe Type:	Not reported
Delivery System:	Not reported
Monitor Code:	90
UST Monitor Method:	NO MONITORING ALTERNATIVE SELECTED. VERIFY AND ENTER MONITORING ALTERNATIVE DURING INSPECTION.
UST Name:	UNDERGROUND TANK 112458 T003
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	SINGLE WALL
Additional Id:	3
Capacity Gallons:	5000
UST Contents:	Not reported
Other Content Info:	SEE FILE FOR CONTENTS
Reg Status:	REMOVED
Remove Close Date:	1986-11-08 00:00:00
Year Installed:	1967-01-01 00:00:00
Pipe Type:	Not reported
Delivery System:	Not reported
Monitor Code:	90
UST Monitor Method:	NO MONITORING ALTERNATIVE SELECTED. VERIFY AND ENTER MONITORING ALTERNATIVE DURING INSPECTION.
UST Name:	UNDERGROUND TANK 112458 T004
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	SINGLE WALL
Additional Id:	4
Capacity Gallons:	1000
UST Contents:	Not reported
Other Content Info:	SEE FILE FOR CONTENTS
Reg Status:	REMOVED
Remove Close Date:	1986-11-08 00:00:00
Year Installed:	1967-01-01 00:00:00
Pipe Type:	Not reported
Delivery System:	Not reported
Monitor Code:	90
UST Monitor Method:	NO MONITORING ALTERNATIVE SELECTED. VERIFY AND ENTER MONITORING ALTERNATIVE DURING INSPECTION.
UST Name:	UNDERGROUND TANK 201007 T005
Last Update:	2012-11-02 14:17:38

CHEVRON 95664 (Continued) **S104747343**

Permit Number:	112458
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 T3
Capacity Gallons:	10000
UST Contents:	REGULAR UNLEADED
Other Content Info:	REGULAR UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	SINGLE WALL
Delivery System:	PRESSURE
Monitor Code:	18
UST Monitor Method:	DW TNK SW PRESSURE PIPE W/ SHUTOFF LLD: INTERSTITIAL, PIPE TEST ANNUALLY 0.1 GAL/HR OR MONTHLY 0.2 GAL/HR.
UST Name:	UNDERGROUND TANK 201007 T004
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 T2
Capacity Gallons:	10000
UST Contents:	MIDGRADE UNLEADED
Other Content Info:	MIDGRADE UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	SINGLE WALL
Delivery System:	PRESSURE
Monitor Code:	18
UST Monitor Method:	DW TNK SW PRESSURE PIPE W/ SHUTOFF LLD: INTERSTITIAL, PIPE TEST ANNUALLY 0.1 GAL/HR OR MONTHLY 0.2 GAL/HR.
UST Name:	UNDERGROUND TANK 201007 T003
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 T1
Capacity Gallons:	10000
UST Contents:	PREMIUM UNLEADED
Other Content Info:	PREMIUM UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	SINGLE WALL
Delivery System:	PRESSURE
Monitor Code:	18
UST Monitor Method:	DW TNK SW PRESSURE PIPE W/ SHUTOFF LLD: INTERSTITIAL, PIPE TEST ANNUALLY 0.1 GAL/HR OR MONTHLY 0.2 GAL/HR.
UST Name:	UNDERGROUND TANK 112458 T008
Last Update:	2012-11-02 14:17:38
Permit Number:	112458
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 T4/AT4809
Capacity Gallons:	1000
UST Contents:	Not reported
Other Content Info:	WASTE OIL

CHEVRON 95664 (Continued) **S104747343**

Reg Status:	REMOVED
Remove Close Date:	2002-12-27 00:00:00
Year Installed:	1985-10-16 00:00:00
Pipe Type:	Not reported
Delivery System:	GRAVITY
Monitor Code:	21
UST Monitor Method:	DW TANK DW SUCTION AND/ OR GRAVITY PIPING WITH INTERSTITIAL MONITORS: INTERSTITIAL.

Name:	CHEVRON STATION #95664/1943
Address:	540 LA COSTA AVE
City,State,Zip:	ENCINITAS, CA 92024
Permit Number:	Not reported
Business Type:	Not reported
EPA Id Number:	CAR000119198
APN:	Not reported
Last HMMD Inspection:	Not reported
Facility Telephone:	760-479-0826
Permit Status:	Permit Renewed
Permit Expiration:	Not reported
Date Last Updated:	03/11/2021
Facility Owner:	Not reported
Facility Mailing Address:	P.O. BOX 6004, ATTN: PERMIT DESK, SAN RAMON, CA 94583
Facility Mailing City:	Not reported
Facility Mailing State:	Not reported
Facility Mailing Zip:	Not reported
UST Owner:	Y
Handle Regulated Hazmat:	Not reported
Own Or Operate UST:	Not reported
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	N
Generate Medical Waste:	Not reported

Inspection Violation:

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	4112118
Return To Compliance Date:	2013-05-09T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	214659
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2013-03-13T16:12:00.000
Violation Code:	2030033 Failure to maintain on site an approved monitoring plan. 23 CCR 16 2632, 2634, 2711, 2712(i)

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank

CHEVRON 95664 (Continued) **S104747343**

Inspection Type:	Routine
Inspection Number:	5121186
Return To Compliance Date:	2014-10-02T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	87
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2014-10-02T11:31:00.000
Violation Code:	2060020 Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5157313
Return To Compliance Date:	2015-11-19T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	88166
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2015-09-28T14:19:00.000
Violation Code:	2030001 (RD) Failure to maintain leak detection alarm logs and/or maintain records of appropriate follow-up actions. 23 CCR 2632, 2634
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5727689
Return To Compliance Date:	2017-09-25T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	21469
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2017-09-25T16:05:00.000
Violation Code:	2060020 (RP) Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket, have a minimum capacity of 5 gallons, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank

CHEVRON 95664 (Continued) **S104747343**

Inspection Type:	Routine
Inspection Number:	5727689
Return To Compliance Date:	2017-09-26T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	88166
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2017-09-25T16:05:00.000
Violation Code:	2060023 Failure of a UST system installed on or after July 1, 2004 to be designed and constructed with a monitoring system capable of detecting the entry of the liquid or vapor-phase of the hazardous substance stored in the primary containment into the secondary containment and capable of detecting water intrusion into the secondary containment. HSC 25290.1(d)
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	4811849
Return To Compliance Date:	2013-10-02T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	87
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2013-10-02T15:24:00.000
Violation Code:	2060020 Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	6244738
Return To Compliance Date:	2020-03-30T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	21469
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2019-09-11T00:00:00.000
Violation Code:	2060020 (TCR 9a) Failure to meet one or more of the following requirements: Install or maintain a liquid-tight spill container. Have a minimum capacity of 5 gallons. Have a functional drain valve or other method for the removal of liquid from the spill container. Be resistant to galvanic corrosion. Perform a tightness test at installation, every 12 months thereafter, or within 30 days after a repair to the spill container, tested using applicable manufacturer guidelines, industry codes, engineering standards, or a method

CHEVRON 95664 (Continued) **S104747343**

approved by a professional engineer. Tested by a certified UST service technician. Maintain records of spill containment testing for 36 months. 23 CCR 2635(b), 2637.1(a-c), 2665(a-b), 2712(b)(1)(F); HSC 25284.2

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	4112118
Return To Compliance Date:	2013-05-09T00:00:00.000
Nov:	Not reported
Violation Classification:	Not reported
Underground Storage Tank Id:	0
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2013-03-13T16:12:00.000
Violation Code:	2030013 Failure to comply with one or more of the designated operator monthly inspection requirements: failed to inspect the monthly alarm history report; attach a copy of the alarm history; failed to inspect for the presence of liquid or debris in the spill container/spill bucket and under dispenser containment; failed to inspect the under dispenser containment to ensure that monitoring equipment is placed in the proper position; failure to inspect for liquid or debris in the containment sump where an alarm occurred or for which there is no record of a service visit; or failure to check that all testing and maintenance has been completed and documented. 23 CCR 16 2715

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5157313
Return To Compliance Date:	2015-10-02T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	21470
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2015-09-28T14:19:00.000
Violation Code:	2060020 (RP) Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5499121

CHEVRON 95664 (Continued) **S104747343**

Return To Compliance Date:	2016-10-28T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	21471
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2016-09-28T15:46:00.000
Violation Code:	2030025 (RD) Failure of the pressurized piping to meet one or more of the following requirements: monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour, and will restrict the flow or product through the piping or trigger an alarm when a release occurs. 23 CCR 2636(f)(2)
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5984868
Return To Compliance Date:	2018-09-21T00:00:00.000
Nov:	No
Violation Classification:	Class II
Underground Storage Tank Id:	21469
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2018-09-21T15:38:00.000
Violation Code:	2060020 (RP) Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket, have a minimum capacity of 5 gallons, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Program Element:	Underground Storage Tank
Inspection Type:	Routine
Inspection Number:	5984868
Return To Compliance Date:	2018-09-21T00:00:00.000
Nov:	No
Violation Classification:	Not reported
Underground Storage Tank Id:	86186
Container/Tank Id:	Not reported
Last Update:	2021-05-06T01:28:33.000
Inspection Date:	2018-09-21T15:38:00.000
Violation Code:	2030025 (RD) Failure of the line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly. with the capability of detecting a release of 3.0 gallons per hour leak at 10 p.s.i.g. and restrict or shut off the flow of product through the piping when a leak is detected. 23 CCR 2636(f)(2)

UST DTL:

Record ID:	DEH2002-HUPFP-201007

CHEVRON 95664 (Continued) **S104747343**

Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	21470
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	Motor Vehicle Fueling
Piping System Type:	Pressure
Last Updated:	2021-05-06T01:28:42.000
Tank Capacityin Gallons:	10000
Tank Contents:	Regular Unleaded
Type Of Tank:	Double Wall

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	21471
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	Motor Vehicle Fueling
Piping System Type:	Pressure
Last Updated:	2021-05-06T01:28:42.000
Tank Capacityin Gallons:	10000
Tank Contents:	Premium Unleaded
Type Of Tank:	Double Wall

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	21469
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	Motor Vehicle Fueling
Piping System Type:	Pressure
Last Updated:	2021-05-06T01:28:42.000
Tank Capacityin Gallons:	10000
Tank Contents:	Regular Unleaded
Type Of Tank:	Double Wall

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	88166
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	Other

CHEVRON 95664 (Continued) **S104747343**

Piping System Type:	Gravity
Last Updated:	2021-05-06T01:28:42.000
Tank Capacityin Gallons:	1500
Tank Contents:	Other Non-petroleum
Type Of Tank:	Double Wall
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Facility Id Number:	37-000-201007
Facility Type (Ust Facility):	Motor Vehicle Fueling
Tank Owner Name:	CHEVRON STATION# 95664/1943
Tankid:	86186
Tank Status:	Active
Date Ust Permanently Closed:	Not reported
Tank Use:	Motor Vehicle Fueling
Piping System Type:	Pressure
Last Updated:	2021-05-06T01:28:42.000
Tank Capacityin Gallons:	8000
Tank Contents:	Diesel
Type Of Tank:	Double Wall

Waste and Materials:

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2017-HCHEM-0144885
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2018-05-09T14:46:09.000
Chemical Name:	PREMIUM UNLEADED
Common Name:	UNDERGROUND TANK 112458 T007 - SUPREME UNLEADED
Case Number:	86290-81-5
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2017-HCHEM-0144886
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2018-05-09T14:46:09.000
Chemical Name:	DIESEL FUEL
Common Name:	DIESEL UNDERGROUND TANK 201007 T001
Case Number:	68476-34-6
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2017-HWAST-0123530
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2018-05-09T14:46:09.000
Chemical Name:	WASTE 223 UNSPEC OIL CONTAINING WASTE
Common Name:	STORMWATER TANK / WASTE WATER
Case Number:	Not reported
Record ID:	DEH2002-HUPFP-201007

CHEVRON 95664 (Continued) **S104747343**

Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2017-HWAST-0123531
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2018-05-09T14:46:09.000
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2017-HWAST-0123532
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2018-05-09T14:46:09.000
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HCHEM-0230466
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-04-14T02:31:00.000
Chemical Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Common Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HCHEM-0230467
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-04-14T02:31:00.000
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2017-HWAST-0123533
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2018-05-09T14:46:09.000
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y

CHEVRON 95664 (Continued) **S104747343**

Child Record Id: DEH2018-HWAST-0160478
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2019-03-19T02:31:21.000
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HCHEM-0185739
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2019-03-19T02:31:21.000
Chemical Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Common Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HCHEM-0230465
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-04-14T02:31:00.000
Chemical Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Common Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HWAST-0200548
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-04-14T02:31:00.000
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HWAST-0200549
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-04-14T02:31:00.000
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HCHEM-0185740
Trade Secret: N

CHEVRON 95664 (Continued) **S104747343**

Hazardous Material Type: Mixture
Last Updated: 2019-03-19T02:31:21.000
Chemical Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Common Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HCHEM-0185741
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2019-03-19T02:31:21.000
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HWAST-0160479
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2019-03-19T02:31:21.000
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0265727
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-09-30T00:49:01.000
Chemical Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Common Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0262142
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-05-01T01:39:07.000
Chemical Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Common Name: Regular Unleaded Gasoline (87 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0262143
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-05-01T01:39:07.000

CHEVRON 95664 (Continued) **S104747343**

Chemical Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Common Name: Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0262144
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-05-01T01:39:07.000
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0233078
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-05-01T01:39:07.000
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0233079
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-05-01T01:39:07.000
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0233080
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-05-01T01:39:07.000
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HCHEM-0265729
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2020-09-30T00:49:01.000
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates

CHEVRON 95664 (Continued) **S104747343**

Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0236164
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-09-30T00:49:01.000
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0236165
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-09-30T00:49:01.000
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2020-HWAST-0236166
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2020-09-30T00:49:01.000
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2018-HWAST-0160480
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2019-03-19T02:31:21.000
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2017-HCHEM-0144884
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2018-05-09T14:46:09.000
Chemical Name: 87 REGULAR UNLEADED
Common Name: UNDERGROUND TANK 112458 T004 REGULAR UNLEADED
Case Number: 86290-81-5

CHEVRON 95664 (Continued) **S104747343**

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2016-HCHEM-0103678
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2017-02-14T00:58:04.000
Chemical Name:	PREMIUM UNLEADED
Common Name:	UNDERGROUND TANK 112458 T007 - SUPREME UNLEADED
Case Number:	86290-81-5

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2016-HWAST-0085599
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2017-02-14T00:58:05.000
Chemical Name:	WASTE 223 UNSPEC OIL CONTAINING WASTE
Common Name:	STORMWATER TANK / WASTE WATER
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2016-HWAST-0085600
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2017-02-14T00:58:05.000
Chemical Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name:	Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2016-HWAST-0085601
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2017-02-14T00:58:05.000
Chemical Name:	Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name:	Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2016-HWAST-0085602
Trade Secret:	N
Hazardous Material Type:	Not reported
Last Updated:	2017-02-14T00:58:05.000
Chemical Name:	Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name:	Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number:	Not reported

Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed

CHEVRON 95664 (Continued) **S104747343**

Active Permit: Y
Child Record Id: DEH2021-HCHEM-0290320
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2021-03-11T05:10:37.000
Chemical Name: Unleaded Gasoline - Petroleum Hydrocarbons
Common Name: Unleaded Gasoline - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HCHEM-0290321
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2021-03-11T05:10:37.000
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0259214
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-03-11T05:10:37.000
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0259215
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-03-11T05:10:37.000
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0259216
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-03-11T05:10:37.000
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HCHEM-0298074

CHEVRON 95664 (Continued) **S104747343**

Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2021-05-06T01:28:42.000
Chemical Name: Unleaded Gasoline - Petroleum Hydrocarbons
Common Name: Unleaded Gasoline - Petroleum Hydrocarbons
Case Number: 86290-81-5

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HCHEM-0298075
Trade Secret: N
Hazardous Material Type: Mixture
Last Updated: 2021-05-06T01:28:42.000
Chemical Name: Diesel Fuel - Middle Distillates
Common Name: Diesel Fuel - Middle Distillates
Case Number: 68476-34-6

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0265968
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-05-06T01:28:42.000
Chemical Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Common Name: Spill Bucket/Sump Water - Waste Gasoline/Water
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0265969
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-05-06T01:28:42.000
Chemical Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Common Name: Absorbent Spill Pads - Waste Polypropylene Absorbent Spill Pads
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2021-HWAST-0265970
Trade Secret: N
Hazardous Material Type: Not reported
Last Updated: 2021-05-06T01:28:42.000
Chemical Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name: Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number: Not reported

Record ID: DEH2002-HUPFP-201007
Permit Status: Permit Renewed
Active Permit: Y
Child Record Id: DEH2019-HWAST-0200550
Trade Secret: N
Hazardous Material Type: Not reported

CHEVRON 95664 (Continued) **S104747343**

Last Updated:	2020-04-14T02:31:00.000
Chemical Name:	Used Filters, Hoses and Nozzles - Waste Metal Solids
Common Name:	Used Filters, Hoses and Nozzles - Waste Metal Solids
Case Number:	Not reported
Record ID:	DEH2002-HUPFP-201007
Permit Status:	Permit Renewed
Active Permit:	Y
Child Record Id:	DEH2020-HCHEM-0265728
Trade Secret:	N
Hazardous Material Type:	Mixture
Last Updated:	2020-09-30T00:49:01.000
Chemical Name:	Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Common Name:	Supreme Unleaded Gasoline (91 Octane) - Petroleum Hydrocarbons
Case Number:	86290-81-5
Name:	CHEVRON #95664
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 92024
Permit Number:	201007
Business Type:	6HK28
EPA Id Number:	CAR000119198
APN:	216-030-51-00
Last HMMD Inspection:	03/02/2012
Facility Telephone:	760-479-0826
Permit Status:	OPEN
Permit Expiration:	04/30/2013
Date Last Updated:	11/02/2012
Facility Owner:	CHEVRON PRODUCTS COMPANY
Facility Mailing Address:	PO BOX 6004
Facility Mailing City:	SAN RAMON
Facility Mailing State:	CA
Facility Mailing Zip:	94583
UST Owner:	CHEVRON PRODUCTS COMPANY
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Y
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	Y

Inventory Active Permits (not SQG Medical):

Permit Number:	201007
Update Date:	11/02/2012
Case Number:	86290-81-5
Name:	87 REGULAR UNLEADED
Other Information:	UNDERGROUND TANK 112458 T004 REGULAR UNLEADED
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE
Permit Number:	201007
Update Date:	11/02/2012
Case Number:	68476-34-6
Name:	DIESEL FUEL
Other Information:	DIESEL UNDERGROUND TANK 201007 T001
Material Waste:	Material

CHEVRON 95664 (Continued) **S104747343**

Hazardous Categories 1: FIRE
Hazardous Categories 2: ACUTE

Permit Number: 201007
Update Date: 11/02/2012
Case Number: 86290-81-5
Name: PREMIUM UNLEADED
Other Information: UNDERGROUND TANK 112458 T007 - SUPREME UNLEADED
Material Waste: Material
Hazardous Categories 1: FIRE
Hazardous Categories 2: ACUTE

Permit Number: 201007
Update Date: 11/02/2012
Case Number: 86290-81-5
Name: REGULAR UNLEADED
Other Information: UNDERGROUND TANK 112458 T005
Material Waste: Material
Hazardous Categories 1: FIRE
Hazardous Categories 2: Not reported

Permit Number: 201007
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 134 AQUEOUS SOL'N W/LESS 10% ORG
Other Information: WATER & FUEL / SUMP WATER
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Permit Number: 201007
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 223 UNSPEC OIL CONTAINING WASTE
Other Information: STORMWATER TANK / WASTE WATER
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Permit Number: 201007
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 352 ORGANIC SOLIDS (OTHER)
Other Information: GAS FILTERS/HOSES/PADS
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Violations Active Permits:
Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 03/11/2009
Violation Code: 6HV3256
Violation: NO FUNCTIONAL DRAIN BOX/BACKUP
Violation Citation: Fill box drain not functional and backup system is not available. 2635(b)(1)(C)
Activity: ACTIVE

CHEVRON 95664 (Continued) **S104747343**

Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/11/2009
Violation Code:	6HV3411
Violation:	LLD NOT INSTALLED/NOT FUNCTIONAL
Violation Citation:	DOUBLE WALLED PRESSURIZED PIPING-Including Under Dispenser Containment (UDC):Line leak detector is not installed, not functional, or not tested. 2636(f)(2), 25284.1(a)(4)(C), 2641(j)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/02/2012
Violation Code:	6HV0138
Violation:	NO TSDF SIGNED MANIFEST ONSITE
Violation Citation:	Generator has not maintained the required signed copy of the hazardous waste manifest from the TSD facility on site for review. CCR 66262.40(a)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV0202
Violation:	WASTE CONTAINER W/O LABELS
Violation Citation:	Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2); 66262.34(a)(3) & 66262.34(f)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV3158
Violation:	ALL OPERATING CONDITIONS NOT MET
Violation Citation:	All permit operating conditions not met. 25284; 2712
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV3255
Violation:	SPILL CONTAIN. NOT DRY/IN GOOD CONDITION
Violation Citation:	Spill container is not in good condition and/or liquid free. 2635(b)(1), 2636(a)(1)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV3255
Violation:	SPILL CONTAIN. NOT DRY/IN GOOD CONDITION
Violation Citation:	Spill container is not in good condition and/or liquid free. 2635(b)(1), 2636(a)(1)
Activity:	ACTIVE
Permit Number:	201007

CHEVRON 95664 (Continued) **S104747343**

Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV0201
Violation:	WASTE CONTAINER NOT CLOSED
Violation Citation:	Hazardous waste containers are not kept closed while in storage. CCR 66265.173(a)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/16/2010
Violation Code:	6HV3254
Violation:	UST SYSTEM W/O APPROVED OVERFILL PROTECT
Violation Citation:	UST system does not have an approved overfill protection system. 2635(b)(2)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/16/2010
Violation Code:	6HV3164
Violation:	MONITOR EQUIP NOT PER MANUF. SPECS
Violation Citation:	All monitoring equipment not installed, calibrated, operated, and/or maintained per manufacturer instructions. 2638(a), 2641(j)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2006
Violation Code:	6HV3263
Violation:	MONITOR SYSTEM NOT ALL FUNCTIONAL
Violation Citation:	Monitoring system components &/or devices are not all functional. 2630, 2641(j), 2632
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2006
Violation Code:	6HV0135
Violation:	MANIFESTS/RECEIPTS FOR 3 YEARS NOT ONSIT
Violation Citation:	Hazardous waste manifests/receipts for 3 years are not maintained onsite to document proper disposal of hazardous waste. CCR 66262.40(a) & 25160.2(b)(3)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3152
Violation:	ALL MAINT/MONITOR RECORDS NOT AVAILABLE
Violation Citation:	All maintenance/monitoring/calibration/ repair records not available. 25293; 2712 (b)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004

CHEVRON 95664 (Continued) **S104747343**

Violation Code: 6HV3258
Violation: SENSORS NOT AT LOW POINT OR ADEQUATELY
Violation Citation: Sensors not placed adequately and/or at low point in sumps. 2641(a), 25291(a)(7)(C)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 11/15/2004
Violation Code: 6HV3263
Violation: MONITOR SYSTEM NOT ALL FUNCTIONAL
Violation Citation: Monitoring system components &/or devices are not all functional. 2630, 2641(j), 2632
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 03/22/2011
Violation Code: 6HV3411
Violation: LLD NOT INSTALLED/NOT FUNCTIONAL
Violation Citation: DOUBLE WALLED PRESSURIZED PIPING-Including Under Dispenser Containment (UDC):Line leak detector is not installed, not functional, or not tested. 2636(f)(2), 25284.1(a)(4)(C), 2641(j)
Activity: ACTIVE

UST:
UST Name: UNDERGROUND TANK 201007 T002
Last Update: 2012-11-02 14:17:38
Permit Number: 201007
Tank Type: DOUBLE WALL
Additional Id: NT2483 (POST JULY 2004 INSTALLATION),RT5077,RT5553
Capacity Gallons: 1500
UST Contents: OTHER
Other Content Info: WASTE WATER
Reg Status: ACTIVE
Remove Close Date: Not reported
Year Installed: 2007-10-03 00:00:00
Pipe Type: DOUBLE WALL
Delivery System: GRAVITY
Monitor Code: 41
UST Monitor Method: DW TANK DW PRESSURIZED PIPE W/INTERSTITIAL HYDROSTATIC TANK; PIPING, SUMPS & UDCS UNDER CONSTANT VACUUM, WITH SHUT-OFF & ALARM

UST Name: UNDERGROUND TANK 201007 T001
Last Update: 2012-11-02 14:17:38
Permit Number: 201007
Tank Type: DOUBLE WALL
Additional Id: NT2483 (POST JULY 1, 2004 INSTALLATION), RT4189,RT
Capacity Gallons: 8000
UST Contents: DIESEL
Other Content Info: DIESEL
Reg Status: ACTIVE
Remove Close Date: Not reported
Year Installed: Not reported
Pipe Type: DOUBLE WALL
Delivery System: PRESSURE
Monitor Code: 41

CHEVRON 95664 (Continued) **S104747343**

UST Monitor Method:	DW TANK DW PRESSURIZED PIPE W/INTERSTITIAL HYDROSTATIC TANK; PIPING, SUMPS & UDCS UNDER CONSTANT VACUUM, WITH SHUT-OFF & ALARM
UST Name:	UNDERGROUND TANK 201007 T005
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#1/RT3681, RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	REGULAR UNLEADED
Other Content Info:	REGULAR UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF
UST Name:	UNDERGROUND TANK 201007 T004
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#2/RT3681,RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	REGULAR UNLEADED
Other Content Info:	REGULAR UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF
UST Name:	UNDERGROUND TANK 201007 T003
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#3/RT3681, RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	PREMIUM UNLEADED
Other Content Info:	SUPREME UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF
UST Name:	UNDERGROUND TANK 112458 T008
Last Update:	2012-11-02 14:17:38
Permit Number:	201007

CHEVRON 95664 (Continued) **S104747343**

Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#4; AT4809
Capacity Gallons:	1000
UST Contents:	OTHER
Other Content Info:	USED OIL
Reg Status:	REMOVED
Remove Close Date:	2001-09-17 00:00:00
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	21
UST Monitor Method:	DW TANK DW SUCTION AND/ OR GRAVITY PIPING WITH INTERSTITIAL MONITORS: INTERSTITIAL

Name:	CHEVRON #95664
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 92024
Permit Number:	201007
Business Type:	6HK28
EPA Id Number:	CAR000119198
APN:	216-030-51-00
Last HMMD Inspection:	03/02/2012
Facility Telephone:	760-479-0826
Permit Status:	OPEN
Permit Expiration:	04/30/2013
Date Last Updated:	11/02/2012
Facility Owner:	CHEVRON PRODUCTS COMPANY
Facility Mailing Address:	PO BOX 6004
Facility Mailing City:	SAN RAMON
Facility Mailing State:	CA
Facility Mailing Zip:	94583
UST Owner:	CHEVRON PRODUCTS COMPANY
Handle Regulated Hazmat:	Y
Own Or Operate UST:	Y
Subject To APSA:	Not reported
Generate Haz Waste:	Y
Treat Haz Waste:	Not reported
Generate Medical Waste:	Y

Inventory Active Permits (not SQG Medical):

Permit Number:	201007
Update Date:	11/02/2012
Case Number:	86290-81-5
Name:	87 REGULAR UNLEADED
Other Information:	UNDERGROUND TANK 112458 T004 REGULAR UNLEADED
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE

Permit Number:	201007
Update Date:	11/02/2012
Case Number:	68476-34-6
Name:	DIESEL FUEL
Other Information:	DIESEL UNDERGROUND TANK 201007 T001
Material Waste:	Material
Hazardous Categories 1:	FIRE
Hazardous Categories 2:	ACUTE

CHEVRON 95664 (Continued) **S104747343**

Permit Number: 201007
Update Date: 11/02/2012
Case Number: 86290-81-5
Name: PREMIUM UNLEADED
Other Information: UNDERGROUND TANK 112458 T007 - SUPREME UNLEADED
Material Waste: Material
Hazardous Categories 1: FIRE
Hazardous Categories 2: ACUTE

Permit Number: 201007
Update Date: 11/02/2012
Case Number: 86290-81-5
Name: REGULAR UNLEADED
Other Information: UNDERGROUND TANK 112458 T005
Material Waste: Material
Hazardous Categories 1: FIRE
Hazardous Categories 2: Not reported

Permit Number: 201007
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 134 AQUEOUS SOL'N W/LESS 10% ORG
Other Information: WATER & FUEL / SUMP WATER
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Permit Number: 201007
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 223 UNSPEC OIL CONTAINING WASTE
Other Information: STORMWATER TANK / WASTE WATER
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Permit Number: 201007
Update Date: 11/02/2012
Case Number: Not reported
Name: WASTE 352 ORGANIC SOLIDS (OTHER)
Other Information: GAS FILTERS/HOSES/PADS
Material Waste: Waste
Hazardous Categories 1: Not reported
Hazardous Categories 2: Not reported

Violations Active Permits:
Permit Number: 201007
Update Date: 11/02/2012
Inspection Date: 03/11/2009
Violation Code: 6HV3256
Violation: NO FUNCTIONAL DRAIN BOX/BACKUP
Violation Citation: Fill box drain not functional and backup system is not available. 2635(b)(1)(C)
Activity: ACTIVE

Permit Number: 201007
Update Date: 11/02/2012

CHEVRON 95664 (Continued) **S104747343**

Inspection Date:	03/11/2009
Violation Code:	6HV3411
Violation:	LLD NOT INSTALLED/NOT FUNCTIONAL
Violation Citation:	DOUBLE WALLED PRESSURIZED PIPING-Including Under Dispenser Containment (UDC):Line leak detector is not installed, not functional, or not tested. 2636(f)(2), 25284.1(a)(4)(C), 2641(j)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/02/2012
Violation Code:	6HV0138
Violation:	NO TSDF SIGNED MANIFEST ONSITE
Violation Citation:	Generator has not maintained the required signed copy of the hazardous waste manifest from the TSD facility on site for review. CCR 66262.40(a)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV0202
Violation:	WASTE CONTAINER W/O LABELS
Violation Citation:	Hazardous waste containers &/or tanks are missing labels, accumulation date and/or are improperly labeled. CCR 66262.34(a)(2); 66262.34(a)(3) & 66262.34(f)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV3158
Violation:	ALL OPERATING CONDITIONS NOT MET
Violation Citation:	All permit operating conditions not met. 25284; 2712
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV3255
Violation:	SPILL CONTAIN. NOT DRY/IN GOOD CONDITION
Violation Citation:	Spill container is not in good condition and/or liquid free. 2635(b)(1), 2636(a)(1)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005
Violation Code:	6HV3255
Violation:	SPILL CONTAIN. NOT DRY/IN GOOD CONDITION
Violation Citation:	Spill container is not in good condition and/or liquid free. 2635(b)(1), 2636(a)(1)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/09/2005

CHEVRON 95664 (Continued) **S104747343**

Violation Code:	6HV0201
Violation:	WASTE CONTAINER NOT CLOSED
Violation Citation:	Hazardous waste containers are not kept closed while in storage. CCR 66265.173(a)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/16/2010
Violation Code:	6HV3254
Violation:	UST SYSTEM W/O APPROVED OVERFILL PROTECT
Violation Citation:	UST system does not have an approved overfill protection system. 2635(b)(2)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/16/2010
Violation Code:	6HV3164
Violation:	MONITOR EQUIP NOT PER MANUF. SPECS
Violation Citation:	All monitoring equipment not installed, calibrated, operated, and/or maintained per manufacturer instructions. 2638(a), 2641(j)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2006
Violation Code:	6HV3263
Violation:	MONITOR SYSTEM NOT ALL FUNCTIONAL
Violation Citation:	Monitoring system components &/or devices are not all functional. 2630, 2641(j), 2632
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2006
Violation Code:	6HV0135
Violation:	MANIFESTS/RECEIPTS FOR 3 YEARS NOT ONSIT
Violation Citation:	Hazardous waste manifests/receipts for 3 years are not maintained onsite to document proper disposal of hazardous waste. CCR 66262.40(a) & 25160.2(b)(3)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3152
Violation:	ALL MAINT/MONITOR RECORDS NOT AVAILABLE
Violation Citation:	All maintenance/monitoring/calibration/ repair records not available. 25293; 2712 (b)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3258
Violation:	SENSORS NOT AT LOW POINT OR ADEQUATELY

CHEVRON 95664 (Continued) **S104747343**

Violation Citation:	Sensors not placed adequately and/or at low point in sumps. 2641(a), 25291(a)(7)(C)
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	11/15/2004
Violation Code:	6HV3263
Violation:	MONITOR SYSTEM NOT ALL FUNCTIONAL
Violation Citation:	Monitoring system components &/or devices are not all functional. 2630, 2641(j), 2632
Activity:	ACTIVE
Permit Number:	201007
Update Date:	11/02/2012
Inspection Date:	03/22/2011
Violation Code:	6HV3411
Violation:	LLD NOT INSTALLED/NOT FUNCTIONAL
Violation Citation:	DOUBLE WALLED PRESSURIZED PIPING-Including Under Dispenser Containment (UDC):Line leak detector is not installed, not functional, or not tested. 2636(f)(2), 25284.1(a)(4)(C), 2641(j)
Activity:	ACTIVE

UST:

UST Name:	UNDERGROUND TANK 201007 T002
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	NT2483 (POST JULY 2004 INSTALLATION),RT5077,RT5553
Capacity Gallons:	1500
UST Contents:	OTHER
Other Content Info:	WASTE WATER
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	2007-10-03 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	GRAVITY
Monitor Code:	41
UST Monitor Method:	DW TANK DW PRESSURIZED PIPE W/INTERSTITIAL HYDROSTATIC TANK; PIPING, SUMPS & UDCS UNDER CONSTANT VACUUM, WITH SHUT-OFF & ALARM
UST Name:	UNDERGROUND TANK 201007 T001
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	NT2483 (POST JULY 1, 2004 INSTALLATION), RT4189,RT
Capacity Gallons:	8000
UST Contents:	DIESEL
Other Content Info:	DIESEL
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	Not reported
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	41
UST Monitor Method:	DW TANK DW PRESSURIZED PIPE W/INTERSTITIAL HYDROSTATIC TANK; PIPING, SUMPS & UDCS UNDER CONSTANT VACUUM, WITH SHUT-OFF & ALARM

CHEVRON 95664 (Continued) **S104747343**

UST Name:	UNDERGROUND TANK 201007 T005
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#1/RT3681, RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	REGULAR UNLEADED
Other Content Info:	REGULAR UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF

UST Name:	UNDERGROUND TANK 201007 T004
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#2/RT3681,RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	REGULAR UNLEADED
Other Content Info:	REGULAR UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF

UST Name:	UNDERGROUND TANK 201007 T003
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#3/RT3681, RT3827,RT5077,RT5553
Capacity Gallons:	10000
UST Contents:	PREMIUM UNLEADED
Other Content Info:	SUPREME UNLEADED
Reg Status:	ACTIVE
Remove Close Date:	Not reported
Year Installed:	1985-10-16 00:00:00
Pipe Type:	DOUBLE WALL
Delivery System:	PRESSURE
Monitor Code:	31A
UST Monitor Method:	DW TANK, DW PRESSURIZED PIPE W/ DRY TANK ANNULAR; POSITIVE SHUT-OFF & FAILSAFE, 3.0 LLD; UDC W/ POSITIVE SHUT-OFF

UST Name:	UNDERGROUND TANK 112458 T008
Last Update:	2012-11-02 14:17:38
Permit Number:	201007
Tank Type:	DOUBLE WALL
Additional Id:	RT0851 TANK ID#4; AT4809
Capacity Gallons:	1000

CHEVRON 95664 (Continued) **S104747343**

UST Contents: OTHER
Other Content Info: USED OIL
Reg Status: REMOVED
Remove Close Date: 2001-09-17 00:00:00
Year Installed: 1985-10-16 00:00:00
Pipe Type: DOUBLE WALL
Delivery System: PRESSURE
Monitor Code: 21
UST Monitor Method: DW TANK DW SUCTION AND/ OR GRAVITY PIPING WITH INTERSTITIAL MONITORS: INTERSTITIAL

CERS HAZ WASTE:
Name: CHEVRON STATION #95664/1943
Address: 540 LA COSTA AVE
City,State,Zip: ENCINITAS, CA 92024
Site ID: 104963
CERS ID: 10367323
CERS Description: Hazardous Waste Generator

CERS TANKS:
Name: CHEVRON STATION #95664/1943
Address: 540 LA COSTA AVE
City,State,Zip: ENCINITAS, CA 92024
Site ID: 104963
CERS ID: 10367323
CERS Description: Underground Storage Tank

CERS:
Name: LA COSTA CHEVRON
Address: 540 LA COSTA AV
City,State,Zip: ENCINITAS, CA 920241115
Site ID: 234109
CERS ID: T0607302127
CERS Description: Leaking Underground Storage Tank Cleanup Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: SCOTT WELDON - SAN DIEGO COUNTY LOP
Entity Title: Not reported
Affiliation Address: P.O. Box 129261
Affiliation City: San Diego
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported
Affiliation Phone: Not reported

Name: CHEVRON STATION #95664/1943
Address: 540 LA COSTA AVE
City,State,Zip: ENCINITAS, CA 92024
Site ID: 104963
CERS ID: 10367323
CERS Description: Chemical Storage Facilities

Violations:
Site ID: 104963

CHEVRON 95664 (Continued) **S104747343**

Site Name:	CHEVRON STATION #95664/1943
Violation Date:	09-21-2018
Citation:	23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description:	Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container. Be resistant to galvanic corrosion.
Violation Notes:	Returned to compliance on 09/21/2018. Inspection Sequence ID:5984868;Tank ID:21469,21470;Violation Description:(RP) Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket, have a minimum capacity of 5 gallons, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS

Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	09-21-2018
Citation:	23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description:	Failure of the functional line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly with the capability of detecting a release of 3.0 gallons per hour leak at 10 p.s.i.g. and restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes:	Returned to compliance on 09/21/2018. Inspection Sequence ID:5984868;Tank ID:86186;Violation Description:(RD) Failure of the line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements: Monitored at least hourly. with the capability of detecting a release of 3.0 gallons per hour leak at 10 p.s.i.g. and restrict or shut off the flow of product through the piping when a leak is detected. 23 CCR 2636(f)(2)
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS

Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	09-28-2016
Citation:	23 CCR 16 2636(f)(2) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2636(f)(2)
Violation Description:	Failure of the line leak detector (LLD) monitoring pressurized piping to meet one or more of the following requirements:Monitor at least hourly.Be capable of detecting a release of 3.0 gallons per hour at 10 p.s.i.g. Restrict or shut off the flow of product through the piping when a leak is detected.
Violation Notes:	Returned to compliance on 10/28/2016.
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS

Site ID:	104963

CHEVRON 95664 (Continued) **S104747343**

Site Name: CHEVRON STATION #95664/1943
Violation Date: 09-28-2015
Citation: 23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description: Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Violation Notes: Returned to compliance on 10/02/2015. Inspection Sequence ID:5157313;Tank ID:21470,21471,86186;Violation Description:(RP) Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion. 23 CCR 2635(b), 2665
Violation Division: San Diego County Department of Env Health
Violation Program: UST
Violation Source: CERS

Site ID: 104963
Site Name: CHEVRON STATION #95664/1943
Violation Date: 09-28-2015
Citation: 23 CCR 16 2712(b) - California Code of Regulations, Title 23, Chapter 16, Section(s) 2712(b)
Violation Description: Failure to maintain leak detection alarm logs and/or maintain records of appropriate follow-up actions
Violation Notes: Returned to compliance on 11/19/2015. Inspection Sequence ID:5157313;Tank ID:88166;Violation Description:(RD) Failure to maintain leak detection alarm logs and/or maintain records of appropriate follow-up actions. 23 CCR 2632, 2634
Violation Division: San Diego County Department of Env Health
Violation Program: UST
Violation Source: CERS

Site ID: 104963
Site Name: CHEVRON STATION #95664/1943
Violation Date: 09-25-2017
Citation: HSC 6.7 25290.1(d) - California Health and Safety Code, Chapter 6.7, Section(s) 25290.1(d)
Violation Description: Failure of a UST system installed on or after July 1, 2004 to be designed and constructed with a monitoring system capable of detecting the entry of the liquid or vapor-phase of the hazardous substance stored in the primary containment into the secondary containment and capable of detecting water intrusion into the secondary containment.
Violation Notes: Returned to compliance on 09/26/2017.
Violation Division: San Diego County Department of Env Health
Violation Program: UST
Violation Source: CERS

Site ID: 104963
Site Name: CHEVRON STATION #95664/1943
Violation Date: 10-02-2014
Citation: 23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description: Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.

CHEVRON 95664 (Continued) **S104747343**

Violation Notes:	Returned to compliance on 10/02/2014. Inspection Sequence ID:5121186;Tank ID:87,87,91;Violation Description: Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS
Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	09-11-2019
Citation:	HSC 6.7 25284.2 - California Health and Safety Code, Chapter 6.7, Section(s) 25284.2
Violation Description:	"Failure to meet one or more of the following requirements: Install or maintain a liquid-tight spill container. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the removal of liquid from the spill container. Be resistant to galvanic corrosion. Perform a tightness test at installation, every 12 months thereafter, or within 30 days after a repair to the spill container. Tested using applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer. Tested by a certified UST service technician. Maintain records of spill containment testing for 36 months. "
Violation Notes:	Returned to compliance on 03/30/2020. Inspection Sequence ID:6244738;Tank ID:21469,21470,21471,86186;Violation Description:(TCR 9a) Failure to meet one or more of the following requirements: Install or maintain a liquid-tight spill container. Have a minimum capacity of 5 gallons. Have a functional drain valve or other method for the removal of liquid from the spill container. Be resistant to galvanic corrosion. Perform a tightness test at installation, every 12 months thereafter, or within 30 days after a repair to the spill container, tested using applicable manufacturer guidelines, industry codes, engineering standards, or a method approved by a professional engineer. Tested by a certified UST service technician. Maintain records of spill containment testing for 36 months. 23 CCR 2635(b), 2637.1(a-c), 2665(a-b), 2712(b)(1)(F); HSC 25284.2
Violation Division:	San Diego County Department of Env Health
Violation Program:	UST
Violation Source:	CERS
Site ID:	104963
Site Name:	CHEVRON STATION #95664/1943
Violation Date:	10-02-2013
Citation:	23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description:	Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.
Violation Notes:	Returned to compliance on 10/02/2013. Inspection Sequence ID:4811849;Tank ID:87,87,91,03;Violation Description: Failure to comply with one or more of the following: failure to install a spill bucket, have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container, and/or be resistant to galvanic corrosion.

CHEVRON 95664 (Continued) **S104747343**

Violation Division: San Diego County Department of Env Health
Violation Program: UST
Violation Source: CERS

Site ID: 104963
Site Name: CHEVRON STATION #95664/1943
Violation Date: 09-25-2017
Citation: 23 CCR 16 2665 - California Code of Regulations, Title 23, Chapter 16, Section(s) 2665
Violation Description: Failure to comply with one or more of the following: Failure to install or maintain a liquid-tight spill bucket. Have a minimum capacity of five gallons. Have a functional drain valve or other method for the removal of liquid from the spill bucket/spill container. Be resistant to galvanic corrosion.
Violation Notes: Returned to compliance on 09/25/2017.
Violation Division: San Diego County Department of Env Health
Violation Program: UST
Violation Source: CERS

Evaluation:
Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5499121
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2016
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5499121
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-02-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:4811849
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 10-02-2013
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:4811849
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection

CHEVRON 95664 (Continued) **S104747343**

Eval Date:	10-02-2013
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Inspector: Fernandez Juan Inspection ID:4811849
Eval Division:	San Diego County Department of Env Health
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-02-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Inspector: Tank HT202 Inspection ID:5121186
Eval Division:	San Diego County Department of Env Health
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-02-2014
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Inspector: Tank HT202 Inspection ID:5121186
Eval Division:	San Diego County Department of Env Health
Eval Program:	HW
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	10-02-2014
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	Inspector: Tank HT202 Inspection ID:5121186
Eval Division:	San Diego County Department of Env Health
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Other/Unknown
Eval Date:	09-10-2020
Violations Found:	No
Eval Type:	Other, not routine, done by local agency
Eval Notes:	"No On-site Inspection" Inspector: Fernandez Juan Inspection ID:6493756
Eval Division:	San Diego County Department of Env Health
Eval Program:	UST
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	09-11-2019
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	Inspector: Fernandez Juan Inspection ID:6244738
Eval Division:	San Diego County Department of Env Health
Eval Program:	HMRRP
Eval Source:	CERS
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	09-11-2019
Violations Found:	No

CHEVRON 95664 (Continued) **S104747343**

Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:6244738
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-11-2019
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:6244738
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-21-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5984868
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-21-2018
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5984868
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-21-2018
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5984868
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-25-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5727689
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-25-2017
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5727689
Eval Division: San Diego County Department of Env Health

CHEVRON 95664 (Continued) **S104747343**

Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-25-2017
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Fernandez Juan Inspection ID:5727689
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5157313
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2015
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5157313
Eval Division: San Diego County Department of Env Health
Eval Program: HW
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2015
Violations Found: Yes
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5157313
Eval Division: San Diego County Department of Env Health
Eval Program: UST
Eval Source: CERS

Eval General Type: Compliance Evaluation Inspection
Eval Date: 09-28-2016
Violations Found: No
Eval Type: Routine done by local agency
Eval Notes: Inspector: Beacon Ellen Inspection ID:5499121
Eval Division: San Diego County Department of Env Health
Eval Program: HMRRP
Eval Source: CERS

Coordinates:
Site ID: 104963
Facility Name: CHEVRON STATION #95664/1943
Env Int Type Code: HWG
Program ID: 10367323
Coord Name: Not reported
Ref Point Type Desc: Center of a facility or station.
Latitude: 33.084120
Longitude: -117.299420

CHEVRON 95664 (Continued) **S104747343**

Affiliation:

Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94583
Affiliation Phone:	Not reported

Affiliation Type Desc:	Identification Signer
Entity Name:	Pedro R Carranza
Entity Title:	RETAIL HES SPECIALIST
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Affiliation Type Desc:	Legal Owner
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	TX
Affiliation Country:	United States
Affiliation Zip:	77001
Affiliation Phone:	(925) 842-9002

Affiliation Type Desc:	Operator
Entity Name:	CHEVRON STATION# 95664/1943
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(760) 479-0826

Affiliation Type Desc:	CUPA District
Entity Name:	San Diego County Env Health Qlty
Entity Title:	Not reported
Affiliation Address:	PO Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92112-9261
Affiliation Phone:	(858) 505-6880

Affiliation Type Desc:	Document Preparer
Entity Name:	Pedro R Carranza
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported

CHEVRON 95664 (Continued) **S104747343**

Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Environmental Contact
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	94583
Affiliation Phone:	Not reported
Affiliation Type Desc:	Parent Corporation
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported
Affiliation Type Desc:	Property Owner
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94583
Affiliation Phone:	(925) 842-9002
Affiliation Type Desc:	UST Permit Applicant
Entity Name:	CHARLES BITTLE - 12/1/2016
Entity Title:	RETAIL HES
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(925) 842-9002
Affiliation Type Desc:	UST Property Owner Name
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported
Affiliation Address:	P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City:	SAN RAMON
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	94583
Affiliation Phone:	(925) 842-9002
Affiliation Type Desc:	UST Tank Operator
Entity Name:	CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title:	Not reported

CHEVRON 95664 (Continued) **S104747343**

Affiliation Address: P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City: SAN RAMON
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94583
Affiliation Phone: (925) 842-9002

Affiliation Type Desc: UST Tank Owner
Entity Name: CHEVRON PRODUCTS COMPANY (A DIVISION OF CHEVRON U.S.A. INC.)
Entity Title: Not reported
Affiliation Address: P.O. BOX 6004, ATTN: PERMIT DESK
Affiliation City: SAN RAMON
Affiliation State: CA
Affiliation Country: United States
Affiliation Zip: 94583
Affiliation Phone: (925) 842-9002

HWTS:
Name: CHEVRON 95664
Address: 540 LA COSTA AVE
Address 2: Not reported
City,State,Zip: ENCINITAS, CA 920241115
EPA ID: CAR000119198
Inactive Date: Not reported
Create Date: 09/23/2002
Last Act Date: 07/28/2020
Mailing Name: Not reported
Mailing Address: PO BOX 6004
Mailing Address 2: Not reported
Mailing City,State,Zip: SAN RAMON, CA 945830000
Owner Name: CHEVRON
Owner Address: PO BOX 6004
Owner Address 2: Not reported
Owner City,State,Zip: SAN RAMON, CA 945830000
Contact Name: KWAME AWUKU
Contact Address: 6001 BOLLINGER CANYON RD.
Contact Address 2: Not reported
City,State,Zip: SAN RAMON, CA 94583

NAICS:
EPA ID: CAR000119198
Create Date: 2002-09-23 07:27:48.530
NAICS Code: 44711
NAICS Description: Gasoline Stations with Convenience Stores
Issued EPA ID Date: 2002-09-23 07:27:48.51300
Inactive Date: Not reported
Facility Name: CHEVRON 95664
Facility Address: 540 LA COSTA AVE
Facility Address 2: Not reported
Facility City: ENCINITAS
Facility County: Not reported
Facility State: CA
Facility Zip: 920241115

EPA ID: CAR000119198
Create Date: 2011-08-17 14:36:26.000

CHEVRON 95664 (Continued) **S104747343**

NAICS Code:	447110
NAICS Description:	Gasoline Stations with Convenience Stores
Issued EPA ID Date:	2002-09-23 07:27:48.51300
Inactive Date:	Not reported
Facility Name:	CHEVRON 95664
Facility Address:	540 LA COSTA AVE
Facility Address 2:	Not reported
Facility City:	ENCINITAS
Facility County:	Not reported
Facility State:	CA
Facility Zip:	920241115

C10 **CHEVRON SERVICES STATION** **LUST** **S111760418**
NW **540 LA COSTA AVE** **Cortese** **N/A**
1/4-1/2 **ENCINITAS, CA 92024** **NPDES**
0.370 mi.
1954 ft. **Site 2 of 2 in cluster C**

Relative:
Lower

Actual:
67 ft.

LUST:

Name:	LA COSTA CHEVRON
Address:	540 LA COSTA AV
City,State,Zip:	ENCINITAS, CA 920241115
Lead Agency:	SAN DIEGO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0607302127
Global Id:	T0607302127
Latitude:	33.0842136
Longitude:	-117.2995927
Status:	Completed - Case Closed
Status Date:	01/04/2001
Case Worker:	SW
RB Case Number:	9UT3365
Local Agency:	SAN DIEGO COUNTY LOP
File Location:	Local Agency
Local Case Number:	H12458-001
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0607302127
Contact Type:	Local Agency Caseworker
Contact Name:	SCOTT WELDON
Organization Name:	SAN DIEGO COUNTY LOP
Address:	P.O. Box 129261
City:	San Diego
Email:	scott.weldon@sdcounty.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	T0607302127
Action Type:	ENFORCEMENT
Date:	12/26/2000
Action:	Closure/No Further Action Letter

Global Id:	T0607302127
Action Type:	Other

CHEVRON SERVICES STATION (Continued) **S111760418**

Date: 03/02/1995
Action: Leak Began

Global Id: T0607302127
Action Type: Other
Date: 03/02/1995
Action: Leak Discovery

Global Id: T0607302127
Action Type: Other
Date: 03/02/1995
Action: Leak Stopped

Global Id: T0607302127
Action Type: Other
Date: 03/07/1995
Action: Leak Reported

LUST:
Global Id: T0607302127
Status: Open - Case Begin Date
Status Date: 03/02/1995

Global Id: T0607302127
Status: Completed - Case Closed
Status Date: 01/04/2001

CORTESE:
Name: LA COSTA CHEVRON
Address: 540 LA COSTA AV
City,State,Zip: ENCINITAS, CA 920241115
Region: CORTESE
Envirostor Id: Not reported
Global ID: T0607302127
Site/Facility Type: LUST CLEANUP SITE
Cleanup Status: COMPLETED - CASE CLOSED
Status Date: Not reported
Site Code: Not reported
Latitude: Not reported
Longitude: Not reported
Owner: Not reported
Enf Type: Not reported
Swat R: Not reported
Flag: active
Order No: Not reported
Waste Discharge System No: Not reported
Effective Date: Not reported
Region 2: Not reported
WID Id: Not reported
Solid Waste Id No: Not reported
Waste Management Uit Name: Not reported
File Name: Active Open

NPDES:
Name: CHEVRON SERVICES STATION

CHEVRON SERVICES STATION (Continued) **S111760418**

Address:	540 LA COSTA AVE
City,State,Zip:	ENCINITAS, CA 92024
Facility Status:	Not reported
NPDES Number:	Not reported
Region:	Not reported
Agency Number:	Not reported
Regulatory Measure ID:	Not reported
Place ID:	Not reported
Order Number:	Not reported
WDID:	Not reported
Regulatory Measure Type:	Construction
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Discharge Address:	Not reported
Discharge Name:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
Status:	Returned
Status Date:	04/18/2007
Operator Name:	Chevron
Operator Address:	145 S State College Blvd Ste 400
Operator City:	Brea
Operator State:	California
Operator Zip:	92821

D11 **LA COSTA HOTEL** **CPS-SLIC S123531209**
NW **516 LA COSTA AVE** **CERS N/A**
1/4-1/2 **ENCINITAS, CA 92024**
0.373 mi.
1972 ft. **Site 1 of 2 in cluster D**

Relative: **Lower**
Actual: **78 ft.**

CPS-SLIC:

Name:	LA COSTA HOTEL
Address:	516 LA COSTA AVE
City,State,Zip:	ENCINITAS, CA 92024
Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	01/31/2019
Global Id:	T10000012696
Lead Agency:	SAN DIEGO COUNTY LOP
Lead Agency Case Number:	DEH2019-LSAM-000534
Latitude:	33.0845946373618
Longitude:	-117.300229755685
Case Type:	Cleanup Program Site
Case Worker:	EM
Local Agency:	SAN DIEGO COUNTY LOP
RB Case Number:	Not reported
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

LA COSTA HOTEL (Continued) **S123531209**

CERS:

Name:	LA COSTA HOTEL
Address:	516 LA COSTA AVE
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	515704
CERS ID:	T10000012696
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	EWAN MOFFAT - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

D12 **WESTON FAMILY TRUST** **CPS-SLIC** **S120762622**
NW **510 LA COSTA AVENUE** **HAZNET** **N/A**
1/4-1/2 **ENCINITAS, CA 92024** **CERS**
0.393 mi. **HWTS**
2075 ft. **Site 2 of 2 in cluster D**

Relative:
Lower

Actual:
80 ft.

CPS-SLIC:

Name:	LA COSTA 48
Address:	510 LA COSTA AVENUE
City,State,Zip:	ENCINITAS, CA 92024
Region:	STATE
Facility Status:	**Open - Site Assessment**
Status Date:	05/19/2017
Global Id:	T10000010402
Lead Agency:	SAN DIEGO COUNTY LOP
Lead Agency Case Number:	DEH2017-LSAM-000439
Latitude:	33.08668
Longitude:	-117.30141
Case Type:	Cleanup Program Site
Case Worker:	EM
Local Agency:	SAN DIEGO COUNTY LOP
RB Case Number:	Not reported
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

HAZNET:

Name:	WESTON FAMILY TRUST
Address:	510 LA COSTA AVENUE
Address 2:	Not reported
City,State,Zip:	ENCINITAS, CA 92024
Contact:	DAVID MEYER
Telephone:	7603108836
Mailing Name:	Not reported

WESTON FAMILY TRUST (Continued) **S120762622**

Mailing Address: P.O. BOX 234293

Year: 2017
Gepaid: CAC002897558
TSD EPA ID: CAT080013352
CA Waste Code: 133 - Aqueous solution with total organic residues 10 percent or more
Disposal Method: H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons: 0.834

Additional Info:
Year: 2017
Gen EPA ID: CAC002897558

Shipment Date: 20170224
Creation Date: 5/19/2017 18:30:21
Receipt Date: 20170303
Manifest ID: 009712137FLE
Trans EPA ID: CAT080016116
Trans Name: NIETO AND SONS TRUCKING INC
Trans 2 EPA ID: Not reported
Trans 2 Name: Not reported
TSDF EPA ID: CAT080013352
Trans Name: DEMENNO KERDOON
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
Waste Code Description: 133 - Aqueous solution with 10% or more total organic residues
RCRA Code: Not reported
Meth Code: H039 - Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Quantity Tons: 0.834
Waste Quantity: 200
Quantity Unit: G
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

CERS:
Name: LA COSTA 48
Address: 510 LA COSTA AVENUE
City,State,Zip: ENCINITAS, CA 92024
Site ID: 421732
CERS ID: T10000010402
CERS Description: Cleanup Program Site

Affiliation:
Affiliation Type Desc: Local Agency Caseworker
Entity Name: JAMES CLAY - SAN DIEGO COUNTY LOP
Entity Title: Not reported
Affiliation Address: P.O. Box 129261
Affiliation City: San Diego
Affiliation State: CA
Affiliation Country: Not reported
Affiliation Zip: Not reported

WESTON FAMILY TRUST (Continued) **S120762622**

Affiliation Phone: Not reported

HWTS:

Name:	WESTON FAMILY TRUST
Address:	510 LA COSTA AVENUE
Address 2:	Not reported
City,State,Zip:	ENCINITAS, CA 92024
EPA ID:	CAC002897558
Inactive Date:	05/18/2017
Create Date:	02/15/2017
Last Act Date:	05/18/2017
Mailing Name:	Not reported
Mailing Address:	P.O. BOX 234293
Mailing Address 2:	Not reported
Mailing City,State,Zip:	ENCINITAS, CA 92024
Owner Name:	WESTON FAMILY TRUST C/O DAVID MEYER
Owner Address:	510 LA COSTA AVENUE
Owner Address 2:	Not reported
Owner City,State,Zip:	ENCINITAS, CA 92024
Contact Name:	DAVID MEYER
Contact Address:	P.O. BOX 234293
Contact Address 2:	Not reported
City,State,Zip:	ENCINITAS, CA 92024

13
NW
1/4-1/2
0.470 mi.
2479 ft.

COCA COLA BOTTLING TRUCK SPILL **CPS-SLIC** **S121475965**
NONE HWY I5 NORTH OF LA COSTA EXIT, **CERS** **N/A**
CARLSBAD, CA 92011

Relative:
Lower

Actual:
68 ft.

CPS-SLIC:

Name:	COCA COLA BOTTLING TRUCK SPILL
Address:	NONE HWY I5 NORTH OF LA COSTA EXIT,
City,State,Zip:	CARLSBAD, CA 92011
Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	07/19/2017
Global Id:	SLT19742840
Lead Agency:	SAN DIEGO COUNTY LOP
Lead Agency Case Number:	H39722-001
Latitude:	33.0857167353842
Longitude:	-117.300939559937
Case Type:	Cleanup Program Site
Case Worker:	JC
Local Agency:	SAN DIEGO COUNTY LOP
RB Case Number:	Not reported
File Location:	Local Agency
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	The case involves a release of diesel fuel from a tractor trailer owned by Coca Cola Company of Southern California that veered off Highway 5 in Carlsbad, and crashed on the embankment beside Highway 5. The location was about 200 feet from the edge of Batiquitos Lagoon. Two saddle tanks of about 70 gallons each lost their contents of diesel fuel. A Notice was issued to Coca Cola Company to clean up the impacted soil so that diesel concentrations were less than 1,000

COCA COLA BOTTLING TRUCK SPILL (Continued) **S121475965**

ppm in soil. A clean-up company excavated about 20 yards of contaminated soil and hauled it away. Two soil samples were collected about a foot below finish grade of the excavation. The estimated amount of soil excavated for disposal and recycling is approximately 37 tons. The soil was sent to Filter Recycling in Rialto, CA. A Voluntary Assistance Program (VAP) application was submitted to DEH on February 19. 2008 and case H39722-001 was opened. Even though an official report was never submitted documenting the clean-up, the data submitted demonstrates that diesel contamination was removed to acceptable levels. Provided that the information presented to DEH was complete, accurate, and representative of existing site conditions, this agency concurs that the cleanup goals established for the subject site have been met.

Click here to access the California GeoTracker records for this facility:

CERS:

Name:	COCA COLA BOTTLING TRUCK SPILL
Address:	NONE HWY I5 NORTH OF LA COSTA EXIT,
City,State,Zip:	CARLSBAD, CA 92011
Site ID:	257298
CERS ID:	SLT19742840
CERS Description:	Cleanup Program Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	JAMES CLAY - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

14
WNW
1/4-1/2
0.496 mi.
2618 ft.

BARRETT AMERICAN
236 ANDREW AV
ENCINITAS, CA 92024

LUST **S107619741**
SAN DIEGO CO. SAM **N/A**
Cortese
SAN DIEGO CO LOP
CERS

Relative:
Lower

Actual:
76 ft.

LUST:

Name:	BARRETT AMERICAN
Address:	236 ANDREW AV
City,State,Zip:	ENCINITAS, CA 92024
Lead Agency:	SAN DIEGO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T06019729886
Global Id:	T06019729886
Latitude:	33.082392
Longitude:	-117.30424
Status:	Completed - Case Closed
Status Date:	05/04/2006
Case Worker:	EM
RB Case Number:	Not reported
Local Agency:	SAN DIEGO COUNTY LOP
File Location:	Local Agency

BARRETT AMERICAN (Continued) **S107619741**

Local Case Number: 199128-001
Potential Media Affect: Soil
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T06019729886
Contact Type: Local Agency Caseworker
Contact Name: EWAN MOFFAT
Organization Name: SAN DIEGO COUNTY LOP
Address: P.O. Box 129261
City: San Diego
Email: ewan.moffat@sdcounty.ca.gov
Phone Number: Not reported

LUST:
Global Id: T06019729886
Action Type: ENFORCEMENT
Date: 05/04/2006
Action: Closure/No Further Action Letter

Global Id: T06019729886
Action Type: Other
Date: 06/07/2005
Action: Leak Began

Global Id: T06019729886
Action Type: Other
Date: 06/07/2005
Action: Leak Discovery

Global Id: T06019729886
Action Type: Other
Date: 06/07/2005
Action: Leak Stopped

Global Id: T06019729886
Action Type: Other
Date: 08/04/2005
Action: Leak Reported

Global Id: T06019729886
Action Type: ENFORCEMENT
Date: 08/05/2005
Action: Notice of Responsibility

LUST:
Global Id: T06019729886
Status: Open - Case Begin Date
Status Date: 06/07/2005

Global Id: T06019729886
Status: Completed - Case Closed
Status Date: 05/04/2006

BARRETT AMERICAN (Continued) **S107619741**

SAN DIEGO CO. SAM:

Name:	BARRETT AMERICAN
Address:	236 ANDREW AV
City,State,Zip:	ENCINITAS, CA 92024
Case Number:	226452
Agency:	DEH Site Assessment & Mitigation
Funding:	**LOP - Federal Fund**
Facility Type:	Soils Only
Facility Status:	Closed Case
Date:	5/4/2006
Date Began:	6/7/2005

CORTESE:

Name:	BARRETT AMERICAN
Address:	236 ANDREW AV
City,State,Zip:	ENCINITAS, CA 92024
Region:	CORTESE
Envirostor Id:	Not reported
Global ID:	T06019729886
Site/Facility Type:	LUST CLEANUP SITE
Cleanup Status:	COMPLETED - CASE CLOSED
Status Date:	Not reported
Site Code:	Not reported
Latitude:	Not reported
Longitude:	Not reported
Owner:	Not reported
Enf Type:	Not reported
Swat R:	Not reported
Flag:	active
Order No:	Not reported
Waste Discharge System No:	Not reported
Effective Date:	Not reported
Region 2:	Not reported
WID Id:	Not reported
Solid Waste Id No:	Not reported
Waste Management Uit Name:	Not reported
File Name:	Active Open

SAN DIEGO CO LOP:

Name:	BARRETT AMERICAN
Address:	236 ANDREW AVE
City,State,Zip:	ENCINITAS, CA 92024
Record ID:	DEH2005-LSAM-199128-001
Record Status:	Completed
Opened Date:	08/04/2005
Parcel Number:	216-052-09-00
Case Type:	LOP - Local Oversight Program
Historical Name:	BARRETT AMERICAN
SWRCB Global ID:	T06019729886
Funding:	F - LOP Federal Fund
Lead Agency:	DEH/SAM
Lead Agency Date:	08/04/2005
Census Tract:	Not reported
Community:	Not reported
Jurisdiction:	Not reported
Watershed Basin Number:	Not reported

BARRETT AMERICAN (Continued) **S107619741**

Water Purveyor:	Not reported
Fire Agency:	Not reported
Latitude:	Not reported
Longitude:	Not reported
X MapCoord:	Not reported
Y MapCoord:	Not reported

CERS:

Name:	BARRETT AMERICAN
Address:	236 ANDREW AV
City,State,Zip:	ENCINITAS, CA 92024
Site ID:	226498
CERS ID:	T06019729886
CERS Description:	Leaking Underground Storage Tank Cleanup Site

Affiliation:

Affiliation Type Desc:	Local Agency Caseworker
Entity Name:	EWAN MOFFAT - SAN DIEGO COUNTY LOP
Entity Title:	Not reported
Affiliation Address:	P.O. Box 129261
Affiliation City:	San Diego
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	Not reported

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CARLSBAD	S109348922	COCA COLA BOTTLING TRUCK SPIL	0 HWY I5 NORTH OF LA COSTA EXI	92011	SAN DIEGO CO. SAM

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/30/2021
Date Made Active in Reports: 06/17/2021
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 06/23/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/10/2021
Date Data Arrived at EDR: 05/13/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 82

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 08/05/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/21/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/21/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/14/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 61

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 04/23/2021
Date Data Arrived at EDR: 04/23/2021
Date Made Active in Reports: 07/12/2021
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/22/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 04/23/2021
Date Data Arrived at EDR: 04/23/2021
Date Made Active in Reports: 07/12/2021
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/22/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/10/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 77

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing

Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing

For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/09/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/07/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/12/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/30/2020
Date Data Arrived at EDR: 12/22/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 80
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/02/2020
Date Data Arrived at EDR: 12/18/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 84
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)

Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 01/29/2021
Date Data Arrived at EDR: 02/17/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 33

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 06/29/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 03/05/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 04/01/2021
Number of Days to Update: 23

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/02/2020
Date Data Arrived at EDR: 12/18/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 84

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/12/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 09/30/2020
Date Data Arrived at EDR: 12/22/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/07/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/09/2020
Date Data Arrived at EDR: 12/16/2020
Date Made Active in Reports: 03/12/2021
Number of Days to Update: 86

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 06/11/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 04/23/2021
Date Data Arrived at EDR: 04/23/2021
Date Made Active in Reports: 07/12/2021
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/22/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: No Update Planned

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: No Update Planned

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing

A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 79

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/10/2021
Date Data Arrived at EDR: 06/10/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 68

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/10/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database

Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 03/09/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 11/23/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 04/23/2021
Date Data Arrived at EDR: 04/23/2021
Date Made Active in Reports: 07/12/2021
Number of Days to Update: 80

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/22/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 01/20/2021
Date Made Active in Reports: 04/08/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Varies

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/07/2021
Number of Days to Update: 78
Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 07/15/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Quarterly

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27
Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 77
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS contaminated sites included in the GeoTracker database.

Date of Government Version: 02/24/2021
Date Data Arrived at EDR: 02/24/2021
Date Made Active in Reports: 05/14/2021
Number of Days to Update: 79
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35
Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18
Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing
Aboveground storage tank sites

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/07/2021
Date Made Active in Reports: 07/23/2021
Number of Days to Update: 77

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 07/26/2021
Next Scheduled EDR Contact: 11/14/2021
Data Release Frequency: Varies

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/07/2021
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/15/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Quarterly

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 05/28/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/24/2021
Date Made Active in Reports: 06/17/2021
Number of Days to Update: 85

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/04/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/07/2021
Number of Days to Update: 78

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/15/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 05/04/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 85

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/09/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/06/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 06/17/2021
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 07/26/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/06/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82
Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/16/2021
Number of Days to Update: 87
Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/19/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16
Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 05/07/2021
Date Data Arrived at EDR: 05/13/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 82
Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/14/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35
Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 12/30/2020
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 03/05/2021
Number of Days to Update: 50
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 11/19/2020
Date Data Arrived at EDR: 01/08/2021
Date Made Active in Reports: 03/22/2021
Number of Days to Update: 73
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/09/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 06/29/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: No Update Planned

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/11/2021
Date Made Active in Reports: 05/11/2021
Number of Days to Update: 61
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 07/14/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 12/01/2020
Date Made Active in Reports: 02/09/2021
Number of Days to Update: 70
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/06/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 06/22/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: No Update Planned

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 07/23/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 07/14/2021
Date Made Active in Reports: 07/16/2021
Number of Days to Update: 2

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 07/02/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 11/20/2020
Number of Days to Update: 151

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/21/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/02/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Varies

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/23/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/12/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/27/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: No Update Planned

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: No Update Planned

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 05/27/2021
Date Data Arrived at EDR: 05/27/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 14

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 07/01/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Quarterly

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/03/2021
Date Data Arrived at EDR: 05/25/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 78

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/15/2021
Date Data Arrived at EDR: 06/16/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 62

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/14/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 05/05/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 08/17/2021
Number of Days to Update: 91

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 05/18/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 04/04/2021
Date Data Arrived at EDR: 04/06/2021
Date Made Active in Reports: 06/25/2021
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 07/01/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77
Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/07/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/21/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/14/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 81
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/22/2021
Date Data Arrived at EDR: 03/23/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 79
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 07/17/2019
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 84

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 05/18/2021
Date Data Arrived at EDR: 05/19/2021
Date Made Active in Reports: 08/05/2021
Number of Days to Update: 78

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 06/16/2020
Date Made Active in Reports: 08/28/2020
Number of Days to Update: 73

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/10/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/16/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/07/2021
Number of Days to Update: 78

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 07/15/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/14/2021
Date Data Arrived at EDR: 04/15/2021
Date Made Active in Reports: 07/06/2021
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/13/2021
Date Data Arrived at EDR: 05/13/2021
Date Made Active in Reports: 07/26/2021
Number of Days to Update: 74

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 04/15/2020
Date Made Active in Reports: 07/02/2020
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/09/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/14/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 74

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/14/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 74

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/05/2021
Date Data Arrived at EDR: 04/06/2021
Date Made Active in Reports: 06/23/2021
Number of Days to Update: 78

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/01/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 05/28/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/10/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/27/2021
Number of Days to Update: 77
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/13/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 05/28/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/09/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/12/2021
Date Data Arrived at EDR: 03/16/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 77
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 11/19/2019
Date Data Arrived at EDR: 01/07/2020
Date Made Active in Reports: 03/09/2020
Number of Days to Update: 62

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/01/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing

In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 03/09/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 06/07/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 05/19/2021
Date Data Arrived at EDR: 05/19/2021
Date Made Active in Reports: 08/12/2021
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 05/19/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data

The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 04/20/2021
Date Made Active in Reports: 07/07/2021
Number of Days to Update: 78

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/15/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)

Non-Case Information sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)

Other Oil & Gas Projects sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 03/08/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/30/2021
Number of Days to Update: 21

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Varies

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 06/30/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: No Update Planned

HWTS: Hazardous Waste Tracking System
DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 04/08/2021
Date Data Arrived at EDR: 04/09/2021
Date Made Active in Reports: 04/20/2021
Number of Days to Update: 11

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 06/29/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Varies

PCS INACTIVE: Listing of Inactive PCS Permits
An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 06/30/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: No Update Planned

PCS ENF: Enforcement data
No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 06/30/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: No Update Planned

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 05/27/2021
Next Scheduled EDR Contact: 09/06/2021
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners
EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/29/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Semi-Annually

UST ALAMEDA: Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 03/17/2021
Date Data Arrived at EDR: 03/18/2021
Date Made Active in Reports: 03/25/2021
Number of Days to Update: 7

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/29/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 02/02/2021
Date Data Arrived at EDR: 02/04/2021
Date Made Active in Reports: 04/23/2021
Number of Days to Update: 78

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 07/26/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 06/29/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 06/15/2021
Date Data Arrived at EDR: 06/16/2021
Date Made Active in Reports: 07/02/2021
Number of Days to Update: 16

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 07/26/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 04/21/2021
Date Data Arrived at EDR: 04/22/2021
Date Made Active in Reports: 07/12/2021
Number of Days to Update: 81

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 12/17/2020
Date Data Arrived at EDR: 01/28/2021
Date Made Active in Reports: 04/16/2021
Number of Days to Update: 78

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/10/2021
Date Data Arrived at EDR: 05/12/2021
Date Made Active in Reports: 07/26/2021
Number of Days to Update: 75

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 01/14/2021
Date Data Arrived at EDR: 01/15/2021
Date Made Active in Reports: 04/05/2021
Number of Days to Update: 80

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 06/23/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/17/2021
Date Data Arrived at EDR: 05/18/2021
Date Made Active in Reports: 05/20/2021
Number of Days to Update: 2

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/14/2021
Date Data Arrived at EDR: 04/15/2021
Date Made Active in Reports: 07/06/2021
Number of Days to Update: 82

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 04/22/2021
Date Data Arrived at EDR: 04/30/2021
Date Made Active in Reports: 07/19/2021
Number of Days to Update: 80

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 07/06/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 6

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 05/10/2021
Date Data Arrived at EDR: 05/12/2021
Date Made Active in Reports: 07/26/2021
Number of Days to Update: 75

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/06/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 04/08/2021
Date Data Arrived at EDR: 04/13/2021
Date Made Active in Reports: 06/28/2021
Number of Days to Update: 76

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 06/29/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/12/2021
Date Data Arrived at EDR: 04/13/2021
Date Made Active in Reports: 06/28/2021
Number of Days to Update: 76

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/09/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Varies

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2021
Date Data Arrived at EDR: 02/18/2021
Date Made Active in Reports: 05/10/2021
Number of Days to Update: 81

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/06/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills
This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 02/04/2021
Date Data Arrived at EDR: 04/16/2021
Date Made Active in Reports: 04/21/2021
Number of Days to Update: 5

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 07/12/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory
A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 04/19/2021
Date Data Arrived at EDR: 06/17/2021
Date Made Active in Reports: 06/28/2021
Number of Days to Update: 11

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory
A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 06/17/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/02/2021
Date Data Arrived at EDR: 04/16/2021
Date Made Active in Reports: 07/06/2021
Number of Days to Update: 81

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/09/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/06/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 02/02/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 06/22/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: No Update Planned

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 03/24/2021
Date Data Arrived at EDR: 04/07/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 78

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 05/13/2021
Date Data Arrived at EDR: 05/14/2021
Date Made Active in Reports: 07/26/2021
Number of Days to Update: 73

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 08/09/2021
Next Scheduled EDR Contact: 11/28/2021
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/3021
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/23/2021
Date Data Arrived at EDR: 06/23/2021
Date Made Active in Reports: 06/24/2021
Number of Days to Update: 1

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 06/22/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 04/29/2021
Date Made Active in Reports: 07/15/2021
Number of Days to Update: 77

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 03/01/2021
Date Data Arrived at EDR: 04/30/2021
Date Made Active in Reports: 07/19/2021
Number of Days to Update: 80

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 07/29/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 03/01/2021
Date Data Arrived at EDR: 05/03/2021
Date Made Active in Reports: 05/12/2021
Number of Days to Update: 9

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 04/29/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 04/29/2021
Date Data Arrived at EDR: 04/30/2021
Date Made Active in Reports: 07/19/2021
Number of Days to Update: 80

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 07/29/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 06/01/2021
Number of Days to Update: 6

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

RIVERSIDE COUNTY:

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 14
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 06/29/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 14
Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/07/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 03/30/2021
Date Data Arrived at EDR: 04/01/2021
Date Made Active in Reports: 06/23/2021
Number of Days to Update: 83
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 07/01/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 03/30/2021
Date Data Arrived at EDR: 04/01/2021
Date Made Active in Reports: 06/25/2021
Number of Days to Update: 85
Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 04/28/2021
Date Data Arrived at EDR: 04/29/2021
Date Made Active in Reports: 05/03/2021
Number of Days to Update: 4
Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 07/26/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 05/19/2021
Date Data Arrived at EDR: 05/19/2021
Date Made Active in Reports: 06/07/2021
Number of Days to Update: 19

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/28/2021
Date Data Arrived at EDR: 05/28/2021
Date Made Active in Reports: 08/20/2021
Number of Days to Update: 84

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 05/28/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/01/2020
Date Data Arrived at EDR: 11/23/2020
Date Made Active in Reports: 02/08/2021
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/14/2020
Date Data Arrived at EDR: 07/16/2020
Date Made Active in Reports: 09/29/2020
Number of Days to Update: 75

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/07/2021
Date Made Active in Reports: 07/23/2021
Number of Days to Update: 77

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/07/2021
Date Made Active in Reports: 07/23/2021
Number of Days to Update: 77

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/08/2021
Next Scheduled EDR Contact: 09/27/2021
Data Release Frequency: No Update Planned

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/07/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 05/14/2021
Number of Days to Update: 3

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

SAN MATEO COUNTY:

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/10/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/02/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: No Update Planned

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 02/24/2021
Date Data Arrived at EDR: 02/26/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 82

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/17/2021
Next Scheduled EDR Contact: 12/06/2021
Data Release Frequency: No Update Planned

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 07/27/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: No Update Planned

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/23/2021
Date Data Arrived at EDR: 03/25/2021
Date Made Active in Reports: 06/10/2021
Number of Days to Update: 77

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 06/22/2021
Next Scheduled EDR Contact: 09/12/2021
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/28/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/01/2021
Date Data Arrived at EDR: 04/01/2021
Date Made Active in Reports: 06/23/2021
Number of Days to Update: 83

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/15/2021
Next Scheduled EDR Contact: 10/04/2021
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 05/14/2021
Date Data Arrived at EDR: 05/17/2021
Date Made Active in Reports: 08/03/2021
Number of Days to Update: 78

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 07/06/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 05/25/2021
Date Data Arrived at EDR: 05/26/2021
Date Made Active in Reports: 08/18/2021
Number of Days to Update: 84

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 05/25/2021
Next Scheduled EDR Contact: 09/13/2021
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 01/13/2021
Date Data Arrived at EDR: 01/14/2021
Date Made Active in Reports: 04/06/2021
Number of Days to Update: 82

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 04/14/2021
Date Data Arrived at EDR: 04/15/2021
Date Made Active in Reports: 07/06/2021
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

TULARE COUNTY:

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 04/26/2021
Date Data Arrived at EDR: 04/28/2021
Date Made Active in Reports: 07/13/2021
Number of Days to Update: 76

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/15/2021
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 07/13/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/29/2021
Date Data Arrived at EDR: 04/22/2021
Date Made Active in Reports: 07/12/2021
Number of Days to Update: 81

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/15/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/22/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 08/04/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/29/2021
Date Data Arrived at EDR: 04/21/2021
Date Made Active in Reports: 04/23/2021
Number of Days to Update: 2

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/15/2021
Next Scheduled EDR Contact: 11/01/2021
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 03/01/2021
Date Data Arrived at EDR: 03/09/2021
Date Made Active in Reports: 03/31/2021
Number of Days to Update: 22

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/04/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 03/26/2021
Date Data Arrived at EDR: 04/01/2021
Date Made Active in Reports: 06/23/2021
Number of Days to Update: 83

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/22/2021
Next Scheduled EDR Contact: 10/11/2021
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 04/21/2021
Date Data Arrived at EDR: 04/22/2021
Date Made Active in Reports: 05/12/2021
Number of Days to Update: 20

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/20/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 03/24/2021
Date Data Arrived at EDR: 05/11/2021
Date Made Active in Reports: 07/28/2021
Number of Days to Update: 78

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/10/2021
Next Scheduled EDR Contact: 11/22/2021
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 07/09/2021
Next Scheduled EDR Contact: 10/18/2021
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 07/29/2021
Next Scheduled EDR Contact: 11/08/2021
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/07/2021
Next Scheduled EDR Contact: 10/25/2021
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 02/11/2021
Date Made Active in Reports: 02/24/2021
Number of Days to Update: 13

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/11/2021
Next Scheduled EDR Contact: 11/29/2021
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/03/2021
Next Scheduled EDR Contact: 09/20/2021
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

PIRAEUS PROPERTY
PIRAEUS STREET/PLATO PLACE
ENCINITAS, CA 92024

TARGET PROPERTY COORDINATES

Latitude (North):	33.079225 - 33° 4' 45.21''
Longitude (West):	117.295148 - 117° 17' 42.53''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	472452.5
UTM Y (Meters):	3659917.2
Elevation:	158 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5641296 ENCINITAS, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

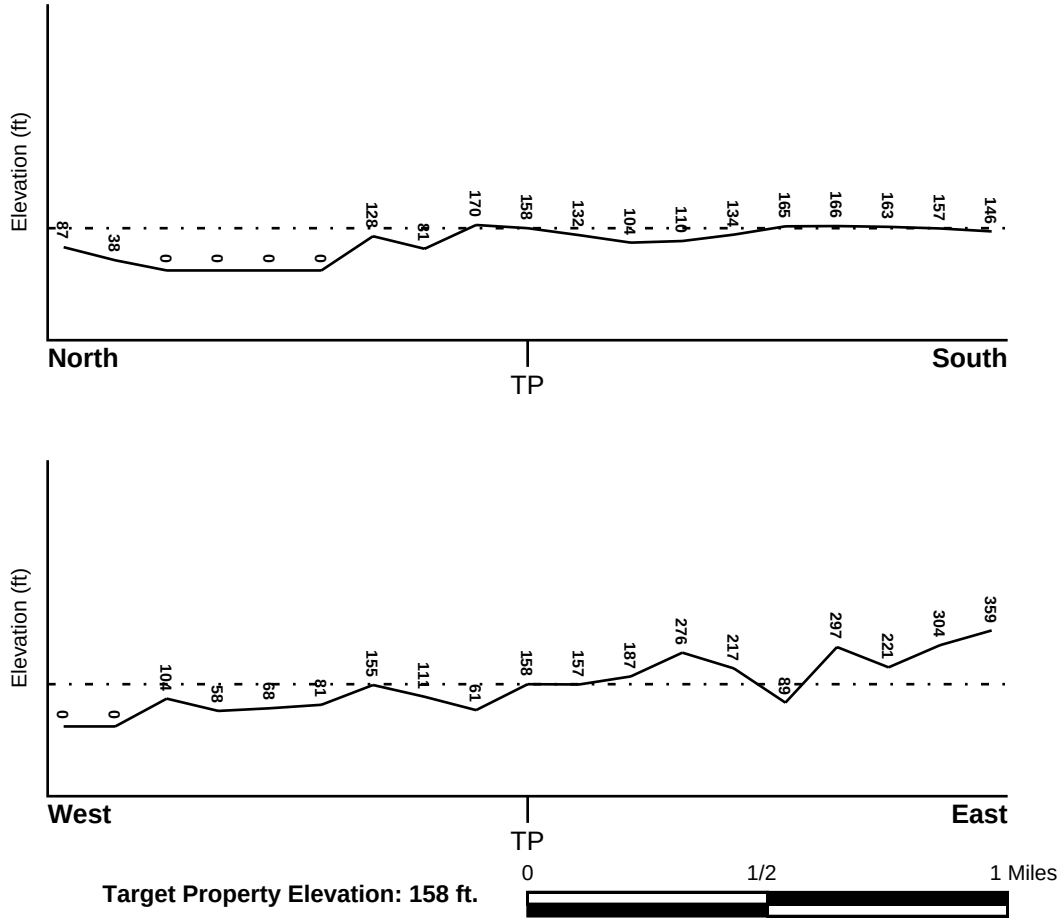
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General WSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 158 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06073C1035G	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ENCINITAS	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

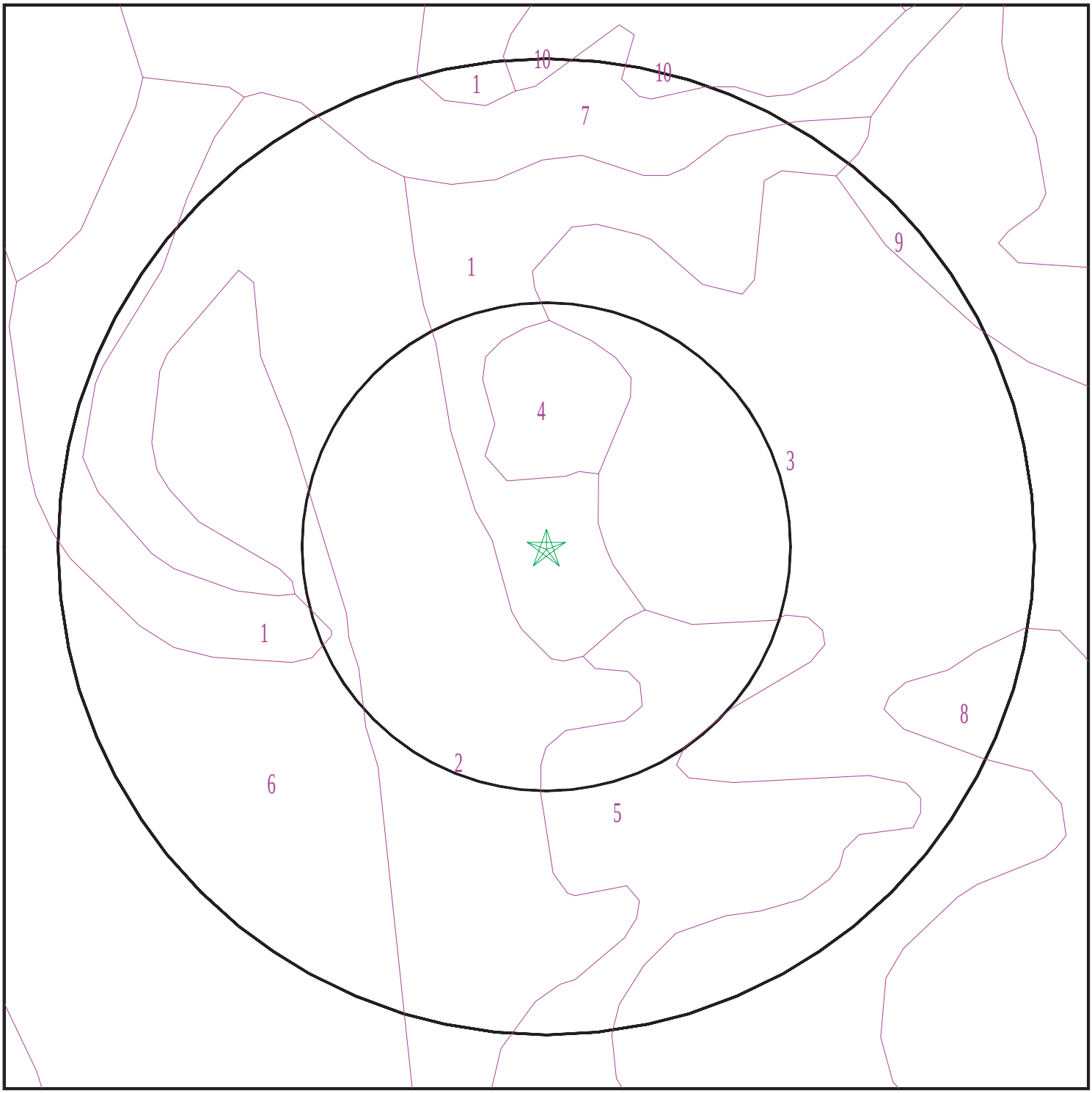
Era:	Cenozoic
System:	Tertiary
Series:	Eocene
Code:	Te *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 6632347.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Piraeus Property	CLIENT:	Geocon Env. Consultants, Inc.
ADDRESS:	Piraeus Street/Plato Place Encinitas CA 92024	CONTACT:	Cole Mikesell
LAT/LONG:	33.079225 / 117.295148	INQUIRY #:	6632347.2s
		DATE:	August 23, 2021 8:24 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: GAVIOTA

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 41 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	16 inches	20 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 2

Soil Component Name: MARINA

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat excessively drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	9 inches	57 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4
3	57 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4

Soil Map ID: 3

Soil Component Name: CIENEBA

Soil Surface Texture: coarse sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	coarse sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: Min:	Max: Min:
2	9 inches	14 inches	weathered bedrock	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 4

Soil Component Name: ROUGH BROKEN LAND

Soil Surface Texture: unweathered bedrock

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	1 inches	unweathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 5

Soil Component Name: GAVIOTA

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 41 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:
2	16 inches	20 inches	unweathered bedrock	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: Min:	Max: Min:

Soil Map ID: 6

Soil Component Name: MARINA

Soil Surface Texture: loamy coarse sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loamy coarse sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4
2	9 inches	57 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4
3	57 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 7

Soil Component Name: CORRALITOS

Soil Surface Texture: loamy sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Somewhat excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.6
2	9 inches	42 inches	loamy fine sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.6
3	42 inches	72 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 7.3 Min: 6.6

Soil Map ID: 8

Soil Component Name: CHESTERTON

Soil Surface Texture: fine sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information

	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	18 inches	fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0 Min: 0	Max: Min:
2	18 inches	33 inches	sandy clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0 Min: 0	Max: Min:
3	33 inches	59 inches	indurated	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	Not reported	Max: 0 Min: 0	Max: Min:

Soil Map ID: 9

Soil Component Name: HUERHUERO

Soil Surface Texture: loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4
2	9 inches	50 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4
3	50 inches	59 inches	stratified sand to sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

Soil Map ID: 10

Soil Component Name: LOAMY ALLUVIAL LAND

Soil Surface Texture: variable

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	59 inches	variable	Not reported	Not reported	Max: Min:	Max: Min:

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	CAEDF0000013266	1/2 - 1 Mile WNW
A2	CAEDF0000121349	1/2 - 1 Mile WNW
3	CADWR0000024818	1/2 - 1 Mile ENE
A4	CAEDF0000112429	1/2 - 1 Mile WNW
5	CADWR0000011881	1/2 - 1 Mile West

PHYSICAL SETTING SOURCE MAP - 6632347.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	Piraeus Property	CLIENT:	Geocon Env. Consultants, Inc.
ADDRESS:	Piraeus Street/Plato Place Encinitas CA 92024	CONTACT:	Cole Mikesell
LAT/LONG:	33.079225 / 117.295148	INQUIRY #:	6632347.2s
		DATE:	August 23, 2021 8:24 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
WNW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000013266**

Well ID:	T06019729886-MW-1	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-1
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T06019729886&assigned_name=MW-1&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T06019729886&assigned_name=MW-1		

A2
WNW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000121349**

Well ID:	T06019729886-MW-3	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-3
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T06019729886&assigned_name=MW-3&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T06019729886&assigned_name=MW-3		

3
ENE
1/2 - 1 Mile
Lower

CA WELLS **CADWR0000024818**

Well ID:	12S04W34K001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	12S04W34K001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=12S04W34K001S&store_num=		
GeoTracker Data:	Not Reported		

A4
WNW
1/2 - 1 Mile
Lower

CA WELLS **CAEDF0000112429**

Well ID:	T06019729886-MW-2	Well Type:	MONITORING
Source:	EDF	Other Name:	MW-2
GAMA PFAS Testing:	Not Reported		
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=EDF&samp_date=&global_id=T06019729886&assigned_name=MW-2&store_num=		
GeoTracker Data:	https://geotracker.waterboards.ca.gov/profile_report.asp?cmd=MWEDFResults&global_id=T06019729886&assigned_name=MW-2		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation		Database	EDR ID Number
5 **West** **1/2 - 1 Mile** **Lower**		**CA WELLS**	**CADWR0000011881**

Well ID:	12S04W33P001S	Well Type:	UNK
Source:	Department of Water Resources		
Other Name:	12S04W33P001S	GAMA PFAS Testing:	Not Reported
Groundwater Quality Data:	https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/GamaDataDisplay.asp?dataset=DWR&samp_date=&global_id=&assigned_name=12S04W33P001S&store_num=		
GeoTracker Data:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
92024	42	5

Federal EPA Radon Zone for SAN DIEGO County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 92024

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.700 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

PHYSICAL SETTING SOURCE RECORDS SEARCHED

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX D

PERMIT #: LMWP-003948
A.P.N.: 254-144-01
EST #: None

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

GEOTECHNICAL BORING CONSTRUCTION PERMIT

SITE NAME: PIRAEUS STREET

SITE ADDRESS: 0 PIRAEUS STREET, ENCINITAS 92024

PERMIT FOR: **CONSTRUCTION OF GEOTECHINCAL BORINGS (8)**

PERMIT APPROVAL DATE: 4/29/2019

PERMIT EXPIRES ON: 8/27/2019

RESPONSIBLE PARTY: COVELOP INCORPORATED

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material. Bentonite slurries are not an acceptable fill material in the unsaturated zone.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, D-4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html) In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. **This office must be given 24-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.**

APPROVED BY: Jon Senaha DATE: 4/29/2019

Jon Senaha

PERMIT APPLICATION
GROUNDWATER
AND VADOSE MONITORING WELLS
AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMWP# 003948
SAM CASE Y/N # None
DATE RECEIVED: 4/24/2019
FEE PAID: $669.00
CHECK # Online

A. RESPONSIBLE PARTY Covelop Incorporated E-mail dmavis@covelop.net
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)
Mailing Address PO Box 12910 City San Luis Obisbo State CA Zip 93406
Contact Person Damien Mavis Phone 805-781-3133 Ext.____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # ____

C. CONSULTING FIRM Geocon Incorporated
Mailing Address 6960 Flanders Drive City San Diego State CA Zip 92121
Registered Professional Lilian Rodriguez Phone 858-558-6900 Registration # 83227 (RCE)
E-mail lrodriguez@geoconinc.com
Contact Person SAME Phone____ Ext____ Email ____

D. DRILLING COMPANY Tri-County Drilling C57# 547737
Contact Name Dave Maske E-mail dmaske@tcdrilling.com
Mailing Address 6931 Candida Street City San Diego State CA Zip 92126
Phone 858-271-0099 Ext.____

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	8
☐ Soil Vapor	___
☐ Other	___

NUMBER OF WELLS TO BE DESTROYED

☐ Destruction ___

MATERIALS TO BE USED

CASING

Not Applicable X
Type ____
Gauge____
Diameter ____
Screen Size ____
Filter Pack ____

SEAL/BORING BACKFILL

☐ Neat Cement
☒ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☐ Other
Borehole diameter 8-30"

Drilling Method

☒ Auger
☐ Direct Push
☐ Other ____
☐ Air Rotary
☐ Sonic
☐ Percussion

PROPOSED CONSTRUCTION
Estimated Groundwater Depth: 50 ft.
Estimated Depth of Boring: 100 ft.
Concrete Seal: 0 to 3
Annular Seal: ____to____
Filter Pack: ____to____
Perforation: ____to____

NOTE: Attach a well construction diagram

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE _____ DATE 4/24/19

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk (858) 505-6688 with a complete well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE/CEG SIGNATURE _____ DATE 4/24/19

F. SITE INFORMATION - A Property Owner Consent agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties. Submit a separate sheet for additional parcels.

1. **ASSESSOR'S PARCEL NUMBER** 254-144-01-00

Site Name _____

Site Address Piraeus Street City Encinitas Zip 92024

PROPERTY OWNER Piraeus Investor LLC

Phone _____ Ext. _____ Fax _____

Mailing Address 158 N Melrose Drive City Vista State CA Zip92083

NUMBER OF WELLS 8 **TYPE OF WELLS** Geotechnical Borings

2. **ASSESSOR'S PARCEL NUMBER** _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. QUESTIONNAIRE: Please answer all applicable questions completely *and submit any required supportive documentation*.

1. What is the purpose of the well/boring investigation?

☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

DEH _____ RWQCB _____ DTSC _____

☐ b. Part of a Phase I investigation for property ownership transfer.

☒ c. Geotechnical investigation for proposed construction or land stabilization.

☐ d. Other: _____

2. If wells are to be destroyed, provide a description of method of destruction NA

3. Are you proposing a variation from current SAM Manual Requirements for the construction or destruction of borings, Vadose and/or Groundwater Monitoring Wells? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines. Yes ☐ No ☒

_____

H. FEES

ACTIVITY	FEE SCHEDULE	AMOUNT
Permit for Well Installations Only *(Groundwater Monitoring Wells, Vapor Extraction Wells)*	$351.00 for the first monitoring well	**$351.00** _____
	$224.00 for each additional well installation	_____**x $224.00** _____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$235.00 for the first boring	**$235.00** **235.00**
	$62.00 for each additional boring	7**x $ 62.00** **434.00**
Permit for Well Destructions Only	$235.00 for the first destruction	**$235.00** _____
	$143.00 for each additional destruction	_____**x $143.00** _____
Permit for any Combination of Well Installations, Borings, & Destructions *(Except Enhanced Leak Detection & Soil Vapor Survey)*	First Activity: $351.00 (if monitoring wells will be installed) OR $235.00 (for borings and destructions only)	**$351.00** _____ **OR** **$235.00** _____
	$224.00 for each additional well	_____**x $224.00** _____
	$ 62.00 for each additional boring	_____**x $ 62.00** _____
	$143.00 for each additional well destruction	_____**x $143.00** _____
Permit for Soil Vapor Survey *(Vadose Monitoring Wells)*	$388.00 (flat fee per site)	**$388.00** _____
Permit for Enhanced Leak Detection	$235.00 for the first boring	**$368.00** _____
	TOTAL COST OF PERMIT	**$669.00**

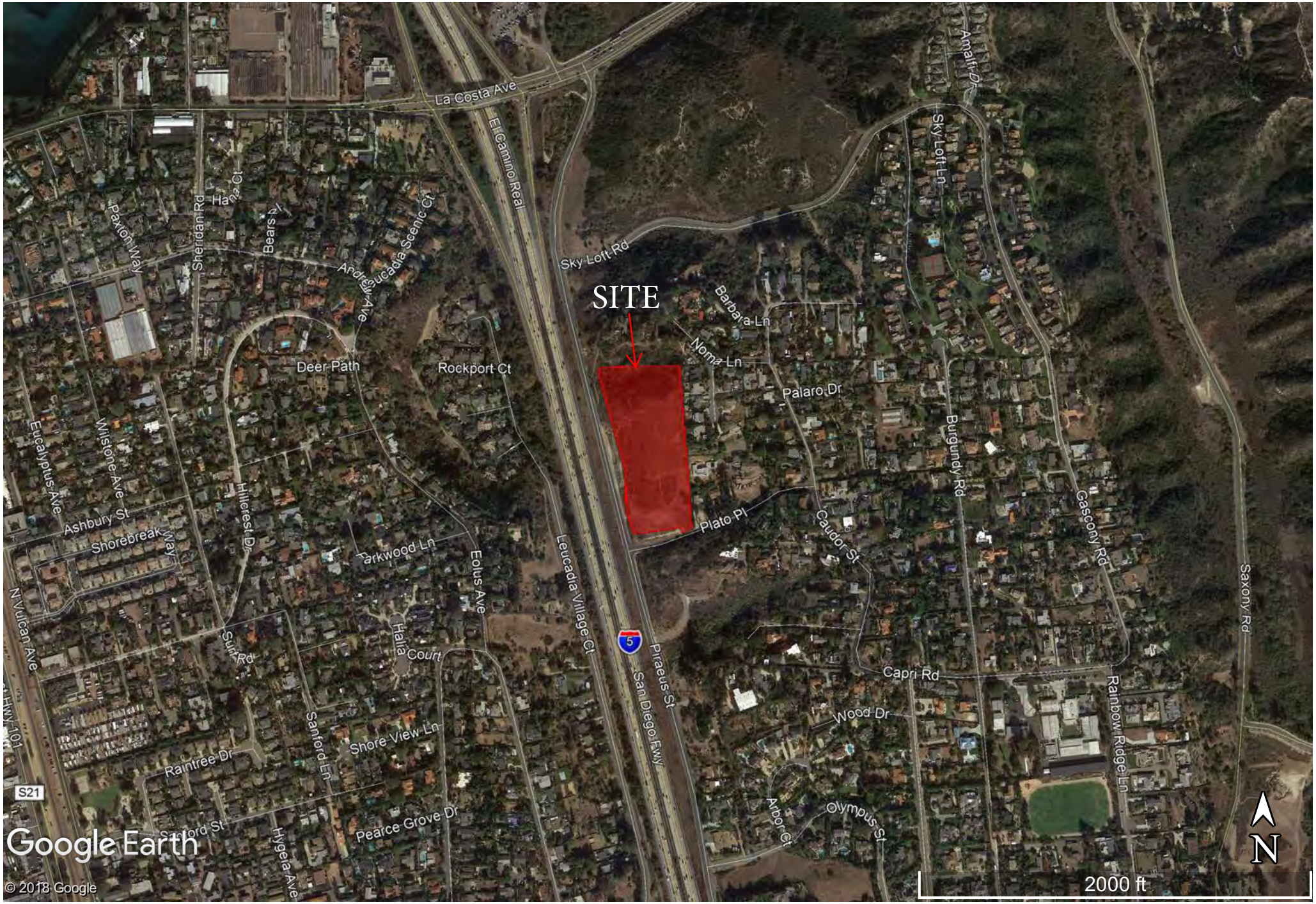


Figure 1 - Vicinity Map



Figure 2 - Boring Location Plan

Geocon Legend

B-8 ... Approx. Location of Planned Boring

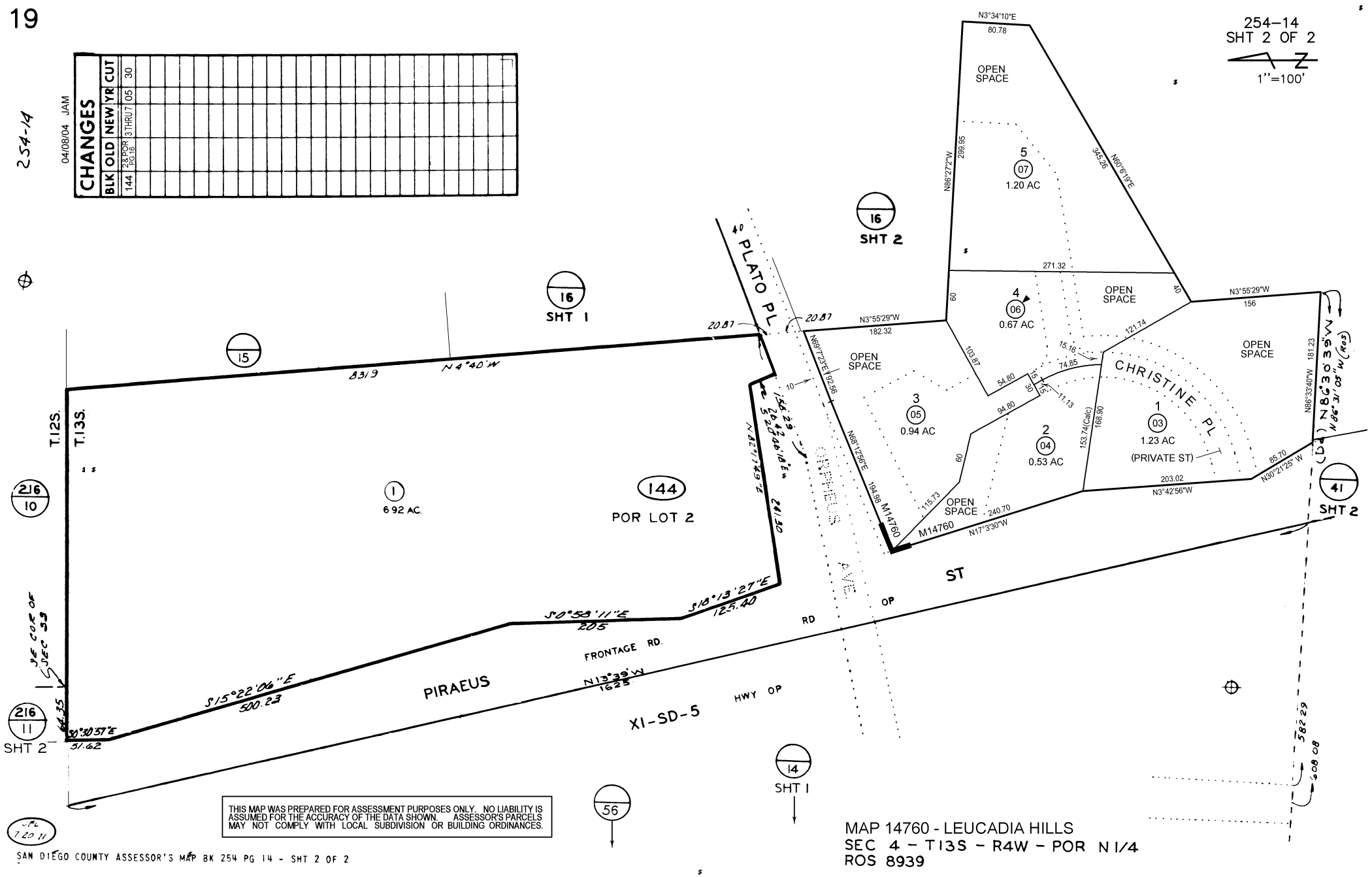


Figure 3 - Parcel Map

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858)505-6688
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:	**Assessor's Parcel Number (APN):**
Piraeus Street	254-144-01-00
Encinitas, CA	_____

I, PIRAEUS INVESTOR LLC, owner of the property/properties listed above, give my permission to Geocon Incorporated (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 8 soil borings

I understand that Lilian Rodriguez (registered professional) of Geocon Incorporated (consulting company) and an authorized signer for Tri-County Drilling Incorporated (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: _____ Date: _____ 4.23.19

Print Name: _____ Title: _____ HARRINGTON C. CANNON OWNER

Company: _____ PIRAEUS INVESTOR LLC

Mailing Address: _____ 158 N MELROSE DR. VISTA CA. 92083

HARRINGTONCANNON@ icloud.com

760. 500. 7039

GEOCON
INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS

Project No. G2307-11-02
May 24, 2019

Well Permitting Clerk
County of San Diego
Department of Environmental Health
Site Assessment and Mitigation Division
5500 Overland Avenue, Suite 110
San Diego, California 92123

Subject: SUBMITTAL OF FIGURES AND BORING LOGS FOR PERMIT CLOSURE
DEH PERMIT NO. LMWP-003948
APN NO: 254-144-01-00
ENCINITAS, CALIFORNIA

To Whom It May Concern:

On behalf of Covelop Incorporated, we prepared this letter regarding 3 small-diameter and 4 large-diameter geotechnical borings (SB-1 through SB-3 and LB-1 through LB-4, respectively) advanced at the subject site under DEH Permit No. LMWP-003984. The subsurface materials encountered consist of undocumented fill, alluvium, Terrace Deposits, and Santiago Formation. We encountered perched groundwater in the small diameter borings at depths ranging from approximately 38 to 49 feet below the existing ground surface, and we encountered seepage in the large diameter borings at depths ranging from approximately 40 to 44 feet below the existing groundwater surface. The Vicinity Map, Figure 1, depicts the approximate location of the site. The Boring Location Map, Figure 2, presents the approximate locations of the borings. The site is also depicted on the Parcel Map, Figure 3. The small and large diameter borings were 8 and 30-inches in diameter, respectively, and the borings were terminated at depths ranging from approximately 52½ and 84 feet. We backfilled the small-diameter borings with a bentonite-grout mix, and the large-diameter borings with bentonite in accordance with the requirements of the permit following the completion of the drilling, sampling, and logging operations. Details of subsurface materials encountered in the borings and backfill materials are indicated on the attached boring logs.

Please contact the undersigned if you have any questions.

Very truly yours,

GEOCON INCORPORATED





Lilian E. Rodriguez
RCE 83227

LER:dmc

Enclosures: Figure 1, Vicinity Map
Figure 2, Boring Location Map
Figure 3, Parcel Map
Boring Logs SB-1 through SB-3 and LB-1 through LB-4

(e-mail) Addressee

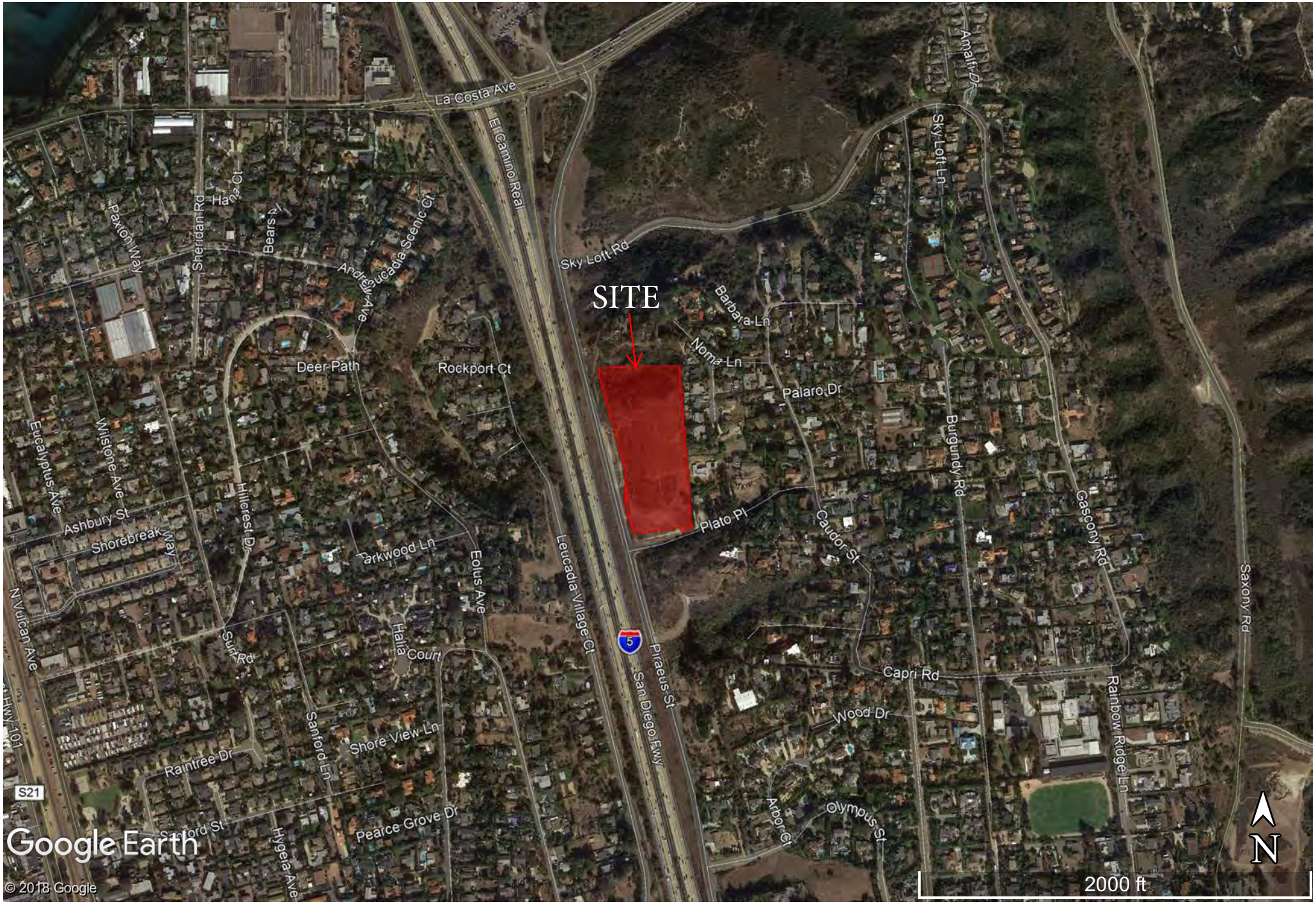
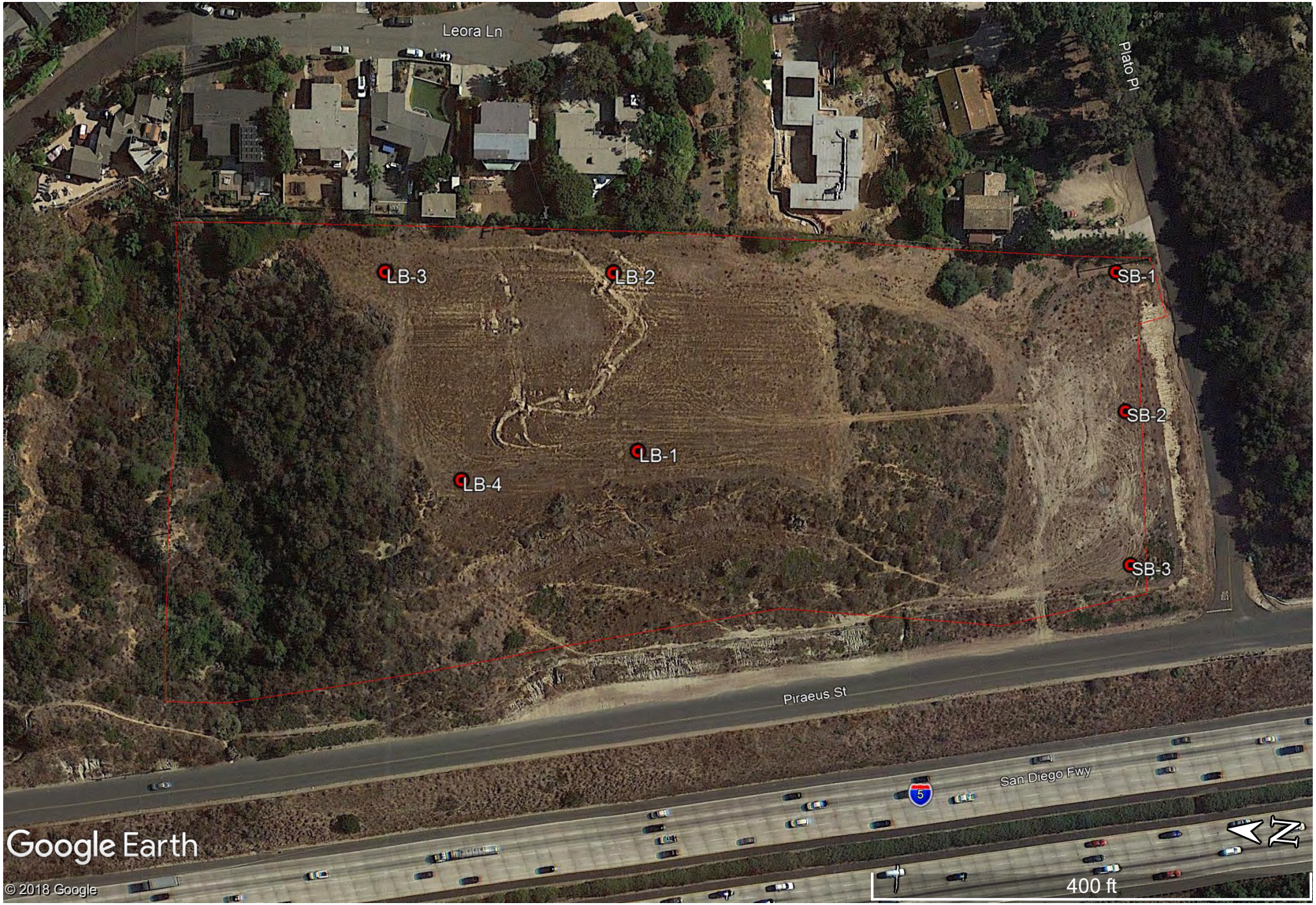


Figure 1 - Vicinity Map



Geocon Legend

LB-4 ... Approx. Location of Large-Diameter Boring

SB-3 ... Approx. Location of Small-Diameter Boring

Figure 2 - Boring Location Map

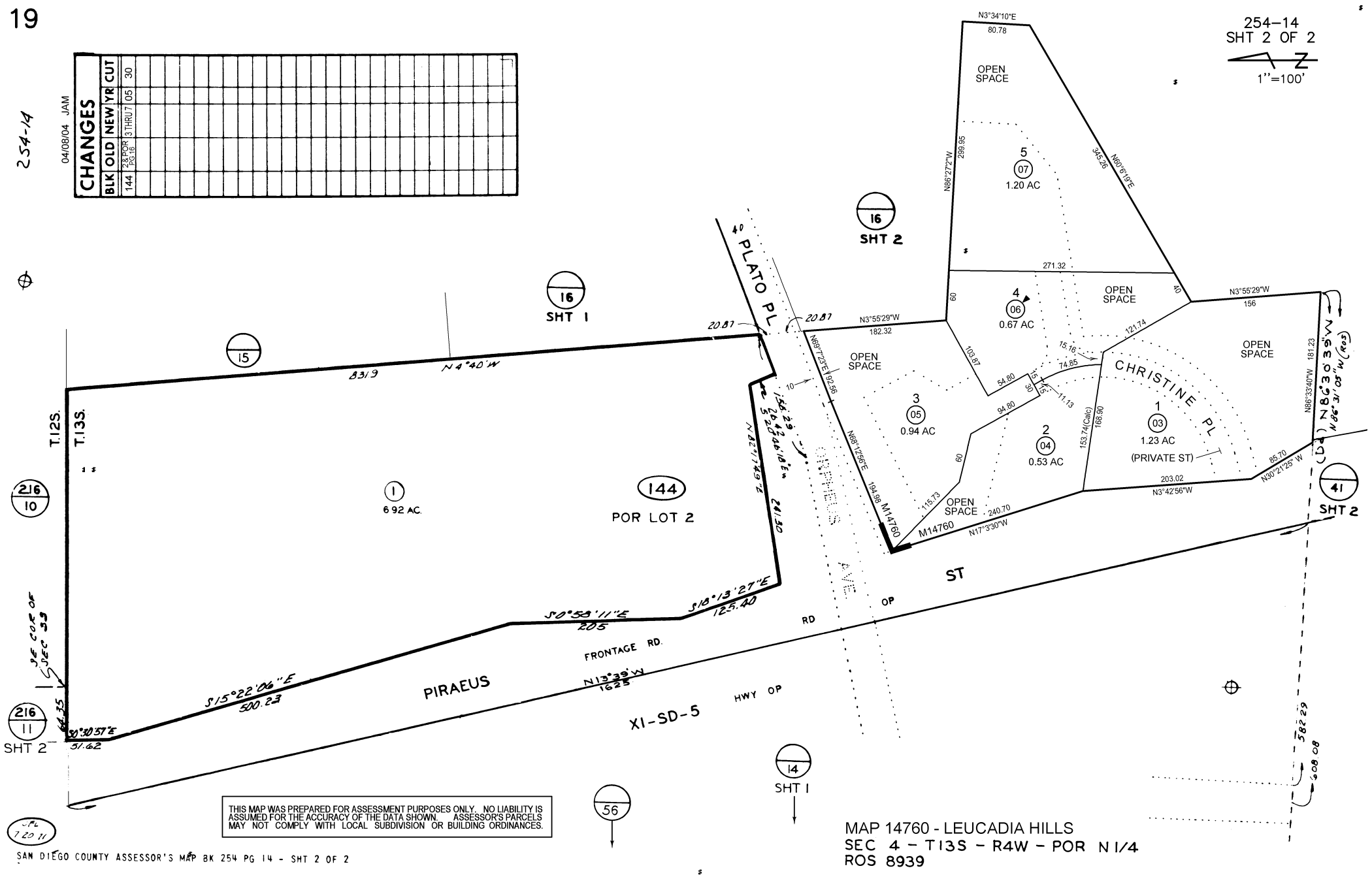


Figure 3 - Parcel Map

PROJECT NO. G2307-11-02

BORING LB 1

ELEV. (MSL.) **156'** DATE COMPLETED **05-06-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**TERRACE DEPOSITS (Qt)** Medium dense, damp to moist, reddish brown, Silty, fine to coarse SAND			
2								
4								
6	LB1-1				-Becomes very dense		124.9	5.4
8	LB1-2				-Becomes fine- to medium-grained			
10	LB1-3				-Becomes moist -Cobble up to 5 inches		117.7	8.6
12								
14								
16	LB1-4 LB1-5			SM	Dense, moist, brown to yellowish brown, Silty, fine to coarse SAND		116.3	10.1
18	LB1-6			SM	-Cobble up to 8 inches -Erosional, undulatory contact **SANTIAGO FORMATION (Tsa)**			
20	LB1-7				Dense to very dense, moist, olive to yellowish brown, Silty, fine- to coarse-grained SANDSTONE; massive and very weakly laminated single undulatory sub vertical sand filled fracture 1/8"-1/4" wide, fracture is completely filled, trace claystone rip up clasts; rounded less than 3/4"			
22								
24					-Oxidation			
26	LB1-8			CL	-Bioturbated contact Hard, moist, grayish olive, CLAYSTONE; oxidation			
28								
30	LB1-9				-Shear, thin, 1/4" thick soft plastic clay gouge remolded, flat, moderately polished bounding surface with weak strike continuous around hole 1º at N30W DDD		107.5	20.3

Figure A-1,
Log of Boring LB 1, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING LB 1

ELEV. (MSL.) **156'** DATE COMPLETED **05-06-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32					-Few, close, iron stained fractures, sub vertical with N_S strike with 1/16" gypsum filling _Few gypsum veins sub-parallel to bedding			
34								
36	LB1-10						100.8	23.1
38	LB1-11							
40	LB1-12		▼		-Open fractures 1/8"-1/4", moderate to heavy seepage			
42								
44					-Shear 1/4"-1/2" thick, bluish-gray remolded clay gouge, soft plastic, continuous around hole			
46	LB1-13 LB1-14			SM	-Shear 1/2"-2" thick, bluish-gray and brown, fully remolded plastic clay gouge; soft, internally sheared with numerous polished parting surfaces			
				SP	Dense to very dense, wet, bluish-gray, Silty, fine- to medium-grained SANDSTONE; laminated			
48					Very dense, wet, reddish brown and gray, fine- to coarse-grained SANDSTONE; crossbedded, gunbarrel			
50								
52								
54								
56					-End of log due to standing water			
58					BORING TERMINATED AT 58 FEET Groundwater encountered at 40.5 feet Backfilled with bentonite chips per manufacturing recommendations			

Figure A-1,
Log of Boring LB 1, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

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GEOCON

PROJECT NO. G2307-11-02

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 2** ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				SM/SC	**TERRACE DEPOSITS (Qt)** Medium dense to dense, moist, Silty to Clayey, fine to coarse SAND			
2								
4					-Vertical fractions, 1/4"-3" wide; completely sand filled with roots			
6								
8								
10								
12								
14				SM	Dense, moist, brown to yellowish brown, Silty, fine to coarse SAND			
16					-Lenses of yellowish brown, fine to coarse sand			
18								
20					-Less cohesion			
22								
24				SP	Dense, damp, light brown, fine- to medium-grained SANDSTONE; oxidized and micaceous planer laminate			
26					-Belling of hole, logged cuttings only below			
28				SM	Medium dense, damp, yellowish brown, Silty, fine to coarse SANDSTONE; cobble up to 8"			
30				SP	**SANTIAGO FORMATION (Tsa)** Dense to very dense, moist, yellowish brown, fine- to coarse-grained SANDSTONE			

Figure A-2,
Log of Boring LB 2, Page 1 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 2** ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE** MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32								
34								
36								
38								
40				ML/CL	Very stiff to hard, moist, bluish gray, SILTSTONE to CLAYSTONE; oxidized in areas			
42								
44								
46								
48								
50								
52								
54								
56	LB2-1				-Approximately bedding plane shear			
58								
60								
62								
				SP	Very dense, damp to moist, light yellowish brown, fine- to coarse-grained			

Figure A-2,
Log of Boring LB 2, Page 2 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 2** ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
64					SANDSTONE; cobble up to 6 inches			
66								
68								
70								
72								
74								
76								
78								
80								
82								
84					BORING TERMINATED AT 84 FEET Groundwater not encountered Backfilled with bentonite chips per manufacturing recommendations			

Figure A-2,
Log of Boring LB 2, Page 3 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

BORING LB 3

ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**TERRACE DEPOSITS (Qt)** Loose to medium dense, dry to damp, Silty, fine- to medium-grained SAND			
2								
					-Vertical fractures, 1/2" to 3" wide, sand infilled			
4				SC	Medium dense, moist, reddish brown, Clayey, fine to medium SAND			
6	LB3-1				Vertical fractures, 1/4" to 2 1/2" wide, sand infilled			
8								
10					-Less fractures			
12					-Becomes dense			
14								
16	LB3-2						116.1	5.9
				SP	Dense, moist, brown, fine to medium SAND			
18								
20					-Yellowish brown, fine to coarse SAND lenses			
22								
24				SC	Dense, moist, reddish brown, Clayey, fine to coarse SAND			
26					-Dark brown, sandy clay rip-up clasts			
28								
30					-Cobble lag up to 8"			
	LB3-3						101.5	7.5

Figure A-3,
Log of Boring LB 3, Page 1 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

BORING LB 3

ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32		SP	**SANTIAGO FORMATION (Tsa)** Dense, moist, yellowish brown, fine- to coarse-grained SANDSTONE			
34			-Lamination, fine to coarse cross-bedding			
36	LB3-4	SM	Dense, moist, olive gray, Silty, fine- to coarse-grained SANDSTONE		117.1	9.1
38						
40		SM	Very dense, moist, dark gray, Silty, fine- to coarse-grained SANDSTONE; mottled yellowish brown oxidation			
42						
44		CL	-Low seepage along contact Hard, damp to moist, light bluish gray, CLAYSTONE			
46	LB3-5					
48			-Vertical and horizontal fracturing, oxidized with gypsum in fill			
50	LB3-6					
52			-Sub-vertical fractures controlled seepage			
54						
56						
58			-Weakly fissured claystone beds with discontinuous, poorly developed clay gouge; fissile polished parting surfaces in some areas (58'-59.5')			
60	LB3-7				101.5	19.4
62	LB3-8		-Bedding plane shear-1/2" to 1" thick, soft and stiff, gray, fully developed, plastic clay bed 2º at N10W DDD			

G2307-11-02.GPJ

Figure A-3,
Log of Boring LB 3, Page 2 of 3

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 3** ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
64				SM	-Bedding plane shear-1" to 1 1/4" thick, soft and stiff, gray, fully developed, moderately to fully remolded, plastic clay bed; numerous polished internal parting surfaces, 1º at N10W DDD			
66					Very dense, moist, bluish gray, fine- to medium-grained SANDSTONE			
68				SM	-Contact interbedded Very dense, moist, olive to yellowish brown, Silty, fine- to medium-grained SANDSTONE			
70	LB3-9							
72								
74					-Concretion			
76								
78								
80					-Becomes finer grained			
82								
84					BORING TERMINATED AT 84 FEET Groundwater encountered at 44 feet Backfilled with bentonite chips per manufacturing recommendations			

Figure A-3,
Log of Boring LB 3, Page 3 of 3

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

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GEOCON

PROJECT NO. G2307-11-02

BORING LB 4

ELEV. (MSL.) **154'** DATE COMPLETED **05-09-2019**

EQUIPMENT **EZ BORE E-120** BY: **R. ADAMS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SC	**TERRACE DEPOSITS (Qt)** Dense, damp to moist, reddish brown to dark brown, Clayey, fine to coarse SAND; massive to very weakly bedded, few brown paleosol horizons			
10					-Paleosol, 2"-6" thick, reddish to dark brown sand with trace silt			
12				SC	Medium dense to dense, moist, brown to reddish brow, Clayey, fine to coarse SAND; gravel and cobble up to 6 inches			
14				SM	**SANTIAGO FORMATION (Tsa)** Dense to very dense, damp, grayish to yellowish brown, Silty, fine- to coarse-grained SANDSTONE; massive to very weakly laminated, some cross bedding, few sand filled fractures extending down from contact, narrowing with increasing depth			
20					-Coarse grained			
22					-Mottled			
24					-Sharp, bioturbated contact			
26				CL	Stiff to very stiff, damp, bluish gray to mottled orangish gray, CLAYSTONE; interbedded siltstone, oxidated laminae, short closed fractures			
28								
30								

Figure A-4,
Log of Boring LB 4, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING LB 4

ELEV. (MSL.) **154'** DATE COMPLETED **05-09-2019**

EQUIPMENT **EZ BORE E-120** BY: **R. ADAMS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32				ML	Stiff to hard, damp, gray to grayish brown, Clayey, SILTSTONE; massive, occasional closed fracture			
34								
36								
38					-Transitional contact			
				CL	Stiff to hard, moist, bluish gray, CLAYSTONE; very weakly fissured, oxidized laminae, little seepage, few closed fractures, few thin, 1/8" thick, gypsum veins parallel to bedding			
40			▼					
42					-Shear, 3/4" to 1" thick, gray, weak to moderately remolded, soft to very soft, plastic clay gouge; increase fissuring above shear			
44				SM	-Shear, 1 1/2" thick, gayish brown, weakly remolded, fully developed, soft plastic, clay bed, internally sheared with numerous parting surfaces, 1º N63W DDD			
46					very dense, damp, bluish gray, Silty, medium- to coarse-grained SANDSTONE			
				SP	-1/4" TO 1/2" sub-horizontal fractures with seepage; 40% TO 60% gypsum filled			
48					Very dense, damp, yellowish gray, medium- to coarse-grained SANDSTONE; very weakly laminated			
50								
52					-Concretion bed			
54								
56								
58								
60					BORING TERMINATED AT 60 FEET Groundwater encountered at 40 feet Backfilled with bentonite chips per manufacturing recommendations			

Figure A-4,
Log of Boring LB 4, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

BORING SB 1

ELEV. (MSL.) **115'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB1-1			SC	**UNDOCUMENTED FILL (Qudf)** Loose to medium dense, moist, yellowish to grayish brown, Clayey, fine to coarse SAND; trace gravel			
2								
4					-Becomes medium dense			
6	SB1-2				-Becomes damp; chunks of gray siltstone	46	113.3	8.1
8								
10	SB1-3				-Becomes moist, dark brown	38	123.0	11.1
12								
14								
16	SB1-4			SC	**ALLUVIUM (Qal)** Loose, damp, dark yellowish brown, Clayey, fine to coarse SAND	16	123.0	6.5
18								
20	SB1-5				Becomes medium dense; finer-grained	18	106.1	5.3
22	SB1-6							
24								
26	SB1-7				-Becomes moist; clay content increases	27	114.0	11.8
28								
30	SB1-8					19	108.8	10.8

Figure A-5,
Log of Boring SB 1, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

BORING SB 1

ELEV. (MSL.) **115'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32								
34								
36	SB1-9				Becomes loose, wet	15	110.2	15.0
38			▼		-Measured after leaving hole open for 15 min.			
40	SB1-10					17		
42								
44								
46	SB1-11					16	109.6	20.5
48								
50	SB1-12			SM	**SANTIAGO FORMATION (Tsa)** Very dense, damp, light yellowish to grayish brown, Silty, fine-grained SANDSTONE	80/10"		
52	SB1-13					50/5"		
					BORING TERMINATED AT 52.5 FEET Groundwater encountered at 38 feet Backfilled with 18.3 ft³ of bentonite grout			

Figure A-5,
Log of Boring SB 1, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

BORING SB 2

ELEV. (MSL.) **111'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB2-1			SC	**UNDOCUMENTED FILL (Qudf)** Loose to medium dense, moist, yellowish to grayish brown, Clayey, fine to coarse SAND; trace organics, trace gravel			
2								
4								
6	SB2-2				-Becomes dense; chunks of gray siltstone and sandstone	61	120.2	11.4
8								
10	SB2-3				-Becomes medium dense	32	112.4	16.4
12								
14								
16	SB2-4			SC/SW	**ALLUVIUM (Qal)** Medium dense, moist, dark yellowish brown, Clayey, fine to medium SAND to well-graded, fine to medium SAND	19	115.0	9.1
18								
20	SB2-5			SC	Medium dense, moist, dark yellowish brown, Clayey, fine to medium SAND	22	115.2	10.0
22								
24								
26	SB2-6					18	107.1	6.5
28								
30	SB2-7					16	110.8	12.2

Figure A-6,
Log of Boring SB 2, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

BORING SB 2

ELEV. (MSL.) **111'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32								
34								
36	SB2-8			SM/SP	Medium dense, moist, dark yellowish brown, Silty, fine SAND to poorly-graded fine SAND	19	112.4	9.6
38			▼					
40	SB2-9			SC	Medium dense, saturated, yellowish brown, Clayey, fine SAND	18	115.4	17.0
42								
44								
46	SB2-10					18		
48								
50	SB2-11				-Becomes light reddish brown	24	114.5	19.5
52								
54								
56	SB2-12			SM	**SANTIAGO FORMATION (Tsa)** Very dense, damp, light yellowish brown to gray, Silty, fine-grained SANDSTONE	82/8"		
	SB2-13					50/6"		

BORING TERMINATED AT 56.5 FEET
Groundwater encountered at 40 feet
Backfilled with 19.7 ft³ of bentonite grout

Figure A-6,
Log of Boring SB 2, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

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PROJECT NO. G2307-11-02

BORING SB 3

ELEV. (MSL.) **107'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB3-1			SM	**UNDOCUMENTED FILL (Qudf)** Loose to medium dense, damp, yellowish brown, Silty, fine to coarse SAND; trace organics; trace gravel -Becomes medium dense			
4	SB3-2				-Becomes dense, dark yellowish brown	56	120.9	3.7
10	SB3-3				-Becomes medium dense, yellowish brown to gray	25	110.8	9.3
16	SB3-4			SC/CL	**ALLUVIUM (Qal)** Loose, moist, dark brown to yellowish brown, Clayey, fine to medium SAND to Sandy CLAY	16	121.1	11.5
20	SB3-5			SC	Loose, moist, dark brown, Clayey, fine to medium SAND	14	116.1	9.4
30	SB3-6				-Becomes light yellowish brown; clay content increases	15	112.6	11.8

Figure A-7,
Log of Boring SB 3, Page 1 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-11-02

BORING SB 3

ELEV. (MSL.) **107'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
32								
34								
36	SB3-7					17	109.8	14.4
38								
40	SB3-8			SM	Loose, damp, light yellowish to grayish brown, Silty, fine SAND	14	97.8	5.7
42								
44								
46	SB3-9			SC	Loose, moist, light yellowish to grayish brown, Clayey, fine SAND	13	96.0	14.4
48			▼		-Becomes saturated			
50	SB3-10			SM	**SANTIAGO FORMATION (Tsa)** Very dense, moist, light yellowish to grayish brown, Silty, fine-grained SANDSTONE	30		
52								
54	SB3-11					50/6"		
					BORING TERMINATED AT 55.5 FEET Groundwater encountered at 49 feet Backfilled with 19.4 ft³ of bentonite grout			

Figure A-7,
Log of Boring SB 3, Page 2 of 2

G2307-11-02.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

APPENDIX E

Piraeus Property

Piraeus Street/Plato Place

Encinitas, CA 92024

Inquiry Number: 6632347.8

August 23, 2021

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

08/23/21

Site Name:

Piraeus Property
Piraeus Street/Plato Place
Encinitas, CA 92024
EDR Inquiry # 6632347.8

Client Name:

Geocon Env. Consultants, Inc.
6960 Flanders Drive
San Diego, CA 92121-0000
Contact: Cole Mikesell

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2002	1"=500'	Acquisition Date: January 01, 2002	USGS/DOQQ
1997	1"=500'	Acquisition Date: October 16, 1997	USGS/DOQQ
1994	1"=500'	Acquisition Date: January 01, 1994	USGS/DOQQ
1990	1"=500'	Flight Date: September 06, 1990	USDA
1985	1"=500'	Flight Date: September 13, 1985	USDA
1979	1"=500'	Flight Date: February 13, 1979	EDR Proprietary Landiscor
1970	1"=500'	Flight Date: March 06, 1970	EDR Proprietary Landiscor
1967	1"=500'	Flight Date: May 07, 1967	USGS
1964	1"=500'	Flight Date: April 09, 1964	USDA
1953	1"=500'	Flight Date: April 14, 1953	USDA
1946	1"=500'	Flight Date: December 30, 1946	USGS
1939	1"=500'	Flight Date: April 16, 1939	USDA
1928	1"=500'	Flight Date: November 01, 1928	EDR Proprietary Landiscor

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INQUIRY #: 6632347.8
YEAR: 2016
= 500'
N
EDR


INQUIRY #: 6632347.8
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 6632347.8
YEAR: 2009
= 500'
N
EDR


INQUIRY #: 6632347.8
YEAR: 2005
= 500'
N
EDR



INQUIRY #: 6632347.8

YEAR: 2002

= 500'

N

EDR


INQUIRY #: 6632347.8
YEAR: 1997
= 500'
N
EDR


INQUIRY #: 6632347.8
YEAR: 1994
= 500'
N
EDR



INQUIRY #: 6632347.8

YEAR: 1990

= 500'

N

EDR



INQUIRY #: 6632347.8

YEAR: 1985

= 500'

N

EDR



INQUIRY #: 6632347.8

YEAR: 1979

= 500'

N

EDR



INQUIRY #: 6632347.8

YEAR: 1970

= 500'

N

EDR


INQUIRY #: 6632347.8
YEAR: 1967
= 500'
N
EDR



INQUIRY #: 6632347.8

YEAR: 1964

= 500'

N

EDR



INQUIRY #: 6632347.8

YEAR: 1953

= 500'

N

EDR



INQUIRY #: 6632347.8

YEAR: 1946

= 500'

N

EDR


INQUIRY #: 6632347.8
YEAR: 1939
= 500'
N
EDR



INQUIRY #: 6632347.8

YEAR: 1928

= 500'

N

EDR

APPENDIX F

Piraeus Property

Piraeus Street/Plato Place

Encinitas, CA 92024

Inquiry Number: 6632347.4

August 23, 2021

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

08/23/21

Site Name:

Piraeus Property
Piraeus Street/Plato Place
Encinitas, CA 92024
EDR Inquiry # 6632347.4

Client Name:

Geocon Env. Consultants, Inc.
6960 Flanders Drive
San Diego, CA 92121-0000
Contact: Cole Mikesell

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Geocon Env. Consultants, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# G2307-62-04
Project: Piraeus Street

Coordinates:

Latitude:	33.079225 33° 4' 45" North
Longitude:	-117.295148 -117° 17' 43" West
UTM Zone:	Zone 11 North
UTM X Meters:	472453.12
UTM Y Meters:	3660108.62
Elevation:	156.12' above sea level

Maps Provided:

2012
1997
1975
1968
1949
1948
1947
1901
1898
1893

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Encinitas
2012
7.5-minute, 24000

1997 Source Sheets



Encinitas
1997
7.5-minute, 24000
Aerial Photo Revised 1997

1975 Source Sheets



Encinitas
1975
7.5-minute, 24000
Aerial Photo Revised 1975

1968 Source Sheets



Encinitas
1968
7.5-minute, 24000
Aerial Photo Revised 1967

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1949 Source Sheets



Encinitas
1949
7.5-minute, 24000
Aerial Photo Revised 1947

1948 Source Sheets



Encinitas
1948
7.5-minute, 24000
Aerial Photo Revised 1947

1947 Source Sheets



OCEANSIDE
1947
15-minute, 50000

1901 Source Sheets



Oceanside
1901
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1898 Source Sheets



Oceanside
1898
15-minute, 62500

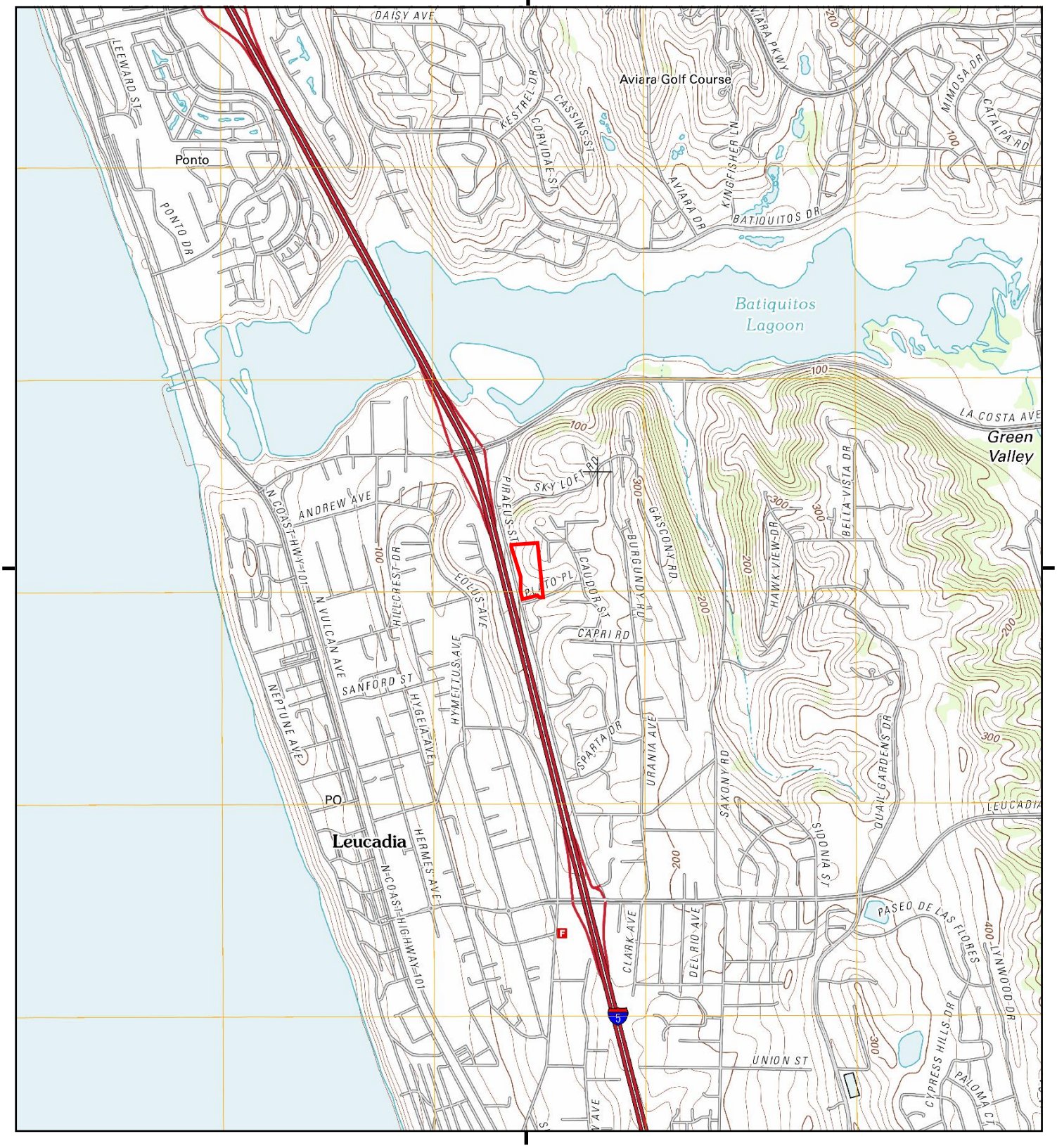
1893 Source Sheets



Oceanside
1893
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

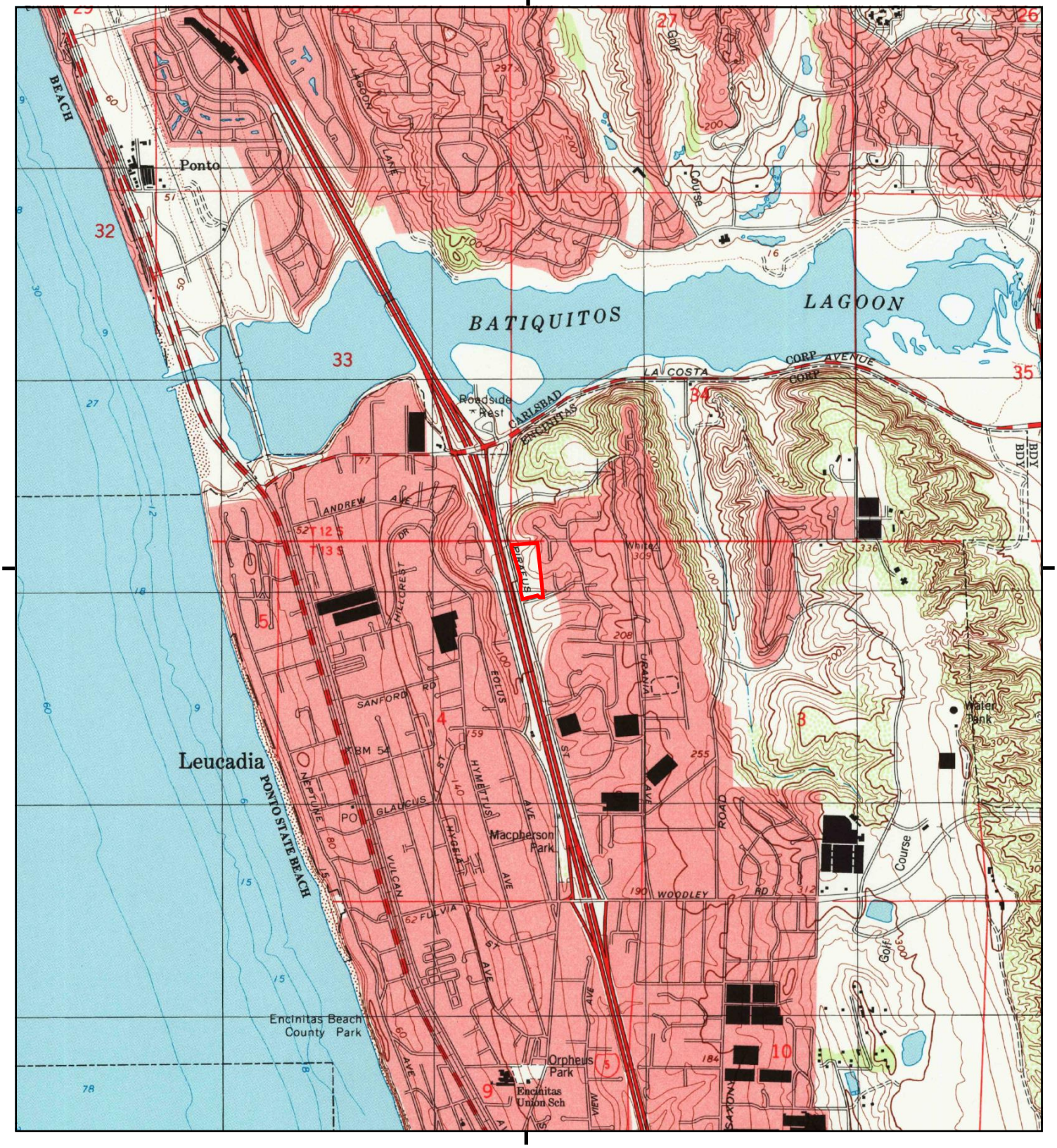
TP, Encinitas, 2012, 7.5-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

Historical Topo Map

1997



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

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W E
SW S SE

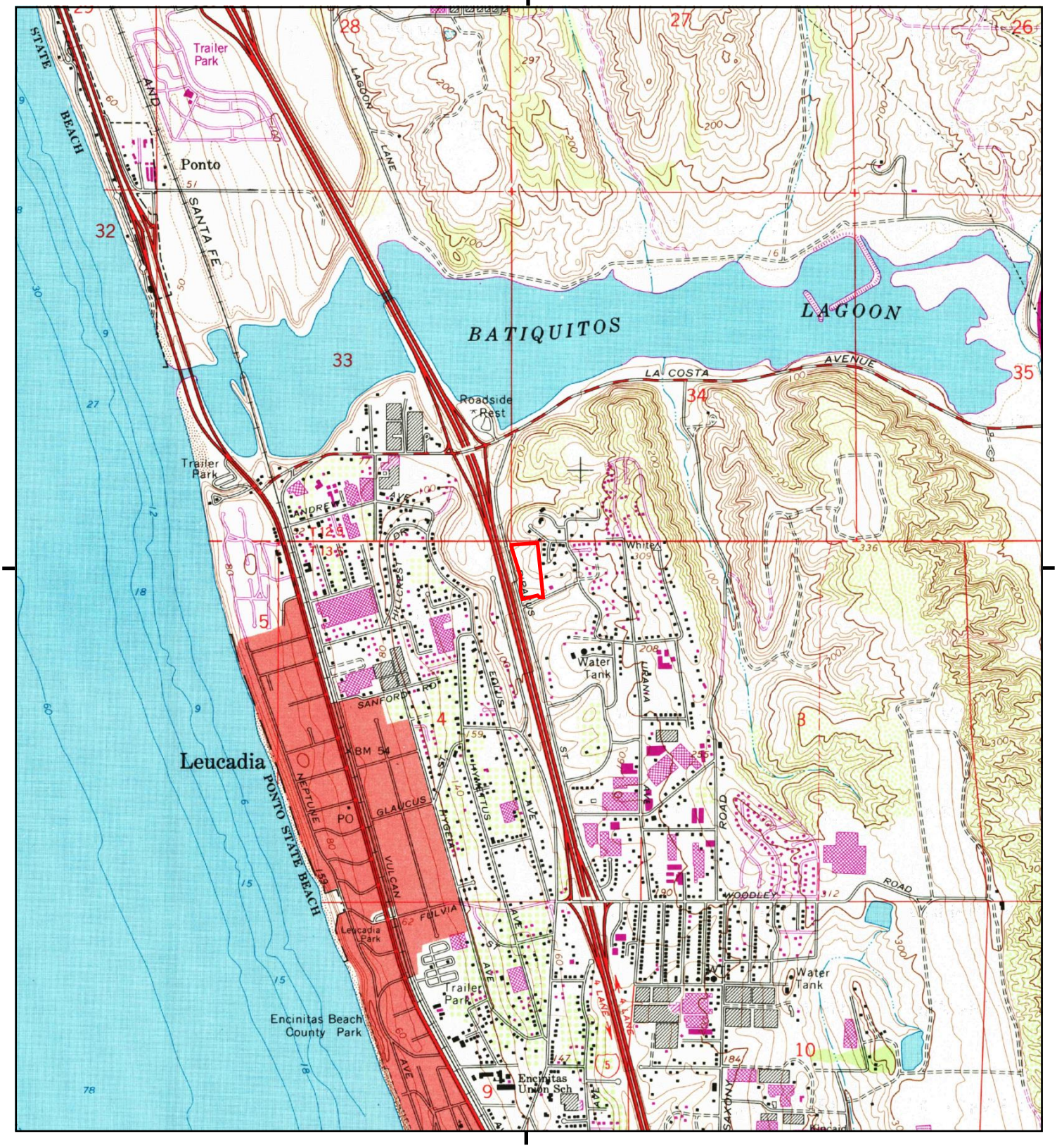
TP, Encinitas, 1997, 7.5-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

Historical Topo Map

1975



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

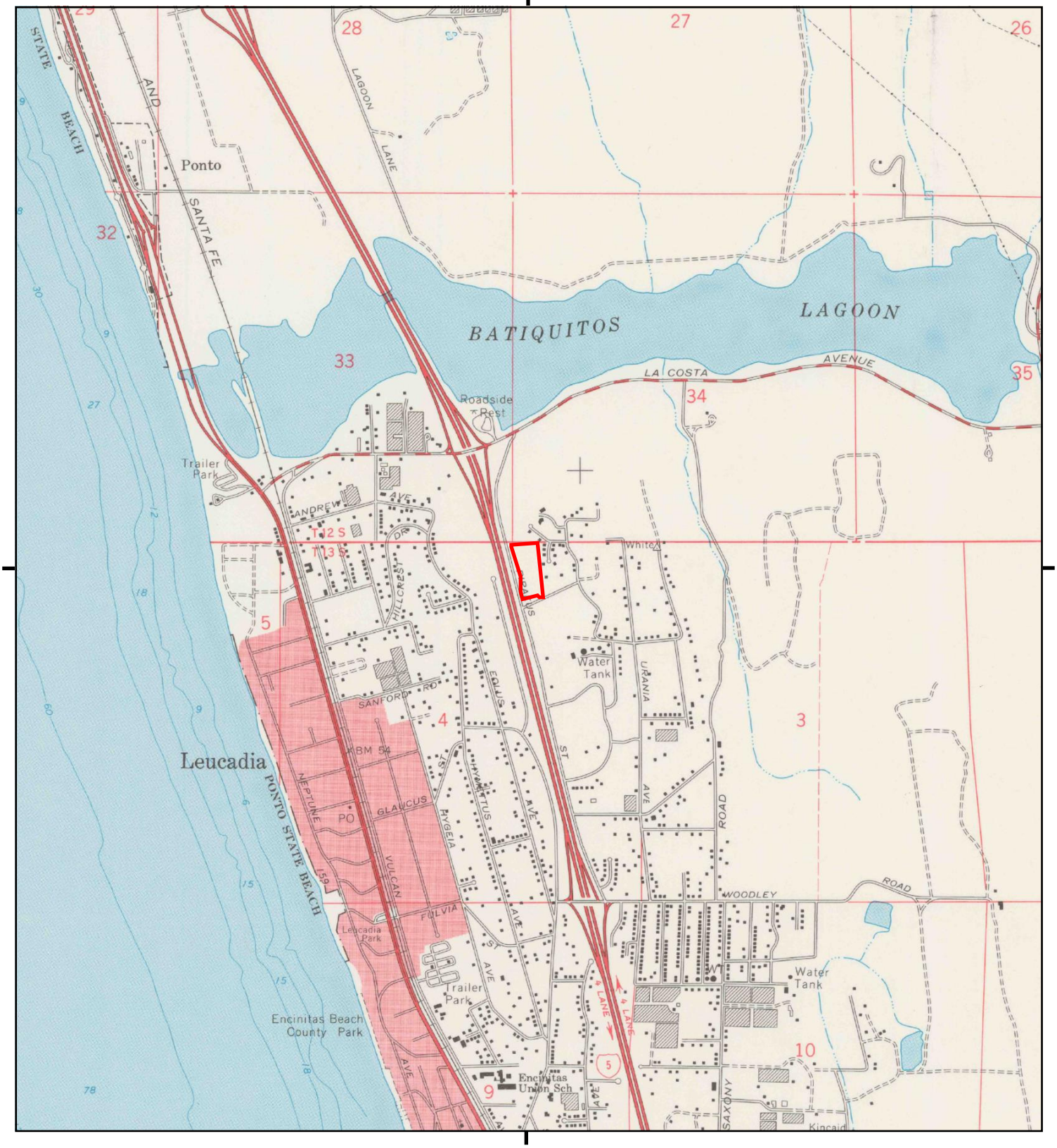
TP, Encinitas, 1975, 7.5-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

Historical Topo Map

1968



This report includes information from the following map sheet(s).

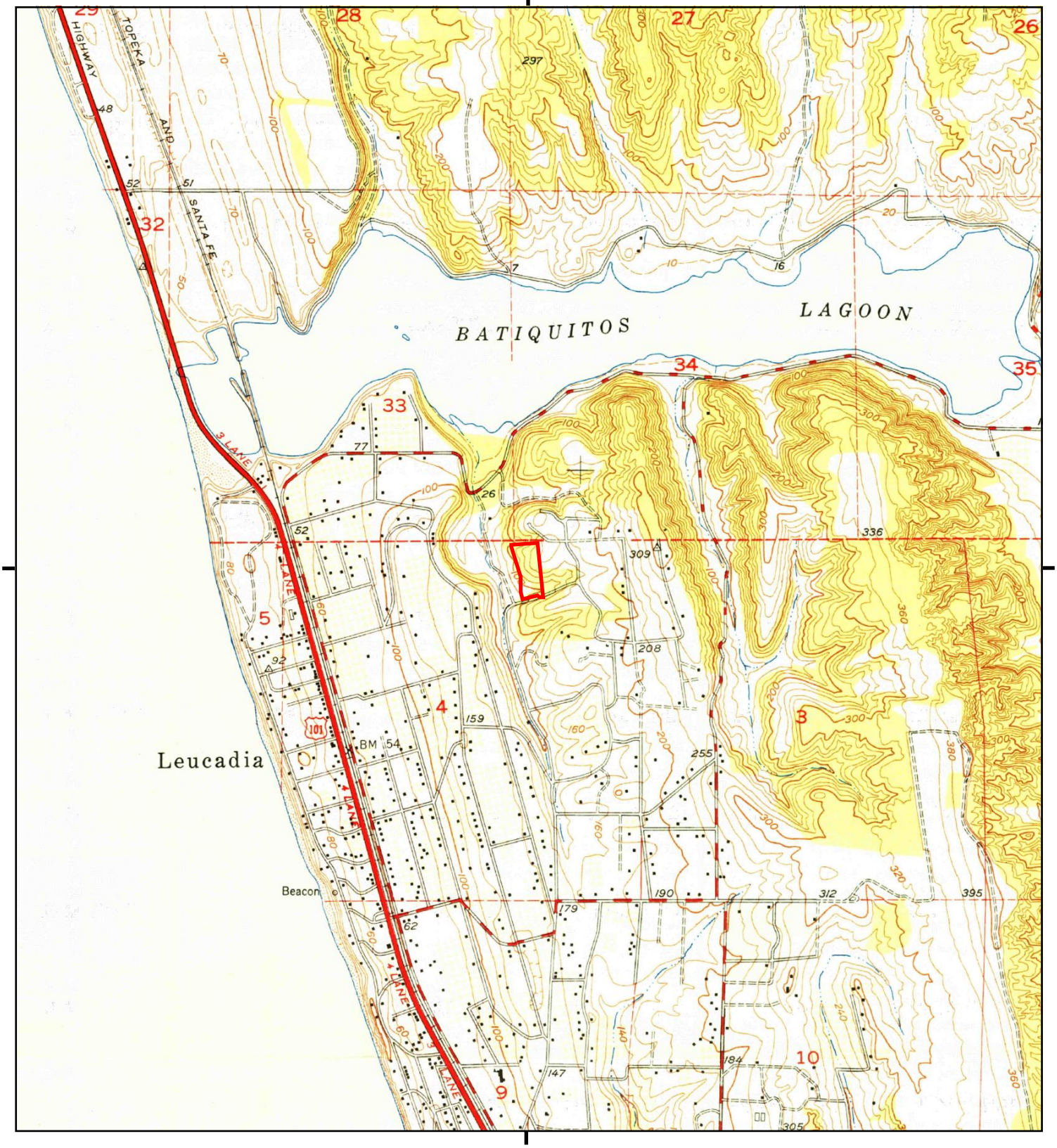
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Encinitas, 1968, 7.5-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

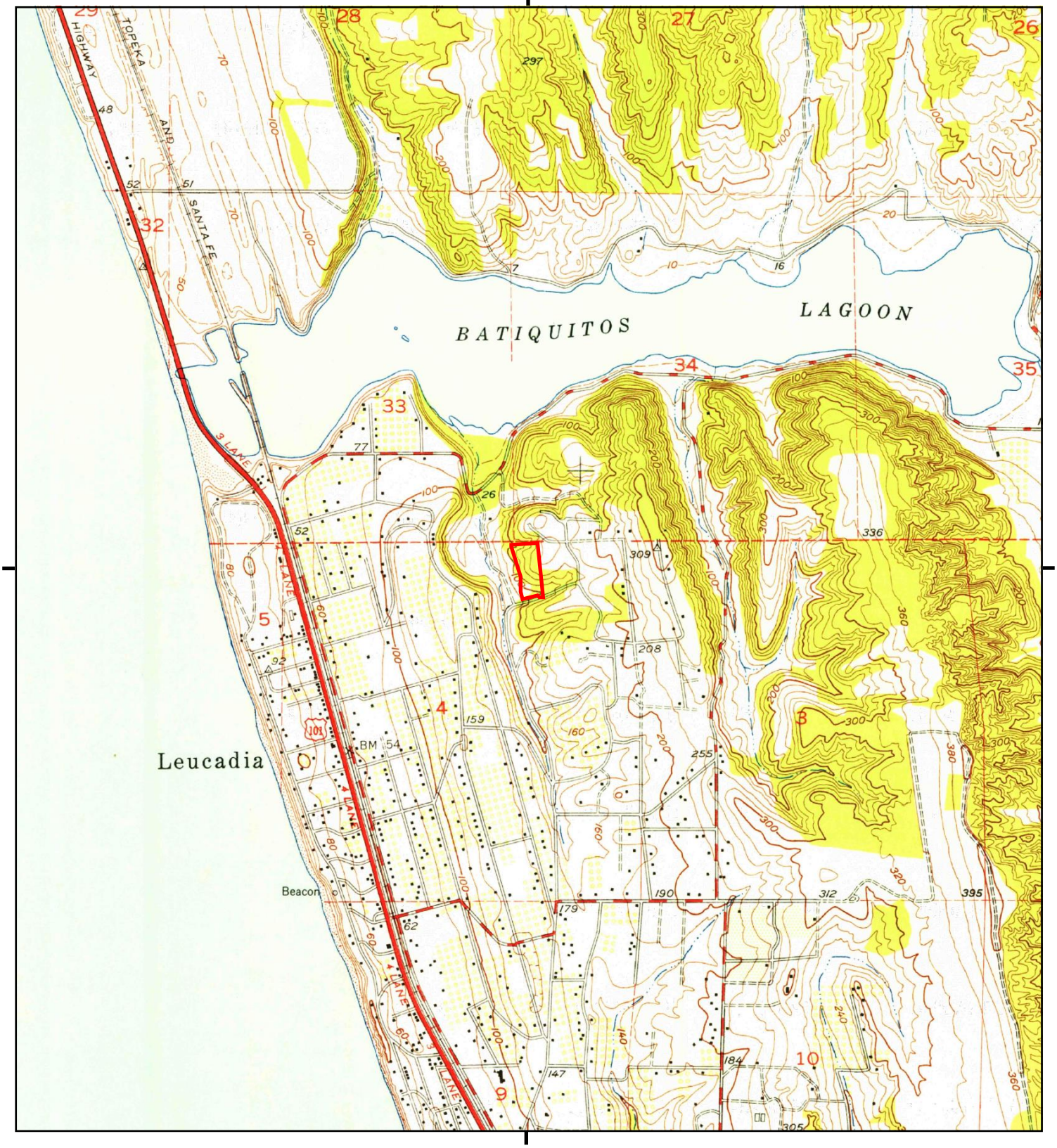
TP, Encinitas, 1949, 7.5-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

Historical Topo Map

1948



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Encinitas, 1948, 7.5-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

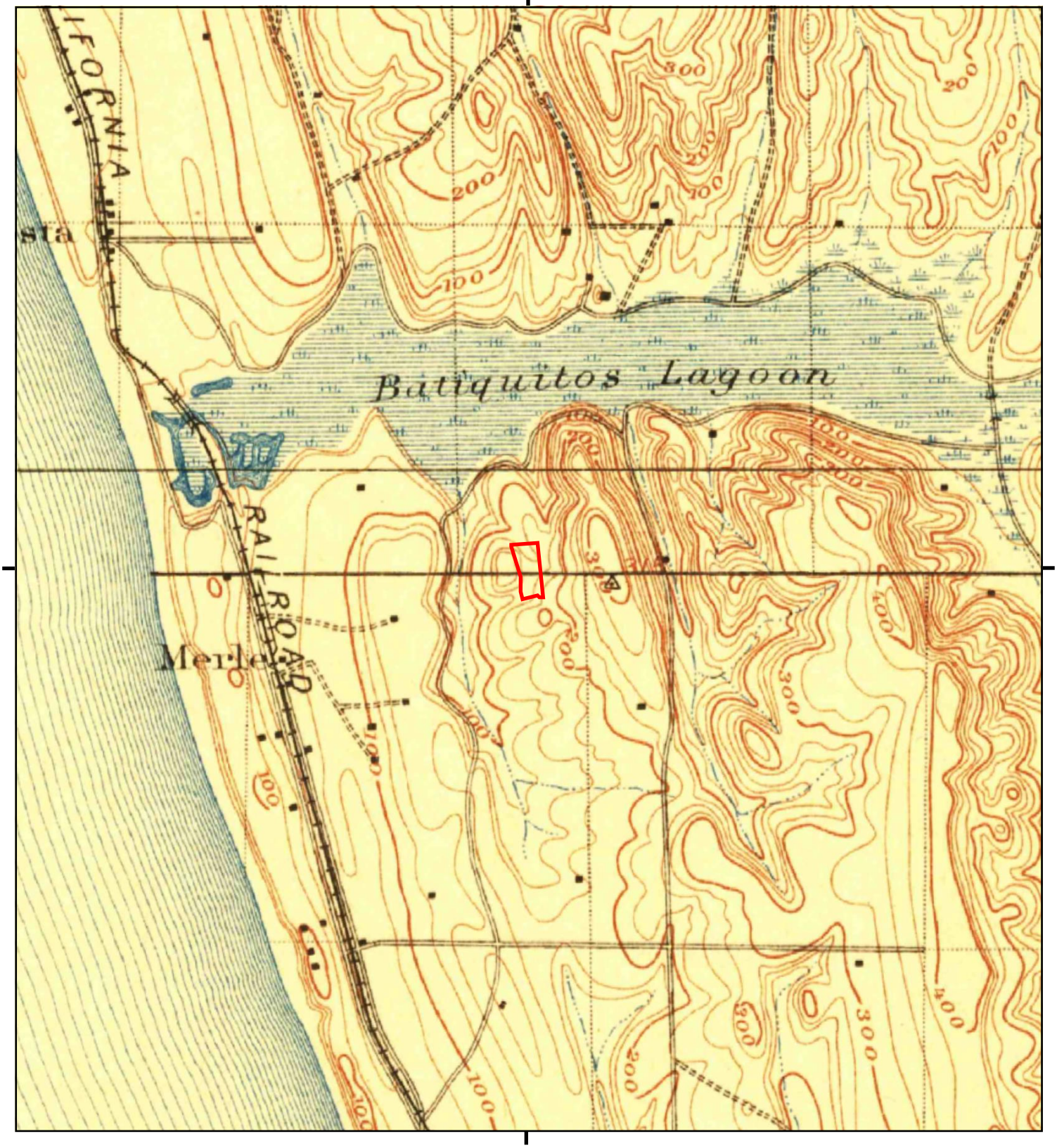
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, OCEANSIDE, 1947, 15-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

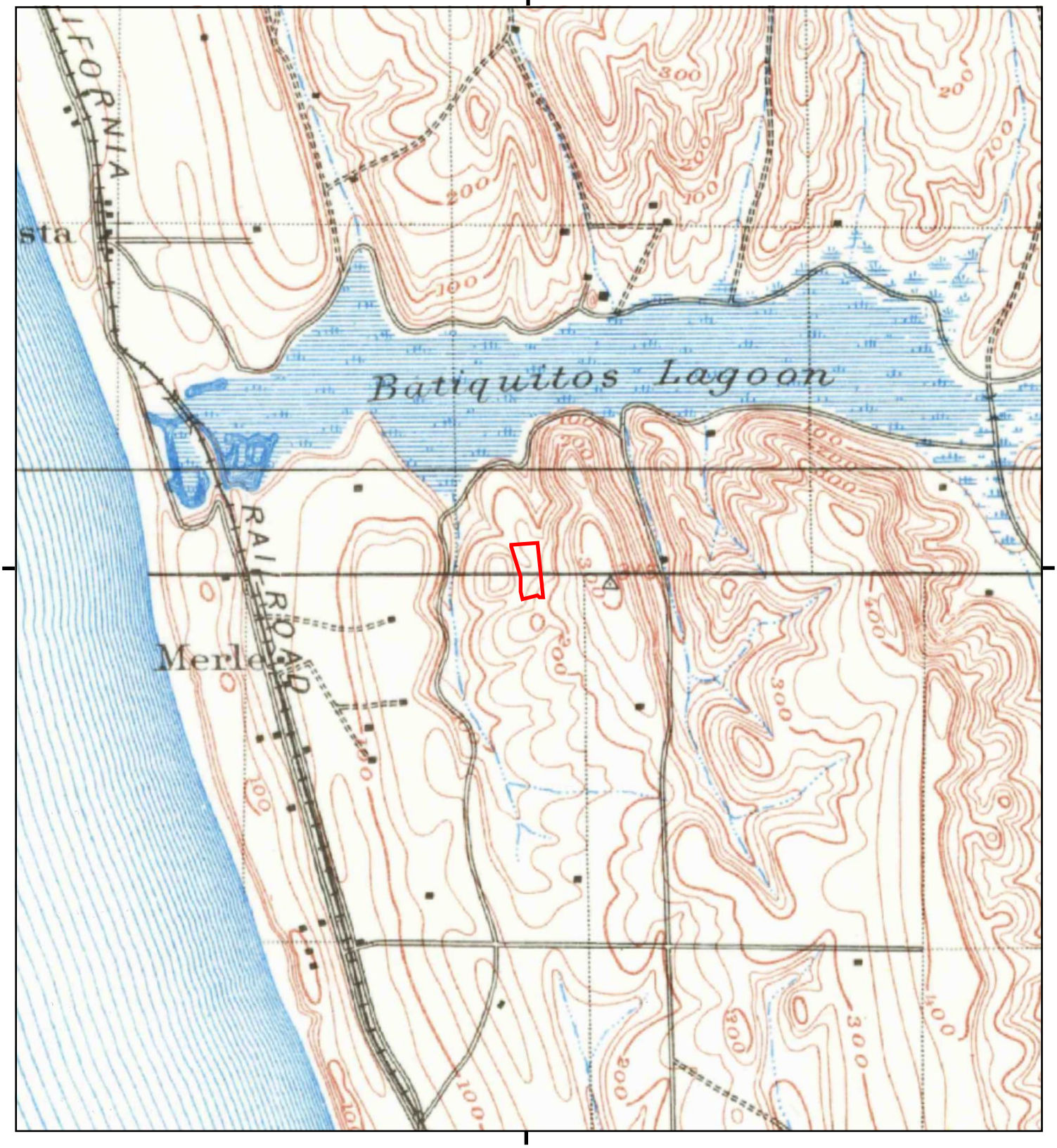
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Oceanside, 1901, 15-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Oceanside, 1898, 15-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Oceanside, 1893, 15-minute

SITE NAME: Piraeus Property
ADDRESS: Piraeus Street/Plato Place
Encinitas, CA 92024
CLIENT: Geocon Env. Consultants, Inc.

N

APPENDIX G

Piraeus Property
Piraeus Street/Plato Place
Encinitas, CA 92024

Inquiry Number: 6632347.5
August 27, 2021

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2017	☑	☑	EDR Digital Archive
2014	☑	☑	EDR Digital Archive
2010	☑	☑	EDR Digital Archive
2005	☑	☑	EDR Digital Archive
2000	☑	☑	EDR Digital Archive
1995	☑	☑	EDR Digital Archive
1992	☑	☑	EDR Digital Archive
1986	☑	☑	Haines Criss-Cross Directory
1982	☑	☑	Haines Criss-Cross Directory
1979	☑	☑	Haines Criss-Cross Directory
1975	☑	☑	Haines Criss-Cross Directory
1971	☑	☑	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

Piraeus Street/Plato Place
Encinitas, CA 92024

Year	*CD Image*	*Source*
PIRAEUS ST		
2017	pg A1	EDR Digital Archive
2014	pg A3	EDR Digital Archive
2010	pg A5	EDR Digital Archive
2005	pg A7	EDR Digital Archive
2000	pg A9	EDR Digital Archive
1995	pg A11	EDR Digital Archive
1992	pg A13	EDR Digital Archive
1986	pg A15	Haines Criss-Cross Directory
1982	pg A17	Haines Criss-Cross Directory
1979	pg A19	Haines Criss-Cross Directory
1975	pg A21	Haines Criss-Cross Directory
1971	pg A23	Haines Criss-Cross Directory

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*
PLATO PL		
2017	pg. A2	EDR Digital Archive
2014	pg. A4	EDR Digital Archive
2010	pg. A6	EDR Digital Archive
2005	pg. A8	EDR Digital Archive
2000	pg. A10	EDR Digital Archive
1995	pg. A12	EDR Digital Archive
1992	pg. A14	EDR Digital Archive
1986	pg. A16	Haines Criss-Cross Directory
1982	pg. A18	Haines Criss-Cross Directory
1979	pg. A20	Haines Criss-Cross Directory
1975	pg. A22	Haines Criss-Cross Directory
1971	pg. A24	Haines Criss-Cross Directory

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2017

949	SEIFF, KEVIN
975	ARMS, WENDY R
1411	GUNTHER, EARL L
1419	STOCKHAM, JORDAN N
1437	LARA, FRED D
	SUNDANCE RESEARCH INTERNATL
1441	GUTOSKI, RAYMOND

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2017

746	BELMONTE, PHIL P
748	WILLIAMSON, VICTORIA D
750	MILLER, DOUGLAS R
754	TURNER, EDWIN W
786	SAVILLE, SHAUN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2014

949	DEROGY, JEAN R
963	OCCUPANT UNKNOWN,
975	ARMS, JIM C
1411	GUNTHER, EARL L
1417	STOCKHAM, JORDAN N
1419	OCCUPANT UNKNOWN,
1433	MORENO, RODRIGO
1437	LARA, FRED D
	SUNDANCE RESEARCH INTERNATL
1441	GUTOSKI, RAYMOND

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2014

746	BELMONTE, PHIL A
748	WILLIAMSON, VICTORIA D
754	TURNER, EDWIN W
773	CHARRETTE, CHRISTOPHER G
786	SAVILLE, SHAUN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2010

949	DEROGY, JEAN R
975	ARMS, JIM C
1411	GUNTHER, EARL L
1417	ORTMAN, SUSAN
1419	STOCKHAM, JORDAN N
1433	SOLANO, SONIA
1437	LARA, FRED D
1441	GUTOSKI, RAYMOND F

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2010

746	BELMONTE, PHIL A
748	WILLIAMSON, DAVID M
750	OCCUPANT UNKNOWN,
754	TURNER, EDWIN W
773	CHARRETTE, CHRISTOPHER G
786	SAVILLE, SHAUN

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2005

949	DEROGY, JEAN R
963	RODRIGUEZ, CESAREO G
1411	GUNTHER, EARL L
1417	STOCKHAM, JORDAN N
1419	STOCKHAM, JEROME C
1433	MARTINEZ, IGNACIA
1437	LARA, ALFREDO D
1441	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2005

746	BELMONTE, PHIL
	MATTESONS FLORIST
748	WILLIAMSON, DAVID M
750	MATTESON, GLORIA M
754	TURNER, EDWIN W
773	CHARRETTE, CHRISTOPHER
786	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 2000

1411 GUNTHER, EARL
1417 OCCUPANT UNKNOWN,
1419 STOCKHAM, JEROME C
1437 LARA, ALFREDO D
SUNDANCE RESEARCH INTERNATL

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 2000

746	BELMONTE, PHIL
748	WILLIAMSON, DAVID
750	OCCUPANT UNKNOWN,
754	TURNER, EDWIN W
773	CHARRETTE, C G
786	VASQUEZ, CHRIS J

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 1995

1411	GUNTHER, EARL
1417	FENTIMAN, THOMAS H
1419	STOCKHAM, JEROME C
1433	OCCUPANT UNKNOWNN
1437	DIETSCHE, ANTHONY
	OKAWA, MICHIO

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 1995

746	BELMONTE, PHIL
748	MULLEN, JAMES
754	TURNER, EDWIN W

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

PIRAEUS ST 1992

1411 GUNTHER, EARL
1419 FENTIMAN, THOMAS H
1433 MALDONADO, RAMONA R
1437 DIETSCHE, ANTHONY
1441 OTO, SHIGERU

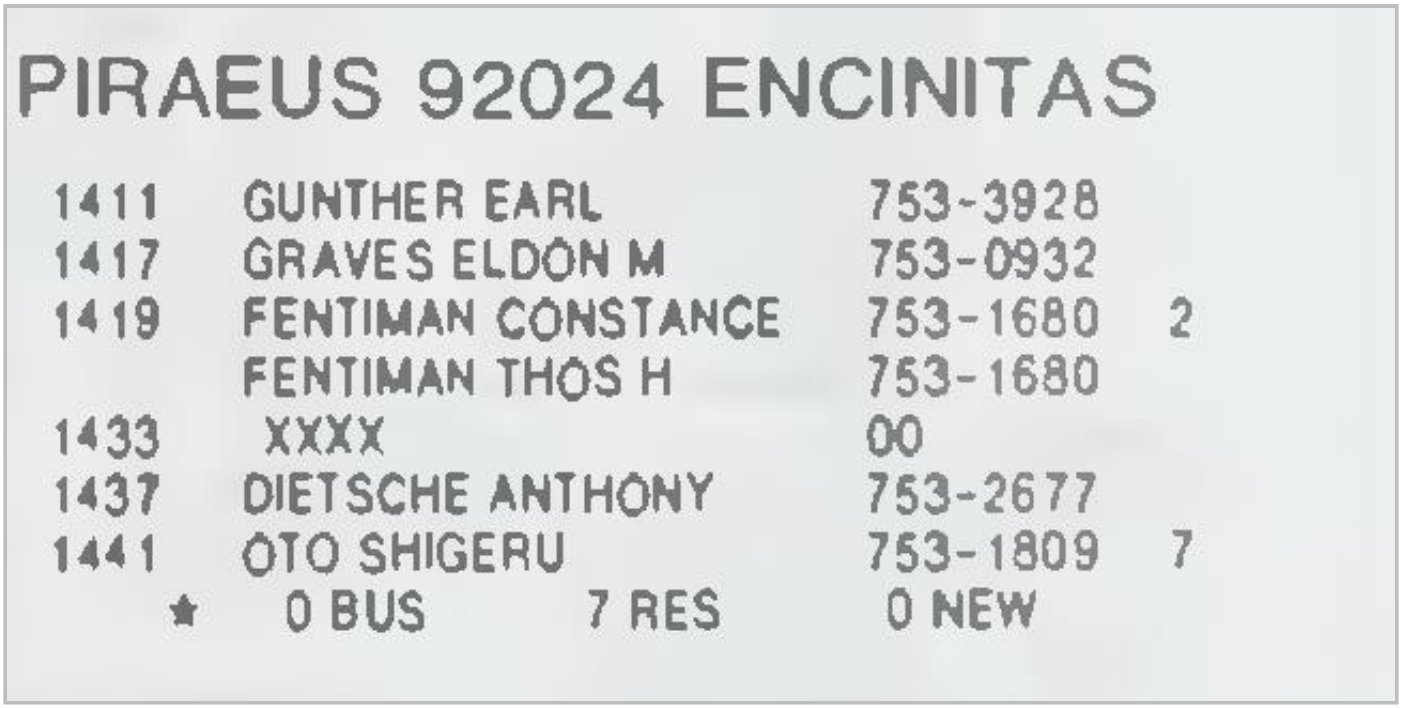
Target Street	Cross Street	Source
-	✓	EDR Digital Archive

PLATO PL 1992

746 BELMONTE, PHIL
754 TURNER, EDWIN W

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PIRAEUS ST 1986



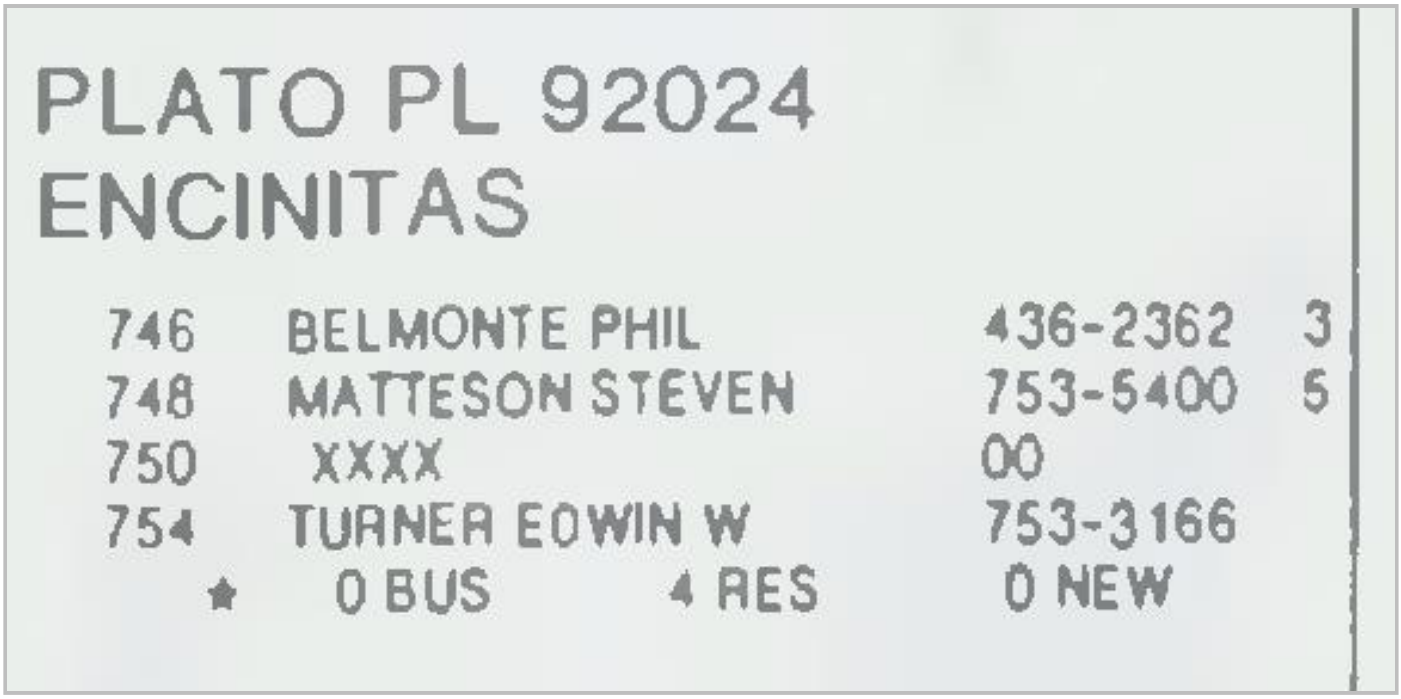
PIRAEUS 92024 ENCINITAS

1411	GUNTHER EARL	753-3928	
1417	GRAVES ELDON M	753-0932	
1419	FENTIMAN CONSTANCE	753-1680	2
	FENTIMAN THOS H	753-1680	
1433	XXXX	00	
1437	DIETSCHE ANTHONY	753-2677	
1441	OTO SHIGERU	753-1809	7

★ 0 BUS 7 RES 0 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1986



PLATO PL 92024
ENCINITAS

746	BELMONTE PHIL	436-2362	3
748	MATTESON STEVEN	753-5400	5
750	XXXX	00	
754	TURNER EDWIN W	753-3166	
★	0 BUS 4 RES	0 NEW	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PIRAEUS ST 1982

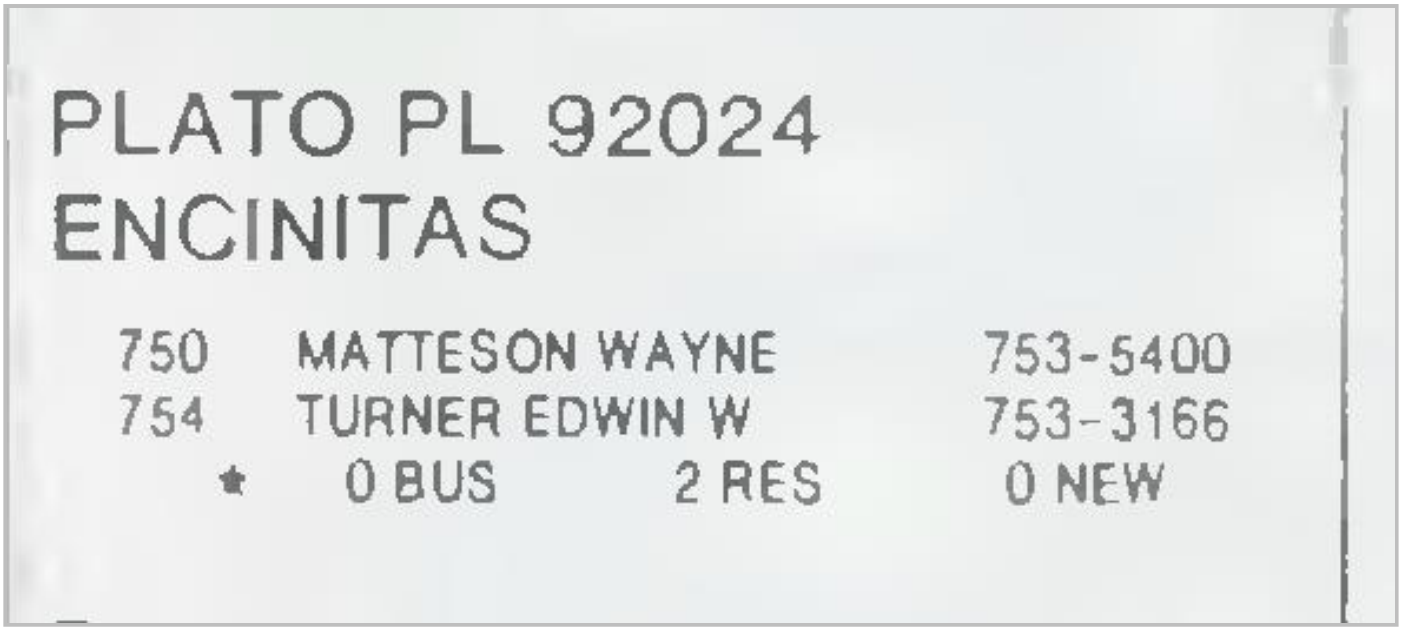


PIRAEUS 92024 ENCINITAS

1411	GUNTHER EARL	753-3928	
1417	GRAVES ELOON M	753-0932	4
1419	FENTIMAN THOS H	753-1680	+2
1433	MATHESON DENNY	436-0617	7
1437	DIETSCHE ANTHONY	753-2677	6
1441	OTO SHIGERU	753-1809	7
*	0 BUS 6 RES	1 NEW	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1982



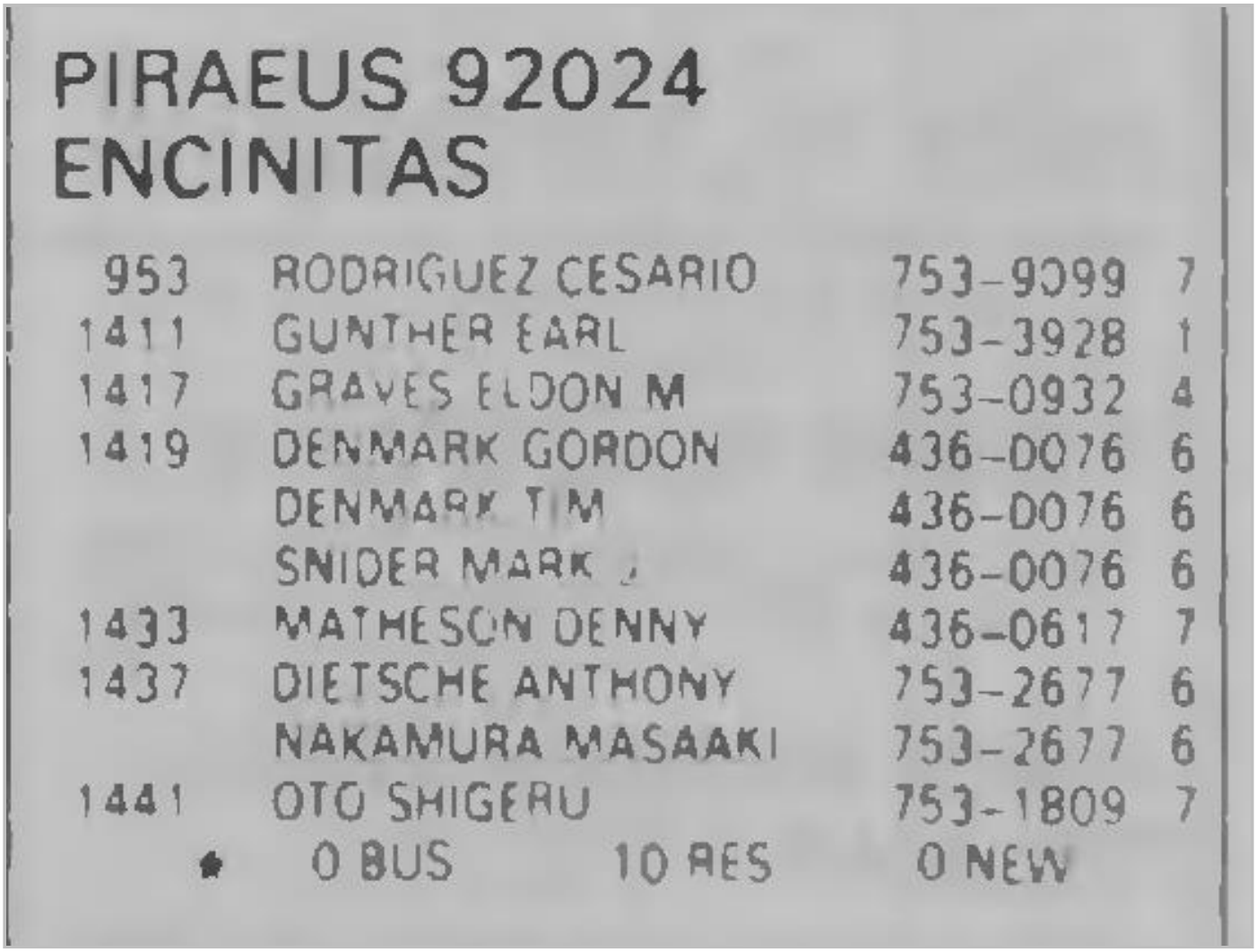
PLATO PL 92024
ENCINITAS

750	MATTESON WAYNE	753-5400
754	TURNER EDWIN W	753-3166

* 0 BUS 2 RES 0 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PIRAEUS ST 1979



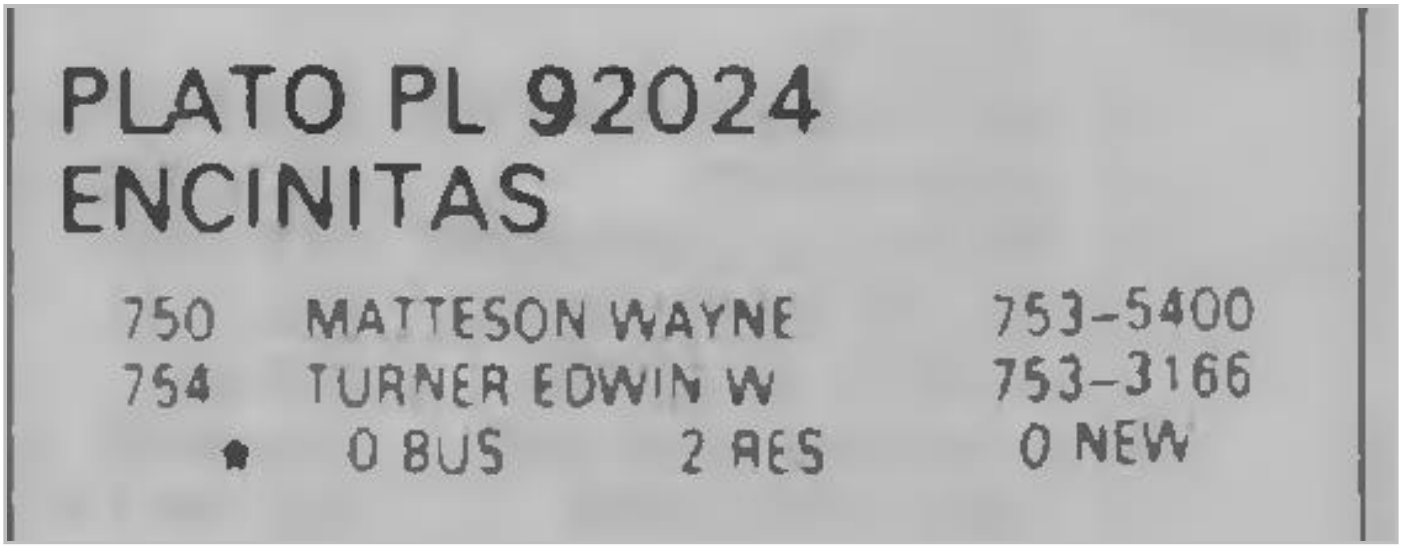
PIRAEUS 92024
ENCINITAS

953	RODRIGUEZ CESARIO	753-9099	7
1411	GUNTHER EARL	753-3928	1
1417	GRAVES ELDON M	753-0932	4
1419	DENMARK GORDON	436-0076	6
	DENMARK TIM	436-0076	6
	SNIDER MARK	436-0076	6
1433	MATHESON DENNY	436-0617	7
1437	DIETSCHE ANTHONY	753-2677	6
	NAKAMURA MASAAKI	753-2677	6
1441	OTO SHIGERU	753-1809	7

* 0 BUS 10 RES 0 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1979



PLATO PL 92024
ENCINITAS

750	MATTESON WAYNE	753-5400
754	TURNER EDWIN W	753-3166
*	0 BUS 2 RES	0 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

PIRAEUS ST 1975

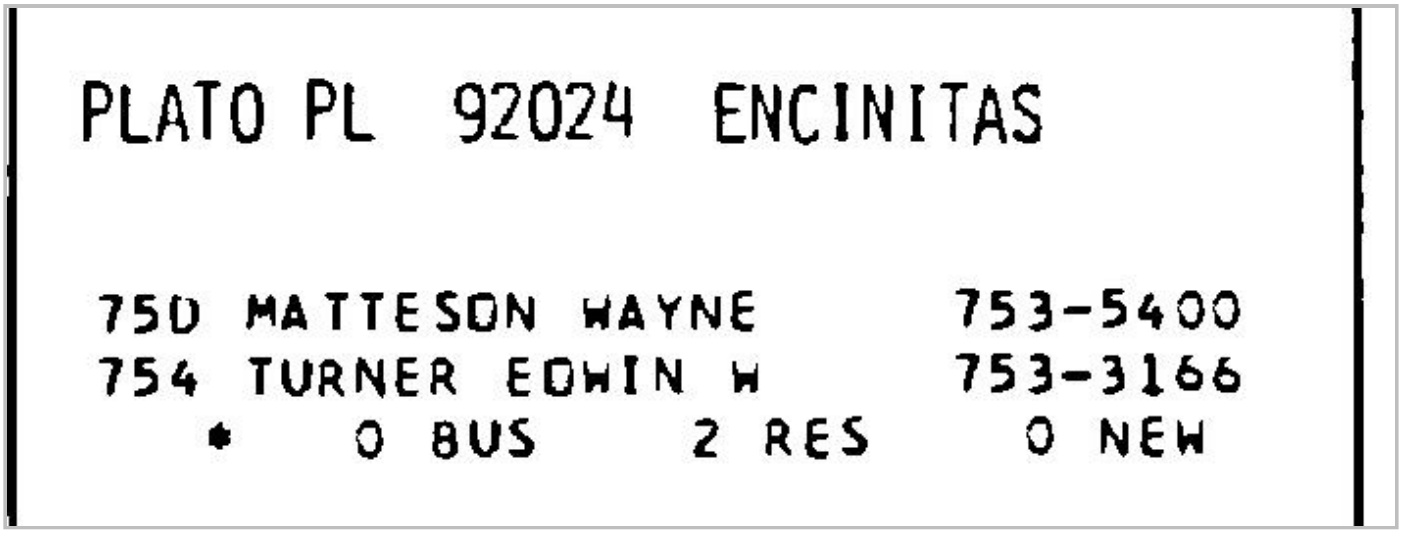
PIRAEUS 92024 ENCINITAS

963	STACHO STEVE G	753-0812	3
1411	GUNTHER EARL	753-3928	1
1417	GRAVES ELDON M	753-0932	4
1419	OENMARK GORDON	436-0271	+5
1437	SCOTT GREGORY P	753-8157	+5

* 0 BUS 5 RES 2 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1975



PLATO PL 92024 ENCINITAS

750	MATTESON WAYNE	753-5400
754	TURNER EDWIN W	753-3166

* 0 BUS 2 RES 0 NEW

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

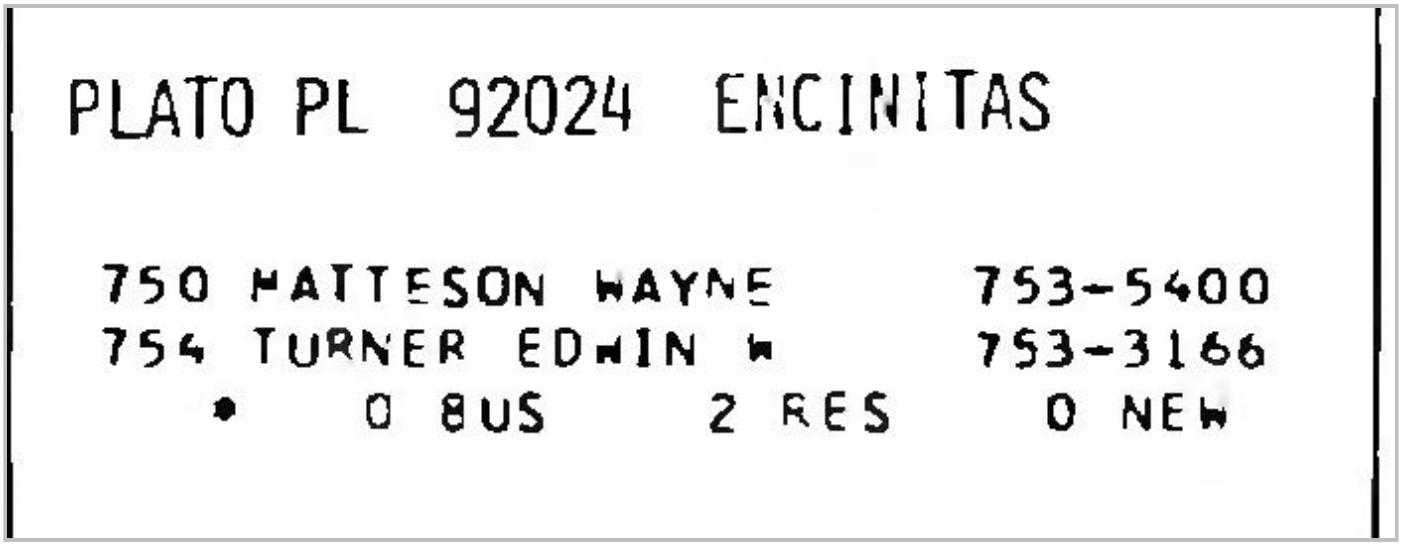
PIRAEUS ST 1971

PIRAEUS 92024 ENCINITAS

963 STEPHENS MAPY E 753-8641+1
1411 GUNTHER EARL 753-3928+1
* 0 BUS 2 RES 2 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

PLATO PL 1971



PLATO PL 92024 ENCINITAS

750 MATTESON WAYNE 753-5400
754 TURNER EDWIN W 753-3166
• 0 BUS 2 RES 0 NEW

APPENDIX H

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 450392
Report Level: II
Report Date: 09/14/2021

Analytical Report *prepared for:*

Troy Reist
Geocon Incorporated
6960 Flanders Drive
San Diego, CA 92121

Location: Piraeus - G2307-62-04

Authorized for release by:

Diane Galvan, Project Manager
714-771-9928
diane.galvan@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105, CDC ELITE Member

ENTHALPY ANALYTICAL

Sample Summary

Troy Reist
Geocon Incorporated
6960 Flanders Drive
San Diego, CA 92121

Lab Job #: 450392
Location: Piraeus - G2307-62-04
Date Received: 09/10/21

Sample ID	Lab ID	Collected	Matrix
S-1	450392-001	09/09/21 10:00	Soil
S-2	450392-002	09/09/21 10:05	Soil
S-3	450392-003	09/09/21 10:10	Soil
S-4	450392-004	09/09/21 10:15	Soil
S-5	450392-005	09/09/21 10:20	Soil
S-6	450392-006	09/09/21 10:25	Soil

ENTHALPY ANALYTICAL

Chain of Custody Record

Lab No: 450392

Page: 1 of 1

Turn Around Time (rush by advanced notice only)

Standard:	X	5 Day:		3 Day:	
2 Day:	X	1 Day		Custom TAT:	

Enthalpy Analytical - Orange

931 W. Barkley Avenue, Orange, CA 92868

Phone 714-771-6900

Matrix: A = Air S = Soil/Solid W = Water DW = Drinking Wate SD = Sediment PP = Pure Product SEA = Sea Water SW = Swab T = Tissue WP = Wipe O = Other

Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

Sample Receipt Temp: 2.1 / 1.6 (lab use only)

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Geocon Inc.	Name:	Piraeus
Report To:	Troy Reist	Number:	G2307-62-04
Email:	reist@geoconinc.com	P.O. #:	
Address:	6960 Flanders Drive	Address:	
	San Diego, CA 92127		
Phone:	858 558-6900	Global ID:	
Cell:	619 818-0267	Sampled By:	Cole Mikesell

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	8260 VOCs	8015 TPH GRO + ORO + DRO	6010B Lead	8081 OCPs	8270 sVOCs	6010 Title 22 Metals	8082 PCBs	6010 Arsenic Only			Test Instructions / Comments
1	S-1	09/09/21	10:00 AM	S	1-8oz	6				X				X			
2	S-2	09/09/21	10:05 AM	S	1-8oz	6				X				X			
3	S-3	09/09/21	10:10 AM	S	1-8oz	6				X				X			
4	S-4	09/09/21	10:15 AM	S	1-8oz	6				X				X			
5	S-5	09/09/21	10:20 AM	S	1-8oz	6				X				X			
6	S-6	09/09/21	10:25 AM	S	1-8oz	6				X				X			

	Signature	Print Name	Company / Title	Date / Time
[1] Relinquished By:	Troy K. Reist	Troy Reist	Geocon Inc.	09/09/2021; 11:26 AM
[1] Received By:		NELSON ESQUIVEL	EA	9.10.21 12:20P
[2] Relinquished By:		NELSON ESQUIVEL	EA	9.10.21 1620
[2] Received By:		David Tran	EA	9/10/21 1620
[3] Relinquished By:		David Tran	EA	9/10/21 1845
[3] Received By:		Elizabeth Ramos	EA	9/10/21 1845

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Geocon Inc. Project: Piraeus

Date Received: 9/10/21 Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2) Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 2.1 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 1.6 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?	✔		
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✔
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?			✔
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✔
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 9/10/21

ENTHALPY ANALYTICAL

Analysis Results for 450392

Troy Reist
Geocon Incorporated
6960 Flanders Drive
San Diego, CA 92121

Lab Job #: 450392
Location: Piraeus - G2307-62-04
Date Received: 09/10/21

Sample ID: S-1 **Lab ID: 450392-001** **Collected: 09/09/21 10:00**
Matrix: Soil

450392-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Arsenic	**3.8**		mg/Kg	1.1	1.1	273791	09/13/21	09/14/21	SBW
Method: EPA 8081A Prep Method: EPA 3546									
alpha-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
beta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
gamma-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
delta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Aldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor epoxide	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan I	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Dieldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDE	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan II	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan sulfate	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDD	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin aldehyde	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin ketone	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDT	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Methoxychlor	ND		ug/Kg	10	1	273784	09/13/21	09/13/21	TRN
Toxaphene	ND		ug/Kg	100	1	273784	09/13/21	09/13/21	TRN
Chlordane (Technical)	ND		ug/Kg	50	1	273784	09/13/21	09/13/21	TRN
Surrogates				**Limits**					
TCMX	80%		%REC	23-120	1	273784	09/13/21	09/13/21	TRN
Decachlorobiphenyl	96%		%REC	24-120	1	273784	09/13/21	09/13/21	TRN

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Analysis Results for 450392

Sample ID: S-2	Lab ID: 450392-002	Collected: 09/09/21 10:05
	Matrix: Soil	

450392-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Arsenic	ND		mg/Kg	1.0	1	273791	09/13/21	09/14/21	SBW
Method: EPA 8081A Prep Method: EPA 3546									
alpha-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
beta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
gamma-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
delta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Aldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor epoxide	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan I	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Dieldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDE	**8.8**		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan II	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan sulfate	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDD	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin aldehyde	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin ketone	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDT	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Methoxychlor	ND		ug/Kg	10	1	273784	09/13/21	09/13/21	TRN
Toxaphene	ND		ug/Kg	100	1	273784	09/13/21	09/13/21	TRN
Chlordane (Technical)	ND		ug/Kg	50	1	273784	09/13/21	09/13/21	TRN
Surrogates				**Limits**					
TCMX	85%		%REC	23-120	1	273784	09/13/21	09/13/21	TRN
Decachlorobiphenyl	98%		%REC	24-120	1	273784	09/13/21	09/13/21	TRN

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Analysis Results for 450392

Sample ID: S-3	Lab ID: 450392-003	Collected: 09/09/21 10:10
	Matrix: Soil	

450392-003 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Arsenic	ND		mg/Kg	0.98	0.98	273791	09/13/21	09/14/21	SBW
Method: EPA 8081A Prep Method: EPA 3546									
alpha-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
beta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
gamma-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
delta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Aldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor epoxide	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan I	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Dieldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDE	**79**		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan II	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan sulfate	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDD	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin aldehyde	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin ketone	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDT	**12**	#	ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Methoxychlor	ND		ug/Kg	10	1	273784	09/13/21	09/13/21	TRN
Toxaphene	ND		ug/Kg	100	1	273784	09/13/21	09/13/21	TRN
Chlordane (Technical)	ND		ug/Kg	50	1	273784	09/13/21	09/13/21	TRN
Surrogates				**Limits**					
TCMX	85%		%REC	23-120	1	273784	09/13/21	09/13/21	TRN
Decachlorobiphenyl	95%		%REC	24-120	1	273784	09/13/21	09/13/21	TRN

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Analysis Results for 450392

Sample ID: S-4	Lab ID: 450392-004	Collected: 09/09/21 10:15
	Matrix: Soil	

450392-004 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Arsenic	ND		mg/Kg	1.0	1	273791	09/13/21	09/14/21	SBW
Method: EPA 8081A Prep Method: EPA 3546									
alpha-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
beta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
gamma-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
delta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Aldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor epoxide	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan I	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Dieldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDE	**41**		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan II	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan sulfate	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDD	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin aldehyde	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin ketone	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDT	**6.1**	#	ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Methoxychlor	ND		ug/Kg	10	1	273784	09/13/21	09/13/21	TRN
Toxaphene	ND		ug/Kg	100	1	273784	09/13/21	09/13/21	TRN
Chlordane (Technical)	ND		ug/Kg	50	1	273784	09/13/21	09/13/21	TRN
Surrogates				**Limits**					
TCMX	93%		%REC	23-120	1	273784	09/13/21	09/13/21	TRN
Decachlorobiphenyl	110%		%REC	24-120	1	273784	09/13/21	09/13/21	TRN

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Analysis Results for 450392

Sample ID: S-5	Lab ID: 450392-005	Collected: 09/09/21 10:20
	Matrix: Soil	

450392-005 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Arsenic	ND		mg/Kg	0.97	0.97	273791	09/13/21	09/14/21	SBW
Method: EPA 8081A Prep Method: EPA 3546									
alpha-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
beta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
gamma-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
delta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Aldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor epoxide	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan I	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Dieldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDE	**5.7**		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan II	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan sulfate	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDD	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin aldehyde	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin ketone	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDT	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Methoxychlor	ND		ug/Kg	10	1	273784	09/13/21	09/13/21	TRN
Toxaphene	ND		ug/Kg	100	1	273784	09/13/21	09/13/21	TRN
Chlordane (Technical)	ND		ug/Kg	50	1	273784	09/13/21	09/13/21	TRN
Surrogates				**Limits**					
TCMX	71%		%REC	23-120	1	273784	09/13/21	09/13/21	TRN
Decachlorobiphenyl	84%		%REC	24-120	1	273784	09/13/21	09/13/21	TRN

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Analysis Results for 450392

Sample ID: S-6	Lab ID: 450392-006	Collected: 09/09/21 10:25
	Matrix: Soil	

450392-006 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: EPA 6010B Prep Method: EPA 3050B									
Arsenic	**6.5**		mg/Kg	0.93	0.93	273791	09/13/21	09/14/21	SBW
Method: EPA 8081A Prep Method: EPA 3546									
alpha-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
beta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
gamma-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
delta-BHC	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Aldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Heptachlor epoxide	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan I	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Dieldrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDE	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan II	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endosulfan sulfate	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDD	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin aldehyde	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Endrin ketone	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
4,4'-DDT	ND		ug/Kg	5.0	1	273784	09/13/21	09/13/21	TRN
Methoxychlor	ND		ug/Kg	10	1	273784	09/13/21	09/13/21	TRN
Toxaphene	ND		ug/Kg	100	1	273784	09/13/21	09/13/21	TRN
Chlordane (Technical)	ND		ug/Kg	50	1	273784	09/13/21	09/13/21	TRN
Surrogates				**Limits**					
TCMX	78%		%REC	23-120	1	273784	09/13/21	09/13/21	TRN
Decachlorobiphenyl	106%		%REC	24-120	1	273784	09/13/21	09/13/21	TRN

CCV drift outside limits; average CCV drift within limits per method requirements
ND Not Detected

Results for any subcontracted analyses are not included in this section.

ENTHALPY ANALYTICAL

Batch QC

Type: Blank	**Lab ID: QC943336**	**Batch: 273784**
Matrix: Soil	**Method: EPA 8081A**	**Prep Method: EPA 3546**

QC943336 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
alpha-BHC	ND		ug/Kg	5.0	09/13/21	09/13/21
beta-BHC	ND		ug/Kg	5.0	09/13/21	09/13/21
gamma-BHC	ND		ug/Kg	5.0	09/13/21	09/13/21
delta-BHC	ND		ug/Kg	5.0	09/13/21	09/13/21
Heptachlor	ND		ug/Kg	5.0	09/13/21	09/13/21
Aldrin	ND		ug/Kg	5.0	09/13/21	09/13/21
Heptachlor epoxide	ND		ug/Kg	5.0	09/13/21	09/13/21
Endosulfan I	ND		ug/Kg	5.0	09/13/21	09/13/21
Dieldrin	ND		ug/Kg	5.0	09/13/21	09/13/21
4,4'-DDE	ND		ug/Kg	5.0	09/13/21	09/13/21
Endrin	ND		ug/Kg	5.0	09/13/21	09/13/21
Endosulfan II	ND		ug/Kg	5.0	09/13/21	09/13/21
Endosulfan sulfate	ND		ug/Kg	5.0	09/13/21	09/13/21
4,4'-DDD	ND		ug/Kg	5.0	09/13/21	09/13/21
Endrin aldehyde	ND		ug/Kg	5.0	09/13/21	09/13/21
Endrin ketone	ND		ug/Kg	5.0	09/13/21	09/13/21
4,4'-DDT	ND		ug/Kg	5.0	09/13/21	09/13/21
Methoxychlor	ND		ug/Kg	10	09/13/21	09/13/21
Toxaphene	ND		ug/Kg	100	09/13/21	09/13/21
Chlordane (Technical)	ND		ug/Kg	50	09/13/21	09/13/21
Surrogates				**Limits**		
TCMX	86%		%REC	23-120	09/13/21	09/13/21
Decachlorobiphenyl	95%		%REC	24-120	09/13/21	09/13/21

ENTHALPY ANALYTICAL

Batch QC

Type: Lab Control Sample	**Lab ID: QC943337**	**Batch: 273784**
Matrix: Soil	**Method: EPA 8081A**	**Prep Method: EPA 3546**

QC943337 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
alpha-BHC	43.45	50.00	ug/Kg	87%		22-129
beta-BHC	42.36	50.00	ug/Kg	85%		28-125
gamma-BHC	43.02	50.00	ug/Kg	86%		22-128
delta-BHC	41.40	50.00	ug/Kg	83%		24-131
Heptachlor	43.24	50.00	ug/Kg	86%		18-124
Aldrin	41.63	50.00	ug/Kg	83%		23-120
Heptachlor epoxide	43.35	50.00	ug/Kg	87%		26-120
Endosulfan I	47.05	50.00	ug/Kg	94%		25-126
Dieldrin	46.21	50.00	ug/Kg	92%		23-124
4,4'-DDE	47.29	50.00	ug/Kg	95%		28-121
Endrin	54.15	50.00	ug/Kg	108%	#	25-127
Endosulfan II	48.68	50.00	ug/Kg	97%	#	29-121
Endosulfan sulfate	41.06	50.00	ug/Kg	82%		30-121
4,4'-DDD	45.37	50.00	ug/Kg	91%		26-120
Endrin aldehyde	28.21	50.00	ug/Kg	56%		10-120
Endrin ketone	38.48	50.00	ug/Kg	77%		28-125
4,4'-DDT	51.91	50.00	ug/Kg	104%	#	22-125
Methoxychlor	51.97	50.00	ug/Kg	104%	#	28-130
Surrogates						
TCMX	40.28	50.00	ug/Kg	81%		23-120
Decachlorobiphenyl	43.81	50.00	ug/Kg	88%		24-120

ENTHALPY ANALYTICAL

Batch QC

Type:	**Matrix Spike**	**Lab ID:**	**QC943338**	**Batch:**	**273784**
Matrix (Source ID):	**Soil (450392-001)**	**Method:**	**EPA 8081A**	**Prep Method:**	**EPA 3546**

QC943338 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
alpha-BHC	41.24	ND	50.00	ug/Kg	82%		46-120	1
beta-BHC	40.75	ND	50.00	ug/Kg	81%		41-120	1
gamma-BHC	41.31	ND	50.00	ug/Kg	83%		41-120	1
delta-BHC	38.09	ND	50.00	ug/Kg	76%		38-123	1
Heptachlor	40.34	ND	50.00	ug/Kg	81%		39-120	1
Aldrin	39.72	ND	50.00	ug/Kg	79%		34-120	1
Heptachlor epoxide	41.69	ND	50.00	ug/Kg	83%		43-120	1
Endosulfan I	44.96	ND	50.00	ug/Kg	90%		45-120	1
Dieldrin	44.03	ND	50.00	ug/Kg	88%		45-120	1
4,4'-DDE	45.93	ND	50.00	ug/Kg	92%		34-120	1
Endrin	51.52	ND	50.00	ug/Kg	103%	#	40-120	1
Endosulfan II	46.86	ND	50.00	ug/Kg	94%	#	41-120	1
Endosulfan sulfate	39.74	ND	50.00	ug/Kg	79%		42-120	1
4,4'-DDD	43.42	ND	50.00	ug/Kg	87%		41-120	1
Endrin aldehyde	28.42	ND	50.00	ug/Kg	57%		30-120	1
Endrin ketone	37.44	ND	50.00	ug/Kg	75%		45-120	1
4,4'-DDT	51.33	ND	50.00	ug/Kg	103%	#	35-127	1
Methoxychlor	51.24	ND	50.00	ug/Kg	102%	#	42-136	1
Surrogates								
TCMX	37.59		50.00	ug/Kg	75%		23-120	1
Decachlorobiphenyl	42.33		50.00	ug/Kg	85%		24-120	1

ENTHALPY ANALYTICAL

Batch QC

Type:	**Matrix Spike Duplicate**	**Lab ID:**	**QC943339**	**Batch:**	**273784**
Matrix (Source ID):	**Soil (450392-001)**	**Method:**	**EPA 8081A**	**Prep Method:**	**EPA 3546**

QC943339 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
alpha-BHC	41.79	ND	50.00	ug/Kg	84%		46-120	1	30	1
beta-BHC	41.62	ND	50.00	ug/Kg	83%		41-120	2	30	1
gamma-BHC	41.21	ND	50.00	ug/Kg	82%		41-120	0	30	1
delta-BHC	39.54	ND	50.00	ug/Kg	79%		38-123	4	30	1
Heptachlor	41.67	ND	50.00	ug/Kg	83%		39-120	3	30	1
Aldrin	41.08	ND	50.00	ug/Kg	82%		34-120	3	30	1
Heptachlor epoxide	42.60	ND	50.00	ug/Kg	85%		43-120	2	30	1
Endosulfan I	45.90	ND	50.00	ug/Kg	92%		45-120	2	30	1
Dieldrin	45.08	ND	50.00	ug/Kg	90%		45-120	2	30	1
4,4'-DDE	47.17	ND	50.00	ug/Kg	94%		34-120	3	30	1
Endrin	51.93	ND	50.00	ug/Kg	104%	#	40-120	1	30	1
Endosulfan II	47.80	ND	50.00	ug/Kg	96%	#	41-120	2	30	1
Endosulfan sulfate	41.45	ND	50.00	ug/Kg	83%		42-120	4	30	1
4,4'-DDD	44.62	ND	50.00	ug/Kg	89%		41-120	3	30	1
Endrin aldehyde	28.24	ND	50.00	ug/Kg	56%		30-120	1	30	1
Endrin ketone	39.61	ND	50.00	ug/Kg	79%		45-120	6	30	1
4,4'-DDT	52.52	ND	50.00	ug/Kg	105%	#	35-127	2	30	1
Methoxychlor	51.36	ND	50.00	ug/Kg	103%	#	42-136	0	30	1
Surrogates										
TCMX	37.60		50.00	ug/Kg	75%		23-120			1
Decachlorobiphenyl	43.17		50.00	ug/Kg	86%		24-120			1

Type:	**Blank**	**Lab ID:**	**QC943362**	**Batch:**	**273791**
Matrix:	**Soil**	**Method:**	**EPA 6010B**	**Prep Method:**	**EPA 3050B**

QC943362 Analyte	Result	Qual	Units	RL	Prepared	Analyzed
Arsenic	ND		mg/Kg	1.0	09/13/21	09/14/21

Type:	**Lab Control Sample**	**Lab ID:**	**QC943363**	**Batch:**	**273791**
Matrix:	**Soil**	**Method:**	**EPA 6010B**	**Prep Method:**	**EPA 3050B**

QC943363 Analyte	Result	Spiked	Units	Recovery	Qual	Limits
Arsenic	99.14	100.0	mg/Kg	99%		80-120

ENTHALPY ANALYTICAL

Batch QC

Type:	**Matrix Spike**	**Lab ID:**	**QC943364**	**Batch:**	**273791**
Matrix (Source ID):	**Soil (450378-001)**	**Method:**	**EPA 6010B**	**Prep Method:**	**EPA 3050B**

QC943364 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	DF
Arsenic	100.5	4.387	96.15	mg/Kg	100%		75-125	0.96

Type:	**Matrix Spike Duplicate**	**Lab ID:**	**QC943365**	**Batch:**	**273791**
Matrix (Source ID):	**Soil (450378-001)**	**Method:**	**EPA 6010B**	**Prep Method:**	**EPA 3050B**

QC943365 Analyte	Result	Source Sample Result	Spiked	Units	Recovery	Qual	Limits	RPD	RPD Lim	DF
Arsenic	100.3	4.387	97.09	mg/Kg	99%		75-125	1	35	0.97

\# CCV drift outside limits; average CCV drift within limits per method requirements

ND Not Detected

APPENDIX I-1.
PRELIMINARY HYDROLOGY STUDY

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PRELIMINARY HYDROLOGY STUDY

FOR

PIRAEUS POINT
PIRAEUS STREET, ENCINITAS, CA 92024
MULTI-005158-2022

CITY OF ENCINITAS, CA

PREPARED FOR:

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Prepared: January 19, 2022
Revised: April 5, 2022
Revised September 8,2022



TYLER G. LAWSON, RCE 80356 DATE

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

This Preliminary Hydrology Study for the proposed development at the intersection of Piraeus Street and Plato Place has been prepared to analyze the hydrologic and hydraulic characteristics of the existing and proposed project site. This report intends to present both the methodology and the calculations used for determining the runoff from the project site in both the existing condition and the post-developed (proposed) condition produced by the 100-year, 6-hour storm.

1.2 Existing Conditions

The subject property is located east of Interstate 5 and is geographically settled between Piraeus Street to the east and Plato Place to the south. The site is bordered by single family homes to the east, Interstate 5 to the west, and undeveloped open space to the north and south. The site is currently vacant and has not previously been developed. Existing site topography is generally steep with slopes ranging from 4 to over 75 percent and elevations ranging from 175 to 69 feet.

The existing site is comprised of approximately 8.16 acres. In its current state, about 70% of the site drains north via surface/sheet flow before entering an existing storm drain conveyance system at the northwest corner of the property. This is shown as drainage areas B-1 and B-2 on the Existing Condition Hydrology Node Map included in Appendix A. Once in the storm drain system, runoff from Drainage area B-1 and B-2 flows west, crossing Interstate-5 into an earthen ditch. The remainder of the site, areas A-1 and A-2, as shown on the Existing Condition Hydrology Node Map in Appendix A, flow south via surface/sheet flow and enters the existing storm drain system at the southwest corner of the property. The existing system carries runoff across Interstate-5 and discharges into an existing concrete lined ditch where it will meet runoff from Drainage Area B-1 and B-2. From this point, drainage from both basins continues north until the runoff reaches Batiquitos Lagoon and finally the Pacific Ocean.

An existing condition and post-development hydrology analysis of the existing system has been included as a part of this study to ensure the proposed project will not negatively impact the existing storm drain system. Results of the offsite analysis are provided in the Conclusions section of this report. Supporting calculations and AES output reports are provided in Appendix C.

In the existing condition, pavement, and various hardscape results in a 0% impervious basin. Based City of Encinitas Engineering Design Manual, the basin was analyzed assuming Type D soils. Based upon soil type and the lack of existing impervious area onsite, a runoff coefficient of 0.45 was used for each basin. Using the Rational Method Procedure outlined in the San Diego County Hydrology Manual, a peak flow rate and time of concentration was calculated for the basin for the 100-year, 6-hour storm event. Refer to the existing condition hydrology calculations included in Appendix C of this report for detailed analysis and the

Existing Condition Hydrology Node Map included in Appendix A of this report for existing drainage basin delineation and POC'S.

1.3 Proposed Project

As shown on the Post-Development Hydrology Node Map, runoff from Drainage Area's A-1 thru A-18 is picked up in the on-site storm drain system and conveyed to the south to the proposed biofiltration basin located adjacent to Plato Place. Once the runoff is treated and stored it is discharged into the existing storm drain system identified as POC-A.

Runoff generated in Drainage Areas B-1 thru B-6 primarily sheet flows west towards Piraeus Street where it is collected in a concrete ditch and discharges into an existing headwall at the northwest corner of the site. This is identified as POC-B on the Post-Construction Node Map.

A Runoff coefficient was calculated for Drainage Basin- A based on the methodology described in the City of Encinitas Engineering Design Manual and the formula provided therein. See Section 2.4 of this report for post-development runoff coefficient calculations. For a breakdown of the existing condition and post development peak flow rates for the 100-year, 6-hour storm event, see the conclusion section of this report.

In an effort to comply with the City of Encinitas' Stormwater standards and the MS4 Permit, all runoff generated onsite will be conveyed to a biofiltration basin adjacent to Plato Place as shown on the Post Development Hydrology Node Map. The biofiltration basin has been sized for pollution and flow control purposes. Flow rates generated on-site will be controlled via a small low-flow orifice consistent with HMP requirements as outlined in the City of Encinitas BMP Manual. In larger storm events, runoff not filtered through the engineered soil will be conveyed via an overflow outlet structure consisting of a 3-foot by 3-foot grate located on top of the outlet structure. Runoff conveyed via the outlet structure will bypass the treatment and flow control BMP's and will be conveyed directly to the proposed storm drain system perpendicular to Piraeus Street.

Conclusions

Onsite

As illustrated in the Peak Flow Rate Comparison Table shown below, the project has been designed to adequately convey the 100-year, 6-hour storm event. In addition, in the mitigated post development condition, the site has been designed to attenuate the 100-year storm event and reduce flow rates below what is currently leaving the site today. Based on our analysis, the proposed storm drain system has sufficient capacity to convey the flows that are generated by this development.

Peak Flow Rate Comparison Table (100 Year, 6 Hour)			
Existing Condition		Post Development (Unmitigated)	
Drainage Area	Peak Flow (CFS)	Drainage Area	Peak Flow (CFS)
A-1 THRU A-2	4.90	A-1 THRU A-18	29.89
B-1 THRU B-2	10.17	B-1 THRU B-9	4.90

Peak Flow Rate Comparison Table (100 Year, 6 Hour)			
Existing Condition		Post Development (Mitigated)	
Drainage Area	Peak Flow (CFS)	Drainage Area	Peak Flow (CFS)
A-1 THRU A-2	4.90	A-1 THRU A-18	0.12
B-1 THRU B-2	10.17	B-1 THRU B-9	4.83

1.4 References

"Encinitas Stormwater Manual Chapter 7", Version 1.3, adopted March 17, 2010, City of Encinitas, Engineering Department

"Engineering Design Manual Chapter 6: Drainage Design Requirements", revised February 2016, City of Encinitas

"Engineering Design Manual Appendix 6: Drainage Design Requirements", October 28, 2009, City of Encinitas

"Engineering Design Manual Chapter 7: BMP Design Manual", revised February 2016, City of Encinitas

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov. Accessed May 2015

2.0 METHODOLOGY

2.1 Introduction

The hydrologic model used to perform the hydrologic analysis presented in this report utilizes the Rational Method (RM) equation, Q = CIA. The RM formula estimates the peak rate of runoff based on the variables of area, runoff coefficient, and rainfall intensity. The rainfall intensity (I) is equal to:

$$I = 7.44 \times P_6 \times D^{-0.645}$$

Where:

I = Intensity (in/hr)
P_6 = 6-hour precipitation (inches)
D = duration (minutes – use Tc)

Using the Time of Concentration (Tc), which is the time required for a given element of water that originates at the most remote point of the basin being analyzed to reach the point at which the runoff from the basin is being analyzed. The RM equation determines the storm water runoff rate (Q) for a given basin in terms of flow (typically in cubic feet per second (cfs) but sometimes as gallons per minute (gpm)). The RM equation is as follows:

$$Q = CIA$$

Where:

Q = flow (in cfs)
C = runoff coefficient, ratio of rainfall that produces storm water runoff (runoff vs. infiltration/evaporation/absorption/etc)
I = average rainfall intensity for a duration equal to the Tc for the area, in inches per hour.
A = drainage area contributing to the basin in acres.

The RM equation assumes that the storm event being analyzed delivers precipitation to the entire basin uniformly, and therefore the peak discharge rate will occur when a raindrop that falls at the most remote portion of the basin arrives at the point of analysis. The RM also assumes that the fraction of rainfall that becomes runoff or the runoff coefficient C is not affected by the storm intensity, I, or the precipitation zone number.

Rational Method calculations were performed using the AES-2016 computer program. To perform the hydrology routing, the total watershed area is divided into sub-areas which discharge at designated nodes. The procedure for the sub-area summation model is as follows:

1. Subdivide the watershed into an initial sub-area (generally 1 lot) and subsequent sub-areas, which are generally less than 10 acres in size. Assign upstream and downstream node numbers to each sub-area.

2. Estimate an initial Tc by using the appropriate nomograph or overland flow velocity estimation. The minimum Tc considered is 5.0 minutes.

3. Using the initial Tc, determine the corresponding values of I. Then Q = CIA.

4. Using Q, estimate the travel time between this node and the next by Manning's equation as applied to particular channel or conduit linking the two nodes. Then, repeat the calculation for Q based on the revised intensity (which is a function of the revised time of concentration)

The nodes are joined together by links, which may be street gutter flows, drainage swales, drainage ditches, pipe flow, or various channel flows. The AES computer sub-area menu is as follows:

SUBAREA HYDROLOGIC PROCESS

1. Confluence analysis at node.
2. Initial sub-area analysis (including time of concentration calculation).
3. Pipe flow travel time (computer estimated).
4. Pipe flow travel time (user specified).
5. Trapezoidal channel travel time.
6. Street flow analysis through sub-area.
7. User-specified information at node.
8. Addition of sub-area runoff to main line.
9. V-gutter flow through area.
10. Copy main stream data to memory bank
11. Confluence main stream data with a memory bank
12. Clear a memory bank.
31. Compute pipe-flow travel time thru subarea using computer estimated pipe size.
51. Compute trapezoidal channel flow travel time thru subarea.
81. Addition of subarea to mainline peak flow.

At the confluence point of two or more basins, the following procedure is used to combine peak flow rates to account for differences in the basin's times of concentration. This adjustment is based on the assumption that each basin's hydrographs are triangular in shape.

1. If the collection streams have the same times of concentration, then the Q values are directly summed,

$$Qp = Qa + Qb; \; Tp = Ta = Tb$$

2. If the collection streams have different times of concentration, the smaller of the tributary Q values may be adjusted as follows:
    a. The most frequent case is where the collection stream with the longer time of concentration has the larger Q. The smaller Q value is adjusted by a ratio of rainfall intensities.

        $$Qp = Qb + Qa\ (Ib/Ia);\ Tp = Ta$$

    b. In some cases, the collection stream with the shorter time of concentration has the larger Q. Then the smaller Q is adjusted by a ratio of the T values.

        $$Qp = Qb + Qa\ (Tb/Ta);\ Tp = Tb$$

2.2 County of San Diego Criteria

As defined by the San Diego County Hydrology Manual (SDCHM) dated June 2003, the Rational Method is the preferred equation for determining the hydrologic characteristics of basins up to approximately one square mile in size. The County of San Diego has developed its own tables, nomographs, and methodologies for analyzing storm water runoff for areas within the county. The County has also developed precipitation isopluvial contour maps that show even lines of rainfall anticipated from a given storm event (i.e. 100-year, 6-hour storm).

One of the variables of the RM equation is the runoff coefficient, C. The runoff coefficient is dependent only upon land use and soil type and the County of San Diego has developed a table of Runoff Coefficients for Urban Areas to be applied to basin located within the County of San Diego. The table categorizes the land use, the associated development density (dwelling units per acre) and the percentage of impervious area. Each of the categories listed has an associated runoff coefficient, C, for each soil type class.

The County has also illustrated in detail the methodology for determining the Time of Concentration, in particular the Initial Time of Concentration (Ti). The County has adopted the Federal Aviation Agency's (FAA) overland time of flow equation. For this project, High Density Residential at 43 DU/acre maximum overland flow lengths are used. This equation essentially limits the flow path length for the initial time of concentration to lengths to 100 feet for slopes of 10% and greater and 95 feet for slopes up to 5%, and is dependent on land use and slope. See the "Rational Formula – Overland Time of Flow Nomograph," shown in Figure 3-3 or Table 3-2 of the San Diego County Hydrology Manual (June 2003).

The travel time (Tt) is computed by dividing the length of the flow path by the computed velocity. Figure 3-6 of the SDCHM is used to estimate time of travel for street gutter flow. Velocity in a channel is estimated by using the nomograph show in Figure 3-7 (Manning's Equation Nomograph). Travel time in natural watersheds is calculated from the Kirpich nomograph in Figure 3-4 or from the Kirpich equation.

See Appendix B of this report for San Diego County Hydrology Manual reference material.

2.3 City of Encinitas Standards

The City of Encinitas Engineering Design Manual Chapter 6 and Appendix 6 has additional requirements for hydrology reports which are outlined in the Grading, Erosion and Sediment Control Ordinance. Please refer to this manual for further details. The drainage analysis used in this study is also consistent with the requirements set forth in Section 2.3 of the City of Encinitas Engineering Design Manual.

2.4 Runoff Coefficient Determination

In accordance with City of Encinitas Engineering Design Manual, runoff coefficients are based on land use and soil type. Per the City of Encinitas Engineering Manual the soil condition used in this study is assumed to be Type D. An appropriate area-weighted runoff coefficient (C) for each Drainage Basin A and B was calculated using the methodology presented in Chapter 6 of the City of Encinitas Engineering Design Manual. Impervious areas will use a runoff coefficient of 0.90 while pervious areas will use a runoff coefficient of 0.45. These coefficients are multiplied by the percentage of total area (A) included in that class. The sum of products for all land uses is the weighted runoff coefficient (∑[C]). See the table below for weighted runoff coefficient "C" calculations. The Existing and Post-Development Hydrology Maps show the drainage basin subareas, on-site drainage system and nodal points.

$$\frac{\sum C = C_1A_1 \text{ x } C_2A_2}{A_1+A_2}$$

Summary of Existing Condition Weighted Runoff Coefficients						
Drainage Basin	Total Area, A (ac)	C_1	A_1	C_2	A_2	C
A	2.48	0.9	0	0.45	2.48	0.45
B	5.89	0.9	0	0.45	5.89	0.45

Summary of Proposed Condition Weighted Runoff Coefficients						
Drainage Basin	Total Area, A (ac)	C_1	A_1	C_2	A_2	C
A	5.80	0.9	4.62	0.45	1.18	0.81
B	2.57	0.9	0	0.45	2.58	0.45

2.5 Hydraulics

The hydraulics of existing and proposed storm drain pipes were analyzed using the AES computer program. For pipe flow, a Manning's N value of 0.013 was used to reflect the use of HDPE and RCP pipe. All proposed storm drain pipes have been sized based on the proposed unmitigated flow condition for the 100-year storm event. Pipe, curb, gutter, curb inlet and catch basin capacity calculations are included in the Appendix of this report.

2.6 Detention Analysis

The HMP Biofiltration basins (BMP) provide pollutant control, hydromodification management flow control and mitigation of the 100-year storm event peak flow rate. The 100-year storm event detention analysis was performed using HydroCAD Stormwater Modeling software. The inflow runoff hydrographs to the BMPs were modeled using RatHydro which is a Rational Method Design Storm Hydrograph software that creates a hydrograph using the results of the Rational Method calculations. HydroCAD has the ability to route the 100-year 6-hour storm event inflow hydrographs through the BMPs and based on the BMP cross sectional geometry, stage storage and outlet structure data, HydroCAD calculates the detained peak flow rates and detained times to peak.

The detained flow rates and time of concentrations from the detention basins were then entered into the project's AES hydrologic study using Process Code 7 (see Section 2.1 of this report for summary of AES process codes). A mitigated condition AES report was produced for the 100-year storm event. See Appendix C for proposed mitigated condition hydrologic calculations. HydroCAD detention output reports will be provided upon final engineering.

The HMP Biofiltration facilities consists of a basin with 18 inches of engineered soil and Rtank structure storage layer of 6.5'. Runoff will be biofiltered through the engineered soil and gravel layers, then collected in a series of small PVC drainpipes and directed to a catch basin located in the HMP Biofiltration basin where runoff will be mitigated via a small HMP orifice to comply with HMP requirements. In larger storm events, runoff not filtered through the engineered soil and gravel layers will be conveyed via an overflow outlet structure. Runoff conveyed via the outlet structure will bypass the small HMP orifice and be conveyed directly to the proposed storm drain discharge pipe.

Based on the results of the HydroCAD analysis, the HMP Biofiltration facilities provide mitigation for the 100-year storm event peak flow rate, detaining the proposed condition.

APPENDIX A

Existing and Post Development Hydrology Node Maps

EXISTING CONDITION HYDROLOGY NODE MAP

PIRAEUS STREET, ENCINITAS, CA



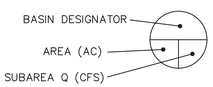
PLAN VIEW - EXISTING CONDITION HYDROLOGY

SCALE: 1" = 50'

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- CENTER LINE OF ROAD
- DRAINAGE BOUNDARY
- INITIAL SUB-BASIN BOUNDARY
- DRAINAGE PATH OF TRAVEL
- EXISTING CONTOURS — 175

BASIN INFORMATION



REGISTERED PROFESSIONAL ENGINEER
TYLER G LAWSON
No. 80356
Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA

0 50 100 150

SCALE: 1" = 50'

PREPARED BY:

PASCO LARET SUITER & ASSOCIATES

San Diego | Encinitas | Orange County

Phone 858.259.8212 | www.plsaengineering.com

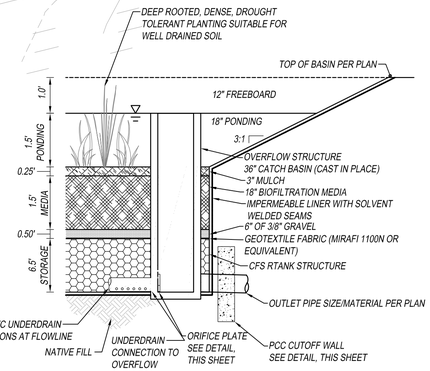
POST-DEVELOPEMENT HYDROLOGY NODE MAP

PIRAEUS STREET, ENCINITAS, CA



PLAN VIEW - POST-DEVELOPMENT HYDROLOGY

SCALE: 1" = 50'



TYPICAL BASIN DETAIL

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- CENTER LINE OF ROAD
- DRAINAGE BOUNDARY
- INITIAL SUB-BASIN BOUNDARY
- DRAINAGE PATH OF TRAVEL
- EXISTING CONTOURS (175)
- BASIN INFORMATION: BASIN DESIGNATOR / AREA (AC) / SUBAREA Q (CFS)

REGISTERED PROFESSIONAL ENGINEER
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Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA

40 20 0 40 80 120

SCALE: 1" = 40'

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APPENDIX B

Hydrology Support Material

County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 6 Hours

Isopluvial (inches)

Orange County

Riverside County

Imperial County

Mexico

Pacific Ocean

PROJECT SITE

OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
S.D. COUNTY
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
CHULA VISTA
IMPERIAL BEACH
SD

33°30'
33°15'
33°00'
32°45'
32°30'
117°30'
117°15'
117°00'
116°45'
116°30'
116°15'

DPW GIS
Department of Public Works
Geographic Information Services

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We Have San Diego Covered!

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3 0 3 Miles

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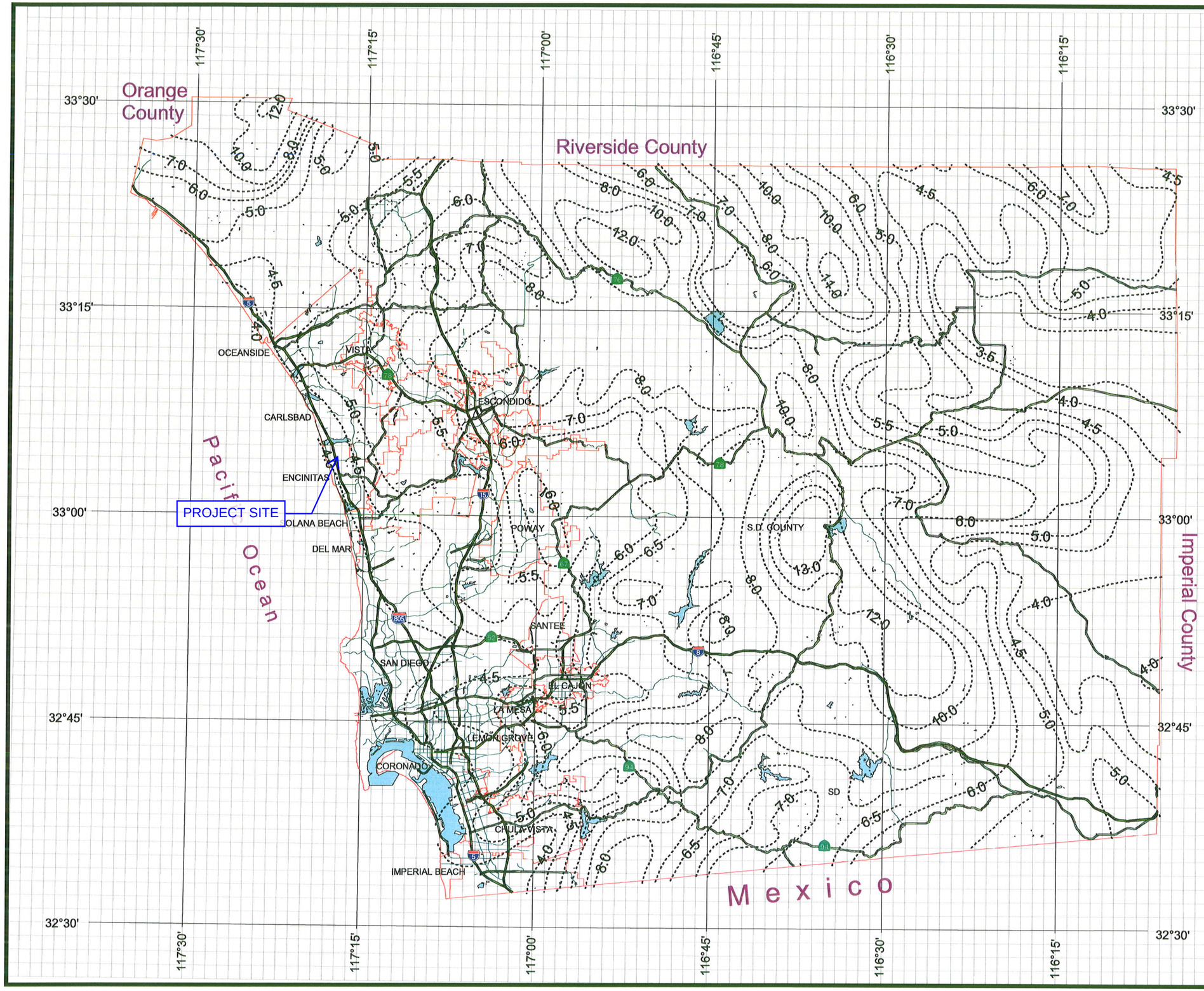
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County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 24 Hours

Isopluvial (inches)



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Department of Public Works
Geographic Information Services

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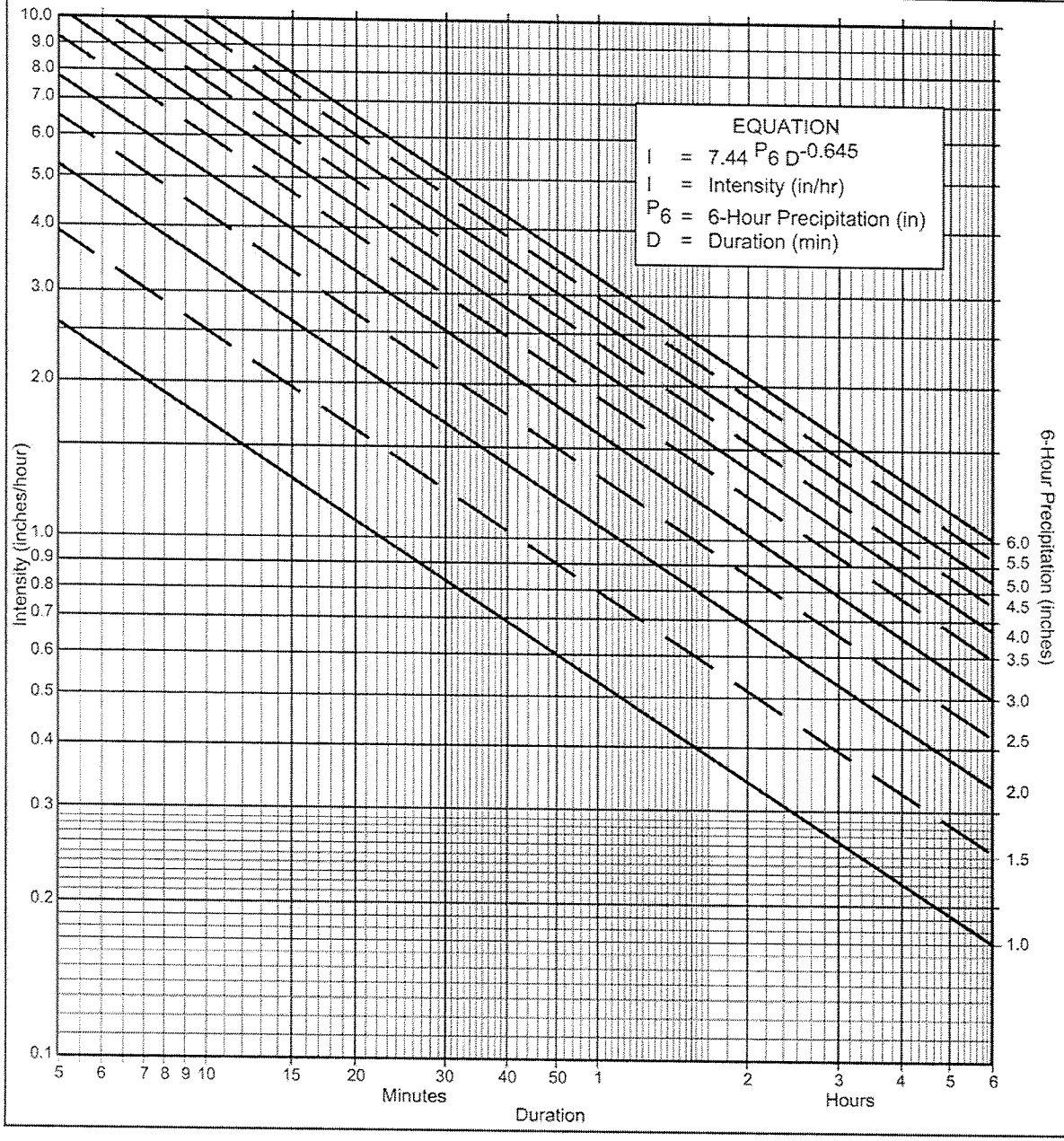
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3 0 3 Miles



Directions for Application:

(1) From precipitation maps determine 6 hr and 24 hr amounts for the selected frequency. These maps are included in the County Hydrology Manual (10, 50, and 100 yr maps included in the Design and Procedure Manual).

(2) Adjust 6 hr precipitation (if necessary) so that it is within the range of 45% to 65% of the 24 hr precipitation (not applicaple to Desert).

(3) Plot 6 hr precipitation on the right side of the chart.

(4) Draw a line through the point parallel to the plotted lines.

(5) This line is the intensity-duration curve for the location being analyzed.

Application Form:

(a) Selected frequency 100 year

(b) P_6 = 2.5 in., P_{24} = 4.2, $\frac{P_6}{P_{24}}$ = 60 %(2)

(c) Adjusted P_6(2) = 2.5 in.

(d) t_x = 5.52 min.

(e) I = 6.18 in./hr.

Note: This chart replaces the Intensity-Duration-Frequency curves used since 1965.

P6	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Duration	I	I	I	I	I	I	I	I	I	I	I
5	2.63	3.95	5.27	6.59	7.90	9.22	10.54	11.86	13.17	14.49	15.81
7	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54	10.60	11.66	12.72
10	1.68	2.53	3.37	4.21	5.05	5.90	6.74	7.58	8.42	9.27	10.11
15	1.30	1.95	2.59	3.24	3.89	4.54	5.19	5.84	6.49	7.13	7.78
20	1.08	1.62	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.93	6.46
25	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67	5.13	5.60
30	0.83	1.24	1.66	2.07	2.49	2.90	3.32	3.73	4.15	4.56	4.98
40	0.69	1.03	1.38	1.72	2.07	2.41	2.76	3.10	3.45	3.79	4.13
50	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.98	3.28	3.58
60	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18
90	0.41	0.61	0.82	1.02	1.23	1.43	1.63	1.84	2.04	2.25	2.45
120	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	1.87	2.04
150	0.29	0.44	0.59	0.73	0.88	1.03	1.18	1.32	1.47	1.62	1.76
180	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.18	1.31	1.44	1.57
240	0.22	0.33	0.43	0.54	0.65	0.76	0.87	0.98	1.08	1.19	1.30
300	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.85	0.94	1.03	1.13
360	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.84	0.92	1.00

Intensity-Duration Design Chart - Template

FIGURE

3-1

Note that the Initial Time of Concentration should be reflective of the general land-use at the upstream end of a drainage basin. A single lot with an area of two or less acres does not have a significant effect where the drainage basin area is 20 to 600 acres.

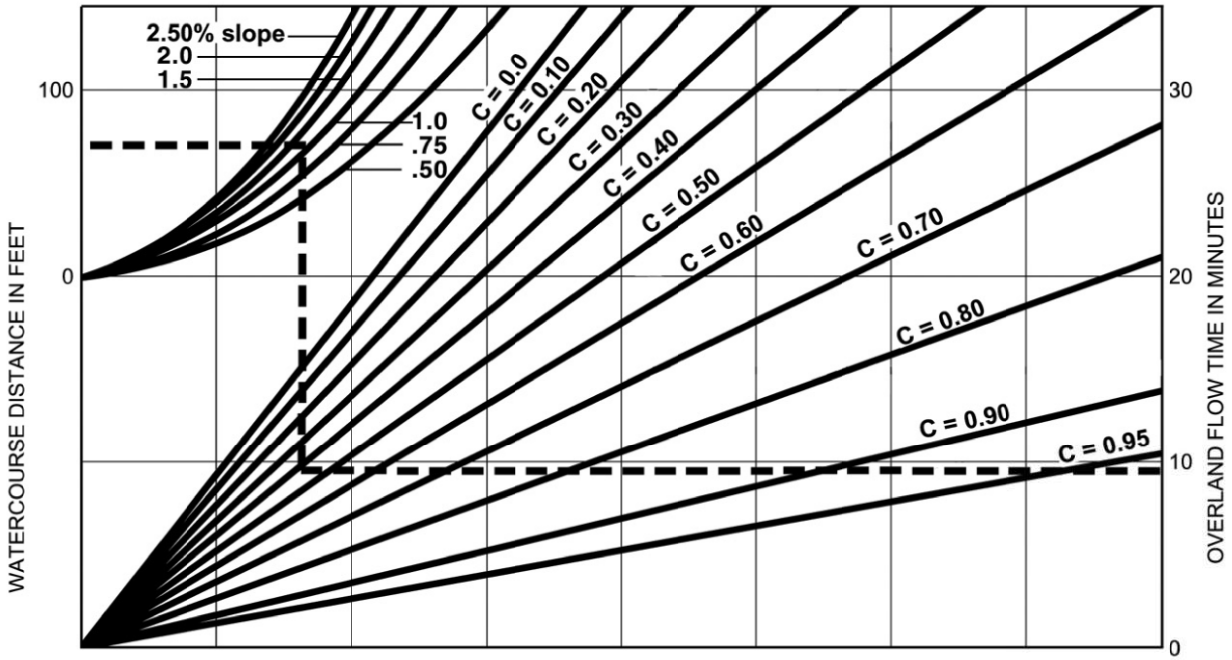
Table 3-2 provides limits of the length (Maximum Length (L_M)) of sheet flow to be used in hydrology studies. Initial T_i values based on average C values for the Land Use Element are also included. These values can be used in planning and design applications as described below. Exceptions may be approved by the "Regulating Agency" when submitted with a detailed study.

Table 3-2

MAXIMUM OVERLAND FLOW LENGTH (L_M)
& INITIAL TIME OF CONCENTRATION (T_i)

Element*	DU/ Acre	.5%		1%		2%		3%		5%		10%	
		L_M	T_i	L_M	T_i	L_M	T_i	L_M	T_i	L_M	T_i	L_M	T_i
Natural		50	13.2	70	12.5	85	10.9	100	10.3	100	8.7	100	6.9
LDR	1	50	12.2	70	11.5	85	10.0	100	9.5	100	8.0	100	6.4
LDR	2	50	11.3	70	10.5	85	9.2	100	8.8	100	7.4	100	5.8
LDR	2.9	50	10.7	70	10.0	85	8.8	95	8.1	100	7.0	100	5.6
MDR	4.3	50	10.2	70	9.6	80	8.1	95	7.8	100	6.7	100	5.3
MDR	7.3	50	9.2	65	8.4	80	7.4	95	7.0	100	6.0	100	4.8
MDR	10.9	50	8.7	65	7.9	80	6.9	90	6.4	100	5.7	100	4.5
MDR	14.5	50	8.2	65	7.4	80	6.5	90	6.0	100	5.4	100	4.3
HDR	24	50	6.7	65	6.1	75	5.1	90	4.9	95	4.3	100	3.5
HDR	43	50	5.3	65	4.7	75	4.0	85	3.8	95	3.4	100	2.7
N. Com		50	5.3	60	4.5	75	4.0	85	3.8	95	3.4	100	2.7
G. Com		50	4.7	60	4.1	75	3.6	85	3.4	90	2.9	100	2.4
O.P./Com		50	4.2	60	3.7	70	3.1	80	2.9	90	2.6	100	2.2
Limited I.		50	4.2	60	3.7	70	3.1	80	2.9	90	2.6	100	2.2
General I.		50	3.7	60	3.2	70	2.7	80	2.6	90	2.3	100	1.9

*See Table 3-1 for more detailed description



EXAMPLE:

Given: Watercourse Distance (D) = 70 Feet
Slope (s) = 1.3%
Runoff Coefficient (C) = 0.41
Overland Flow Time (T) = 9.5 Minutes

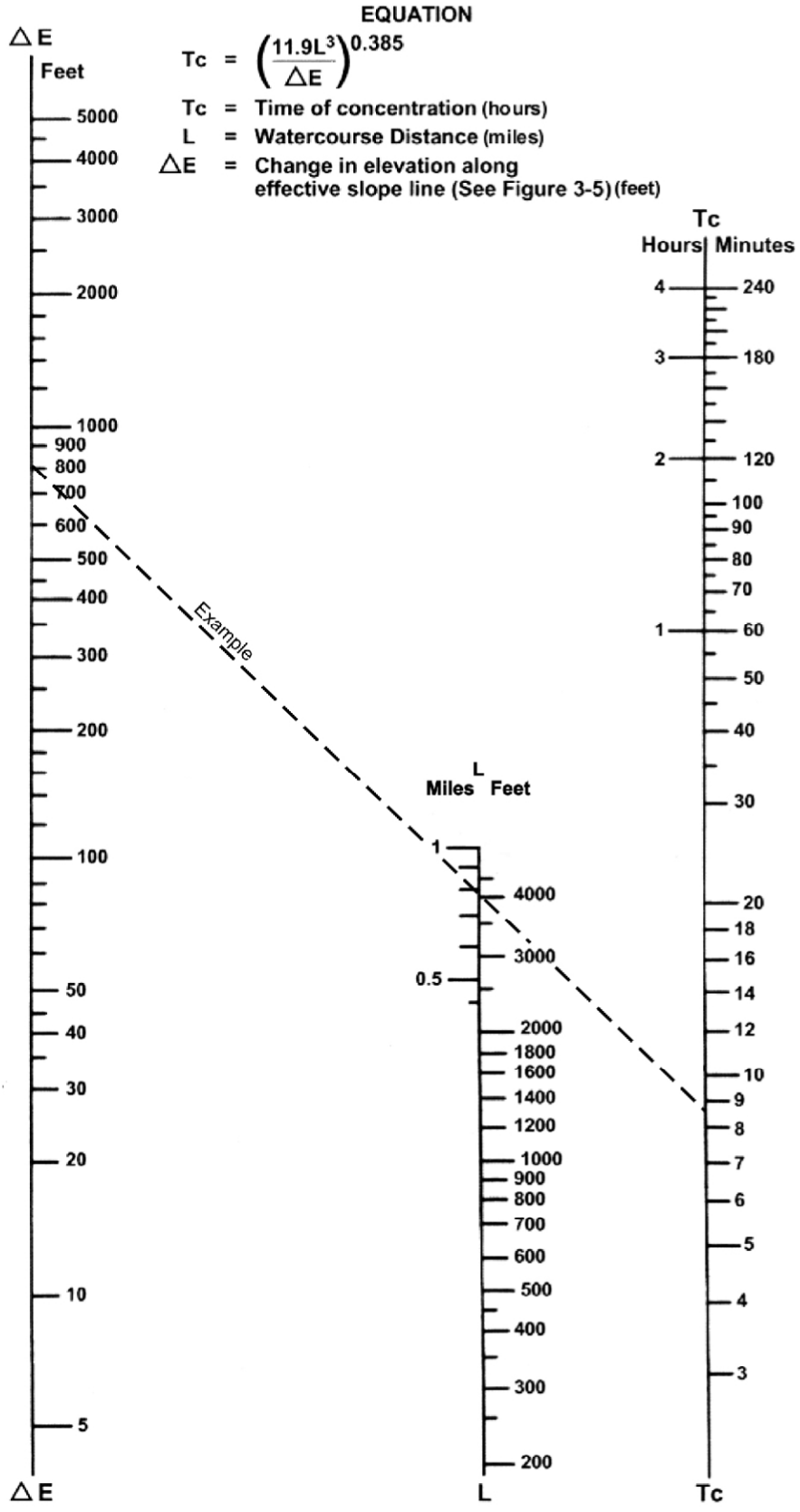
$$T = \frac{1.8\,(1.1-C)\sqrt{D}}{\sqrt[3]{s}}$$

SOURCE: Airport Drainage, Federal Aviation Administration, 1965

FIGURE

3-3

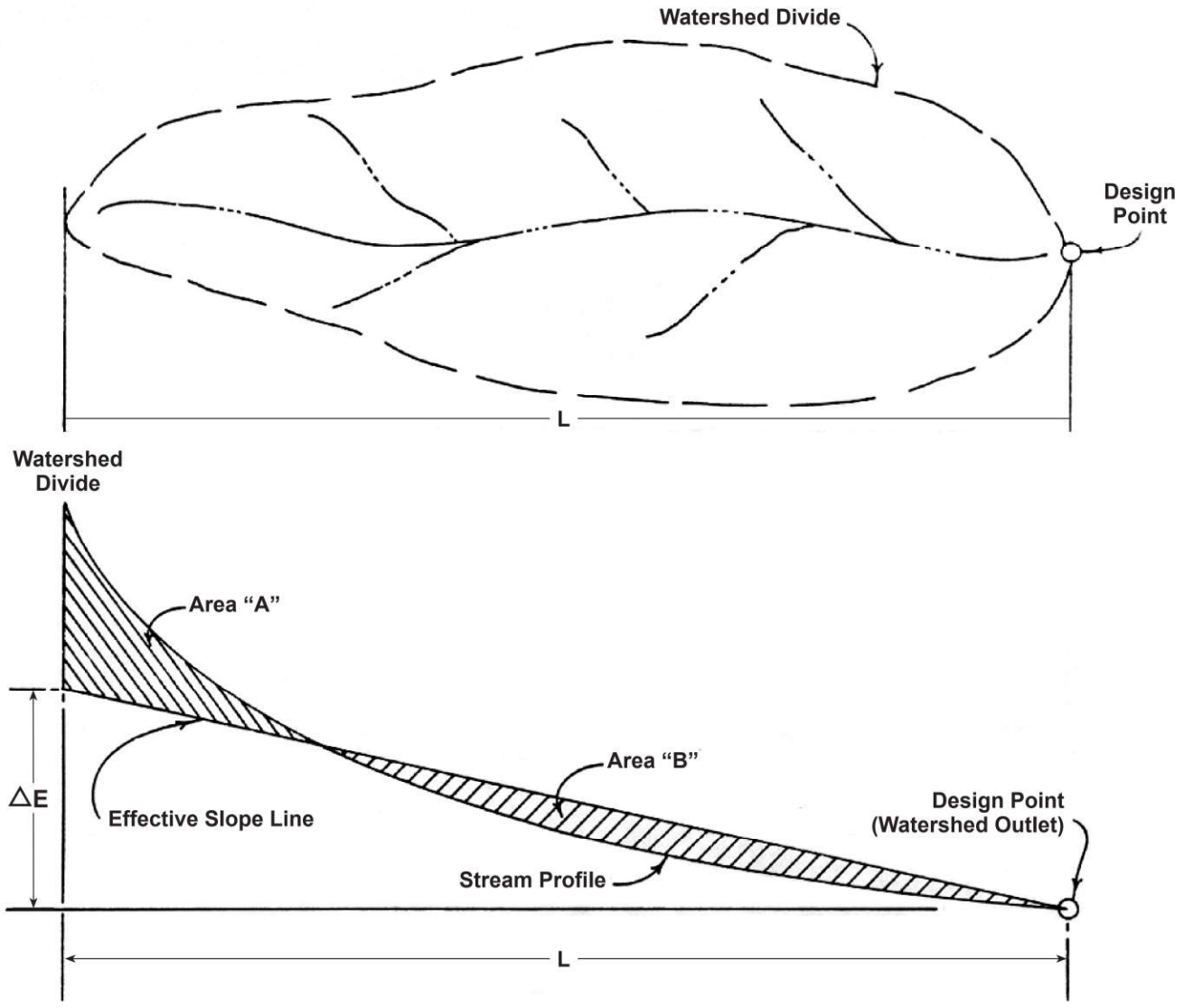
Rational Formula - Overland Time of Flow Nomograph



SOURCE: California Division of Highways (1941) and Kirpich (1940)

FIGURE 3-4

Nomograph for Determination of
Time of Concentration (Tc) or Travel Time (Tt) for Natural Watersheds

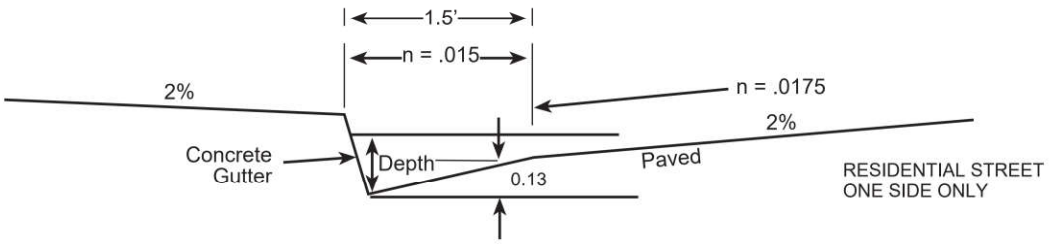


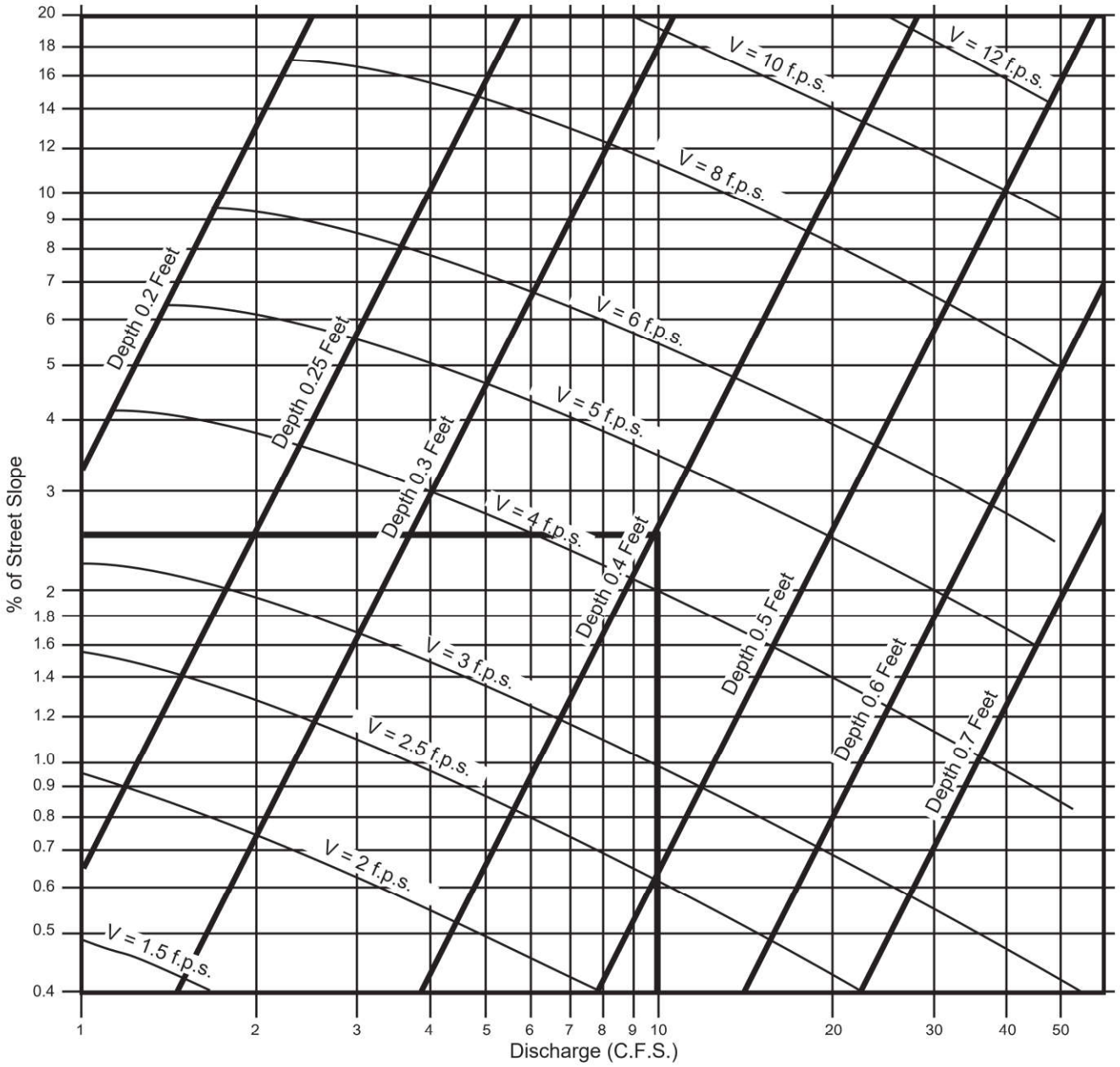
SOURCE: California Division of Highways (1941) and Kirpich (1940)

FIGURE

Computation of Effective Slope for Natural Watersheds

3-5





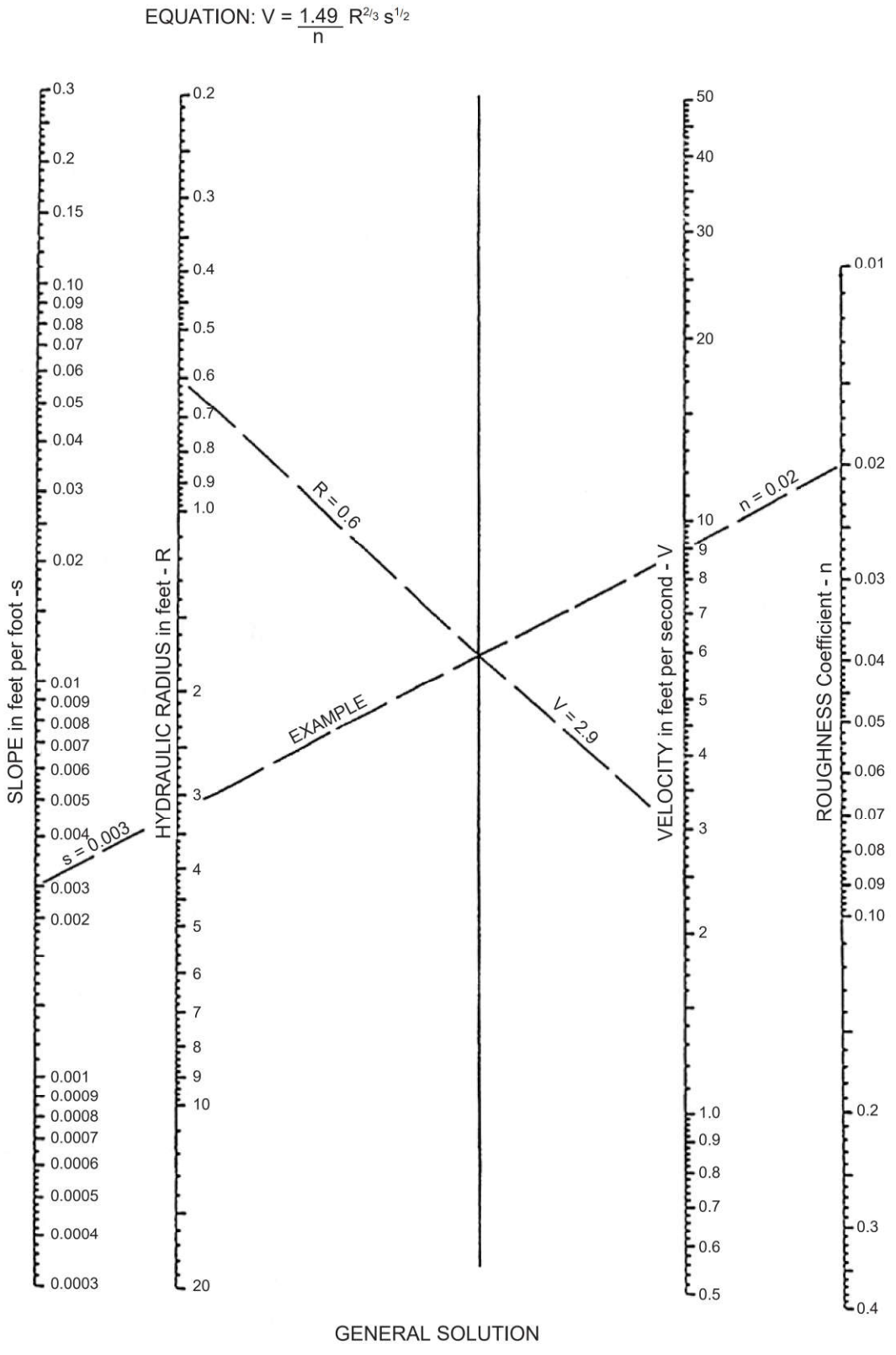
EXAMPLE:
Given: Q = 10 S = 2.5%
Chart gives: Depth = 0.4, Velocity = 4.4 f.p.s.

SOURCE: San Diego County Department of Special District Services Design Manual

FIGURE

Gutter and Roadway Discharge - Velocity Chart

3-6



SOURCE: USDOT, FHWA, HDS-3 (1961)

FIGURE 3-7

Manning's Equation Nomograph



Map Scale: 1:1,550 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 16, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2020—Feb 13, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX C

AES Existing Condition and Post-Development Output Reports

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
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              Ver. 23.0 Release Date: 07/01/2016  License ID 1452

                              Analysis prepared by:

                          PASCO LARET SUITER & ASSOCIATES
                           1911 SAN DIEGO AVE. SUITE 100
                                SAN DIEGO, CA 92110


 ************************* DESCRIPTION OF STUDY *************************
* PIRAEUS STREET, ENCINITAS                                              *
* PRE-DEVELOPMENT ANALYSIS                                               *
*                                                                        *
 **************************************************************************

  FILE NAME: 3733PRE.DAT
  TIME/DATE OF STUDY: 09:47 09/02/2022
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   2.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   6.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+--------------------------------------------------------------------------+
```

```
| BEGIN FLOWS TO POC-B                                                        |
|                                                                             |
|                                                                             |
+-----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    182.30
  DOWNSTREAM ELEVATION(FEET) =    174.40
  ELEVATION DIFFERENCE(FEET) =      7.90
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.629
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.102
  SUBAREA RUNOFF(CFS) =      0.47
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.47

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    174.40  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1348.00   CHANNEL SLOPE =  0.0698
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =  10.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.839
  *USER SPECIFIED(SUBAREA):
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       5.62
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.80
  AVERAGE FLOW DEPTH(FEET) =   0.21   TRAVEL TIME(MIN.) =   5.92
  Tc(MIN.) =   11.55
  SUBAREA AREA(ACRES) =     5.72       SUBAREA RUNOFF(CFS) =    9.88
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        5.9        PEAK FLOW RATE(CFS) =      10.17

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.29   FLOW VELOCITY(FEET/SEC.) =   4.54
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =    1443.00 FEET.

+-----------------------------------------------------------------------------+
| END FLOWS TO POC-B                                                          |
```

```
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

+----------------------------------------------------------------------------+
| BEGIN FLOWS TO POC-A                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    182.30
  DOWNSTREAM ELEVATION(FEET) =    173.36
  ELEVATION DIFFERENCE(FEET) =      8.94
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.402
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.266
  SUBAREA RUNOFF(CFS) =      0.28
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    173.36  DOWNSTREAM(FEET) =    106.30
  CHANNEL LENGTH THRU SUBAREA(FEET) =   631.00   CHANNEL SLOPE =  0.1063
  CHANNEL BASE(FEET) =   15.00   "Z" FACTOR =   8.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.389
  *USER SPECIFIED(SUBAREA):
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.70
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.64
  AVERAGE FLOW DEPTH(FEET) =   0.07   TRAVEL TIME(MIN.) =   3.98
  Tc(MIN.) =    9.38
  SUBAREA AREA(ACRES) =     2.38       SUBAREA RUNOFF(CFS) =    4.70
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        2.5         PEAK FLOW RATE(CFS) =       4.90

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
```

```
  DEPTH(FEET) =  0.09   FLOW VELOCITY(FEET/SEC.) =   3.29
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    102.00 =     726.00 FEET.

+----------------------------------------------------------------------------+
| END FLOWS TO POC-A                                                         |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        2.5  TC(MIN.) =      9.38
  PEAK FLOW RATE(CFS)   =       4.90
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```



```
**************************************************************************

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                              Analysis prepared by:

                          PASCO LARET SUITER & ASSOCIATES
                           1911 SAN DIEGO AVE. SUITE 100
                                SAN DIEGO, CA 92110


 ************************* DESCRIPTION OF STUDY *************************
* PIRAEUS STREET, ENCINITAS                                              *
* POST-DEVELOPMENT UNMITIGATED ANALYSIS                                  *
*                                                                        *
 **************************************************************************

  FILE NAME: 3733PSTU.DAT
  TIME/DATE OF STUDY: 12:09 09/08/2022
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   2.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   6.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   12.0      1.0    0.020/0.020/0.020   0.50    1.50 0.0313 0.125 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
```

```
| BEGIN FLOWS TO POC-B                                                          |
|                                                                               |
|                                                                               |
+-------------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    174.70
  DOWNSTREAM ELEVATION(FEET) =    142.09
  ELEVATION DIFFERENCE(FEET) =     32.61
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.431
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.245
  SUBAREA RUNOFF(CFS) =      0.67
  TOTAL AREA(ACRES) =      0.24   TOTAL RUNOFF(CFS) =      0.67

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    142.09  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   492.00   CHANNEL SLOPE =  0.1255
  CHANNEL BASE(FEET) =    3.50   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =  28.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.099
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.82
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.09
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   2.01
  Tc(MIN.) =    7.44
  SUBAREA AREA(ACRES) =     0.99       SUBAREA RUNOFF(CFS) =    2.27
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        1.2         PEAK FLOW RATE(CFS) =       2.82

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.16   FLOW VELOCITY(FEET/SEC.) =   4.76
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =     592.00 FEET.

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    7.44
  RAINFALL INTENSITY(INCH/HR) =   5.10
  TOTAL STREAM AREA(ACRES) =     1.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.82

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    204.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    108.00
  DOWNSTREAM ELEVATION(FEET) =     95.20
  ELEVATION DIFFERENCE(FEET) =     12.80
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.431
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.245
  SUBAREA RUNOFF(CFS) =      0.14
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.14

****************************************************************************
  FLOW PROCESS FROM NODE    204.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     95.20  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   790.00   CHANNEL SLOPE =  0.0188
  CHANNEL BASE(FEET) =    1.50   "Z" FACTOR =  12.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.328
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.72
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.47
  AVERAGE FLOW DEPTH(FEET) =   0.15   TRAVEL TIME(MIN.) =   8.98
  Tc(MIN.) =   14.41
  SUBAREA AREA(ACRES) =     0.75       SUBAREA RUNOFF(CFS) =    1.12
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        0.8         PEAK FLOW RATE(CFS) =       1.20
```

```
  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.19   FLOW VELOCITY(FEET/SEC.) =   1.62
  LONGEST FLOWPATH FROM NODE    203.00 TO NODE    202.00 =     890.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   14.41
  RAINFALL INTENSITY(INCH/HR) =   3.33
  TOTAL STREAM AREA(ACRES) =     0.80
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.20

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    153.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.328
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5036
  SUBAREA AREA(ACRES) =    0.14   SUBAREA RUNOFF(CFS) =    0.38
  TOTAL AREA(ACRES) =        0.9   TOTAL RUNOFF(CFS) =       1.58
  TC(MIN.) =   14.41

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    500.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    93.00  DOWNSTREAM(FEET) =    90.52
  FLOW LENGTH(FEET) =    29.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   4.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.29
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.58
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   14.46
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    500.00 =      29.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
================================================================================
  UPSTREAM ELEVATION(FEET) =   90.52  DOWNSTREAM ELEVATION(FEET) =   80.34
  STREET LENGTH(FEET) =   333.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.59
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.25
    HALFSTREET FLOOD WIDTH(FEET) =    6.21
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.15
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.79
  STREET FLOW TRAVEL TIME(MIN.) =   1.76   Tc(MIN.) =   16.23
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.083
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.507
  SUBAREA AREA(ACRES) =    0.01      SUBAREA RUNOFF(CFS) =    0.02
  TOTAL AREA(ACRES) =        0.9        PEAK FLOW RATE(CFS) =       1.58

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.25   HALFSTREET FLOOD WIDTH(FEET) =   6.21
  FLOW VELOCITY(FEET/SEC.) =  3.12   DEPTH*VELOCITY(FT*FT/SEC.) =   0.78
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    202.00 =     362.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =   16.23
  RAINFALL INTENSITY(INCH/HR) =   3.08
  TOTAL STREAM AREA(ACRES) =     0.95
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.58

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 IS CODE =  81
----------------------------------------------------------------------------
```

```
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.083
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5458
  SUBAREA AREA(ACRES) =    0.14   SUBAREA RUNOFF(CFS) =    0.35
  TOTAL AREA(ACRES) =        1.1   TOTAL RUNOFF(CFS) =       1.83
  TC(MIN.) =   16.23

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     90.00  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   114.00   CHANNEL SLOPE =  0.0847
  CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.048
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.85
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.57
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   0.29
  Tc(MIN.) =   16.52
  SUBAREA AREA(ACRES) =     0.01       SUBAREA RUNOFF(CFS) =    0.02
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.548
  TOTAL AREA(ACRES) =        1.1         PEAK FLOW RATE(CFS) =       1.84

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.12   FLOW VELOCITY(FEET/SEC.) =   6.54
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    202.00 =     114.00 FEET.

+--------------------------------------------------------------------------+
| ADD SUBAREA B-7 AT NODE 510                                              |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    510.00 TO NODE    510.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.048
  *USER SPECIFIED(SUBAREA):
```

```
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5378
  SUBAREA AREA(ACRES) =    0.13   SUBAREA RUNOFF(CFS) =    0.18
  TOTAL AREA(ACRES) =        1.2   TOTAL RUNOFF(CFS) =       2.02
  TC(MIN.) =   16.52

****************************************************************************
  FLOW PROCESS FROM NODE    510.00 TO NODE    143.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
  UPSTREAM ELEVATION(FEET) =    150.50
  DOWNSTREAM ELEVATION(FEET) =    127.00
  ELEVATION DIFFERENCE(FEET) =     23.50
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.345
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.12
  TOTAL AREA(ACRES) =      0.04   TOTAL RUNOFF(CFS) =      0.12

****************************************************************************
  FLOW PROCESS FROM NODE    143.00 TO NODE    145.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    127.00  DOWNSTREAM(FEET) =    111.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   180.00   CHANNEL SLOPE =  0.0870
  CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.354
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.27
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.18
  AVERAGE FLOW DEPTH(FEET) =   0.04   TRAVEL TIME(MIN.) =   0.94
  Tc(MIN.) =    5.29
  SUBAREA AREA(ACRES) =     0.06       SUBAREA RUNOFF(CFS) =    0.31
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.666
  TOTAL AREA(ACRES) =        0.1         PEAK FLOW RATE(CFS) =       0.42

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.05   FLOW VELOCITY(FEET/SEC.) =   3.98
```

```
 LONGEST FLOWPATH FROM NODE    510.00 TO NODE    145.00 =     244.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    145.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  111.34  DOWNSTREAM ELEVATION(FEET) =   80.34
 STREET LENGTH(FEET) =  1213.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 12.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.44
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.17
   HALFSTREET FLOOD WIDTH(FEET) =    2.13
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.68
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.45
 STREET FLOW TRAVEL TIME(MIN.) =   7.55   Tc(MIN.) =   12.84
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.585
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8100
 S.C.S. CURVE NUMBER (AMC II) =   0
 AREA-AVERAGE RUNOFF COEFFICIENT =  0.679
 SUBAREA AREA(ACRES) =    0.01      SUBAREA RUNOFF(CFS) =    0.03
 TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.42

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.16   HALFSTREET FLOOD WIDTH(FEET) =   1.50
 FLOW VELOCITY(FEET/SEC.) =  3.02   DEPTH*VELOCITY(FT*FT/SEC.) =   0.47
 LONGEST FLOWPATH FROM NODE    510.00 TO NODE    202.00 =    1457.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  5
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  5 ARE:
 TIME OF CONCENTRATION(MIN.) =   12.84
```

```
  RAINFALL INTENSITY(INCH/HR) =   3.58
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.42

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.82     7.44        5.099          1.23
      2        1.20    14.41        3.328          0.80
      3        1.58    16.23        3.083          0.95
      5        0.42    12.84        3.585          0.11

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  5 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.00     0.00       6.587
      2        4.41     7.44       5.099
      3        4.72    12.84       3.585
      4        4.83    14.41       3.328
      5        4.76    16.23       3.083

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.83   Tc(MIN.) =   14.41
  TOTAL AREA(ACRES) =        3.1
  LONGEST FLOWPATH FROM NODE    510.00 TO NODE    202.00 =    1457.00 FEET.

+----------------------------------------------------------------------------+
| END FLOWS TO POC-B                                                         |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

+----------------------------------------------------------------------------+
| BEGIN FLOWS TO POC-A                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    45.00
```

```
  UPSTREAM ELEVATION(FEET) =    181.00
  DOWNSTREAM ELEVATION(FEET) =    172.00
  ELEVATION DIFFERENCE(FEET) =      9.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.625
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.16
  TOTAL AREA(ACRES) =      0.03   TOTAL RUNOFF(CFS) =      0.16

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    151.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   156.53  DOWNSTREAM(FEET) =   156.00
  FLOW LENGTH(FEET) =    10.50   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO  6.000
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.39
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.16
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    1.67
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    151.00 =      55.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    102.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  156.00  DOWNSTREAM ELEVATION(FEET) =  138.54
  STREET LENGTH(FEET) =   321.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.35
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.26
    HALFSTREET FLOOD WIDTH(FEET) =    6.58
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.26
```

```
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.10
  STREET FLOW TRAVEL TIME(MIN.) =   1.26   Tc(MIN.) =    2.92
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.82      SUBAREA RUNOFF(CFS) =    4.37
  TOTAL AREA(ACRES) =        0.8        PEAK FLOW RATE(CFS) =       4.54

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   8.96
  FLOW VELOCITY(FEET/SEC.) =  4.93   DEPTH*VELOCITY(FT*FT/SEC.) =   1.50
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =     376.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   128.34  DOWNSTREAM(FEET) =   128.12
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.19
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.54
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    2.93
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     381.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    104.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    150.62
  DOWNSTREAM ELEVATION(FEET) =    146.63
  ELEVATION DIFFERENCE(FEET) =      3.99
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.086
```

```
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    91.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.13   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE    104.00 TO NODE    105.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  146.63  DOWNSTREAM ELEVATION(FEET) =  140.51
  STREET LENGTH(FEET) =    97.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.17
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.21
    HALFSTREET FLOOD WIDTH(FEET) =    4.13
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.06
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.85
  STREET FLOW TRAVEL TIME(MIN.) =   0.40   Tc(MIN.) =    3.48
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.18      SUBAREA RUNOFF(CFS) =    0.96
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.65

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.17
  FLOW VELOCITY(FEET/SEC.) =  4.29   DEPTH*VELOCITY(FT*FT/SEC.) =   0.98
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    105.00 =     192.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    105.00 TO NODE    106.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   137.51  DOWNSTREAM(FEET) =   133.85
 FLOW LENGTH(FEET) =    82.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   4.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   7.67
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.65
 PIPE TRAVEL TIME(MIN.) =   0.18    Tc(MIN.) =    3.66
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    106.00 =     274.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    106.00 TO NODE    106.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =    3.66
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.31
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.65

****************************************************************************
 FLOW PROCESS FROM NODE    107.00 TO NODE    108.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8100
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
 UPSTREAM ELEVATION(FEET) =    146.18
 DOWNSTREAM ELEVATION(FEET) =    140.74
 ELEVATION DIFFERENCE(FEET) =      5.44
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.844
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.96
 TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
 FLOW PROCESS FROM NODE    108.00 TO NODE    106.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
```

```
  UPSTREAM ELEVATION(FEET) =  140.74  DOWNSTREAM ELEVATION(FEET) =  136.85
  STREET LENGTH(FEET) =    70.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.36
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.80
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.90
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.87
  STREET FLOW TRAVEL TIME(MIN.) =   0.30   Tc(MIN.) =    3.14
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.15      SUBAREA RUNOFF(CFS) =    0.80
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.76

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.24   HALFSTREET FLOOD WIDTH(FEET) =   5.62
  FLOW VELOCITY(FEET/SEC.) =  4.06   DEPTH*VELOCITY(FT*FT/SEC.) =   0.97
  LONGEST FLOWPATH FROM NODE    107.00 TO NODE    106.00 =     165.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    106.00 TO NODE    106.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.14
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.33
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.76

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
```

```
     1        1.65     3.66        6.587          0.31
     2        1.76     3.14        6.587          0.33

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        3.18     3.14       6.587
     2        3.41     3.66       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.41   Tc(MIN.) =    3.66
  TOTAL AREA(ACRES) =        0.6
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    106.00 =     274.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    106.00 TO NODE    109.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   133.85  DOWNSTREAM(FEET) =   131.86
  FLOW LENGTH(FEET) =   199.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.03
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.41
  PIPE TRAVEL TIME(MIN.) =   0.66    Tc(MIN.) =    4.32
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    109.00 =     473.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    109.00 TO NODE    110.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   131.86  DOWNSTREAM(FEET) =   129.61
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.78
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.41
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    4.49
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    110.00 =     551.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    110.00 IS CODE =   1
----------------------------------------------------------------------------
```

```
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
================================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.49
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.64
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.41

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    142.09
  DOWNSTREAM ELEVATION(FEET) =    136.65
  ELEVATION DIFFERENCE(FEET) =      5.44
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.844
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.96
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  136.65  DOWNSTREAM ELEVATION(FEET) =  134.29
  STREET LENGTH(FEET) =    41.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.28
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.58
```

```
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.91
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.85
  STREET FLOW TRAVEL TIME(MIN.) =   0.17   Tc(MIN.) =    3.02
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.12      SUBAREA RUNOFF(CFS) =    0.64
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.60

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.25
  FLOW VELOCITY(FEET/SEC.) =  4.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.94
  LONGEST FLOWPATH FROM NODE    111.00 TO NODE    113.00 =     136.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    113.00 TO NODE    110.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   131.29  DOWNSTREAM(FEET) =   129.61
  FLOW LENGTH(FEET) =   168.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.16
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.60
  PIPE TRAVEL TIME(MIN.) =   0.67    Tc(MIN.) =    3.69
  LONGEST FLOWPATH FROM NODE    111.00 TO NODE    110.00 =     304.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    110.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.69
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.60

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.41     4.49        6.587          0.64
      2        1.60     3.69        6.587          0.30
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        5.02     3.69       6.587
      2        5.02     4.49       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.02   Tc(MIN.) =    4.49
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    110.00 =     551.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   129.61  DOWNSTREAM(FEET) =   128.12
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.55
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.02
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    4.59
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    114.00 =     601.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        5.02     4.59       6.587        0.94
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    114.00 =     601.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        4.54     2.93       6.587        0.85
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     381.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
```

```
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1       7.74       2.93        6.587
      2       9.55       4.59        6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       9.55   Tc(MIN.) =    4.59
  TOTAL AREA(ACRES) =        1.8

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    115.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   128.12  DOWNSTREAM(FEET) =   127.37
  FLOW LENGTH(FEET) =    24.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.19
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       9.55
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    4.63
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    115.00 =     625.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    115.00 TO NODE    115.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.63
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     1.79
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      9.55

****************************************************************************
  FLOW PROCESS FROM NODE    116.00 TO NODE    530.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    30.00
```

```
  UPSTREAM ELEVATION(FEET) =    138.00
  DOWNSTREAM ELEVATION(FEET) =    136.30
  ELEVATION DIFFERENCE(FEET) =      1.70
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.604
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.32
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.32

****************************************************************************
  FLOW PROCESS FROM NODE    530.00 TO NODE    117.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  136.30  DOWNSTREAM ELEVATION(FEET) =  131.74
  STREET LENGTH(FEET) =    78.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.80
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.19
    HALFSTREET FLOOD WIDTH(FEET) =    3.02
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.82
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.71
  STREET FLOW TRAVEL TIME(MIN.) =   0.34   Tc(MIN.) =    1.94
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.18      SUBAREA RUNOFF(CFS) =    0.96
  TOTAL AREA(ACRES) =        0.2        PEAK FLOW RATE(CFS) =       1.28

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.22   HALFSTREET FLOOD WIDTH(FEET) =   4.51
  FLOW VELOCITY(FEET/SEC.) =  3.99   DEPTH*VELOCITY(FT*FT/SEC.) =   0.86
  LONGEST FLOWPATH FROM NODE    116.00 TO NODE    117.00 =     108.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    117.00 TO NODE    115.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   128.74  DOWNSTREAM(FEET) =   127.37
 FLOW LENGTH(FEET) =   137.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.05
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.28
 PIPE TRAVEL TIME(MIN.) =   0.56    Tc(MIN.) =    2.51
 LONGEST FLOWPATH FROM NODE    116.00 TO NODE    115.00 =     245.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    155.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =    2.51
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.24
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.28

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        9.55     4.63        6.587          1.79
     2        1.28     2.51        6.587          0.24

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        6.46     2.51       6.587
     2       10.83     4.63       6.587

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      10.83   Tc(MIN.) =    4.63
 TOTAL AREA(ACRES) =        2.0
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    155.00 =     625.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    118.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   127.37  DOWNSTREAM(FEET) =   124.46
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.20
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      10.83
  PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =    4.74
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    118.00 =     703.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    118.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.74
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     2.03
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     10.83

****************************************************************************
  FLOW PROCESS FROM NODE    119.00 TO NODE    120.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    93.00
  UPSTREAM ELEVATION(FEET) =    133.92
  DOWNSTREAM ELEVATION(FEET) =    128.64
  ELEVATION DIFFERENCE(FEET) =      5.28
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.822
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.96
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
  FLOW PROCESS FROM NODE    120.00 TO NODE    118.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   125.64  DOWNSTREAM(FEET) =   124.46
  FLOW LENGTH(FEET) =   118.00   MANNING'S N =  0.013
```

```
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.82
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.96
  PIPE TRAVEL TIME(MIN.) =   0.52    Tc(MIN.) =    3.34
  LONGEST FLOWPATH FROM NODE    119.00 TO NODE    118.00 =     211.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    118.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.34
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.96

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       10.83     4.74        6.587          2.03
      2        0.96     3.34        6.587          0.18

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       11.79     3.34       6.587
      2       11.79     4.74       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      11.79   Tc(MIN.) =    4.74
  TOTAL AREA(ACRES) =        2.2
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    118.00 =     703.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    121.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   124.46  DOWNSTREAM(FEET) =   116.01
  FLOW LENGTH(FEET) =   139.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.92
```

```
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      11.79
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    4.91
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    121.00 =     842.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    121.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.91
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     2.21
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     11.79

****************************************************************************
  FLOW PROCESS FROM NODE    156.00 TO NODE    123.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    143.00
  DOWNSTREAM ELEVATION(FEET) =    138.63
  ELEVATION DIFFERENCE(FEET) =      4.37
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.027
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    93.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.91
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.91

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    124.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  138.63  DOWNSTREAM ELEVATION(FEET) =  125.78
  STREET LENGTH(FEET) =   245.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
```

```
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.75
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.27
    HALFSTREET FLOOD WIDTH(FEET) =    7.18
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.34
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.17
  STREET FLOW TRAVEL TIME(MIN.) =   0.94   Tc(MIN.) =    3.97
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.69      SUBAREA RUNOFF(CFS) =    3.68
  TOTAL AREA(ACRES) =        0.9        PEAK FLOW RATE(CFS) =       4.59

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   9.03
  FLOW VELOCITY(FEET/SEC.) =  4.91   DEPTH*VELOCITY(FT*FT/SEC.) =   1.51
  LONGEST FLOWPATH FROM NODE    156.00 TO NODE    124.00 =     340.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    121.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   116.23  DOWNSTREAM(FEET) =   116.01
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.21
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.59
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    3.98
  LONGEST FLOWPATH FROM NODE    156.00 TO NODE    121.00 =     344.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    121.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
```

```
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.98
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.86
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.59

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       11.79     4.91        6.587          2.21
      2        4.59     3.98        6.587          0.86

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       16.38     3.98       6.587
      2       16.38     4.91       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      16.38   Tc(MIN.) =    4.91
  TOTAL AREA(ACRES) =        3.1
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    121.00 =     842.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    125.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   116.01  DOWNSTREAM(FEET) =   112.93
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.28
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      16.38
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =    4.96
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    125.00 =     892.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    125.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    148.00 TO NODE    149.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    129.50
  DOWNSTREAM ELEVATION(FEET) =    119.80
  ELEVATION DIFFERENCE(FEET) =      9.70
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.362
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.75
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.75

+----------------------------------------------------------------------------+
| AREA FORCE DRAINED VIA PUMP                                                |
| ADDED AS SUBAREA AT PRESSURE PIPE DISCHARGE POINT                          |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    149.00 TO NODE    149.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.8100
  SUBAREA AREA(ACRES) =    0.23   SUBAREA RUNOFF(CFS) =    1.23
  TOTAL AREA(ACRES) =        0.4   TOTAL RUNOFF(CFS) =       1.97
  TC(MIN.) =    2.36

****************************************************************************
  FLOW PROCESS FROM NODE    149.00 TO NODE    590.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   115.80  DOWNSTREAM(FEET) =   114.25
  FLOW LENGTH(FEET) =   103.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.11
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.97
```

```
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    2.70
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    590.00 =     198.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    590.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.70
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.37
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.97

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    540.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    53.00
  UPSTREAM ELEVATION(FEET) =    124.30
  DOWNSTREAM ELEVATION(FEET) =    121.10
  ELEVATION DIFFERENCE(FEET) =      3.20
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.087
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.48
  TOTAL AREA(ACRES) =      0.09   TOTAL RUNOFF(CFS) =      0.48

****************************************************************************
  FLOW PROCESS FROM NODE    540.00 TO NODE    132.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  121.10  DOWNSTREAM ELEVATION(FEET) =  117.36
  STREET LENGTH(FEET) =    65.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
```

```
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.04
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.20
    HALFSTREET FLOOD WIDTH(FEET) =    3.91
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.84
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.78
  STREET FLOW TRAVEL TIME(MIN.) =   0.28   Tc(MIN.) =    2.37
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.21      SUBAREA RUNOFF(CFS) =    1.12
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.60

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.25
  FLOW VELOCITY(FEET/SEC.) =  4.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.94
  LONGEST FLOWPATH FROM NODE    131.00 TO NODE    132.00 =     118.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    590.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   114.36  DOWNSTREAM(FEET) =   114.25
  FLOW LENGTH(FEET) =    11.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.16
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.60
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    2.41
  LONGEST FLOWPATH FROM NODE    131.00 TO NODE    590.00 =     129.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    590.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.41
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.60
```

```
  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.97     2.70        6.587          0.37
      2        1.60     2.41        6.587          0.30

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.37     2.41       6.587
      2        3.57     2.70       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.57   Tc(MIN.) =    2.70
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    590.00 =     198.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    125.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   114.25  DOWNSTREAM(FEET) =   112.93
  FLOW LENGTH(FEET) =   132.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.30
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.57
  PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =    3.11
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    125.00 =     330.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    125.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        3.57     3.11       6.587        0.67
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    125.00 =     330.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
```

```
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       16.38     4.96       6.587        3.07
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    125.00 =     892.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      13.85       3.11        6.587
      2      19.95       4.96        6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      19.95   Tc(MIN.) =    4.96
  TOTAL AREA(ACRES) =        3.7

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    126.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   112.93  DOWNSTREAM(FEET) =   108.69
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.12
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      19.95
  PIPE TRAVEL TIME(MIN.) =   0.09    Tc(MIN.) =    5.05
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    126.00 =     970.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    126.00 TO NODE    126.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.05
  RAINFALL INTENSITY(INCH/HR) =   6.55
  TOTAL STREAM AREA(ACRES) =     3.74
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     19.95

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    550.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    37.00
```

```
  UPSTREAM ELEVATION(FEET) =    119.66
  DOWNSTREAM ELEVATION(FEET) =    117.30
  ELEVATION DIFFERENCE(FEET) =      2.36
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.712
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.37
  TOTAL AREA(ACRES) =      0.07   TOTAL RUNOFF(CFS) =      0.37

****************************************************************************
  FLOW PROCESS FROM NODE    550.00 TO NODE    134.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  117.30  DOWNSTREAM ELEVATION(FEET) =  113.12
  STREET LENGTH(FEET) =    77.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.80
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.19
    HALFSTREET FLOOD WIDTH(FEET) =    3.10
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.74
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.70
  STREET FLOW TRAVEL TIME(MIN.) =   0.34   Tc(MIN.) =    2.06
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.16      SUBAREA RUNOFF(CFS) =    0.85
  TOTAL AREA(ACRES) =        0.2        PEAK FLOW RATE(CFS) =       1.23

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.22   HALFSTREET FLOOD WIDTH(FEET) =   4.51
  FLOW VELOCITY(FEET/SEC.) =  3.82   DEPTH*VELOCITY(FT*FT/SEC.) =   0.83
  LONGEST FLOWPATH FROM NODE    133.00 TO NODE    134.00 =     114.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    134.00 TO NODE    126.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   110.12  DOWNSTREAM(FEET) =   108.69
 FLOW LENGTH(FEET) =   143.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.01
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.23
 PIPE TRAVEL TIME(MIN.) =   0.59    Tc(MIN.) =    2.65
 LONGEST FLOWPATH FROM NODE    133.00 TO NODE    126.00 =     257.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    126.00 TO NODE    126.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =    2.65
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.23
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.23

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1       19.95     5.05        6.546          3.74
     2        1.23     2.65        6.587          0.23

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1       11.70     2.65       6.587
     2       21.17     5.05       6.546

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      21.17   Tc(MIN.) =    5.05
 TOTAL AREA(ACRES) =        4.0
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    126.00 =     970.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    126.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.69  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =    20.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.16
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      21.17
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =    5.07
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     990.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.07
  RAINFALL INTENSITY(INCH/HR) =   6.53
  TOTAL STREAM AREA(ACRES) =     3.97
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     21.17

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    600.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    181.00
  DOWNSTREAM ELEVATION(FEET) =    172.00
  ELEVATION DIFFERENCE(FEET) =      9.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.390
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.275
  SUBAREA RUNOFF(CFS) =      0.11
  TOTAL AREA(ACRES) =      0.04   TOTAL RUNOFF(CFS) =      0.11

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    160.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    172.00  DOWNSTREAM(FEET) =    132.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   333.00   CHANNEL SLOPE =  0.1201
  CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =   2.000
```

```
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.507
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.29
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.59
  AVERAGE FLOW DEPTH(FEET) =   0.06   TRAVEL TIME(MIN.) =   1.21
  Tc(MIN.) =    6.60
  SUBAREA AREA(ACRES) =     0.14       SUBAREA RUNOFF(CFS) =    0.35
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        0.2         PEAK FLOW RATE(CFS) =       0.45

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.07   FLOW VELOCITY(FEET/SEC.) =   5.46
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    160.00 =     428.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    160.00 TO NODE    128.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   129.00  DOWNSTREAM(FEET) =   125.76
  FLOW LENGTH(FEET) =   122.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   3.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.52
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.45
  PIPE TRAVEL TIME(MIN.) =   0.45    Tc(MIN.) =    7.05
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    128.00 =     550.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    128.00 TO NODE    130.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  125.76  DOWNSTREAM ELEVATION(FEET) =  117.50
  STREET LENGTH(FEET) =   156.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130
```

```
    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.65
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.24
    HALFSTREET FLOOD WIDTH(FEET) =    5.47
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.96
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.93
  STREET FLOW TRAVEL TIME(MIN.) =   0.66   Tc(MIN.) =    7.70
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.984
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.727
  SUBAREA AREA(ACRES) =    0.60      SUBAREA RUNOFF(CFS) =    2.42
  TOTAL AREA(ACRES) =        0.8        PEAK FLOW RATE(CFS) =       2.83

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.27   HALFSTREET FLOOD WIDTH(FEET) =   7.25
  FLOW VELOCITY(FEET/SEC.) =  4.39   DEPTH*VELOCITY(FT*FT/SEC.) =   1.19
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    130.00 =     706.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.06  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.94
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.83
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    7.71
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    127.00 =     710.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    7.71
  RAINFALL INTENSITY(INCH/HR) =   4.98
  TOTAL STREAM AREA(ACRES) =     0.78
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.83

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    136.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    150.62
  DOWNSTREAM ELEVATION(FEET) =    145.21
  ELEVATION DIFFERENCE(FEET) =      5.41
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.849
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.27
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.27

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    137.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  145.21  DOWNSTREAM ELEVATION(FEET) =  117.57
  STREET LENGTH(FEET) =   543.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.25
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.65
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.73
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.82
  STREET FLOW TRAVEL TIME(MIN.) =   2.43   Tc(MIN.) =    5.28
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.361
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.38      SUBAREA RUNOFF(CFS) =    1.96
  TOTAL AREA(ACRES) =        0.4        PEAK FLOW RATE(CFS) =       2.22
```

```
  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.25   HALFSTREET FLOOD WIDTH(FEET) =   6.44
  FLOW VELOCITY(FEET/SEC.) =  4.16   DEPTH*VELOCITY(FT*FT/SEC.) =   1.06
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    137.00 =     638.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    137.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.72  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =    18.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.51
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.22
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    5.31
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     656.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.31
  RAINFALL INTENSITY(INCH/HR) =   6.33
  TOTAL STREAM AREA(ACRES) =     0.43
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.22

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       21.17     5.07        6.526          3.97
      2        2.83     7.71        4.980          0.78
      3        2.22     5.31        6.334          0.43

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  3 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       25.15     5.07       6.526
      2       24.71     5.31       6.334
      3       20.73     7.71       4.980
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      25.15   Tc(MIN.) =    5.07
  TOTAL AREA(ACRES) =        5.2
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     990.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   107.84  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =    46.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  14.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.31
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      25.15
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =    5.13
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    141.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    40.00
  UPSTREAM ELEVATION(FEET) =    117.50
  DOWNSTREAM ELEVATION(FEET) =    114.93
  ELEVATION DIFFERENCE(FEET) =      2.57
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.776
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.16
  TOTAL AREA(ACRES) =      0.03   TOTAL RUNOFF(CFS) =      0.16

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
```

```
  UPSTREAM ELEVATION(FEET) =  114.93  DOWNSTREAM ELEVATION(FEET) =  110.22
  STREET LENGTH(FEET) =   126.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.45
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.16
    HALFSTREET FLOOD WIDTH(FEET) =    1.50
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.65
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.57
  STREET FLOW TRAVEL TIME(MIN.) =   0.58   Tc(MIN.) =    2.35
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.11      SUBAREA RUNOFF(CFS) =    0.59
  TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.75

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.20   HALFSTREET FLOOD WIDTH(FEET) =   3.54
  FLOW VELOCITY(FEET/SEC.) =  3.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.60
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    142.00 =     166.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    142.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.35
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.75

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    142.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
```

```
==============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    70.00
  UPSTREAM ELEVATION(FEET) =    115.00
  DOWNSTREAM ELEVATION(FEET) =    110.22
  ELEVATION DIFFERENCE(FEET) =      4.78
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.160
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.454
  SUBAREA RUNOFF(CFS) =      0.17
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.17

******************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    142.00 IS CODE =   1
------------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.16
  RAINFALL INTENSITY(INCH/HR) =   6.45
  TOTAL STREAM AREA(ACRES) =     0.06
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.17

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.75     2.35        6.587          0.14
      2        0.17     5.16        6.454          0.06

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.83     2.35       6.587
      2        0.91     5.16       6.454

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       0.91   Tc(MIN.) =    5.16
  TOTAL AREA(ACRES) =        0.2
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    142.00 =     166.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    139.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   106.70  DOWNSTREAM(FEET) =   106.40
  FLOW LENGTH(FEET) =    25.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   4.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.04
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.91
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    5.26
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    139.00 =     191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    139.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
================================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.26
  RAINFALL INTENSITY(INCH/HR) =   6.37
  TOTAL STREAM AREA(ACRES) =     0.20
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.91

****************************************************************************
  FLOW PROCESS FROM NODE    137.00 TO NODE    138.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =    117.57
  DOWNSTREAM ELEVATION(FEET) =    114.93
  ELEVATION DIFFERENCE(FEET) =      2.64
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.136
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.27
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.27

****************************************************************************
  FLOW PROCESS FROM NODE    138.00 TO NODE    139.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
================================================================================
  UPSTREAM ELEVATION(FEET) =  114.93  DOWNSTREAM ELEVATION(FEET) =  110.22
  STREET LENGTH(FEET) =    91.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00
```

```
  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.40
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.16
    HALFSTREET FLOOD WIDTH(FEET) =    1.50
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.29
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.67
  STREET FLOW TRAVEL TIME(MIN.) =   0.35   Tc(MIN.) =    3.49
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.05      SUBAREA RUNOFF(CFS) =    0.27
  TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.53

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.16   HALFSTREET FLOOD WIDTH(FEET) =   1.50
  FLOW VELOCITY(FEET/SEC.) =  4.29   DEPTH*VELOCITY(FT*FT/SEC.) =   0.67
  LONGEST FLOWPATH FROM NODE    137.00 TO NODE    139.00 =     171.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    139.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.49
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.53

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.91     5.26        6.372          0.20
      2        0.53     3.49        6.587          0.10
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.41     3.49       6.587
      2        1.42     5.26       6.372

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.42   Tc(MIN.) =    5.26
  TOTAL AREA(ACRES) =        0.3
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    139.00 =     191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   106.40  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =    40.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.11
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.42
  PIPE TRAVEL TIME(MIN.) =   0.16    Tc(MIN.) =    5.43
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    140.00 =     231.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        1.42     5.43       6.249        0.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    140.00 =     231.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       25.15     5.13       6.482        5.18
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
```

```
      1      26.49       5.13        6.482
      2      25.66       5.43        6.249

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      26.49   Tc(MIN.) =    5.13
  TOTAL AREA(ACRES) =        5.5

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    146.00 TO NODE    147.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    116.27
  DOWNSTREAM ELEVATION(FEET) =    110.79
  ELEVATION DIFFERENCE(FEET) =      5.48
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.837
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.13   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE    147.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   107.79  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =     3.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.91
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.69
  PIPE TRAVEL TIME(MIN.) =   0.00    Tc(MIN.) =    2.84
```

```
  LONGEST FLOWPATH FROM NODE    146.00 TO NODE    140.00 =      98.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        0.69     2.84       6.587        0.13
  LONGEST FLOWPATH FROM NODE    146.00 TO NODE    140.00 =      98.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       26.49     5.13       6.482        5.48
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      15.37       2.84        6.587
      2      27.17       5.13        6.482

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      27.17   Tc(MIN.) =    5.13
  TOTAL AREA(ACRES) =        5.6

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.482
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.7951
  SUBAREA AREA(ACRES) =    0.19   SUBAREA RUNOFF(CFS) =    1.00
  TOTAL AREA(ACRES) =        5.8   TOTAL RUNOFF(CFS) =      29.89
  TC(MIN.) =    5.13

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    300.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
```

```
  ELEVATION DATA: UPSTREAM(FEET) =    94.20  DOWNSTREAM(FEET) =    92.00
  FLOW LENGTH(FEET) =   110.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  18.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.30
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      29.89
  PIPE TRAVEL TIME(MIN.) =   0.16    Tc(MIN.) =    5.29
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    300.00 =    1146.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    700.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    92.00  DOWNSTREAM(FEET) =    84.00
  FLOW LENGTH(FEET) =    25.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  32.51
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      29.89
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    5.30
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    700.00 =    1171.00 FEET.

+--------------------------------------------------------------------------+
| END FLOWS TO POC-A                                                       |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        5.8  TC(MIN.) =      5.30
  PEAK FLOW RATE(CFS)   =      29.89
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
          (c) Copyright 1982-2016 Advanced Engineering Software (aes)
              Ver. 23.0 Release Date: 07/01/2016  License ID 1452

                              Analysis prepared by:

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 ************************* DESCRIPTION OF STUDY *************************
* PIRAEUS STREET, ENCINITAS                                              *
* POST-DEVELOPMENT MITIGATED ANALYSIS                                    *
*                                                                        *
 **************************************************************************

  FILE NAME: 3733PSTM.DAT
  TIME/DATE OF STUDY: 15:24 09/08/2022
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   2.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   6.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   12.0      1.0    0.020/0.020/0.020   0.50    1.50 0.0313 0.125 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+-------------------------------------------------------------------------+
```

```
| BEGIN FLOWS TO POC-B                                                          |
|                                                                               |
|                                                                               |
+-------------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    174.70
  DOWNSTREAM ELEVATION(FEET) =    142.09
  ELEVATION DIFFERENCE(FEET) =     32.61
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.431
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.245
  SUBAREA RUNOFF(CFS) =      0.67
  TOTAL AREA(ACRES) =      0.24   TOTAL RUNOFF(CFS) =      0.67

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    142.09  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   492.00   CHANNEL SLOPE =  0.1255
  CHANNEL BASE(FEET) =    3.50   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =  28.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.099
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.82
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.09
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   2.01
  Tc(MIN.) =    7.44
  SUBAREA AREA(ACRES) =     0.99       SUBAREA RUNOFF(CFS) =    2.27
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        1.2         PEAK FLOW RATE(CFS) =       2.82

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.16   FLOW VELOCITY(FEET/SEC.) =   4.76
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =     592.00 FEET.

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    7.44
  RAINFALL INTENSITY(INCH/HR) =   5.10
  TOTAL STREAM AREA(ACRES) =     1.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.82

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    204.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    108.00
  DOWNSTREAM ELEVATION(FEET) =     95.20
  ELEVATION DIFFERENCE(FEET) =     12.80
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.431
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.245
  SUBAREA RUNOFF(CFS) =      0.14
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.14

****************************************************************************
  FLOW PROCESS FROM NODE    204.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     95.20  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   790.00   CHANNEL SLOPE =  0.0188
  CHANNEL BASE(FEET) =    1.50   "Z" FACTOR =  12.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.328
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.72
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.47
  AVERAGE FLOW DEPTH(FEET) =   0.15   TRAVEL TIME(MIN.) =   8.98
  Tc(MIN.) =   14.41
  SUBAREA AREA(ACRES) =     0.75       SUBAREA RUNOFF(CFS) =    1.12
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        0.8         PEAK FLOW RATE(CFS) =       1.20
```

```
  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.19   FLOW VELOCITY(FEET/SEC.) =   1.62
  LONGEST FLOWPATH FROM NODE    203.00 TO NODE    202.00 =     890.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   14.41
  RAINFALL INTENSITY(INCH/HR) =   3.33
  TOTAL STREAM AREA(ACRES) =     0.80
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.20

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    153.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.328
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5036
  SUBAREA AREA(ACRES) =    0.14   SUBAREA RUNOFF(CFS) =    0.38
  TOTAL AREA(ACRES) =        0.9   TOTAL RUNOFF(CFS) =       1.58
  TC(MIN.) =   14.41

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    500.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    93.00  DOWNSTREAM(FEET) =    90.52
  FLOW LENGTH(FEET) =    29.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   4.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.29
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.58
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   14.46
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    500.00 =      29.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
================================================================================
  UPSTREAM ELEVATION(FEET) =   90.52  DOWNSTREAM ELEVATION(FEET) =   80.34
  STREET LENGTH(FEET) =   333.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.59
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.25
    HALFSTREET FLOOD WIDTH(FEET) =    6.21
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.15
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.79
  STREET FLOW TRAVEL TIME(MIN.) =   1.76   Tc(MIN.) =   16.23
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.083
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.507
  SUBAREA AREA(ACRES) =    0.01      SUBAREA RUNOFF(CFS) =    0.02
  TOTAL AREA(ACRES) =        0.9        PEAK FLOW RATE(CFS) =       1.58

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.25   HALFSTREET FLOOD WIDTH(FEET) =   6.21
  FLOW VELOCITY(FEET/SEC.) =  3.12   DEPTH*VELOCITY(FT*FT/SEC.) =   0.78
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    202.00 =     362.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =   16.23
  RAINFALL INTENSITY(INCH/HR) =   3.08
  TOTAL STREAM AREA(ACRES) =     0.95
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.58

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 IS CODE =  81
----------------------------------------------------------------------------
```

```
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.083
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5458
  SUBAREA AREA(ACRES) =    0.14   SUBAREA RUNOFF(CFS) =    0.35
  TOTAL AREA(ACRES) =        1.1   TOTAL RUNOFF(CFS) =       1.83
  TC(MIN.) =   16.23

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     90.00  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   114.00   CHANNEL SLOPE =  0.0847
  CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.048
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.85
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.57
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   0.29
  Tc(MIN.) =   16.52
  SUBAREA AREA(ACRES) =     0.01       SUBAREA RUNOFF(CFS) =    0.02
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.548
  TOTAL AREA(ACRES) =        1.1         PEAK FLOW RATE(CFS) =       1.84

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.12   FLOW VELOCITY(FEET/SEC.) =   6.54
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    202.00 =     114.00 FEET.

+--------------------------------------------------------------------------+
| ADD SUBAREA B-7 AT NODE 510                                              |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    510.00 TO NODE    510.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.048
  *USER SPECIFIED(SUBAREA):
```

```
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5378
  SUBAREA AREA(ACRES) =    0.13   SUBAREA RUNOFF(CFS) =    0.18
  TOTAL AREA(ACRES) =        1.2   TOTAL RUNOFF(CFS) =       2.02
  TC(MIN.) =   16.52

****************************************************************************
  FLOW PROCESS FROM NODE    510.00 TO NODE    143.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
  UPSTREAM ELEVATION(FEET) =    150.50
  DOWNSTREAM ELEVATION(FEET) =    127.00
  ELEVATION DIFFERENCE(FEET) =     23.50
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.345
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.12
  TOTAL AREA(ACRES) =      0.04   TOTAL RUNOFF(CFS) =      0.12

****************************************************************************
  FLOW PROCESS FROM NODE    143.00 TO NODE    145.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    127.00  DOWNSTREAM(FEET) =    111.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   180.00   CHANNEL SLOPE =  0.0870
  CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.354
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.27
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.18
  AVERAGE FLOW DEPTH(FEET) =   0.04   TRAVEL TIME(MIN.) =   0.94
  Tc(MIN.) =    5.29
  SUBAREA AREA(ACRES) =     0.06       SUBAREA RUNOFF(CFS) =    0.31
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.666
  TOTAL AREA(ACRES) =        0.1         PEAK FLOW RATE(CFS) =       0.42

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.05   FLOW VELOCITY(FEET/SEC.) =   3.98
```

```
 LONGEST FLOWPATH FROM NODE    510.00 TO NODE    145.00 =     244.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    145.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  111.34  DOWNSTREAM ELEVATION(FEET) =   80.34
 STREET LENGTH(FEET) =  1213.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 12.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.44
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.17
   HALFSTREET FLOOD WIDTH(FEET) =    2.13
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.68
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.45
 STREET FLOW TRAVEL TIME(MIN.) =   7.55   Tc(MIN.) =   12.84
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.585
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8100
 S.C.S. CURVE NUMBER (AMC II) =   0
 AREA-AVERAGE RUNOFF COEFFICIENT =  0.679
 SUBAREA AREA(ACRES) =    0.01      SUBAREA RUNOFF(CFS) =    0.03
 TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.42

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.16   HALFSTREET FLOOD WIDTH(FEET) =   1.50
 FLOW VELOCITY(FEET/SEC.) =  3.02   DEPTH*VELOCITY(FT*FT/SEC.) =   0.47
 LONGEST FLOWPATH FROM NODE    510.00 TO NODE    202.00 =    1457.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  5
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  5 ARE:
 TIME OF CONCENTRATION(MIN.) =   12.84
```

```
  RAINFALL INTENSITY(INCH/HR) =   3.58
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.42

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.82     7.44        5.099          1.23
      2        1.20    14.41        3.328          0.80
      3        1.58    16.23        3.083          0.95
      5        0.42    12.84        3.585          0.11

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  5 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.00     0.00       6.587
      2        4.41     7.44       5.099
      3        4.72    12.84       3.585
      4        4.83    14.41       3.328
      5        4.76    16.23       3.083

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.83   Tc(MIN.) =   14.41
  TOTAL AREA(ACRES) =        3.1
  LONGEST FLOWPATH FROM NODE    510.00 TO NODE    202.00 =    1457.00 FEET.

+----------------------------------------------------------------------------+
| END FLOWS TO POC-B                                                         |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

+----------------------------------------------------------------------------+
| BEGIN FLOWS TO POC-A                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    45.00
```

```
  UPSTREAM ELEVATION(FEET) =    181.00
  DOWNSTREAM ELEVATION(FEET) =    172.00
  ELEVATION DIFFERENCE(FEET) =      9.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.625
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.16
  TOTAL AREA(ACRES) =      0.03   TOTAL RUNOFF(CFS) =      0.16

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    151.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   156.53  DOWNSTREAM(FEET) =   156.00
  FLOW LENGTH(FEET) =    10.50   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO  6.000
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.39
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.16
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    1.67
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    151.00 =      55.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    102.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  156.00  DOWNSTREAM ELEVATION(FEET) =  138.54
  STREET LENGTH(FEET) =   321.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.35
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.26
    HALFSTREET FLOOD WIDTH(FEET) =    6.58
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.26
```

```
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.10
  STREET FLOW TRAVEL TIME(MIN.) =   1.26   Tc(MIN.) =    2.92
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.82      SUBAREA RUNOFF(CFS) =    4.37
  TOTAL AREA(ACRES) =        0.8        PEAK FLOW RATE(CFS) =       4.54

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   8.96
  FLOW VELOCITY(FEET/SEC.) =  4.93   DEPTH*VELOCITY(FT*FT/SEC.) =   1.50
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =     376.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   128.34  DOWNSTREAM(FEET) =   128.12
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.19
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.54
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    2.93
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     381.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    104.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    150.62
  DOWNSTREAM ELEVATION(FEET) =    146.63
  ELEVATION DIFFERENCE(FEET) =      3.99
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.086
```

```
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    91.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.13   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE    104.00 TO NODE    105.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  146.63  DOWNSTREAM ELEVATION(FEET) =  140.51
  STREET LENGTH(FEET) =    97.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.17
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.21
    HALFSTREET FLOOD WIDTH(FEET) =    4.13
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.06
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.85
  STREET FLOW TRAVEL TIME(MIN.) =   0.40   Tc(MIN.) =    3.48
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.18      SUBAREA RUNOFF(CFS) =    0.96
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.65

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.17
  FLOW VELOCITY(FEET/SEC.) =  4.29   DEPTH*VELOCITY(FT*FT/SEC.) =   0.98
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    105.00 =     192.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    105.00 TO NODE    106.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   137.51  DOWNSTREAM(FEET) =   133.85
 FLOW LENGTH(FEET) =    82.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   4.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   7.67
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.65
 PIPE TRAVEL TIME(MIN.) =   0.18    Tc(MIN.) =    3.66
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    106.00 =     274.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    106.00 TO NODE    106.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =    3.66
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.31
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.65

****************************************************************************
 FLOW PROCESS FROM NODE    107.00 TO NODE    108.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8100
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
 UPSTREAM ELEVATION(FEET) =    146.18
 DOWNSTREAM ELEVATION(FEET) =    140.74
 ELEVATION DIFFERENCE(FEET) =      5.44
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.844
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.96
 TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
 FLOW PROCESS FROM NODE    108.00 TO NODE    106.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
```

```
  UPSTREAM ELEVATION(FEET) =  140.74  DOWNSTREAM ELEVATION(FEET) =  136.85
  STREET LENGTH(FEET) =    70.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.36
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.80
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.90
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.87
  STREET FLOW TRAVEL TIME(MIN.) =   0.30   Tc(MIN.) =    3.14
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.15      SUBAREA RUNOFF(CFS) =    0.80
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.76

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.24   HALFSTREET FLOOD WIDTH(FEET) =   5.62
  FLOW VELOCITY(FEET/SEC.) =  4.06   DEPTH*VELOCITY(FT*FT/SEC.) =   0.97
  LONGEST FLOWPATH FROM NODE    107.00 TO NODE    106.00 =     165.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    106.00 TO NODE    106.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.14
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.33
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.76

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
```

```
     1        1.65     3.66        6.587          0.31
     2        1.76     3.14        6.587          0.33

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        3.18     3.14       6.587
     2        3.41     3.66       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.41   Tc(MIN.) =    3.66
  TOTAL AREA(ACRES) =        0.6
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    106.00 =     274.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    106.00 TO NODE    109.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   133.85  DOWNSTREAM(FEET) =   131.86
  FLOW LENGTH(FEET) =   199.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.03
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.41
  PIPE TRAVEL TIME(MIN.) =   0.66    Tc(MIN.) =    4.32
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    109.00 =     473.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    109.00 TO NODE    110.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   131.86  DOWNSTREAM(FEET) =   129.61
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.78
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.41
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    4.49
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    110.00 =     551.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    110.00 IS CODE =   1
----------------------------------------------------------------------------
```

```
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
================================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.49
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.64
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.41

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    142.09
  DOWNSTREAM ELEVATION(FEET) =    136.65
  ELEVATION DIFFERENCE(FEET) =      5.44
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.844
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.96
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  136.65  DOWNSTREAM ELEVATION(FEET) =  134.29
  STREET LENGTH(FEET) =    41.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.28
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.58
```

```
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.91
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.85
  STREET FLOW TRAVEL TIME(MIN.) =   0.17   Tc(MIN.) =    3.02
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.12      SUBAREA RUNOFF(CFS) =    0.64
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.60

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.25
  FLOW VELOCITY(FEET/SEC.) =  4.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.94
  LONGEST FLOWPATH FROM NODE    111.00 TO NODE    113.00 =     136.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    113.00 TO NODE    110.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   131.29  DOWNSTREAM(FEET) =   129.61
  FLOW LENGTH(FEET) =   168.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.16
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.60
  PIPE TRAVEL TIME(MIN.) =   0.67    Tc(MIN.) =    3.69
  LONGEST FLOWPATH FROM NODE    111.00 TO NODE    110.00 =     304.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    110.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.69
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.60

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.41     4.49        6.587          0.64
      2        1.60     3.69        6.587          0.30
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        5.02     3.69       6.587
      2        5.02     4.49       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.02   Tc(MIN.) =    4.49
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    110.00 =     551.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   129.61  DOWNSTREAM(FEET) =   128.12
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.55
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.02
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    4.59
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    114.00 =     601.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        5.02     4.59       6.587        0.94
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    114.00 =     601.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        4.54     2.93       6.587        0.85
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     381.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
```

```
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1       7.74       2.93        6.587
      2       9.55       4.59        6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       9.55   Tc(MIN.) =    4.59
  TOTAL AREA(ACRES) =        1.8

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    115.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   128.12  DOWNSTREAM(FEET) =   127.37
  FLOW LENGTH(FEET) =    24.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.19
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       9.55
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    4.63
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    115.00 =     625.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    115.00 TO NODE    115.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.63
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     1.79
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      9.55

****************************************************************************
  FLOW PROCESS FROM NODE    116.00 TO NODE    530.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    30.00
```

```
  UPSTREAM ELEVATION(FEET) =    138.00
  DOWNSTREAM ELEVATION(FEET) =    136.30
  ELEVATION DIFFERENCE(FEET) =      1.70
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.604
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.32
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.32

****************************************************************************
  FLOW PROCESS FROM NODE    530.00 TO NODE    117.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  136.30  DOWNSTREAM ELEVATION(FEET) =  131.74
  STREET LENGTH(FEET) =    78.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.80
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.19
    HALFSTREET FLOOD WIDTH(FEET) =    3.02
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.82
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.71
  STREET FLOW TRAVEL TIME(MIN.) =   0.34   Tc(MIN.) =    1.94
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.18      SUBAREA RUNOFF(CFS) =    0.96
  TOTAL AREA(ACRES) =        0.2        PEAK FLOW RATE(CFS) =       1.28

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.22   HALFSTREET FLOOD WIDTH(FEET) =   4.51
  FLOW VELOCITY(FEET/SEC.) =  3.99   DEPTH*VELOCITY(FT*FT/SEC.) =   0.86
  LONGEST FLOWPATH FROM NODE    116.00 TO NODE    117.00 =     108.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    117.00 TO NODE    115.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   128.74  DOWNSTREAM(FEET) =   127.37
 FLOW LENGTH(FEET) =   137.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.05
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.28
 PIPE TRAVEL TIME(MIN.) =   0.56    Tc(MIN.) =    2.51
 LONGEST FLOWPATH FROM NODE    116.00 TO NODE    115.00 =     245.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    155.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =    2.51
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.24
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.28

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        9.55     4.63        6.587          1.79
     2        1.28     2.51        6.587          0.24

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        6.46     2.51       6.587
     2       10.83     4.63       6.587

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      10.83   Tc(MIN.) =    4.63
 TOTAL AREA(ACRES) =        2.0
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    155.00 =     625.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    118.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   127.37  DOWNSTREAM(FEET) =   124.46
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.20
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      10.83
  PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =    4.74
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    118.00 =     703.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    118.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.74
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     2.03
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     10.83

****************************************************************************
  FLOW PROCESS FROM NODE    119.00 TO NODE    120.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    93.00
  UPSTREAM ELEVATION(FEET) =    133.92
  DOWNSTREAM ELEVATION(FEET) =    128.64
  ELEVATION DIFFERENCE(FEET) =      5.28
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.822
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.96
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
  FLOW PROCESS FROM NODE    120.00 TO NODE    118.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   125.64  DOWNSTREAM(FEET) =   124.46
  FLOW LENGTH(FEET) =   118.00   MANNING'S N =  0.013
```

```
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.82
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.96
  PIPE TRAVEL TIME(MIN.) =   0.52    Tc(MIN.) =    3.34
  LONGEST FLOWPATH FROM NODE    119.00 TO NODE    118.00 =     211.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    118.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.34
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.96

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       10.83     4.74        6.587          2.03
      2        0.96     3.34        6.587          0.18

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       11.79     3.34       6.587
      2       11.79     4.74       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      11.79   Tc(MIN.) =    4.74
  TOTAL AREA(ACRES) =        2.2
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    118.00 =     703.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    121.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   124.46  DOWNSTREAM(FEET) =   116.01
  FLOW LENGTH(FEET) =   139.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.92
```

```
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      11.79
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    4.91
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    121.00 =     842.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    121.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.91
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     2.21
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     11.79

****************************************************************************
  FLOW PROCESS FROM NODE    156.00 TO NODE    123.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    143.00
  DOWNSTREAM ELEVATION(FEET) =    138.63
  ELEVATION DIFFERENCE(FEET) =      4.37
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.027
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    93.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.91
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.91

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    124.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  138.63  DOWNSTREAM ELEVATION(FEET) =  125.78
  STREET LENGTH(FEET) =   245.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
```

```
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.75
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.27
    HALFSTREET FLOOD WIDTH(FEET) =    7.18
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.34
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.17
  STREET FLOW TRAVEL TIME(MIN.) =   0.94   Tc(MIN.) =    3.97
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.69      SUBAREA RUNOFF(CFS) =    3.68
  TOTAL AREA(ACRES) =        0.9        PEAK FLOW RATE(CFS) =       4.59

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   9.03
  FLOW VELOCITY(FEET/SEC.) =  4.91   DEPTH*VELOCITY(FT*FT/SEC.) =   1.51
  LONGEST FLOWPATH FROM NODE    156.00 TO NODE    124.00 =     340.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    121.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   116.23  DOWNSTREAM(FEET) =   116.01
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.21
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.59
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    3.98
  LONGEST FLOWPATH FROM NODE    156.00 TO NODE    121.00 =     344.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    121.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
```

```
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.98
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.86
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.59

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       11.79     4.91        6.587          2.21
      2        4.59     3.98        6.587          0.86

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       16.38     3.98       6.587
      2       16.38     4.91       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      16.38   Tc(MIN.) =    4.91
  TOTAL AREA(ACRES) =        3.1
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    121.00 =     842.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    125.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   116.01  DOWNSTREAM(FEET) =   112.93
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.28
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      16.38
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =    4.96
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    125.00 =     892.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    125.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    148.00 TO NODE    149.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    129.50
  DOWNSTREAM ELEVATION(FEET) =    119.80
  ELEVATION DIFFERENCE(FEET) =      9.70
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.362
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.75
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.75

+----------------------------------------------------------------------------+
| AREA FORCE DRAINED VIA PUMP                                                |
| ADDED AS SUBAREA AT PRESSURE PIPE DISCHARGE POINT                          |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    149.00 TO NODE    149.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.8100
  SUBAREA AREA(ACRES) =    0.23   SUBAREA RUNOFF(CFS) =    1.23
  TOTAL AREA(ACRES) =        0.4   TOTAL RUNOFF(CFS) =       1.97
  TC(MIN.) =    2.36

****************************************************************************
  FLOW PROCESS FROM NODE    149.00 TO NODE    590.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   115.80  DOWNSTREAM(FEET) =   114.25
  FLOW LENGTH(FEET) =   103.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.11
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.97
```

```
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    2.70
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    590.00 =     198.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    590.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.70
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.37
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.97

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    540.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    53.00
  UPSTREAM ELEVATION(FEET) =    124.30
  DOWNSTREAM ELEVATION(FEET) =    121.10
  ELEVATION DIFFERENCE(FEET) =      3.20
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.087
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.48
  TOTAL AREA(ACRES) =      0.09   TOTAL RUNOFF(CFS) =      0.48

****************************************************************************
  FLOW PROCESS FROM NODE    540.00 TO NODE    132.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  121.10  DOWNSTREAM ELEVATION(FEET) =  117.36
  STREET LENGTH(FEET) =    65.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
```

```
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.04
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.20
    HALFSTREET FLOOD WIDTH(FEET) =    3.91
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.84
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.78
  STREET FLOW TRAVEL TIME(MIN.) =   0.28   Tc(MIN.) =    2.37
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.21      SUBAREA RUNOFF(CFS) =    1.12
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.60

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.25
  FLOW VELOCITY(FEET/SEC.) =  4.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.94
  LONGEST FLOWPATH FROM NODE    131.00 TO NODE    132.00 =     118.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    590.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   114.36  DOWNSTREAM(FEET) =   114.25
  FLOW LENGTH(FEET) =    11.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.16
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.60
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    2.41
  LONGEST FLOWPATH FROM NODE    131.00 TO NODE    590.00 =     129.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    590.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.41
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.60
```

```
  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.97     2.70        6.587          0.37
      2        1.60     2.41        6.587          0.30

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.37     2.41       6.587
      2        3.57     2.70       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.57   Tc(MIN.) =    2.70
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    590.00 =     198.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    125.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   114.25  DOWNSTREAM(FEET) =   112.93
  FLOW LENGTH(FEET) =   132.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.30
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.57
  PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =    3.11
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    125.00 =     330.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    125.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        3.57     3.11       6.587        0.67
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    125.00 =     330.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
```

```
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       16.38     4.96       6.587        3.07
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    125.00 =     892.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      13.85       3.11        6.587
      2      19.95       4.96        6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      19.95   Tc(MIN.) =    4.96
  TOTAL AREA(ACRES) =        3.7

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    126.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   112.93  DOWNSTREAM(FEET) =   108.69
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.12
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      19.95
  PIPE TRAVEL TIME(MIN.) =   0.09    Tc(MIN.) =    5.05
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    126.00 =     970.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    126.00 TO NODE    126.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.05
  RAINFALL INTENSITY(INCH/HR) =   6.55
  TOTAL STREAM AREA(ACRES) =     3.74
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     19.95

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    550.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    37.00
```

```
  UPSTREAM ELEVATION(FEET) =    119.66
  DOWNSTREAM ELEVATION(FEET) =    117.30
  ELEVATION DIFFERENCE(FEET) =      2.36
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.712
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.37
  TOTAL AREA(ACRES) =      0.07   TOTAL RUNOFF(CFS) =      0.37

****************************************************************************
  FLOW PROCESS FROM NODE    550.00 TO NODE    134.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  117.30  DOWNSTREAM ELEVATION(FEET) =  113.12
  STREET LENGTH(FEET) =    77.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.80
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.19
    HALFSTREET FLOOD WIDTH(FEET) =    3.10
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.74
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.70
  STREET FLOW TRAVEL TIME(MIN.) =   0.34   Tc(MIN.) =    2.06
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.16      SUBAREA RUNOFF(CFS) =    0.85
  TOTAL AREA(ACRES) =        0.2        PEAK FLOW RATE(CFS) =       1.23

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.22   HALFSTREET FLOOD WIDTH(FEET) =   4.51
  FLOW VELOCITY(FEET/SEC.) =  3.82   DEPTH*VELOCITY(FT*FT/SEC.) =   0.83
  LONGEST FLOWPATH FROM NODE    133.00 TO NODE    134.00 =     114.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    134.00 TO NODE    126.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   110.12  DOWNSTREAM(FEET) =   108.69
 FLOW LENGTH(FEET) =   143.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.01
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.23
 PIPE TRAVEL TIME(MIN.) =   0.59    Tc(MIN.) =    2.65
 LONGEST FLOWPATH FROM NODE    133.00 TO NODE    126.00 =     257.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    126.00 TO NODE    126.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =    2.65
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.23
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.23

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1       19.95     5.05        6.546          3.74
     2        1.23     2.65        6.587          0.23

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1       11.70     2.65       6.587
     2       21.17     5.05       6.546

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      21.17   Tc(MIN.) =    5.05
 TOTAL AREA(ACRES) =        4.0
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    126.00 =     970.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    126.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.69  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =    20.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.16
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      21.17
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =    5.07
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     990.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.07
  RAINFALL INTENSITY(INCH/HR) =   6.53
  TOTAL STREAM AREA(ACRES) =     3.97
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     21.17

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    600.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    181.00
  DOWNSTREAM ELEVATION(FEET) =    172.00
  ELEVATION DIFFERENCE(FEET) =      9.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.390
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.275
  SUBAREA RUNOFF(CFS) =      0.11
  TOTAL AREA(ACRES) =      0.04   TOTAL RUNOFF(CFS) =      0.11

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    160.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    172.00  DOWNSTREAM(FEET) =    132.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   333.00   CHANNEL SLOPE =  0.1201
  CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =   2.000
```

```
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.507
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.29
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.59
  AVERAGE FLOW DEPTH(FEET) =   0.06   TRAVEL TIME(MIN.) =   1.21
  Tc(MIN.) =    6.60
  SUBAREA AREA(ACRES) =     0.14       SUBAREA RUNOFF(CFS) =    0.35
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        0.2         PEAK FLOW RATE(CFS) =       0.45

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.07   FLOW VELOCITY(FEET/SEC.) =   5.46
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    160.00 =     428.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    160.00 TO NODE    128.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   129.00  DOWNSTREAM(FEET) =   125.76
  FLOW LENGTH(FEET) =   122.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   3.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.52
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.45
  PIPE TRAVEL TIME(MIN.) =   0.45    Tc(MIN.) =    7.05
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    128.00 =     550.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    128.00 TO NODE    130.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  125.76  DOWNSTREAM ELEVATION(FEET) =  117.50
  STREET LENGTH(FEET) =   156.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130
```

```
    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.65
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.24
    HALFSTREET FLOOD WIDTH(FEET) =    5.47
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.96
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.93
  STREET FLOW TRAVEL TIME(MIN.) =   0.66   Tc(MIN.) =    7.70
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.984
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.727
  SUBAREA AREA(ACRES) =    0.60      SUBAREA RUNOFF(CFS) =    2.42
  TOTAL AREA(ACRES) =        0.8        PEAK FLOW RATE(CFS) =       2.83

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.27   HALFSTREET FLOOD WIDTH(FEET) =   7.25
  FLOW VELOCITY(FEET/SEC.) =  4.39   DEPTH*VELOCITY(FT*FT/SEC.) =   1.19
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    130.00 =     706.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.06  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.94
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.83
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    7.71
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    127.00 =     710.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    7.71
  RAINFALL INTENSITY(INCH/HR) =   4.98
  TOTAL STREAM AREA(ACRES) =     0.78
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.83

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    136.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    150.62
  DOWNSTREAM ELEVATION(FEET) =    145.21
  ELEVATION DIFFERENCE(FEET) =      5.41
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.849
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.27
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.27

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    137.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  145.21  DOWNSTREAM ELEVATION(FEET) =  117.57
  STREET LENGTH(FEET) =   543.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.25
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.65
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.73
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.82
  STREET FLOW TRAVEL TIME(MIN.) =   2.43   Tc(MIN.) =    5.28
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.361
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.38      SUBAREA RUNOFF(CFS) =    1.96
  TOTAL AREA(ACRES) =        0.4        PEAK FLOW RATE(CFS) =       2.22
```

```
  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.25   HALFSTREET FLOOD WIDTH(FEET) =   6.44
  FLOW VELOCITY(FEET/SEC.) =  4.16   DEPTH*VELOCITY(FT*FT/SEC.) =   1.06
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    137.00 =     638.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    137.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.72  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =    18.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.51
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.22
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    5.31
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     656.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.31
  RAINFALL INTENSITY(INCH/HR) =   6.33
  TOTAL STREAM AREA(ACRES) =     0.43
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.22

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       21.17     5.07        6.526          3.97
      2        2.83     7.71        4.980          0.78
      3        2.22     5.31        6.334          0.43

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  3 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       25.15     5.07       6.526
      2       24.71     5.31       6.334
      3       20.73     7.71       4.980
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      25.15   Tc(MIN.) =    5.07
  TOTAL AREA(ACRES) =        5.2
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     990.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   107.84  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =    46.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  14.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.31
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      25.15
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =    5.13
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    141.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    40.00
  UPSTREAM ELEVATION(FEET) =    117.50
  DOWNSTREAM ELEVATION(FEET) =    114.93
  ELEVATION DIFFERENCE(FEET) =      2.57
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.776
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.16
  TOTAL AREA(ACRES) =      0.03   TOTAL RUNOFF(CFS) =      0.16

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
```

```
  UPSTREAM ELEVATION(FEET) =  114.93  DOWNSTREAM ELEVATION(FEET) =  110.22
  STREET LENGTH(FEET) =   126.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.45
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.16
    HALFSTREET FLOOD WIDTH(FEET) =    1.50
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.65
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.57
  STREET FLOW TRAVEL TIME(MIN.) =   0.58   Tc(MIN.) =    2.35
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.11      SUBAREA RUNOFF(CFS) =    0.59
  TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.75

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.20   HALFSTREET FLOOD WIDTH(FEET) =   3.54
  FLOW VELOCITY(FEET/SEC.) =  3.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.60
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    142.00 =     166.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    142.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.35
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.75

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    142.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
```

```
==============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    70.00
  UPSTREAM ELEVATION(FEET) =    115.00
  DOWNSTREAM ELEVATION(FEET) =    110.22
  ELEVATION DIFFERENCE(FEET) =      4.78
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.160
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.454
  SUBAREA RUNOFF(CFS) =      0.17
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.17

******************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    142.00 IS CODE =   1
------------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.16
  RAINFALL INTENSITY(INCH/HR) =   6.45
  TOTAL STREAM AREA(ACRES) =     0.06
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.17

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.75     2.35        6.587          0.14
      2        0.17     5.16        6.454          0.06

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.83     2.35       6.587
      2        0.91     5.16       6.454

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       0.91   Tc(MIN.) =    5.16
  TOTAL AREA(ACRES) =        0.2
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    142.00 =     166.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    139.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   106.70  DOWNSTREAM(FEET) =   106.40
  FLOW LENGTH(FEET) =    25.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   4.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.04
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.91
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    5.26
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    139.00 =     191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    139.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
================================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.26
  RAINFALL INTENSITY(INCH/HR) =   6.37
  TOTAL STREAM AREA(ACRES) =     0.20
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.91

****************************************************************************
  FLOW PROCESS FROM NODE    137.00 TO NODE    138.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =    117.57
  DOWNSTREAM ELEVATION(FEET) =    114.93
  ELEVATION DIFFERENCE(FEET) =      2.64
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.136
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.27
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.27

****************************************************************************
  FLOW PROCESS FROM NODE    138.00 TO NODE    139.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
================================================================================
  UPSTREAM ELEVATION(FEET) =  114.93  DOWNSTREAM ELEVATION(FEET) =  110.22
  STREET LENGTH(FEET) =    91.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00
```

```
  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.40
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.16
    HALFSTREET FLOOD WIDTH(FEET) =    1.50
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.29
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.67
  STREET FLOW TRAVEL TIME(MIN.) =   0.35   Tc(MIN.) =    3.49
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.05      SUBAREA RUNOFF(CFS) =    0.27
  TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.53

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.16   HALFSTREET FLOOD WIDTH(FEET) =   1.50
  FLOW VELOCITY(FEET/SEC.) =  4.29   DEPTH*VELOCITY(FT*FT/SEC.) =   0.67
  LONGEST FLOWPATH FROM NODE    137.00 TO NODE    139.00 =     171.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    139.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.49
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.53

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.91     5.26        6.372          0.20
      2        0.53     3.49        6.587          0.10
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.41     3.49       6.587
      2        1.42     5.26       6.372

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.42   Tc(MIN.) =    5.26
  TOTAL AREA(ACRES) =        0.3
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    139.00 =     191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   106.40  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =    40.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.11
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.42
  PIPE TRAVEL TIME(MIN.) =   0.16    Tc(MIN.) =    5.43
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    140.00 =     231.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        1.42     5.43       6.249        0.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    140.00 =     231.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       25.15     5.13       6.482        5.18
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
```

```
      1      26.49       5.13        6.482
      2      25.66       5.43        6.249

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      26.49   Tc(MIN.) =    5.13
  TOTAL AREA(ACRES) =        5.5

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    146.00 TO NODE    147.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    116.27
  DOWNSTREAM ELEVATION(FEET) =    110.79
  ELEVATION DIFFERENCE(FEET) =      5.48
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.837
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.13   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE    147.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   107.79  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =     3.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.91
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.69
  PIPE TRAVEL TIME(MIN.) =   0.00    Tc(MIN.) =    2.84
```

```
  LONGEST FLOWPATH FROM NODE    146.00 TO NODE    140.00 =      98.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        0.69     2.84       6.587        0.13
  LONGEST FLOWPATH FROM NODE    146.00 TO NODE    140.00 =      98.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       26.49     5.13       6.482        5.48
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      15.37       2.84        6.587
      2      27.17       5.13        6.482

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      27.17   Tc(MIN.) =    5.13
  TOTAL AREA(ACRES) =        5.6

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.482
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.7951
  SUBAREA AREA(ACRES) =    0.19   SUBAREA RUNOFF(CFS) =    1.00
  TOTAL AREA(ACRES) =        5.8   TOTAL RUNOFF(CFS) =      29.89
  TC(MIN.) =    5.13

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =   7
----------------------------------------------------------------------------
  >>>>>USER SPECIFIED HYDROLOGY INFORMATION AT NODE<<<<<
============================================================================
  USER-SPECIFIED VALUES ARE AS FOLLOWS:
```

```
  TC(MIN) = 124.30   RAIN INTENSITY(INCH/HOUR) =  0.83
  TOTAL AREA(ACRES) =     5.80   TOTAL RUNOFF(CFS) =      0.12

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    300.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    94.20  DOWNSTREAM(FEET) =    92.00
  FLOW LENGTH(FEET) =   110.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO  6.000
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.78
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.12
  PIPE TRAVEL TIME(MIN.) =   0.66    Tc(MIN.) =  124.96
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    300.00 =    1146.00 FEET.

+--------------------------------------------------------------------------+
| ENTER HYDROCAD OUTPUT REPORT AT THE FOLLOWING NODE 140 TO 140            |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    700.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    92.00  DOWNSTREAM(FEET) =    84.00
  FLOW LENGTH(FEET) =    25.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO  6.000
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   0.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.59
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.12
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =  125.01
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    700.00 =    1171.00 FEET.

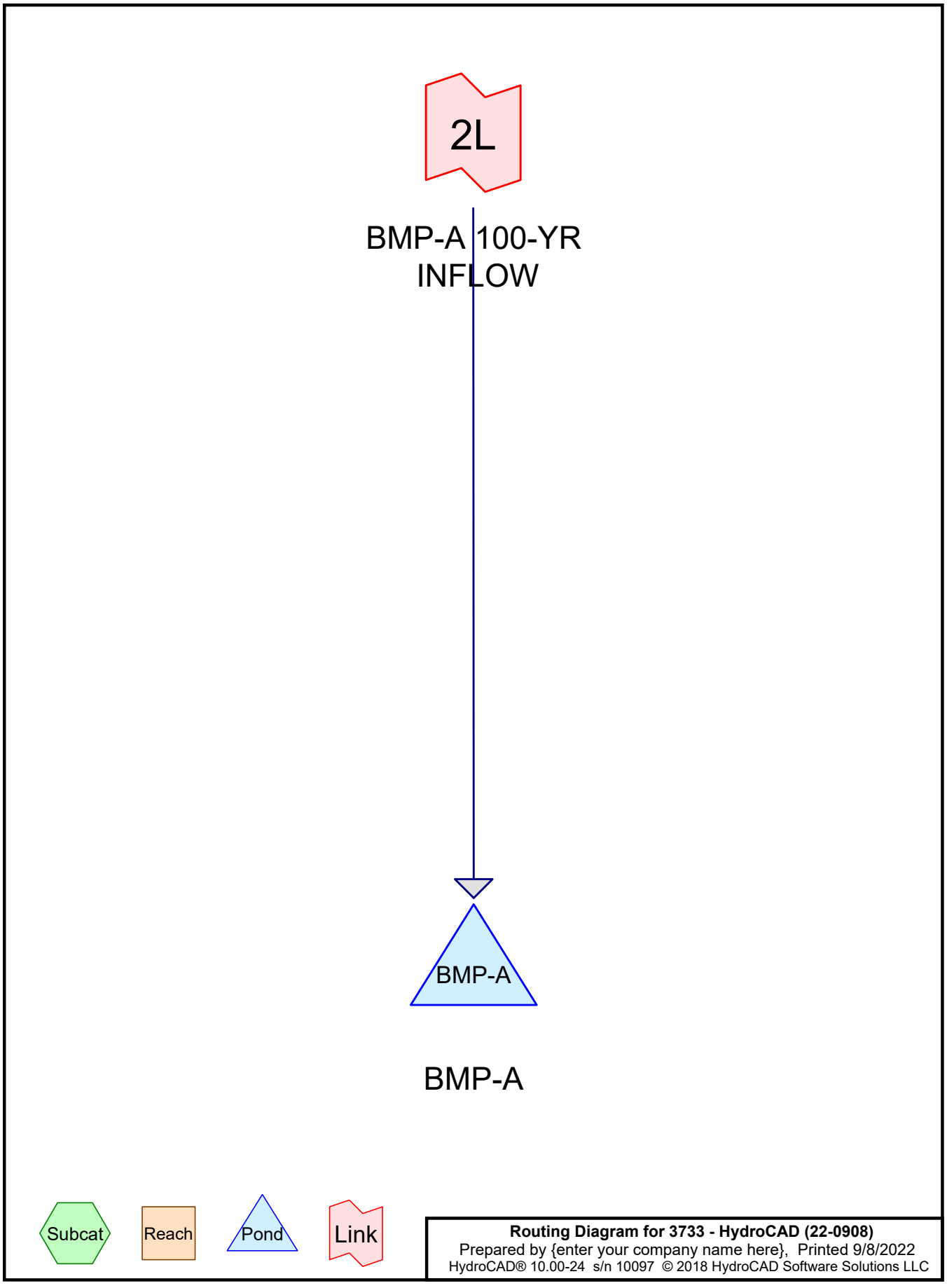
+--------------------------------------------------------------------------+
| END FLOWS TO POC-A                                                       |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        5.8  TC(MIN.) =    125.01
  PEAK FLOW RATE(CFS)   =       0.12
```

```
================================================================================
================================================================================
  END OF RATIONAL METHOD ANALYSIS
```



APPENDIX D

Hydrograph and Detention Calculations



Routing Diagram for 3733 - HydroCAD (22-0908)
Prepared by {enter your company name here}, Printed 9/8/2022
HydroCAD® 10.00-24 s/n 10097 © 2018 HydroCAD Software Solutions LLC

Summary for Pond BMP-A: BMP-A

Inflow	=	29.89 cfs @	4.08 hrs,	Volume=	0.974 af
Outflow	=	0.12 cfs @	6.07 hrs,	Volume=	0.655 af, Atten= 100%, Lag= 119.3 min
Primary	=	0.12 cfs @	6.07 hrs,	Volume=	0.655 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 106.71' @ 6.07 hrs Surf.Area= 5,600 sf Storage= 41,051 cf

Plug-Flow detention time= 2,479.3 min calculated for 0.655 af (67% of inflow)
Center-of-Mass det. time= 2,448.3 min (2,660.7 - 212.4)

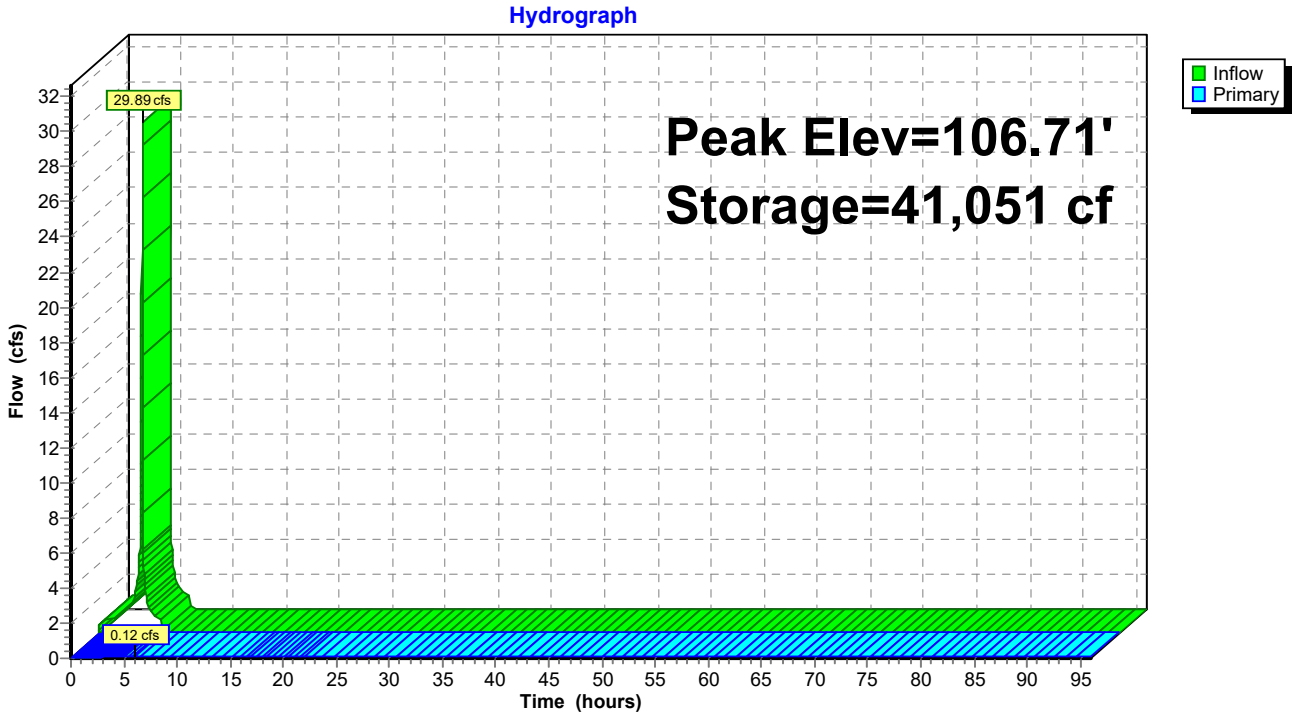
Volume	Invert	Avail.Storage	Storage Description
#1	97.25'	51,100 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.25	5,600	0.0	0	0	5,600
103.75	5,600	95.0	34,580	34,580	7,324
106.00	5,600	20.0	2,520	37,100	7,921
108.50	5,600	100.0	14,000	51,100	8,584

Device	Routing	Invert	Outlet Devices
#1	Primary	97.25'	**24.0" Round Culvert** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 97.25' / 84.00' S= 0.5300 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	97.25'	**1.2" Vert. Orifice** C= 0.600
#3	Device 1	107.50'	**36.0" x 36.0" Horiz. Grate** C= 0.600 in 36.0" x 36.0" Grate (100% open area) Limited to weir flow at low heads
#4	Device 1	107.50'	**36.0" x 36.0" Horiz. Grate** C= 0.600 in 36.0" x 36.0" Grate (100% open area) Limited to weir flow at low heads
#5	Device 2	97.25'	**5.000 in/hr Exfiltration over Surface area below 106.00'**

Primary OutFlow Max=0.12 cfs @ 6.07 hrs HW=106.71' (Free Discharge)
- **1=Culvert** (Passes 0.12 cfs of 54.98 cfs potential flow)
  - **2=Orifice** (Orifice Controls 0.12 cfs @ 14.77 fps)
    - **5=Exfiltration** (Passes 0.12 cfs of 0.65 cfs potential flow)
  - **3=Grate** (Controls 0.00 cfs)
  - **4=Grate** (Controls 0.00 cfs)

Pond BMP-A: BMP-A



Grate Capacity Calculator

Using Sharp Crested Weir Formula equation (5-10) $Q=CLH^{1.5}$ where Coefficient C is 3.3 (Brater and King)

Weir Coefficient 3.3

GRATE INLET CAPACITY				
INLET TYPE	**PERIMETER (FT)**	**HEAD (FT)**	**GRATE/CLOG FACTOR**	**Q_{CAP} (CFS)**
3' Catch Basin (BMP-A)	12	1.0	2	19.800
3' Catch Basin (BMP-A)	12	1.0	2	19.800
TOTAL CAPACITY =				39.600

VOLUME AREA CALCULATION - POC-A					
EXISTING			**PROPOSED**		
P_6 =	0.208	(FT)	P_6 =	0.208	(FT)
C =	0.45		C =	0.81	
A =	108,029	(FT^2)	A =	252,567	(FT^2)
VOL =	10,128	(FT^3)	VOL =	42,621	(FT^3)
		Δ =	32,493	(FT^3)	

VOLUME AREA CALCULATION - POC-B					
EXISTING			**PROPOSED**		
P_6 =	0.208	(FT)	P_6 =	0.208	(FT)
C =	0.45		C =	0.45	
A =	256,568	(FT^2)	A =	111,949	(FT^2)
VOL =	24,053	(FT^3)	VOL =	10,495	(FT^3)
		Δ =	(13,558)	(FT^3)	

BASIN-A STORAGE CAPACITY			
MEDIA	**SURFACE AREA (S_A) (FT^2)**	**DEPTH OF MEDIA (D) (FT)**	**VOID RATIO (VR)**
RTANK	5,600	6.5	0.95
SOIL MEDIA	5,600	1.5	0.2
PONDING	5,600	1.5	1.0
TOTAL BASIN VOL =	44,660	(FT^3)	

BASIN SUMMARY		
REQUIRED STORAGE VOLUME =	32,493	(FT^3)
TOTAL PROVIDED BASIN VOLUME =	44,660	(FT^3)
MEETS VOLUME REQUIREMENTS?	YES	

APPENDIX I-2.
PRELIMINARY STORMWATER QUALITY MANAGEMENT PLAN

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CITY OF ENCINITAS
STORMWATER INTAKE FORM AND PRIORITY DEVELOPMENT PROJECT PRELIMINARY STORMWATER QUALITY MANAGEMENT PLAN (SWQMP)

FOR:
PIRAEUS POINT
MULTI-005158-2022

PIRAEUS STREET
ENCINITAS, CA 92024
APN 254-144-01

PREPARED BY:
TYLER G. LAWSON
PASCO LARET SUITER & ASSOCIATES, INC
1911 SAN DIEGO AVE, SUITE 100
SAN DIEGO, CA 92110
PH: (858) 259-8212

PREPARED FOR:
LENNAR HOMES OF CALIFORNIA, LLC
16465 VIA ESPRILLO, SUITE 150
SAN DIEGO, CA 92127

DATE OF SWQMP:
January 19, 2022
Revised: April 6, 2022
Revised: September 9, 2022

GRADING PLAN PREPARED BY:
PASCO LARET SUITER & ASSOCIATES, INC
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PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the Priority Development Project (PDP) requirements of the City of Encinitas BMP Design Manual, which is a design manual for compliance with local City of Encinitas and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

I have read and understand that the City Engineer has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP Storm Water Quality Management Plan (SWQMP) by the City Engineer is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

Engineer's Seal

Engineer of Work's Signature, PE Number

Tyler G. Lawson
Print Name

Pasco Laret Suiter & Associates
Company

Date

PROJECT OWNER'S CERTIFICATION

This PDP SWQMP has been prepared for PIREAUS INVESTOR, LLC by PASCO LARET SUITER & ASSOCIATES. The PDP SWQMP is intended to comply with the PDP requirements of the City of Encinitas BMP Design Manual, which is a design manual for compliance with local City of Encinitas and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2015-0100) requirements for storm water management.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan. Once the undersigned transfers its interests in the property, its successor-in-interest shall bear the aforementioned responsibility to implement the best management practices (BMPs) described within this plan, including ensuring on-going operation and maintenance of structural BMPs. A signed copy of this document shall be available on the subject property into perpetuity.

_____
Project Owner's Signature

_____
Print Name

Lennar Homes of California, LLC
Company

04/06/2022
Date

SUBMITTAL RECORD

Use this table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In the fourth column, summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Submittal Number	Date	Project Status	Summary of Changes
1	01/19/2022	☑ Preliminary Design/Planning/ CEQA □ Final Design	Initial Submittal
2	04/13/2022	☑ Preliminary Design / Planning/ CEQA □ Final Design	2nd Submittal
3	09/09/2022	☑ Preliminary Design / Planning/ CEQA □ Final Design	3rd Submittal
4		□ Preliminary Design / Planning/ CEQA □ Final Design	4th Submittal

PROJECT IDENTIFICATION

Project/Applicant Name: Piraeus Point/Lennar Homes of California, LLC	
Permit/Application Number: MULTI-005158-2022; CDP-005161-2022, DR-005160-2022; SUB-005159-2022	Date: 1/19/2022
Site Address: Piraeus Street, Encinitas, CA 92024	APN: 254-144-01
Scope of work/project description: The project proposes the construction of 149 condominiums and amenity space, paved private driveways and alleyways, onsite grading and supporting infrastructure such as sewer and water. Also proposed as part of this development are right of way improvements along Piraeus Street and Plato Place.	

DETERMINATION OF PROJECT STATUS AND REQUIREMENTS

This form will identify permanent, post construction BMP requirements. Refer to City of Encinitas Stormwater BMP Design Manual for guidance.

Step 1: Is the project a "development project"? Development projects are defined as "construction, rehabilitation, redevelopment, or reconstruction of any public or private projects". See Section 1.3 and Table 1-2 of the manual for guidance. For example, interior remodels, roof replacements, and electrical and plumbing work are not development projects.	☑ Yes	***Go to Step 2.***
	□ No	***Stop.*** Permanent BMP requirements do not apply. No SWQMP will be required. Provide discussion below.

If "No", provide discussion / justification explaining why the project is not a "development project":

Step 2: Complete questions below for Project Type Determination.
The project is (select one): ☑ New Development □ Redevelopment

The total proposed, newly created and/or replaced impervious area is: 199,195 ft^2

Is the project in any of the following categories, (a) through (f) below?

Yes ☑	No □	(a)	New development projects or redevelopment projects that create and/or replaced 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects.
Yes □	No ☑	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of

			10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects.
Yes ☑	No □	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812). (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes □	No ☑	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharge directly to an Environmentally Sensitive Area (ESA). "Discharge directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and SDRWQCB; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and SDRWQCB; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See manual Section 1.4.2 for additional guidance.
Yes □	No ☑	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. (ii) Retail gasoline outlets. This category includes retail gasoline outlets that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic of 100 or more vehicles per day.
Yes ☑	No □	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. *Note: See manual Section 1.4.2 for additional guidance.*

Does the project meet the definition of one or more of the PDP categories (a) through (f) listed above?

☑ Yes – **The project is a Priority Development Project, the applicant shall provide PDP Post Construction BMPs and *continue to Step 3*.**

□No – **The project is a Standard or Basic Project. *Stop here and complete the "City of Encinitas Stormwater Intake Form for All Developments and Standard Projects SWQMP".***

The following is for ***redevelopment PDPs*** only:

The area of existing (pre-project) impervious area at the project site is: n/a(A)
The total proposed newly created or replaced impervious area is: n/a (B)
Percent impervious surface created or replaced (B/A)*100: n/a%
The percent impervious surface created or replaced is (select one based on the above calculation):

□ Less than or equal to fifty percent (50%) – only new and/or replaced impervious areas are considered PDP subject to treatment and HMP criteria
OR
☑ Greater than fifty percent (50%) – the entire site is a PDP; treatment and HMP criteria apply to entire site regardless of whether it is replaced

Step 3 (PDPs only): Do hydromodification control requirements apply? See Section 1.6 of the BMP Design Manual for guidance.	☑ Yes	PDP structural BMPs required for pollutant control (Chapter 5) and hydromodification control (Chapter 6). ***Go to Step 4.***
	□ No	PDP structural BMPs required for pollutant control (Chapter 5) only. Provide brief discussion of exemption to hydromodification control below. ***Go to "Site Information Checklist"***

Discussion / justification if hydromodification control requirements do not apply:

Step 4 (PDPs subject to treatment and hydromodification controls): Does protection of critical coarse sediment yield areas apply based on review of City of Encinitas Potential Critical Coarse Sediment Yield Area Map? See Section 6.2 of the BMP Design Manual for guidance.	□ Yes	Management measures required for protection of critical coarse sediment yield areas (Chapter 6.2). ***Go to "Site Information Checklist"***
	☑ No	Management measures not required for protection of critical coarse sediment yield areas. Provide brief discussion below. ***Go to "Site Information Checklist"***

Discussion / justification if management measures not required for protection of critical coarse sediment yield areas:

The project site does not fall in a potential Critical Coarse Sediment Yield Area. Refer to Attachment 2b.

SITE INFORMATION CHECKLIST

Project's Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Carlsbad HU, San Marcos HA, Batiquitos HSA 904.51
Parcel Area (Total area of Assessor's Parcel(s) associated with the project)	6.876 Acres (299,508 Square Feet)
Area to be Disturbed by the Project (Project Area)	6.25 Acres (272,590 Square Feet)
Project Proposed Impervious Area (Subset of Project Area)	4.63 Acres (202,011 Square Feet)
Project Proposed Pervious Area (Subset of Project Area)	1.62 Acres (70,579 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Description of Existing Site Condition

Current status of the site (select all that apply):

□ Existing development

☑ Previously graded but not built out

□ Demolition completed without new construction

□ Agricultural or other non-impervious use

□ Vacant, undeveloped/natural

Description / Additional Information:
The site is comprised of vegetated and non-vegetated open space area. The site was previously graded to address slope stability issues.

Existing Land Cover includes (select all that apply):

☑ Vegetative Cover

☑ Non-Vegetated Pervious Areas

□ Impervious Areas

Description / Additional Information:

Currently, the existing site is undeveloped, completely pervious but not in its natural state, remedial grading has occurred throughout the project site.

Underlying soil belongs to Hydrologic Soil Group (select all that apply):

□ NRCS Type A

□ NRCS Type B

□ NRCS Type C

☑ NRCS Type D

Approximate Depth to Groundwater (GW):

□ GW Depth < 5 feet

□ 5 feet < GW Depth < 10 feet

□ 10 feet < GW Depth < 20 feet

☑ GW Depth > 20 feet

Existing Natural Hydrologic Features (select all that apply):

□ Watercourses

□ Seeps

□ Springs

□ Wetlands

☑ None

Description / Additional Information:

Description of Existing Site Drainage Patterns

How is storm water runoff conveyed from the site? At a minimum, this description should answer:

1) Is existing drainage conveyance natural or urban?
2) Is runoff from offsite conveyed through the site? If yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site.
3) Provide details regarding existing project site drainage conveyance network, including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels. And
4) Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Provide summary of the pre-project drainage areas and design flows to each of the existing runoff discharge locations.

Describe existing site drainage patterns:

In its current state the about 70% of the site drains from east to west via surface/sheet flow before entering a storm drain infrastructure adjacent to Piraeus Street. The remainder of the site drains from east to southwest via surface/sheet flow before entering a storm drain structure at the corner of Piraeus Street and Plato Place. Runoff from the site then continues west under interstate 5 through a series of storm drain pipes until it reaches a concrete drainage ditch on the west side of interstate 5 where runoff confluences. Runoff continues north until it eventually discharges into the Batiquitos Lagoon.

Description of Proposed Site Development

Project Description / Proposed Land Use and/or Activities:

The project proposes the construction of 149 condominiums and amenity space, paved private driveways and alleyways, onsite grading and supporting infrastructure such as sewer and water. Also proposed as a part of this development are right of way improvements along Piraeus Street and Plato Place.

As shown on the Post-Development Hydrology Node Map included in the drainage study, Drainage Basin A comprises a majority of the site. Runoff from Drainage Basin A surface flows to the south to the proposed storm drain system which conveys flow to the proposed biofiltration basin located along Plato Place. After being treated and stored, runoff discharges to the existing storm drain system along Piraeus Street and continues west under the Interstate-5 in a similar pattern to predevelopment condition.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

Impervious features include 149 condominiums, paved private driveways and alleyways as well as pathways and hardscape between building use for pedestrian circulation throughout the site are also proposed as a part of this development.

List/describe proposed pervious features of the project (e.g., landscape areas):

Pervious features include approximately 51,016 SF of landscaped area along with approximately 12,197 SF of fill slope.

Does the project include grading and changes to site topography?
☑ Yes
□ No

Description / Additional Information:

Mass grading associated with the private driveways, and pads are proposed over a majority of the site.

Description of Proposed Site Drainage Patterns

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?
☑ Yes

□ No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

The project proposes the construction of a private storm drain system consisting of HDPE pipe, cleanouts, inlets, brooks boxes, area drains, perf pipe, and concrete brow ditches for the collection and conveyance of onsite drainage. In addition, an on-site biofiltration basin has been sized to handle the treatment and flow control requirements as well as attenuate the 100-year, 6-hour storm event.

In the proposed condition, there are two (2) discharge locations identified as POC-A and POC-B. The table below summarizes the pre and post-project peak flow rates in the mitigated and unmitigated conditions. Refer to the DMA Map included in the Appendix for information on the DMA areas.

Summary of 100-yr Peak Discharge Rates

	Pre-Development	Post-Dev Undetained	Post-Dev Detained
	Q100 (cfs)	Q100 (cfs)	Q100 (cfs)
POC-A	4.90	29.89	0.12
POC-B	10.17	4.83	4.83

Refer to the drainage report prepared for this site for detailed calculations.

Identification and Narrative of Receiving Water and Pollutants of Concern

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

A majority of the runoff generated by the proposed development will be collected in the private on-site drainage system which consists of HDPE pipes, inlets, cleanouts, and Brooks boxes. Runoff is conveyed to the proposed Biofiltration Basin that is located adjacent to Plato Place. Runoff that enters the basin is treated and then discharged out into the existing 30" RCP that travels west under Interstate-5.

The remainder of the runoff will be discharged to an existing 18" CMP pipe northwest of the site. Runoff will then travel west under Interstate-5.

All runoff from the site confluences to the west of Interstate-5 within a concrete ditch before heading north and discharging into the Batiquitos Lagoon and ultimately into the Pacific Ocean.

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Batiquitos Lagoon (904.51)	Toxicity	Toxicity
Pacific Ocean (Batiquitos HSA)	Total Coliform	Total Coliform

Identification of Project Site Pollutants*

***Identification of project site pollutants is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs (note the project must also participate in an alternative compliance program unless prior lawful approval to meet earlier PDP requirements is demonstrated)**

Identify pollutants expected from the project site based on all proposed use(s) of the site (see BMP Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Expected from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment	X		
Nutrients	X		
Heavy Metals	X		
Organic Compounds	X		
Trash & Debris	X		
Oxygen Demanding Substances	X		
Oil & Grease	X		
Bacteria & Viruses	X		

Pesticides	X		

Hydromodification Management Requirements

Do hydromodification management requirements apply (see Section 1.6 of the BMP Design Manual)?
☑ Yes, hydromodification management flow control structural BMPs required.

□ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

□ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.

□ No, the project will discharge runoff directly to an area identified as appropriate for an exemption by the WMAA for the watershed in which the project resides.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

Critical Coarse Sediment Yield Areas*

*This section only required if hydromodification management requirements apply

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

□ Yes
☑ No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Section 6.2 of the BMP Design Manual been performed?

□ 6.2.1 Verification of Geomorphic Landscape Units (GLUs) Onsite

□ 6.2.2 Downstream Systems Sensitivity to Coarse Sediment

□ 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite

□ No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what was the final result?

□ No critical coarse sediment yield areas to be protected based on verification of GLUs onsite

□ Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 2.b of the SWQMP.

□ Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections 6.2.4 and 6.2.5 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

Flow Control for Post-Project Runoff*

*This section only required if hydromodification management requirements apply

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

In the proposed condition, there is one point of compliance for flow control hydromodification management identified as POC-A. Refer to the projects DMA Map for location. The biofiltration basin adjacent to Plato Place has been sized to meet HMP requirements for the site.

Has a geomorphic assessment been performed for the receiving channel(s)?

☑ No, the low flow threshold is 0.1Q2 (default low flow threshold)

□ Yes, the result is low flow threshold 0.1Q2

□ Yes, the result is low flow threshold 0.3Q2

□ Yes, the result is low flow threshold 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

Discussion / Additional Information: (optional)

Other Site Requirements and Constraints

When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.

SOURCE CONTROL BMP CHECKLIST

All development projects must implement source control BMPs SC-1 through SC-6 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement source control BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided.

Source Control Requirement	Applied?		
SC-1 Prevention of Illicit Discharges into the MS4	☑ Yes	□ No	□ N/A
SC-2 Storm Drain Stenciling or Signage	☑ Yes	□ No	□ N/A
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☑ Yes	□ No	□ N/A
SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☑ Yes	□ No	□ N/A
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☑Yes	□ No	□ N/A
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)			
☑ Onsite storm drain inlets	☑ Yes	□ No	□ N/A
□ Interior floor drains and elevator shaft sump pumps drain to sewer	□ Yes	□ No	☑ N/A
□ Interior parking garages drain to sewer	□ Yes	□ No	☑ N/A
☑ Need for future indoor & structural pest control	☑ Yes	□ No	□ N/A
☑ Landscape/outdoor pesticide use	☑ Yes	□ No	□ N/A
☑ Pools, spas, ponds, decorative fountains, and other water features	☑ Yes	□ No	□ N/A
☐ Food service	☐ Yes	□ No	☑ N/A
☑ Refuse/Trash areas must be covered	☑ Yes	□ No	□ N/A
□ Industrial processes	□ Yes	□ No	☑ N/A
☑ Outdoor storage of equipment or materials must be covered	☑ Yes	□ No	□ N/A
□ Vehicle and equipment cleaning	□ Yes	□ No	☑ N/A
□ Vehicle/equipment repair and maintenance	□ Yes	□ No	☑ N/A
□ Fuel dispensing areas	□ Yes	□ No	☑ N/A
□ Loading docks	□ Yes	□ No	☑ N/A
☑ Fire sprinkler test water	☑ Yes	□ No	□ N/A
☑ Miscellaneous drain or wash water	☑ Yes	□ No	□ N/A
☑ Plazas, sidewalks, and parking lots	☑ Yes	□ No	□ N/A

Discussion / justification if SC-1 through SC-6 not implemented. Justification must be provided for ALL "No" answers shown above.

SITE DESIGN BMP CHECKLIST

All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification may be provided.

Source Control Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	☑ Yes	□ No	□ N/A
SD-2 Conserve Natural Areas, Soils, and Vegetation	☑ Yes	□ No	□ N/A
SD-3 Minimize Impervious Area	☑ Yes	□ No	□ N/A
SD-4 Minimize Soil Compaction	☑ Yes	□ No	□ N/A
SD-5 Impervious Area Dispersion - Directly Connected Impervious Areas (e.g. roof downspouts connected to street) are not allowed	☑ Yes	□ No	□ N/A
SD-6 Runoff Collection	☑ Yes	□ No	☐ N/A
SD-7 Landscaping with Native or Drought Tolerant Species	☑ Yes	□ No	□ N/A
SD-8 Harvesting and Using Precipitation	□ Yes	□ No	☑ N/A

Discussion / justification if SD-1 through SD-8 not implemented. Justification must be provided for ALL "No" answers shown above.

Harvest and use is not feasible for this project. See Harvest and Use Feasibility Form for calculations.

PDP STRUCTURAL BMPS

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the BMP Design Manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the BMP Design Manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative and engineer of record to certify construction of the structural BMPs (see Section 1.12 of the BMP Design Manual). PDP structural BMPs must be maintained into perpetuity (see Section 7 of the BMP Design Manual). The local jurisdiction will confirm the maintenance annually.

Use this section to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the BMP Design Manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

The project site has been divided into two (2) drainage management areas (DMAs) draining to two (2) different points of confluence (POC) with one (1) de minimis area and two self-mitigating areas draining directly offsite.

The type of structural BMP chosen for the project was based on the flow chart presented in Figures 5-1 and 5-2 of the City of Encinitas BMP Design Manual (February 2016). Using Worksheet B.3-1 to determine feasibility of using capture and use techniques for the property, it was ultimately concluded harvest and use BMPs are considered infeasible.

A feasibility study was then performed to determine whether infiltration is feasible for the project's structural BMPs. The negative impacts associated with infiltration and retention were identified and documented in the attached Geotechnical Investigation. Based on site geologic conditions and at the recommendation of the geotechnical engineer, the site is in a "No Infiltration" designation for storm water BMP design.

The project is proposing one HMP-sized biofiltration basin (BF-1) to meet treatment and storage requirements. The biofiltration basins have been sized to demonstrate compliance with HMP requirements using the County of San Diego HMP spreadsheets. Refer to Attachment 2 of this report for detailed HMP calculations in addition to the project Hydrology Report prepared by Pasco, Laret, Suiter & Associates for additional information.

All on-site private storm drain systems and post construction BMP's have been sized to convey the 100-year, 6-hour storm event and release discharge to the existing storm drain system at a lower rate than in pre-development conditions.

STRUCTURAL BMP SUMMARY INFORMATION

Copy this page as necessary to provide information on each individual proposed structural BMP

Structural BMP ID No: BMP-A	DMA No: A
Construction Plan Sheet No: 6	
Type of structural BMP: □ Retention by harvest and use (HU-1) □ Retention by infiltration basin (INF-1) □ Retention by bioretention (INF-2) □ Retention by permeable pavement (INF-3) □ Partial retention by biofiltration with partial retention (PR-1) ☑ Biofiltration (BF-1) □ Biofiltration with Nutrient Sensitive Media Design (BF-2) □ Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F □ Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) □ Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) □ Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) □ Detention pond or vault for hydromodification management □ Other (describe in discussion section below)	
Purpose: □ Pollutant control only □ Hydromodification control only ☑ Combined pollutant control and hydromodification control □ Pre-treatment/forebay for another structural BMP □ Other (describe in discussion section below)	
Who will inspect and certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms required by the City Engineer (See Section 1.12 of the BMP Design Manual)	Pasco Laret Suiter & Associates 1911 San Diego Ave. Suite 100 San Diego, CA 92110 (858) 259-8212
Who will be the final owner of this BMP?	HOA
Who will maintain this BMP into perpetuity?	HOA
What is the funding mechanism for maintenance?	HOA
Discussion (as needed): An HOA will be formed and will be responsible for the maintenance of storm water facilities into perpetuity, as required by the City.	

ATTACHMENT 1 - BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which items are included behind this cover sheet:

Attachment	Contents	Checklist
Attachment 1a	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	☑ Included
Attachment 1b	Tabular Summary of DMAs Showing DMA ID matching DMA Exhibit, DMA Area, and DMA Type (Required)* *Provide table in this Attachment OR on DMA Exhibit in Attachment 1a	☑ Included on DMA Exhibit in Attachment 1a □ Included as Attachment 1b, separate from DMA Exhibit
Attachment 1c	Form I-7, Harvest and Use Feasibility Screening Checklist (Required unless the entire project will use infiltration BMPs) Refer to Appendix B.3-1 of the BMP Design Manual to complete Form I-7.	☑ Included □ Not included because the entire project will use infiltration BMPs
Attachment 1d	Form I-8, Categorization of Infiltration Feasibility Condition (Required unless the project will use harvest and use BMPs) Refer to Appendices C and D of the BMP Design Manual to complete Form I-8.	☑ Included □ Not included because the entire project will use harvest and use BMPs
Attachment 1e	Pollutant Control BMP Design Worksheets / Calculations (Required) Refer to Appendices B and E of the BMP Design Manual for structural pollutant control BMP design guidelines	☑ Included

Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

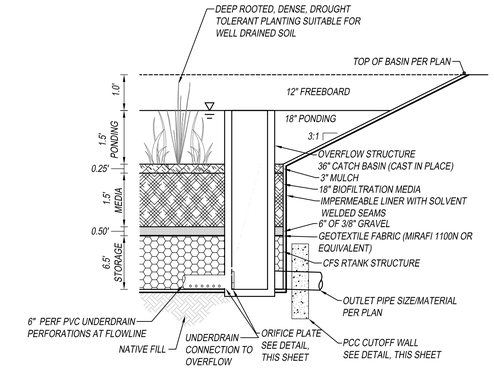
☑ Underlying hydrologic soil group
☑ Approximate depth to groundwater
□ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
☐ Critical coarse sediment yield areas to be protected
☑ Existing topography and impervious areas
☑ Existing and proposed site drainage network and connections to drainage offsite
□ Proposed demolition
☑ Proposed grading
☑ Proposed impervious features
☑ Proposed design features and surface treatments used to minimize imperviousness
☑ Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
□ Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Form I-3B)
☑ Structural BMPs (identify location, type of BMP, and size/detail)

Attachment 1a – DMA Exhibit

DMA/HMP EXHIBIT

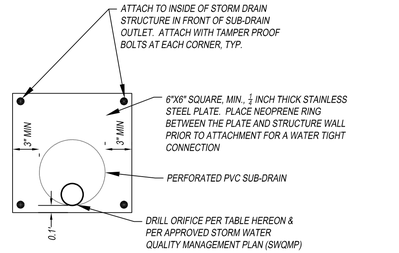
PIRAEUS STREET, ENCINITAS, CA





TYPICAL BASIN DETAIL

NOTE:
1. BIOFILTRATION "ENGINEERED SOIL" LAYER SHALL BE EVENLY MIXED COMPOSITION OF WASHED SAND, SANDY LOAM TOPSOIL, AND HUMIC COMPOST. THE MIX SHALL CONTAIN 65% SAND, 20% TOPSOIL, AND 15% COMPOST OR HARDWOOD MULCH IN ACCORDANCE WITH COUNTY OF SAN DIEGO LID BIOSWALE MEDIA BIO65 CUT SHEET



DRILLED ORIFICE PLATE DETAIL (TYP.)

NOT TO SCALE

SOURCE CONTROL

IDENTIFIER	DESCRIPTION	USED?
SC-1	PREVENTION OF ILLICIT DISCHARGES INTO THE MS4	YES
SC-2	STORM DRAIN STENCILING OR SIGNAGE	YES
SC-3	PROTECT OUTDOOR MATERIALS STORAGE AREA	N/A
SC-4	PROTECT MATERIALS STORED IN OUTDOOR WORK AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND W	N/A
SC-5	PROTECT TRASH STORAGE AREAS	YES
SC-6	ADDITIONAL BMPS BASED ON POTENTIAL SOURCES OF POLLUTANTS	YES

SITE DESIGN

IDENTIFIER	DESCRIPTION	USED?
SD-1	MAINTAIN NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES	YES
SD-2	CONSERVE NATURAL AREAS, SOILS, AND VEGETATION	YES
SD-3	MINIMIZE IMPERVIOUS AREA	YES
SD-4	MINIMIZE SOIL COMPACTION	YES
SD-5	IMPERVIOUS AREA DISPERSION	YES
SD-6	RUNOFF COLLECTION	YES
SD-7	DROUGHT TOLERANT OR NATIVE LANDSCAPING	YES
SD-8	HARVEST AND USE	NO

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- CENTER LINE OF ROAD
- DMA BOUNDARY
- PROPOSED STORM DRAIN
- ROOFS
- ASHPHALT OR CONCRETE (ROAD)
- CONCRETE (HARDSCAPE)
- LANDSCAPE
- SELF- MITIGATING AREA
- DE-MINIMIS AREA

DMA-1 CALCULATIONS

TOTAL DISTURBED AREA	=	6.25 AC
DMA-1 AREA (A)	=	5.80 AC
RUNOFF FACTOR (C)	=	0.74
85TH PERCENTILE RAINFALL DEPTH (d)	=	0.57 INCHES
IMPERVIOUS AREA:		
BUILDING/ROOF		96,273 SF
HARDSCAPE		15,446 SF
ROAD		89,832 SF
PERVIOUS AREA:		
LANDSCAPE AREA		51,016 SF
% IMPERVIOUS AREA:		79.8%
DCV (C*d*A*3,630)	=	8,859 CU FT

SOIL TYPE INFORMATION

HYDROLOGIC SOIL TYPE: D

CRITICAL COARSE SEDIMENT YIELD

NO CRITICAL COARSE SEDIMENT YIELD AREAS TO BE PROTECTED.

GROUNDWATER INFORMATION

GROUNDWATER WAS ENCOUNTERED AT ELEVATIONS 38 TO 49 FEET BELOW EXISTING GRADE DURING TESTING

BMP BASIN DATA TABLE

BMP ID	SURFACE AREA	PONDING DEPTH	STORAGE DEPTH
A	5,600 SF	18"	96"

BMP SIZE & ORIFICE DIAMETER SUMMARY TABLE

BMP #	H_P (FT)	H_S (FT)	H_{RTANK} (FT)	HMP ORIFICE (IN)	A_{BOT} (FT^2)	A_{TOP} (FT^2)
A	1.5	1.5	6.5	1.2	5,600	7,608

REGISTERED PROFESSIONAL ENGINEER
TYLER G LAWSON
No. 80356
Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA

0 50 100 150
SCALE: 1" = 50'

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com

Attachment 1c – Form I-7, Harvest and Use Feasibility

Worksheet B.3-1. Harvest and Use Feasibility Screening

Harvest and Use Feasibility Screening	**Worksksheet B.3-1**

1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?
✓Toilet and urinal flushing
✓ Landscape irrigation
Other:_____

2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

Toilet/Urinal Flushing
(9.3 gal/person-day) x (0.13368 cuft/gal) x (1.5 days) = 1.86 cuft/person-36hr
Assume (447 people) x (1.86 cuft/person-36 hr) = 832 cuft/36hr

Landscape Irrigation
(1.171 ac irrigated) x (390 gal/ac-36hr) x (0.13368 cuft/gal) = 61 cuft/36hr

Total = 832 cuft + 61 cuft = 893 cuft

3. Calculate the DCV using worksheet B-2.1.

DCV = 8,859 cuft

3a. Is the 36-hour demand greater than or equal to the DCV?	3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV?	3c. Is the 36-hour demand less than 0.25DCV?
Yes / ✓ No	Yes / ✓ No	✓ Yes
Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.	Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.	✓ Harvest and use is considered to be infeasible.

Attachment 1d – From I-8, Categorization of Infiltration Feasibility Condition

BMP-1

Categorization of Infiltration Feasibility Condition	Form I-8

Part 1 - Full Infiltration Feasibility Screening Criteria

Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	**Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X

Provide basis:

BMP-1 will be supported by approximately 15 feet of compacted fill over previously-placed fill. Based on our experience, compacted fill is not conducive to infiltration BMP's due low permeability. Infiltration BMP's supported on compacted fill increase the potential for differential settlement of granular soils, heaving of expansive soils, lateral water migration, daylight water seepage on slopes, slope instability, and landsliding.

2	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X

Provide basis:

The property is underlain by a landslide that will be mitigated during grading. Infiltration BMP's greatly increase the risk for raised groundwater, slope instability and landsliding. BMP-1 is situated adjacent to an existing fill slope. Public utilities are located at the toe of this slope. Infiltration BMP's adjacent to existing fill slopes are not recommended. In addition, infiltration BMP's would require a standard horizontal setback from top of slope of 1.5H, H being the slope height. Infiltration BMP's may result in lateral water migration and daylight water seepage that could adversely impact public utilities and right of ways.

Form I-8 Page 2 of 4			
Criteria	Screening Question	**Yes**	**No**
3	**Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: Groundwater is not expected within 10 feet from the bottom of the basin, therefore, we do expect an increase in groundwater contamination as a result of storm water infiltration.			
4	**Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: We are not aware of any water balance issues. Researching water balance issues is not the responsibility of the geotechnical engineer. We also are not aware of any increased discharge of contaminated water to surface water.			
Part 1 Result *	If all answers to rows 1 - 4 are "**Yes**" a full infiltration design is potentially feasible. The feasibility screening category is **Full Infiltration** If any answer from row 1-4 is "**No**", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2	No	

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

Form I-8 Page 3 of 4

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	**Do soil and geologic conditions allow for infiltration in any appreciable rate or volume?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.		X

Provide basis:
BMP-1 will be supported by approximately 15 feet of compacted fill over previously-placed fill. Based on our experience, compacted fill is not conducive to infiltration BMP's due low permeability. Infiltration BMP's supported on compacted fill increase the potential for differential settlement of granular soils, heaving of expansive soils, lateral water migration, daylight water seepage on slopes, slope instability, and landsliding.

6	**Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.		X

Provide basis:

The property is underlain by a landslide that will be mitigated during grading. Infiltration BMP's greatly increase the risk for raised groundwater, slope instability and landsliding. BMP-1 is situated adjacent to an existing fill slope. Public utilities are located at the toe of this slope. Infiltration BMP's adjacent to existing fill slopes are not recommended. In addition, infiltration BMP's would require a standard horizontal setback from top of slope of 1.5H, H being the slope height. Infiltration BMP's may result in lateral water migration and daylight water seepage that could adversely impact public utilities and right of ways.

Form I-8 Page 4 of 4			
Criteria	Screening Question	**Yes**	**No**
7	**Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)?** The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: Groundwater is not expected within 10 feet from the bottom of the basin, therefore, we do expect an increase in groundwater contamination as a result of storm water infiltration.			
8	**Can infiltration be allowed without violating downstream water rights**? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	X	
Provide basis: We are not aware of any water balance issues. Researching water balance issues is not the responsibility of the geotechnical engineer. We also are not aware of any increased discharge of contaminated water to surface water.			
Part 2 Result*	If all answers from row 5-8 are yes then partial infiltration design is potentially feasible. The feasibility screening category is **Partial Infiltration.** If any answer from row 5-8 is no, then infiltration of any volume is considered to be **infeasible** within the drainage area. The feasibility screening category is **No Infiltration.**		No Infiltration

*To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by Agency/Jurisdictions to substantiate findings

Attachment 1e – Pollutant Control BMP Design Worksheets/ Calculations

Runoff Factor (C)			
Surface	Runoff Factor	Area (sq. ft)	Weighted Area
Roofs	0.90	96,273	86,646
Asphalt or Concrete (Road)	0.90	89,832	80,849
Asphalt or Concrete (Hardscape)	0.90	15,446	13,901
Unit Pavers (Grouted)	0.90	-	-
Pervious Pavers	0.10	-	-
Pervious Pavement	0.10	-	-
Decomposed Granite	0.30	-	-
Cobbles or Crushed Aggregate	0.30	-	-
Amended, Mulched Soils or Landscape	0.10	51,016	5,102
Compacted Soil (eg. Unpaved Parking)	0.30	-	-
Natural (A Soil)	0.10	-	-
Natural (B Soil)	0.14	-	-
Natural (C Soil)	0.23	-	-
Natural (D Soil)	0.30	-	-
Total		252,567	186,498
Composite C	**0.74**		

Design Capture Volume (DCV)			Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.57	inches	
2	Area tributary to BMP(s)	A=	5.80	acres	
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1)	C=	0.74	unitless	
4	Street trees volume reduction	TCV=	0	cubic-feet	
5	Rain barrels volume reduction (1 cubic foot=7.48 gallons)	RCV=	0	cubic-feet	
6	Calculate DCV=(3630 x C x d x A) - TCV -RCV	DCV=	8859	cubic-feet	

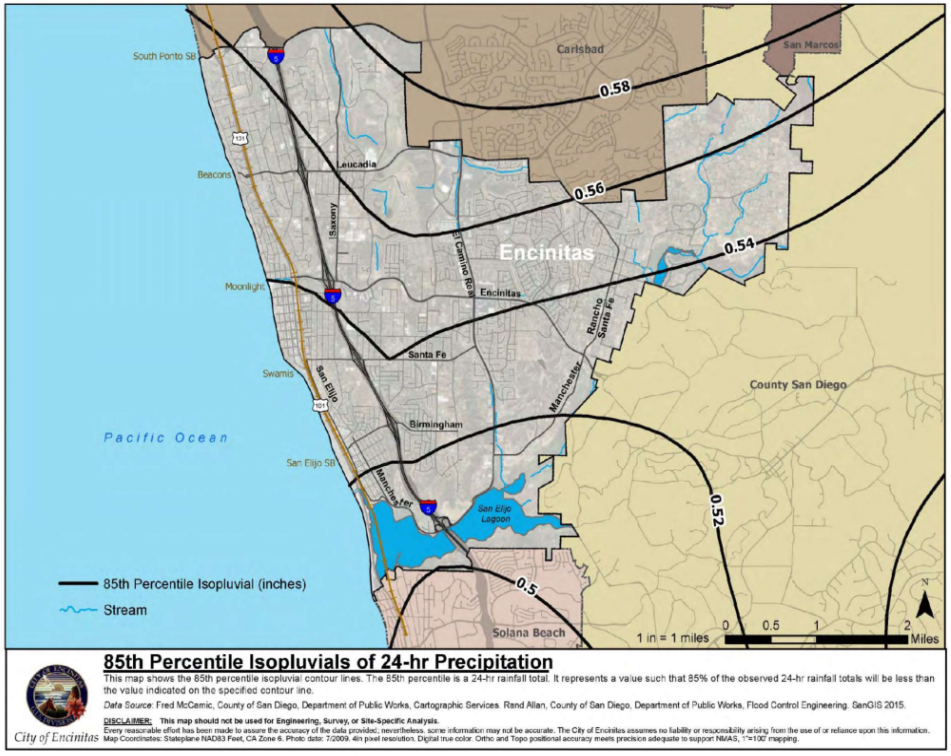


Figure B.1-1: 85th Percentile 24-hour Isopluvial Map

DMA-A

Simple Sizing Method for Biofiltration BMPs (DMA A1)		Worksheet B.5-1	
1	Remaining DCV after implementing retention BMPs	8859	cubic-feet
Partial Retention			
2	Infiltration rate from Worksheet D.5-1 if partial infiltration is feasible	0.00	in/hr
3	Allowable drawdown time for aggregate storage below the underdrain	36.00	hours
4	Depth of runoff that can be infiltrated [Line 2 x Line 3]	0.00	inches
5	Aggregate pore space	0.40	in/in
6	Required depth of gravel below the underdrain [Line 4/Line 5]	0.00	inches
7	Assumed surface area of the biofiltration BMP	5600.00	sq-ft
8	Media retained pore space	0.10	in/in
9	Volume retained by BMP [[Line 4 + (Line 12 x Line 8)]/12] x Line 7	840.00	cubic-feet
10	DCV that requires biofiltration [Line 1 -Line 9]	8018.64	cubic-feet
BMP Parameters			
11	Surface Ponding [6 inch minimum, 12 inch maximum]	18.00	inches
12	Media Thickness [18 inches minimum]	18.00	inches
13	Aggregate storage above underdrain invert (12 inches typical) - use 0 inches for sizing if the aggregate is not over the entire bottom surface area	78.00	inches
14	Media available pore space	0.20	in/in
15	Media filtration rate to be used for sizing	5.00	in/hr
Baseline Calculations			
16	Allowable Routing Time for sizing	6.00	hours
17	Depth filtered during storm [Line 15 x Line 16]	30.00	inches
18	Depth of Detention Storage [Line 11 + (Line 12 x Line 14) + (Line 13 x Line 5)]	52.80	inches
19	Total Depth Treated [Line 17 + Line 18]	82.80	inches
Option 1 - Biofilter 1.5 times the DCV			
20	Required biofiltered volume [1.5 x Line 10]	12027.96	cubic-feet
21	Required Footprint [Line 20/Line 19] x 12	1743.18	sq-ft
Option 2 - Store 0.75 of the remaining DCV in pores and ponding			
22	Required Storage (surface + pores) Volume [0.75 x Line 10]	6013.98	cubic-feet
23	Required Footprint [Line 22/Line 18] x 12	1366.81	sq-ft
Footprint of the BMP			
24	Area draining to the BMP	252566.84	sq-ft
25	Adjusted Runoff Factor for drainage area (Refer to Appendix B.1 and B.2)	0.74	sq-ft
26	Minimum BMP Footprint [Line 24 x Line 25 x 0.03]	5594.93	sq-ft
27	Footprint of the BMP = Maximum (Minimum(Line 21, Line 23), Line 26)	5594.93	sq-ft

Note: Line 7 is used to estimate the amount of volume retained by the BMP. Update assumed surface area in Line 7 until it is equivalent to the required biofiltration footprint (either Line 21 or Line 23)

ATTACHMENT 2 - BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

□ Mark this box if this attachment is not included because the project is exempt from PDP hydromodification management requirements.

Indicate which items are included behind this cover sheet:

Attachment	Contents	Checklist
Attachment 2a	Hydromodification Management Exhibit (Required)	☑Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2b	Management of Critical Coarse Sediment Yield Areas (WMAA Exhibit is required, additional analyses are optional) See Section 6.2 of the BMP Design Manual.	☑ Exhibit showing project drainage boundaries marked on WMAA Critical Coarse Sediment Yield Area Map (Required) Optional analyses for Critical Coarse Sediment Yield Area Determination □ 6.2.1 Verification of Geomorphic Landscape Units Onsite □ 6.2.2 Downstream Systems Sensitivity to Coarse Sediment □ 6.2.3 Optional Additional Analysis of Potential Critical Coarse Sediment Yield Areas Onsite
Attachment 2c	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the BMP Design Manual.	☑ Not performed □ Included □ Submitted as separate stand-alone document
Attachment 2d	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the BMP Design Manual	☑ Included □ Submitted as separate stand-alone document
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	□ Included ☑ Not required because BMPs will drain in less than 96 hours

Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

☑ Underlying hydrologic soil group

☑ Approximate depth to groundwater

□ Existing natural hydrologic features (watercourses, seeps, springs, wetlands)

☐Critical coarse sediment yield areas to be protected

☑ Existing topography

☑ Existing and proposed site drainage network and connections to drainage offsite

☑ Proposed grading

☑ Proposed impervious features

☑ Proposed design features and surface treatments used to minimize imperviousness

☑ Point(s) of Compliance (POC) for Hydromodification Management

☑ Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)

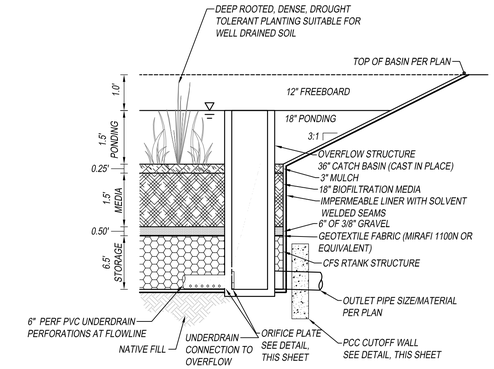
☑ Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail)

Attachment 2a – Hydromodification Management Exhibit

DMA/HMP EXHIBIT

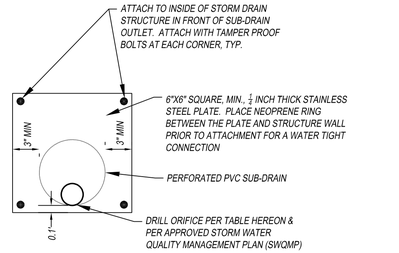
PIRAEUS STREET, ENCINITAS, CA





TYPICAL BASIN DETAIL

NOTE:
1. BIOFILTRATION "ENGINEERED SOIL" LAYER SHALL BE EVENLY MIXED COMPOSITION OF WASHED SAND, SANDY LOAM TOPSOIL, AND HUMIC COMPOST. THE MIX SHALL CONTAIN 65% SAND, 20% TOPSOIL, AND 15% COMPOST OR HARDWOOD MULCH IN ACCORDANCE WITH COUNTY OF SAN DIEGO LID BIOSWALE MEDIA BIO65 CUT SHEET



DRILLED ORIFICE PLATE DETAIL (TYP.)

NOT TO SCALE

SOURCE CONTROL

IDENTIFIER	DESCRIPTION	USED?
SC-1	PREVENTION OF ILLICIT DISCHARGES INTO THE MS4	YES
SC-2	STORM DRAIN STENCILING OR SIGNAGE	YES
SC-3	PROTECT OUTDOOR MATERIALS STORAGE AREA	N/A
SC-4	PROTECT MATERIALS STORED IN OUTDOOR WORK AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND W	N/A
SC-5	PROTECT TRASH STORAGE AREAS	YES
SC-6	ADDITIONAL BMPS BASED ON POTENTIAL SOURCES OF POLLUTANTS	YES

SITE DESIGN

IDENTIFIER	DESCRIPTION	USED?
SD-1	MAINTAIN NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES	YES
SD-2	CONSERVE NATURAL AREAS, SOILS, AND VEGETATION	YES
SD-3	MINIMIZE IMPERVIOUS AREA	YES
SD-4	MINIMIZE SOIL COMPACTION	YES
SD-5	IMPERVIOUS AREA DISPERSION	YES
SD-6	RUNOFF COLLECTION	YES
SD-7	DROUGHT TOLERANT OR NATIVE LANDSCAPING	YES
SD-8	HARVEST AND USE	NO

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- CENTER LINE OF ROAD
- DMA BOUNDARY
- PROPOSED STORM DRAIN
- ROOFS
- ASHPHALT OR CONCRETE (ROAD)
- CONCRETE (HARDSCAPE)
- LANDSCAPE
- SELF- MITIGATING AREA
- DE-MINIMIS AREA

DMA-1 CALCULATIONS

TOTAL DISTURBED AREA	=	6.25 AC
DMA-1 AREA (A)	=	5.80 AC
RUNOFF FACTOR (C)	=	0.74
85TH PERCENTILE RAINFALL DEPTH (d)	=	0.57 INCHES
IMPERVIOUS AREA:		
BUILDING/ROOF		96,273 SF
HARDSCAPE		15,446 SF
ROAD		89,832 SF
PERVIOUS AREA:		
LANDSCAPE AREA		51,016 SF
% IMPERVIOUS AREA:		79.8%
DCV (C*d*A*3,630)	=	8,859 CU FT

SOIL TYPE INFORMATION

HYDROLOGIC SOIL TYPE: D

CRITICAL COARSE SEDIMENT YIELD

NO CRITICAL COARSE SEDIMENT YIELD AREAS TO BE PROTECTED.

GROUNDWATER INFORMATION

GROUNDWATER WAS ENCOUNTERED AT ELEVATIONS 38 TO 49 FEET BELOW EXISTING GRADE DURING TESTING

BMP BASIN DATA TABLE

BMP ID	SURFACE AREA	PONDING DEPTH	STORAGE DEPTH
A	5,600 SF	18"	96"

BMP SIZE & ORIFICE DIAMETER SUMMARY TABLE

BMP #	H_P (FT)	H_S (FT)	H_{RTANK} (FT)	HMP ORIFICE (IN)	A_{BOT} (FT^2)	A_{TOP} (FT^2)
A	1.5	1.5	6.5	1.2	5,600	7,608

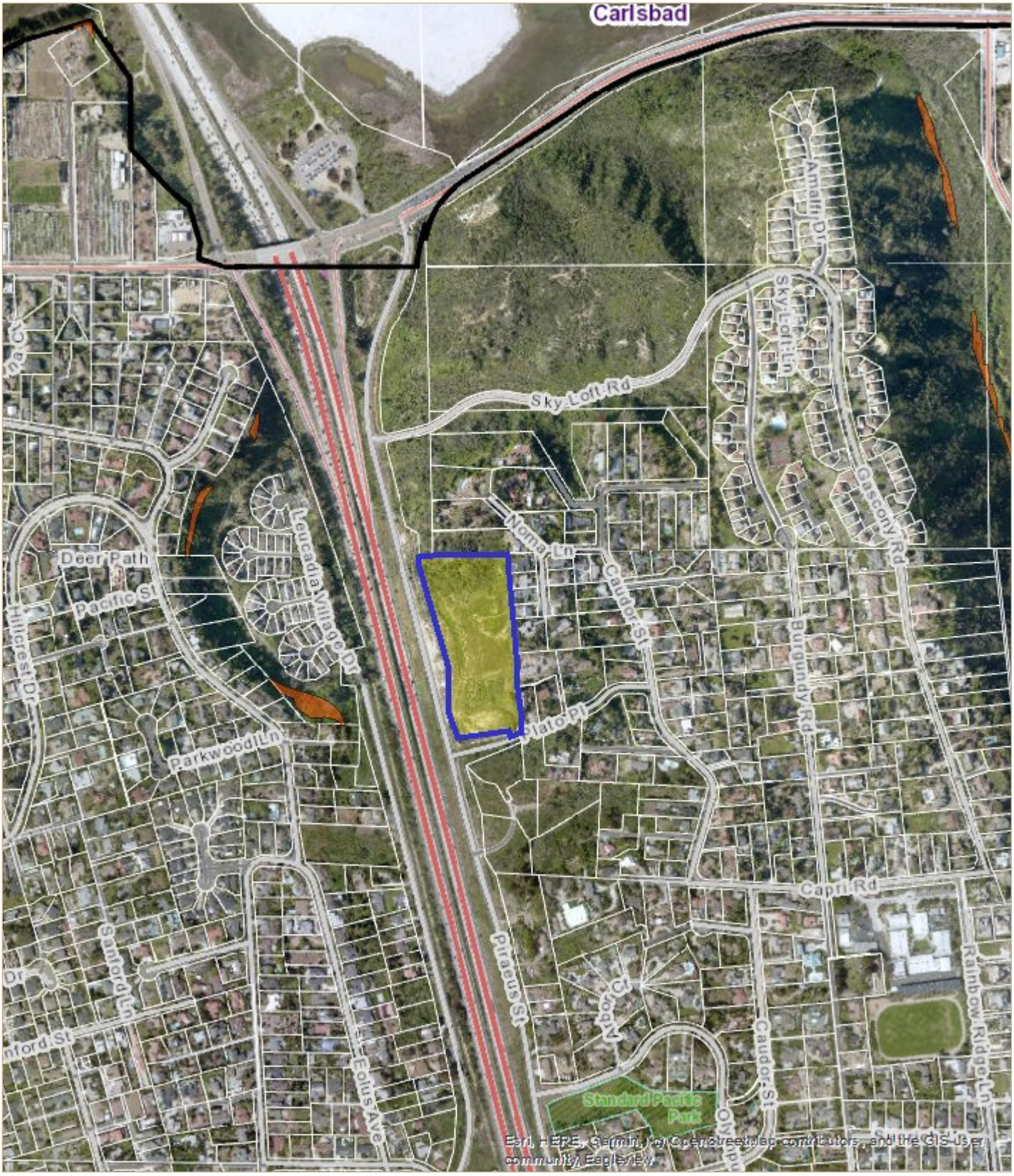
REGISTERED PROFESSIONAL ENGINEER
TYLER G LAWSON
No. 80356
Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA

0 50 100 150
SCALE: 1" = 50'

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com

Attachment 2b – Management of Critical Course Sediment Yield Areas

APN: 2541440100 **Address: N/A**



Attachment 2d – Flow Control Facility Design

SDHM 3.1

PROJECT REPORT

General Model Information

Project Name:	3733 5600 sf Quick Model
Site Name:	3733
Site Address:	1500 Piraeus
City:	Encinitas
Report Date:	9/8/2022
Gage:	ENCINITA
Data Start:	10/01/1963
Data End:	09/30/2004
Timestep:	Hourly
Precip Scale:	1.000
Version Date:	2021/06/28

POC Thresholds

Low Flow Threshold for POC1:	10 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

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Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
D,NatVeg,Steep	5.798
Pervious Total	5.798
Impervious Land Use	acre
Impervious Total	0
Basin Total	5.798

Element Flows To:

Surface	Interflow	Groundwater

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Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
A,NatVeg,Flat	1.171
Pervious Total	1.171

Impervious Land Use	acre
IMPERVIOUS-FLAT	4.627
Impervious Total	4.627
Basin Total	5.798

Element Flows To:

Surface	Interflow	Groundwater
Surface retention 1	Surface retention 1	

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Routing Elements
Predeveloped Routing

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Mitigated Routing

Bioretention 1

Bottom Length:	140.00 ft.
Bottom Width:	40.00 ft.
Material thickness of first layer:	0.25
Material type for first layer:	Mulch
Material thickness of second layer:	1.5
Material type for second layer:	ESM
Material thickness of third layer:	6.5
Material type for third layer:	PERMAVOID
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	1.2
Offset (in.):	0
Flow Through Underdrain (ac-ft.):	118.85
Total Outflow (ac-ft.):	120.732
Percent Through Underdrain:	98.44
Discharge Structure	
Riser Height:	1.5 ft.
Riser Diameter:	36 in.
Element Flows To:	
Outlet 1	Outlet 2

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Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.1286	0.0000	0.0000	0.0000
0.1181	0.1286	0.0046	0.0000	0.0000
0.2363	0.1286	0.0091	0.0000	0.0000
0.3544	0.1286	0.0137	0.0000	0.0000
0.4725	0.1286	0.0182	0.0041	0.0000
0.5907	0.1286	0.0228	0.0105	0.0000
0.7088	0.1286	0.0273	0.0194	0.0000
0.8269	0.1286	0.0319	0.0206	0.0000
0.9451	0.1286	0.0364	0.0212	0.0000
1.0632	0.1286	0.0410	0.0224	0.0000
1.1813	0.1286	0.0456	0.0249	0.0000
1.2995	0.1286	0.0501	0.0261	0.0000
1.4176	0.1286	0.0547	0.0267	0.0000
1.5357	0.1286	0.0592	0.0278	0.0000
1.6538	0.1286	0.0638	0.0284	0.0000
1.7720	0.1286	0.0781	0.0294	0.0000
1.8901	0.1286	0.0925	0.0314	0.0000
2.0082	0.1286	0.1068	0.0323	0.0000
2.1264	0.1286	0.1212	0.0328	0.0000
2.2445	0.1286	0.1355	0.0337	0.0000
2.3626	0.1286	0.1499	0.0354	0.0000
2.4808	0.1286	0.1642	0.0363	0.0000
2.5989	0.1286	0.1786	0.0379	0.0000
2.7170	0.1286	0.1929	0.0387	0.0000
2.8352	0.1286	0.2073	0.0404	0.0000
2.9533	0.1286	0.2217	0.0423	0.0000
3.0714	0.1286	0.2360	0.0433	0.0000
3.1896	0.1286	0.2504	0.0448	0.0000
3.3077	0.1286	0.2647	0.0465	0.0000

3.4258	0.1286	0.2791	0.0483	0.0000
3.5440	0.1286	0.2934	0.0500	0.0000
3.6621	0.1286	0.3078	0.0518	0.0000
3.7802	0.1286	0.3221	0.0535	0.0000
3.8984	0.1286	0.3365	0.0551	0.0000
4.0165	0.1286	0.3508	0.0568	0.0000
4.1346	0.1286	0.3652	0.0583	0.0000
4.2527	0.1286	0.3795	0.0599	0.0000
4.3709	0.1286	0.3939	0.0613	0.0000
4.4890	0.1286	0.4082	0.0628	0.0000
4.6071	0.1286	0.4226	0.0642	0.0000
4.7253	0.1286	0.4369	0.0656	0.0000
4.8434	0.1286	0.4513	0.0670	0.0000
4.9615	0.1286	0.4656	0.0683	0.0000
5.0797	0.1286	0.4800	0.0696	0.0000
5.1978	0.1286	0.4943	0.0709	0.0000
5.3159	0.1286	0.5087	0.0722	0.0000
5.4341	0.1286	0.5230	0.0734	0.0000
5.5522	0.1286	0.5374	0.0747	0.0000
5.6703	0.1286	0.5517	0.0759	0.0000
5.7885	0.1286	0.5661	0.0770	0.0000
5.9066	0.1286	0.5804	0.0782	0.0000
6.0247	0.1286	0.5948	0.0794	0.0000
6.1429	0.1286	0.6091	0.0805	0.0000
6.2610	0.1286	0.6235	0.0816	0.0000
6.3791	0.1286	0.6378	0.0827	0.0000
6.4973	0.1286	0.6522	0.0838	0.0000
6.6154	0.1286	0.6666	0.0849	0.0000
6.7335	0.1286	0.6809	0.0859	0.0000
6.8516	0.1286	0.6953	0.0870	0.0000
6.9698	0.1286	0.7096	0.0880	0.0000
7.0879	0.1286	0.7240	0.0890	0.0000
7.2060	0.1286	0.7383	0.0900	0.0000
7.3242	0.1286	0.7527	0.0910	0.0000
7.4423	0.1286	0.7670	0.0920	0.0000
7.5604	0.1286	0.7814	0.0930	0.0000
7.6786	0.1286	0.7957	0.0940	0.0000
7.7967	0.1286	0.8101	0.0949	0.0000
7.9148	0.1286	0.8244	0.0959	0.0000
8.0330	0.1286	0.8388	0.0968	0.0000
8.1511	0.1286	0.8531	0.0978	0.0000
8.2500	0.1286	0.8651	0.1122	0.0000

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Infilt(cfs)
8.2500	0.1286	0.8651	0.0000	0.6481	0.0000
8.3681	0.1315	0.8805	0.0000	0.6481	0.0000
8.4863	0.1345	0.8962	0.0000	0.8583	0.0000
8.6044	0.1374	0.9123	0.0000	0.9093	0.0000
8.7225	0.1405	0.9287	0.0000	0.9604	0.0000
8.8407	0.1435	0.9455	0.0000	1.0114	0.0000
8.9588	0.1465	0.9626	0.0000	1.0624	0.0000
9.0769	0.1496	0.9801	0.0000	1.1135	0.0000
9.1951	0.1527	0.9979	0.0000	1.1645	0.0000
9.3132	0.1559	1.0162	0.0000	1.2156	0.0000
9.4313	0.1590	1.0348	0.0000	1.2666	0.0000
9.5495	0.1622	1.0537	0.0000	1.3177	0.0000
9.6676	0.1654	1.0731	0.0000	1.3687	0.0000

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9.7857	0.1686	1.0928	0.2149	1.4198	0.0000
9.9038	0.1718	1.1129	1.9183	1.4708	0.0000
10.022	0.1751	1.1334	4.4941	1.5218	0.0000
10.140	0.1784	1.1543	7.6592	1.5729	0.0000
10.258	0.1817	1.1755	11.223	1.6239	0.0000
10.376	0.1850	1.1972	15.002	1.6750	0.0000
10.495	0.1884	1.2193	18.805	1.7260	0.0000
10.613	0.1917	1.2417	22.445	1.7771	0.0000
10.731	0.1952	1.2646	25.747	1.8281	0.0000
10.750	0.1957	1.2683	28.574	1.8364	0.0000

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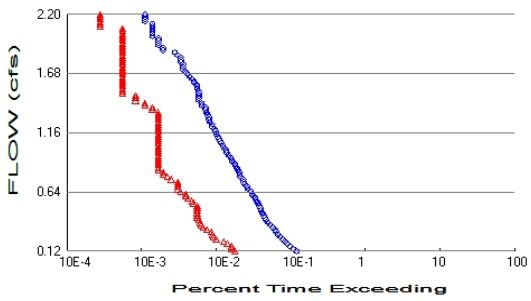
Surface retention 1

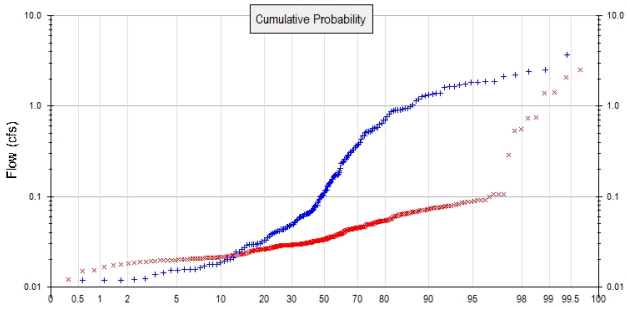
Element Flows To:

Outlet 1	Outlet 2
	Bioretention 1

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Analysis Results
POC 1





\+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 5.798
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 1.171
Total Impervious Area: 4.627

Flow Frequency Method: Cunnane

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	1.208399
5 year	1.842808
10 year	2.202476
25 year	2.759572

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	0.085283
5 year	0.426577
10 year	1.231832
25 year	2.162567

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Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1208	433	64	14	Pass
0.1419	388	58	14	Pass
0.1629	353	58	16	Pass
0.1839	325	51	15	Pass
0.2049	302	45	14	Pass
0.2260	281	36	12	Pass
0.2470	264	33	12	Pass
0.2680	239	32	13	Pass
0.2891	230	31	13	Pass
0.3101	220	27	12	Pass
0.3311	208	24	11	Pass
0.3521	191	23	12	Pass
0.3732	179	22	12	Pass
0.3942	169	21	12	Pass
0.4152	160	20	12	Pass
0.4362	156	20	12	Pass
0.4573	150	20	13	Pass
0.4783	143	20	13	Pass
0.4993	141	20	14	Pass
0.5203	136	20	14	Pass
0.5414	131	18	13	Pass
0.5624	128	17	13	Pass
0.5834	121	15	12	Pass
0.6045	114	14	12	Pass
0.6255	108	14	12	Pass
0.6465	105	12	11	Pass
0.6675	96	11	11	Pass
0.6886	93	11	11	Pass
0.7096	87	11	12	Pass
0.7306	84	11	13	Pass
0.7516	83	9	10	Pass
0.7727	76	8	10	Pass
0.7937	74	7	9	Pass
0.8147	73	7	9	Pass
0.8357	70	6	8	Pass
0.8568	68	6	8	Pass
0.8778	65	6	9	Pass
0.8988	62	6	9	Pass
0.9199	58	6	10	Pass
0.9409	56	6	10	Pass
0.9619	53	6	11	Pass
0.9829	50	6	12	Pass
1.0040	49	6	12	Pass
1.0250	47	6	12	Pass
1.0460	44	6	13	Pass
1.0670	42	6	14	Pass
1.0881	41	6	14	Pass
1.1091	39	6	15	Pass
1.1301	38	6	15	Pass
1.1511	36	6	16	Pass
1.1722	35	6	17	Pass
1.1932	34	6	17	Pass
1.2142	32	6	18	Pass

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1.2353	32	6	18	Pass
1.2563	30	6	20	Pass
1.2773	29	6	20	Pass
1.2983	29	6	20	Pass
1.3194	28	6	21	Pass
1.3404	27	6	22	Pass
1.3614	26	5	19	Pass
1.3824	26	5	19	Pass
1.4035	23	4	17	Pass
1.4245	23	4	17	Pass
1.4455	21	3	14	Pass
1.4665	21	3	14	Pass
1.4876	21	3	14	Pass
1.5086	21	2	9	Pass
1.5296	21	2	9	Pass
1.5507	20	2	10	Pass
1.5717	20	2	10	Pass
1.5927	19	2	10	Pass
1.6137	18	2	11	Pass
1.6348	17	2	11	Pass
1.6558	16	2	12	Pass
1.6768	15	2	13	Pass
1.6978	14	2	14	Pass
1.7189	13	2	15	Pass
1.7399	13	2	15	Pass
1.7609	13	2	15	Pass
1.7819	12	2	16	Pass
1.8030	12	2	16	Pass
1.8240	12	2	16	Pass
1.8450	11	2	18	Pass
1.8660	10	2	20	Pass
1.8871	7	2	28	Pass
1.9081	7	2	28	Pass
1.9291	6	2	33	Pass
1.9502	6	2	33	Pass
1.9712	6	2	33	Pass
1.9922	6	2	33	Pass
2.0132	5	2	40	Pass
2.0343	5	2	40	Pass
2.0553	5	2	40	Pass
2.0763	5	2	40	Pass
2.0973	5	1	20	Pass
2.1184	5	1	20	Pass
2.1394	4	1	25	Pass
2.1604	4	1	25	Pass
2.1814	4	1	25	Pass
2.2025	4	1	25	Pass

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Water Quality

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Model Default Modifications

Total of 0 changes have been made.

PERLND Changes

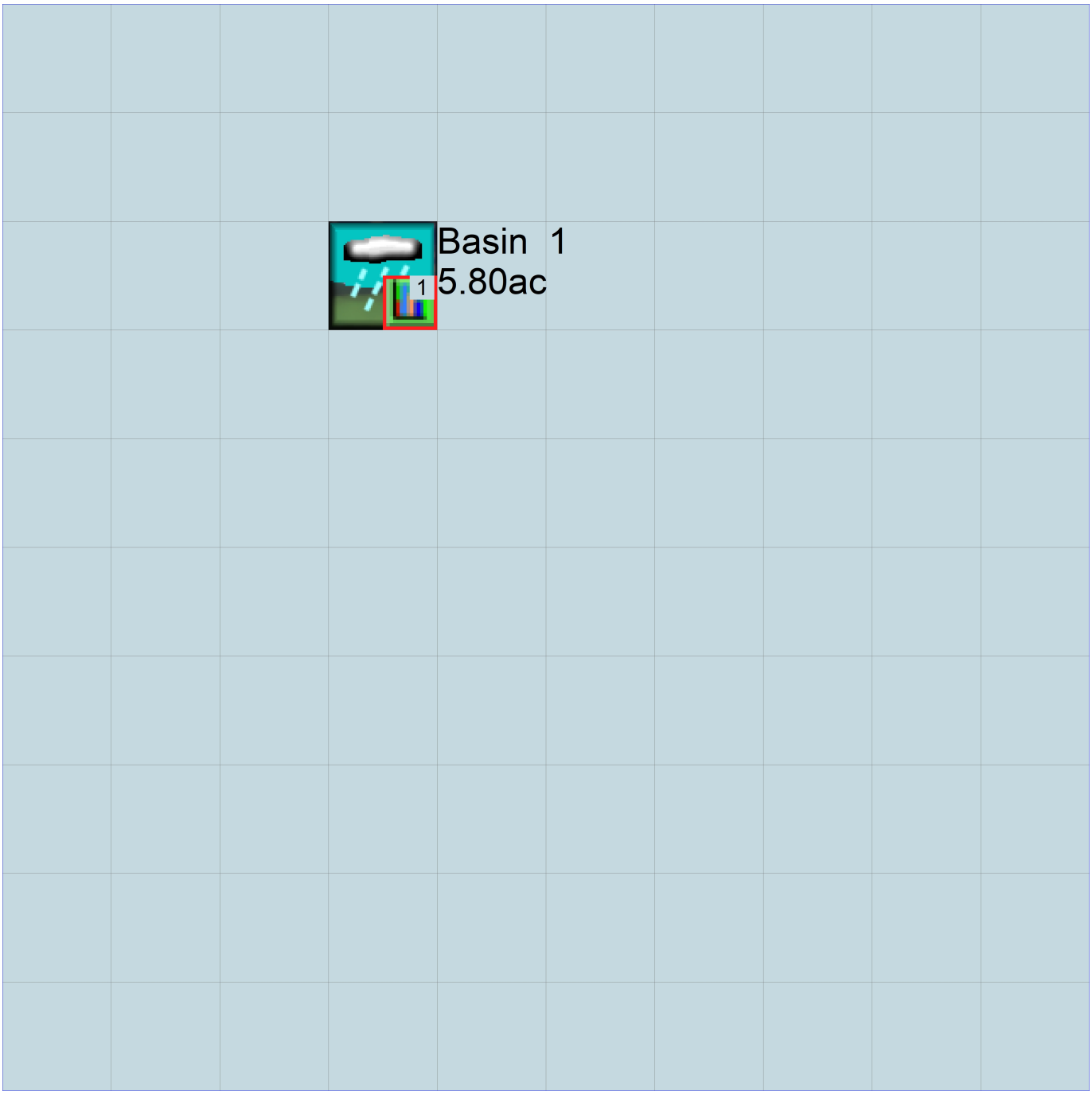
No PERLND changes have been made.

IMPLND Changes

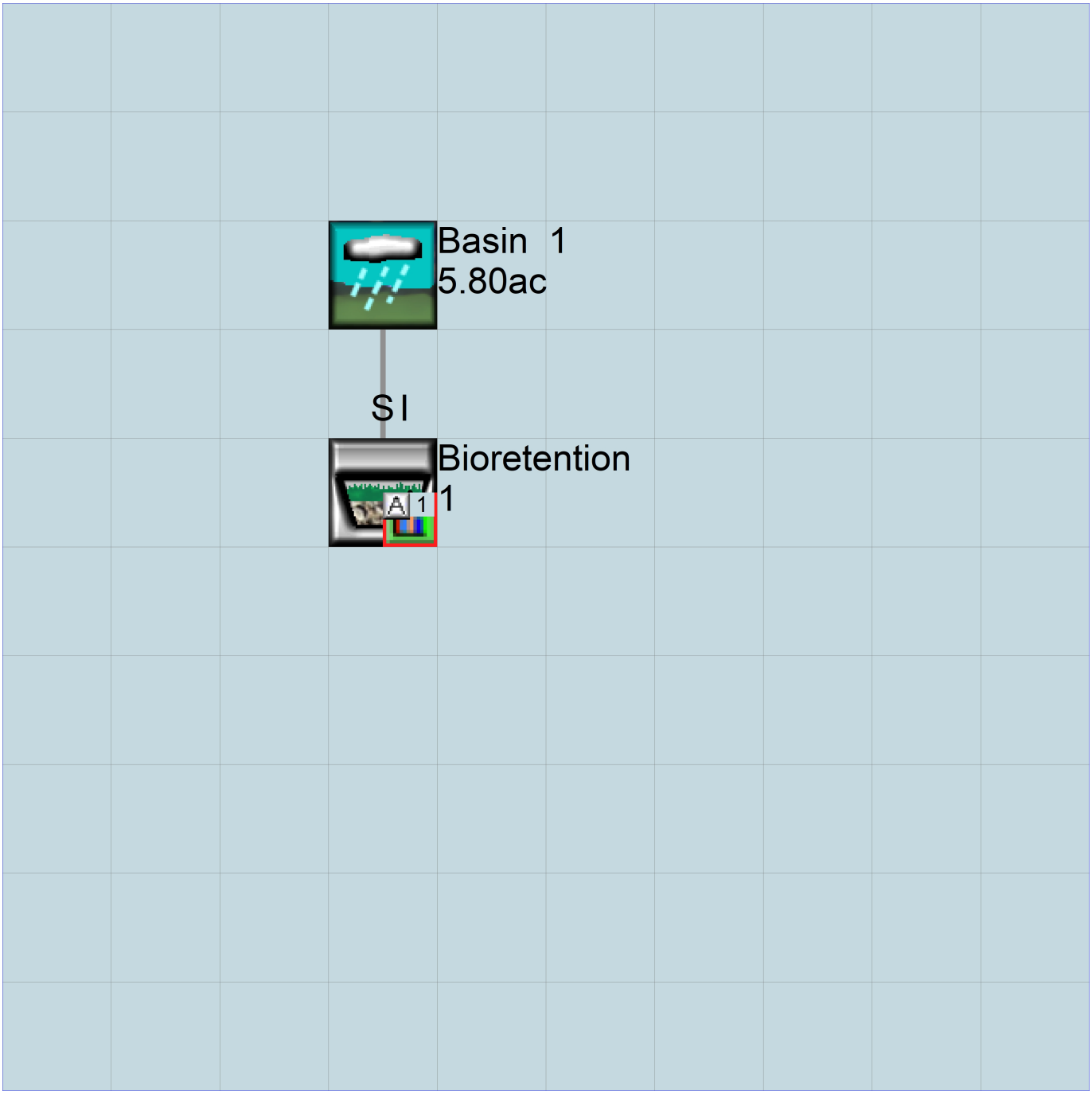
No IMPLND changes have been made.

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Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1963 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                   UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   3733 5600 sf Quick Model.wdm
MESSU       25   Pre3733 5600 sf Quick Model.MES
            27   Pre3733 5600 sf Quick Model.L61
            28   Pre3733 5600 sf Quick Model.L62
            30   POC3733 5600 sf Quick Model1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      30
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                   MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                       in  out           ***
   30      D,NatVeg,Steep         1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   30         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   30         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO
```

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```
  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   30         0    1    1    1    0    0    0    0    1    1    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   30             0       2.7      0.02        75      0.15       2.5     0.915
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   30             0         0         2         2         0      0.05      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                            ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   30             0       0.6      0.04         1       0.3         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   30       0.4  0.4  0.4  0.4  0.6  0.6  0.6  0.6  0.6  0.4  0.4  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   30       0.1  0.1  0.1  0.1 0.06 0.06 0.06 0.06 0.06  0.1  0.1  0.1
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS       IFWS       LZS       AGWS      GWVS
   30             0         0      0.01          0       0.4       0.01         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2
```

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```
  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  30                       5.798     COPY   501     12
PERLND  30                       5.798     COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                     in  out                                ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                  ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                     ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><
```

```
SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1              PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1              IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

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Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1963 10 01        END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                   UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   3733 5600 sf Quick Model.wdm
MESSU       25   Mit3733 5600 sf Quick Model.MES
            27   Mit3733 5600 sf Quick Model.L61
            28   Mit3733 5600 sf Quick Model.L62
            30   POC3733 5600 sf Quick Model1.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND       1
      IMPLND       1
      GENER        2
      RCHRES       1
      RCHRES       2
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title---------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Surface retention  1        MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
    2        24
  END OPCODE
  PARM
    #    #         K ***
    2             0.
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
    1      A,NatVeg,Flat          1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
    1         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY
```

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```
  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
    1         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
    1         0    1    1    1    0    0    0    0    1    1    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2          ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
    1              0       4.2      0.09       100      0.05       2.5     0.915
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3          ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
    1              0         0         2         2         0      0.05      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                                  ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC      LZETP ***
    1              0       0.6      0.04         1       0.3          0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3          ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
    1       0.4  0.4  0.4  0.4  0.6  0.6  0.6  0.6  0.6  0.4  0.4  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3          ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
    1       0.1  0.1  0.1  0.1 0.06 0.06 0.06 0.06 0.06  0.1  0.1  0.1
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
    1              0         0      0.01         0       0.4      0.01         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                      in  out           ***
    1      IMPERVIOUS-FLAT        1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ****************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    1         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    1         0    0    4    0    0    0    1    9
  END PRINT-INFO
```

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```
  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    1         0    0    0    0    1
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    1           100      0.05     0.011       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    1             0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    1             0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK   ***
<Name>   #                 <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND   1                     1.171      RCHRES   1      2
PERLND   1                     1.171      RCHRES   1      3
IMPLND   1                     4.627      RCHRES   1      5

******Routing******
PERLND   1                     1.171      COPY     1     12
IMPLND   1                     4.627      COPY     1     15
PERLND   1                     1.171      COPY     1     13
RCHRES   1                         1      RCHRES   2      8
RCHRES   2                         1      COPY   501     16
RCHRES   1                         1      COPY   501     17
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1
GENER    2 OUTPUT TIMSER      .0002778     RCHRES   1     EXTNL  OUTDGT 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<----------------><---> User T-series  Engl Metr LKFG             ***
                                        in  out                             ***
    1     Surface retentio-004    2    1    1    1   28    0    1
    2     Bioretention  1         1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
    2         1    0    0    0    0    0    0    0    0    0
```

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```
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
    2         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                    ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
           FG FG FG FG  possible  exit  *** possible  exit      possible  exit
            *  *  *  *    *  *  *  *  *      *  *  *  *  *        ***
    1        0  1  0  0    4  5  0  0  0       0  1  0  0  0       2  1  2  2  2
    2        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN      DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------><--------> ***
    1              1      0.01       0.0       0.0       0.0       0.0
    2              2      0.03       0.0       0.0       0.0       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                       ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
         *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1            0         4.0  5.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    2            0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
*** User-Defined Variable Quantity Lines
***                      addr
***                    <------>
*** kwd  varnam optyp  opn  vari  s1 s2 s3 tp multiply  lc ls ac as agfn ***
  <****> <----> <----> <-> <----><-><-><-><-><--------> <><-> <><-> <--> ***
  UVQUAN vol2   RCHRES   2 VOL             4
  UVQUAN v2m2   GLOBAL     WORKSP  1        3
  UVQUAN vpo2   GLOBAL     WORKSP  2        3
  UVQUAN v2d2   GENER    2 K       1        3
*** User-Defined Target Variable Names
***                  addr or                       addr or
***                 <------>                      <------>
*** kwd   varnam ct  vari  s1 s2 s3  frac oper     vari  s1 s2 s3  frac oper
  <****>  <----><-> <----><-><-><-> <---> <-->    <----><-><-><-> <---> <-->
  UVNAME  v2m2    1 WORKSP  1         1.0 QUAN
  UVNAME  vpo2    1 WORKSP  2         1.0 QUAN
  UVNAME  v2d2    1 K       1         1.0 QUAN
*** opt foplop dcdts  yr mo dy hr mn d t   vnam  s1 s2 s3 ac quantity  tc  ts rp
  <****><-><--><><-><--> <> <> <> <><><>  <----><-><-><-><-><--------> <> <-><->
  GENER   2                               v2m2           =  38089.37
*** Compute remaining available pore space
  GENER   2                               vpo2           =  v2m2
  GENER   2                               vpo2          -=  vol2
*** Check to see if VPORA goes negative; if so set VPORA = 0.0
IF (vpo2 < 0.0) THEN
  GENER   2                               vpo2           =  0.0
END IF
*** Infiltration volume
  GENER   2                               v2d2           =  vpo2
END SPEC-ACTIONS
FTABLES
  FTABLE      2
   71    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
```

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0.000000	0.128558	0.000000	0.000000
0.118132	0.128558	0.004556	0.000000
0.236264	0.128558	0.009112	0.000000
0.354396	0.128558	0.013668	0.000000
0.472527	0.128558	0.018224	0.004103
0.590659	0.128558	0.022780	0.010452
0.708791	0.128558	0.027336	0.019440
0.826923	0.128558	0.031892	0.020585
0.945055	0.128558	0.036448	0.021158
1.063187	0.128558	0.041004	0.022450
1.181319	0.128558	0.045561	0.024863
1.299451	0.128558	0.050117	0.026088
1.417582	0.128558	0.054673	0.026701
1.535714	0.128558	0.059229	0.027816
1.653846	0.128558	0.063785	0.028374
1.771978	0.128558	0.078136	0.029418
1.890110	0.128558	0.092488	0.031355
2.008242	0.128558	0.106839	0.032333
2.126374	0.128558	0.121191	0.032822
2.244505	0.128558	0.135542	0.033734
2.362637	0.128558	0.149894	0.035447
2.480769	0.128558	0.164246	0.036310
2.598901	0.128558	0.178597	0.037917
2.717033	0.128558	0.192949	0.038727
2.835165	0.128558	0.207300	0.040442
2.953297	0.128558	0.221652	0.042348
3.071429	0.128558	0.236003	0.043305
3.189560	0.128558	0.250355	0.044784
3.307692	0.128558	0.264707	0.046481
3.425824	0.128558	0.279058	0.048252
3.543956	0.128558	0.293410	0.050025
3.662088	0.128558	0.307761	0.051771
3.780220	0.128558	0.322113	0.053476
3.898352	0.128558	0.336464	0.055136
4.016484	0.128558	0.350816	0.056752
4.134615	0.128558	0.365167	0.058324
4.252747	0.128558	0.379519	0.059855
4.370879	0.128558	0.393871	0.061349
4.489011	0.128558	0.408222	0.062807
4.607143	0.128558	0.422574	0.064232
4.725275	0.128558	0.436925	0.065625
4.843407	0.128558	0.451277	0.066990
4.961538	0.128558	0.465628	0.068327
5.079670	0.128558	0.479980	0.069638
5.197802	0.128558	0.494331	0.070925
5.315934	0.128558	0.508683	0.072189
5.434066	0.128558	0.523035	0.073431
5.552198	0.128558	0.537386	0.074653
5.670330	0.128558	0.551738	0.075855
5.788462	0.128558	0.566089	0.077038
5.906593	0.128558	0.580441	0.078203
6.024725	0.128558	0.594792	0.079351
6.142857	0.128558	0.609144	0.080482
6.260989	0.128558	0.623495	0.081598
6.379121	0.128558	0.637847	0.082699
6.497253	0.128558	0.652199	0.083785
6.615385	0.128558	0.666550	0.084858
6.733516	0.128558	0.680902	0.085917
6.851648	0.128558	0.695253	0.086963
6.969780	0.128558	0.709605	0.087998
7.087912	0.128558	0.723956	0.089020
7.206044	0.128558	0.738308	0.090030
7.324176	0.128558	0.752659	0.091030
7.442308	0.128558	0.767011	0.092019
7.560440	0.128558	0.781363	0.092998
7.678571	0.128558	0.795714	0.093967
7.796703	0.128558	0.810066	0.094927
7.914835	0.128558	0.824417	0.095878
8.032967	0.128558	0.838769	0.096822
8.151099	0.128558	0.853120	0.097760

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```
  8.250000  0.128558  0.874412  0.112240
  END FTABLE  2
  FTABLE      1
   23    5
     Depth      Area    Volume  Outflow1  Outflow2  Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)     (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.128558  0.000000  0.000000  0.000000
  0.118132  0.131499  0.015361  0.000000  0.648149
  0.236264  0.134462  0.031070  0.000000  0.858263
  0.354396  0.137449  0.047130  0.000000  0.909307
  0.472527  0.140458  0.063545  0.000000  0.960352
  0.590659  0.143491  0.080317  0.000000  1.011397
  0.708791  0.146547  0.097448  0.000000  1.062441
  0.826923  0.149626  0.114942  0.000000  1.113486
  0.945055  0.152728  0.132801  0.000000  1.164531
  1.063187  0.155853  0.151027  0.000000  1.215576
  1.181319  0.159001  0.169625  0.000000  1.266620
  1.299451  0.162172  0.188595  0.000000  1.317665
  1.417582  0.165366  0.207941  0.000000  1.368710
  1.535714  0.168583  0.227666  0.214926  1.419754
  1.653846  0.171823  0.247773  1.918337  1.470799
  1.771978  0.175087  0.268263  4.494063  1.521844
  1.890110  0.178373  0.289141  7.659244  1.572888
  2.008242  0.181683  0.310408  11.22319  1.623933
  2.126374  0.185015  0.332067  15.00181  1.674978
  2.244505  0.188371  0.354121  18.80545  1.726022
  2.362637  0.191749  0.376573  22.44511  1.777067
  2.480769  0.195151  0.399426  25.74720  1.828112
  2.500000  0.195707  0.403184  28.57376  1.836421
  END FTABLE  1
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL       1             PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL       1             IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL       1             PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL       1             IMPLND   1 999 EXTNL  PETINP
WDM      2 PREC     ENGL       1             RCHRES   1     EXTNL  PREC
WDM      1 EVAP     ENGL       0.5           RCHRES   1     EXTNL  POTEV
WDM      1 EVAP     ENGL       0.7           RCHRES   2     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   2 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL      REPL
RCHRES   2 HYDR   STAGE  1 1        1      WDM   1001 STAG     ENGL      REPL
RCHRES   1 HYDR   STAGE  1 1        1      WDM   1002 STAG     ENGL      REPL
RCHRES   1 HYDR   O      1 1        1      WDM   1003 FLOW     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1     12.1      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>             <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5
```

DRAFT

```
  MASS-LINK        8
RCHRES     OFLOW  OVOL   2                RCHRES         INFLOW IVOL
  END MASS-LINK    8

  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13

  MASS-LINK       15
IMPLND     IWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   15

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16

  MASS-LINK       17
RCHRES     OFLOW  OVOL   1                 COPY           INPUT  MEAN
  END MASS-LINK   17


END MASS-LINK

END RUN
```

DRAFT

Predeveloped HSPF Message File

DRAFT

DRAFT

Disclaimer

Legal Notice

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DRAFT

Drawdown Calculation for BMP	A	
Project Name	Piraeus	
Project No	3733	
Drawdown Time:	20.1	**hr**
Surface Area	**5600**	**sq ft**
Underdrain Orifice Diameter: in	**1.2**	in
C:	**0.6**	
Ponding (to invert of lowest discharge opening in outlet structure):	**1.5**	ft
Amended Soil Depth:	**1.5**	ft
Permavoid Depth:	**6.5**	ft
Orifice Q =	**0.116**	cfs
Effective Depth	95.7	in
Flow Rate controlled by orifice	0.896	in/hr
Flow Rate controlled by soil media	5.000	in/hr

ATTACHMENT 3 - STRUCTURAL BMP MAINTENANCE INFORMATION

This is the cover sheet for Attachment 3.

Indicate which items are included behind this cover sheet:

Attachment	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Thresholds and Actions (Required)	☑ Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Maintenance Agreement (when applicable)	□ Included ☑ Not Applicable

Attachment 3a – Structural BMP Maintenance Thresholds and Actions

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

□ **Preliminary Design / Planning / CEQA level submittal:**

Attachment 3a must identify:

□ Typical maintenance indicators and actions for proposed structural BMP(s) based on Section 7.7 of the BMP Design Manual

☑ Attachment 3b is not required for preliminary design / planning / CEQA level submittal.

□ **Final Design level submittal:**

Attachment 3a must identify:

□ Specific maintenance indicators and actions for proposed structural BMP(s). This shall be based on Section 7.7 of the BMP Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)

□ How to access the structural BMP(s) to inspect and perform maintenance

□ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)

□ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable

□ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)

□ Recommended equipment to perform maintenance

□ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For private entity operation and maintenance, Attachment 3b shall include a draft maintenance agreement in the local jurisdiction's standard format (PDP applicant to contact the City Engineer to obtain the current maintenance agreement forms).

APPENDIX 3a
BMP MAINTENANCE THRESHOLDS

BMP DESCRIPTION

BIOFILTRATION BASIN	STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT APPROVAL NO: _____ O&M RESPONSIBLE PARTY DESIGNEE: HOA

POST-CONSTRUCTION PERMANENT BMP OPERATION & MAINTENANCE PROCEDURE DETAILS

MAINTENANCE INDICATORS	MAINTENANCE ACTION
ACCUMULATION OF SEDIMENT, LITTER, OR DEBRIS	REMOVE AND PROPERLY DISPOSE OF ACCUMULATED MATERIALS, WITHOUT DAMAGE TO THE VEGETATION
POOR VEGETATION ESTABLISHMENT	RE-SEED, RE-PLANT, OR RE-ESTABLISH VEGETATION PER ORIGINAL PLANS
OVERGROWN VEGETATION	MOW OR TRIM AS APPROPRIATE, BUT NOT LESS THAT THE DESIGN HEIGHT OF THE VEGETATION PER ORIGINAL PLANS.
EROSION DUE TO CONCENTRATED IRRIGATION FLOW	REPAIR/RE-SEED/RE-PLANT ERODED AREAS AND ADJUST THE IRRIGATION SYSTEM
EROSION DUE TO CONCENTRATED STORM WATER RUNOFF FLOW	REPAIR/RE-SEED/RE-PLANT ERODED AREAS AND MAKE APPROPRIATE CORRECTIVE MEASURES SUCH AS ADDING STONE AT FLOW ENTRY POINTS OR MINOR RE-GRADING TO RESTORE PROPER DRAINAGE ACCORDING TO THE ORIGINAL PLAN.
STANDING WATER IN BIOFILTRATION AREAS	MAKE APPROPRIATE CORRECTIVE MEASURES SUCH AS ADJUSTING IRRIGATION SYSTEM, REMOVING OBSTRUCTION OF DEBRIS OR INVASIVE VEGETATION, OR CLEANING UNDERDRAINS
OBSTRUCTED INLET OR OUTLET STRUCTURE	CLEAR OBSTRUCTIONS
DAMAGE TO INLET OR OUTLET STRUCTURE	REPAIR OR REPLACE AS APPLICABLE

MAINTENANCE EQUIPMENT AND ACCESS
USE LANDSCAPE EQUIPMENT FOR MAINTENANCE; ACCESS BMP FROM PRIVATE ROAD AT NORTHWEST CORNER OF SITE

INSPECTION FACILITATION
INSTALL 3' X 3' OUTLET RISER STRUCTURE TO PROVIDE OBSERVATION ACCESS FOR INSPECTION OF MAINTENANCE THRESHOLDS; MARKING TO BE PROVIDED ON BMP COMPONENTS TO DETERMINE HOW FULL BMP IS.

PASCO LARET SUITER & ASSOCIATES
CIVIL ENGINEERING + LAND PLANNING + LAND SURVEYING
535 North Highway 101, Ste A, Solana Beach, CA 92075
ph 858.259.8212 | fx 858.259.4812 | plsaengineering.com

ATTACHMENT 4 - COPY OF PLAN SHEETS SHOWING PERMANENT STORM WATER BMPS

This is the cover sheet for Attachment 4.

Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

☑ Structural BMP(s) with ID numbers matching Form I-6 Summary of PDP Structural BMPs
☑ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
☑ Details and specifications for construction of structural BMP(s)
☑ Signage indicating the location and boundary of structural BMP(s) as required by the [City Engineer]
☑ How to access the structural BMP(s) to inspect and perform maintenance
☑ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)

□ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable

□ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)

□ Recommended equipment to perform maintenance

□ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

□ Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
☑ All BMPs must be fully dimensioned on the plans

□ When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number shall be provided. Photocopies of general brochures are not acceptable.

MULTI-005158-2022/SUB-005159-2022/ DR-005160-2022/CDP-005161-2022
PIRAEUS POINT
PIRAEUS STREET, ENCINITAS, CA

LEGEND

PROPERTY BOUNDARY	
RIGHT-OF-WAY	
ADJACENT LINE	
LOT AREA	5,000 SF
CENTERLINE OF ROAD	
PROPOSED SETBACKS	
EXISTING UTILITY EASEMENT	

EXISTING EASEMENTS

1. AN EASEMENT FOR POLE LINES, UNDERGROUND CONDUITS, INGRESS AND EGRESS RIGHTS TO SAN DIEGO GAS & ELECTRIC COMPANY RECORDED OCTOBER 25, 1949 IN BOOK 3363, PAGE 154 OF OFFICIAL RECORDS.

2. AN EASEMENT FOR EITHER OR BOTH POLE LINES, UNDERGROUND CONDUITS, WITH THE RIGHT OF INGRESS AND EGRESS AND INCIDENTAL PURPOSES TO TO SAN DIEGO GAS & ELECTRIC COMPANY, RECORDED JULY 06, 1926 AS BOOK 1220, PAGE 410 OF OFFICIAL RECORDS. (2 FEET IN WIDTH)

LEGAL DESCRIPTION

PARCEL A:

THAT PORTION OF LOT 2 IN SECTION 4, TOWNSHIP 13 SOUTH, RANGE 4 WEST, SAN BERNARDINO BASEAND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OFCALIFORNIA, ACCORDING TO OFFICIAL PLATTHEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION 4; THENCE WESTERLY ALONG THE NORTH LINE THEREOF TO THE EASTERLY LINE OF THE LAND DESCRIBED IN DEED TO THE STATE OF CALIFORNIA, RECORDED DECEMBER 4, 1961 AS INSTRUMENT NO.209054 OF OFFICIAL RECORDS; THENCE ALONG THE BOUNDARY LINE OF SAID LAND, SOUTH 00°30'57" EAST 51.62 FEET; THENCE SOUTH 15°22'06" EAST 500.23 FEET; THENCE SOUTH 00°08'11" EAST 205.00 FEET; THENCE SOUTH 18°13'27" EAST 125.40 FEET; THENCE NORTH 82°17'49" EAST 241.30 FEET; THENCE SOUTH 20°46'18" EAST 26.42 FEET TO THE NORTHERLY LINE OF ORPHEUS AVENUE AS SHOWN ONCREST ACRES, ACCORDING TO MAP NO. 2019, FILED IN THE OFFICE OF COUNTY RECORDER OF SAN DIEGO COUNTY; THENCE EASTERLY ALONG SAID LINE TO THE EAST LINE OF SAID SECTION; THENCE NORTHERLY ALONG SAID EAST LINE TO THE POINT OF BEGINNING.

PARCEL B:

THAT PORTION OF THE SOUTHEAST QUARTER OF SECTION 33, TOWNSHIP 12 SOUTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, BEING A PORTION OF ACRE LOT 41 AND LOTS 1 TO 20, INCLUSIVE, IN BLOCK 22 OF EATONVILLE, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE MAP THEREOF NO. 513, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, MARCH 20, 1888. TOGETHER WITH THAT PORTION OF THE EAST HALF OF WILLOW STREET, CLOSED TO PUBLIC USE, AS AFORESAID LYING WEST OF AND ADJOINING LOTS 1 TO 20, INCLUSIVE, IN SAID BLOCK 22. ALSO THAT PORTION OF THE NORTH HALF OF CANON STREET, CLOSED TO PUBLIC USE AS AFORESAID, LYING SOUTH OF THE WESTERLY PROLONGATION OF THE SOUTH LINE OF SAID LOT 20, AND EAST OF THE CENTER LINE OF WILLOW STREET, DESCRIBED AS FOLLOWS: BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION 33, SAID CORNER BEING MARKED BY A FOUND CONCRETE MONUMENT BEING AT COORDINATES X EQUALS 1,679,914.49 FEET, AND Y EQUALS 334,015.33 FEET; THENCE ALONG THE SOUTH LINE OF SAID SECTION 33, NORTH 89°37'43" WEST 64.35 FEET TO THE TRUE POINT OF BEGINNING; THENCE SOUTH 89°37'43" EAST 64.35 FEET TO SAID SOUTHEAST CORNER OF SECTION 33; THENCE NORTHERLY ALONG THE EAST LINE OF SAID SECTION TO THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 33, TOWNSHIP 12 SOUTH, RANGE 4 WEST, SAN BERNARDINO BASE AND MERIDIAN; THENCE ALONG THE EAST LINE OF SAID SECTION 33, NORTH 00°42'07" WEST 201.02 FEET TO A POINT IN A NONTANGENT CURVE CONCAVE EASTERLY HAVING A RADIUS OF 479.98 FEET AT WHICH A RADIAL LINE OF SAID CURVE BEARS NORTH 67°49'42" WEST, BEING A POINT ON THE SOUTHWESTERLY LINE OF LAND DESCRIBED IN PARCEL 2 OF DEED TO THE STATE OF CALIFORNIA, RECORDED DECEMBER 4, 1961 AS FILE NO. 209054 OF OFFICIAL RECORDS, SAID CURVE BEING THE EASTERLY LINE OF THAT PARCEL OF LAND DESCRIBED IN DEED TO THE COUNTY OF SAN DIEGO RECORDED MAY 28, 1918 IN BOOK 751, PAGE 39 OF DEEDS, RECORDS OF SAID COUNTY LAST SAID PARCEL IS SHOWN ON MAP OF ROAD SURVEY NO. 346 ON FILE IN THE OFFICE OF SAID COUNTY; THENCE SOUTHERLY AND SOUTHWESTERLY ALONG SAID CURVE AND SAID EASTERLY LINE A DISTANCE OF 131.47 FEET THROUGH AN ANGLE OF 15°41'36"; AND SOUTH 6°28'42" WEST 91.60 FEET TO A POINT IN A TANGENT CURVE CONCAVE TO THE NORTHWEST HAVING A RADIUS OF 419.98 FEET; THENCE SOUTHWESTERLY ALONG SAID CURVE A DISTANCE OF 224.92 FEET THROUGH AN ANGLE OF 30° 41' 05" TO A POINT IN A NON-TANGENT LINE; THENCE LEAVING THE EASTERLY LINE OF SAID COUNTY PARCEL SOUTH 31°07'57" WEST 80.15 FEET TO A POINT BEING A COORDINATES Y EQUALS 335,076.49 FEET AND X EQUALS 1,679,728.08 FEET IN A NON-TANGENT CURVE CONCAVE EASTERLY HAVING A RADIUS OF 950 FEET A RADIAL LINE OF SAID CURVE THROUGH SAID POINT BEING NORTH 70°04'00" WEST; THENCE SOUTHERLY ALONG SAID CURVE TO THE CENTER LINE OF SAID WILLOW STREET, BEING THE NORTHEASTERLY CORNER OF PARCEL 1 OF SAID DEED TO THE STATE OF CALIFORNIA; THENCE ALONG THE EASTERLY LINE OF SAID PARCEL 1 SOUTHERLY ALONG SAID CURVE TO A POINT IN A NON-TANGENT LINE, A RADIAL LINE OF SAID CURVE THROUGH SAID POINT BEARING SOUTH 77°17'34" WEST; THENCE ALONG SAID LINE SOUTH 13°39'00" EAST 400.00 FEET; THENCE SOUTH 58°39'00" EAST 70.71 FEET; THENCE SOUTH 00°30'57" EAST 102.41 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPTING THEREFROM, THAT PORTION OF SAID LAND AS DESCRIBED IN A DOCUMENT ENTITLED "AMENDED FINAL ORDER OF CONDEMNATION" RECORDED AUGUST 30, 1988 AS INSTRUMENT NO. 88-434542 OF OFFICIAL RECORDS.

ALSO, EXCEPTING THEREFROM ONE-HALF OF ALL MINERAL RIGHTS AS RESERVED IN THE DEED BY D S LINEBARGER, ET AL, TO ELIZABETH S. HILL, RECORDED FEBRUARY 8, 1919.

SOLAR STATEMENT

THIS IS A SOLAR SUBDIVISION AS REQUIRED BY THE SUBDIVISION ORDINANCE. ALL PARCELS TO HAVE AT LEAST 100 SQUARE FEET OF UNOBSTRUCTED ACCESS TO SUNLIGHT ON THE BUILDABLE PORTION OF THE PARCEL.

SCOPE OF WORK

THE PROJECT SEEKS APPROVAL OF A TENTATIVE CONDOMINIUM MAP, DESIGN REVIEW PERMIT AND COASTAL DEVELOPMENT PERMIT FOR THE CONSTRUCTION OF 52 ONE-BEDROOM UNITS, 37 TWO-BEDROOM UNITS AND 60 THREE-BEDROOM UNIT FOR A TOTAL OF 149 UNITS. SITE IMPROVEMENTS WILL CONSIST OF GRADING, INSTALLATION OF PUBLIC AND PRIVATE UTILITIES, AND LANDSCAPING AND FLATWORK ASSOCIATED WITH THIS TYPE OF USE.

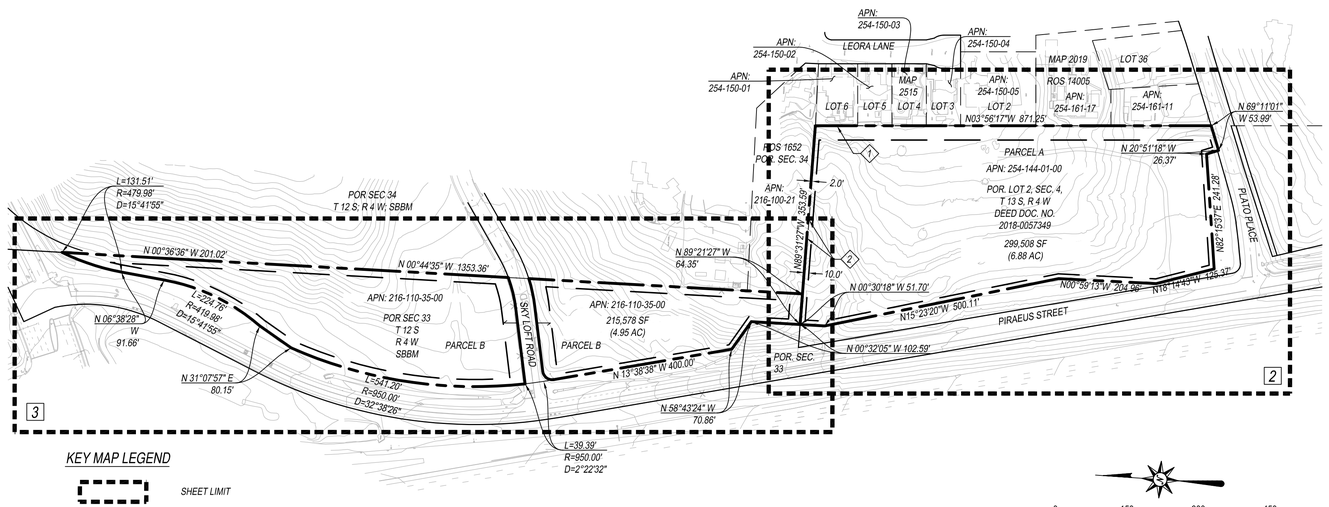
GRADING/EARTHWORK

TOTAL AREA DISTURBED: ± 272,600 (6.258 AC)
CUT VOLUME: ± 83,000 C.Y.
FILL VOLUME: ± 25,400 C.Y.

EXPORT VOLUME: ± 57,600 C.Y.

MAX CUT: ± 33
MAX FILL: ± 24

EXISTING IMPERVIOUS AREA: 0 SF
PROPOSED IMPERVIOUS AREA: 202,011 SF
NET IMPERVIOUS AREA: 70,579 SF

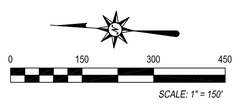


KEY MAP LEGEND

- SHEET LIMIT
- # SHEET NUMBER
- PROPERTY BOUNDARY
- RIGHT-OF-WAY
- ADJACENT PROPERTY LOT LINE
- SETBACK

KEY MAP

SCALE 1" = 150'



CONDOMINIUM NOTE

PARCEL A IS A CONDOMINIUM PARCEL AS DEFINED IN SECTION 1351 AND/OR 4125 OF THE CIVIL CODE OF THE STATE OF CALIFORNIA, AND THIS MAP IS FILED PURSUANT TO THE SUBDIVISION MAP ACT. THERE WILL BE A MAXIMUM OF 149 CONDOMINIUM UNITS ON PARCEL A.

BENCHMARK

ELEVATIONS SHOWN HEREON ARE BASED ON 2.5" BRASS DISC IN THE SOUTHEAST QUADRANT OF LEUCADIA BLVD. AND ORPHEUS AVE. AS SHOWN PER ROS 18416, AS PT. NO. 1024. ELEV: 178.543. (MSL)

CALIFORNIA LAMBERT COORDINATES

CALIF COORD. INDEX

DENSITY CALCULATIONS

MINIMUM REQUIRED DENSITY

NET ACREAGE CALCULATIONS

TOTAL GROSS ACREAGE = 6.876 AC (299,508 SF)

TRANSMISSION LINE EASEMENT: 0.019 AC (832 SF)

NET LOT AREA: 6.857 AC (298,676 SF)

NATURAL SLOPE ADJUSTMENT FOR MINIMUM DENSITY (R-30 ZONING OVERLAY)

SLOPE%	ACREAGE	DENSITY	DWELLING UNITS
0-25	4.625	25	115.6
25-40	1.463	25/2	18.3
40+	0.769	0	0
			133.9 DU'S

MINIMUM REQUIRED DENSITY = 134 DWELLING UNITS

PROPOSED DENSITY = 149 DWELLING UNTIS

NET LOT AREA CALCULATIONS

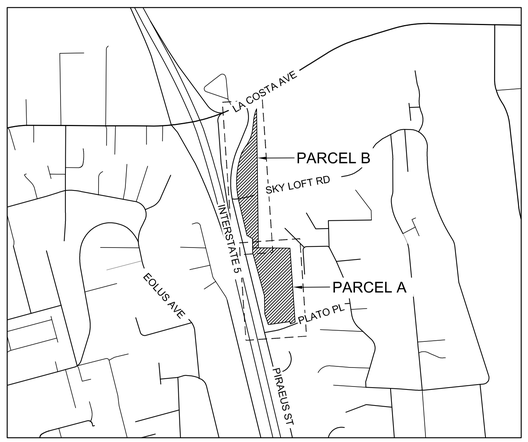
TOTAL GROSS ACREAGE = 6.876 AC (299,508 SF)

EXISTING/PROPOSED RIGHT-OF-WAY = 0.000 AC (0 SF)

NET LOT AREA: 6.876 AC (299,508 SF)

ZONE REQUIREMENTS	R-30	RR-1	RR-2	PARCEL A (R-30)	PARCEL B (RR1/RR2)
NET LOT AREA (SF)	30,000	43,560	21,500	299,508	215,578
LOT WIDTH	100	110	100	341	154
LOT DEPTH	150	150	150	842	981
FRONT YARD SETBACK	10	30	30	32	-
STREET SIDE YARD SETBACK	10	15	10	12	-
SIDE YARD SETBACK	10	15	15	30	-
30' SETBACK PER 30.16.010 (E)(7)(a)	30	-	-	30	-
REAR YARD SETBACK	10	25	25	151	-
BUILDING FOOTPRINT	-	-	-	96,144	-
LOT COVERAGE	65%	35%	35%	32%	-

= REQUESTED CONCESSION OR WAIVER UNDER DENSITY BONUS



VICINITY MAP

NOT TO SCALE

OWNER'S CERTIFICATE

WE HEREBY CERTIFY THAT WE ARE THE RECORDED OWNERS OF THE PROPERTY SHOWN ON THE ATTACHED TENTATIVE MAP AND THAT SAID MAP SHOWS THE ENTIRE CONTIGUOUS OWNERSHIP. I UNDERSTAND THAT PROPERTY IS CONSIDERED CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, STREETS, UTILITY EASEMENTS, OR RAILROAD RIGHTS OF WAY.

OWNER:_____ DATE

PIRAEUS INVESTOR LLC
PIRAEUS STREET, ENCINITAS, CA 92024

SUBDIVIDER'S CERTIFICATE

THE SUBDIVIDER AGREES TO DEFEND, INDEMNIFY, AND HOLD HARMLESS THE CITY OF ENCIIINITAS AND ITS AGENTS, OFFICERS, AND EMPLOYEES FROM ANY CLAIM ACTION, OR PROCEEDING AGAINST THE CITY OF ENCINITAS OR ITS AGENTS, OFFICERS OR EMPLOYEES, TO ATTACK, SET ASIDE, VOID, OR ANNUL AN APPROVAL FROM THE CITY OF ENCINITAS CONCERNING THE SUBDIVISION WHEN SUCH ACTION IS BROUGHT WITHIN THE TIME PERIOD SPECIFIED IN GOV. CODE SECTION 66499.37. THIS CERTIFICATION IS CONDITIONED UPON THE CITY OF ENCINITAS PROVIDING PROMPT NOTICE TO THE SUBDIVIDER AS PROVIDED FOR BY THE ACT (GOV. CODE 66474.9)

SUBDIVIDER:_____ DATE

PIRAEUS INVESTOR LLC
16465 VIA ESPRILLO, SUITE 150, SAN DIEGO, CA 92127

SITE ADDRESS

PIRAEUS STREET ENCINITAS, CA 92024

TOPOGRAPHY

PREPARED BY: PASCO LARET SUITER & ASSOCIATES
DATED: 08/07/2019

ZONING INFORMATION

TOTAL PARCELS:	2
GENERAL PLAN DESIGNATION:	ENCINITAS GENERAL PLAN, R-30 OVERLAY ZONE (25-30 DU/AC)
ZONING REGULATIONS:	ENCINITAS GENERAL PLAN, R-30 OVERLAY ZONE, RR-1 ZONE, RR-2 ZONE
HEIGHT	PER CODE 30.16.010 B6
LOT COVERAGE:	65%
MINIMUM LOT SIZE:	30,000 SF
PRESENT USE:	UNDEVELOPED
PROPOSED USE:	149 FOR SALE CONDOMINIUM UNITS

MINIMUM NET LOT SIZE:	215,578 SF	4.95 AC
MAXIMUM NET LOT SIZE:	299,508 SF	6.88 AC
AVERAGE NET LOT SIZE:	257,543 SF	5.91 AC

APN (PARCEL A): 254-144-01-00
APN (PARCEL B): 216-110-35-00

SETBACKS

	R-30	RR-1	RR-2	MIN PROPOSED
FRONT YARD (FYSB):	10'	30'	30'	32'
REAR YARD (RYSB):	10'	25'	25'	151'
INTERIOR SIDE YARD (SYSB):	10'	15'	15'	30'
STREET SIDE YARD (SSYSB):	10'	15'	10'	12'

ACCESS

PIRAEUS STEET

UTILITIES

WATER	SAN DIEGUITO WATER DISTRICT
FIRE	ENCINITAS FIRE PROTECTION DISTRICT
SEWER	LEUCADIA WASTE WATER DISTRICT
ELEMENTARY SCHOOL	ENCINITAS UNION SCHOOL DISTRICT
HIGH SCHOOL	SAN DIEGUITO UNION SCHOOL DISTRICT

PREPARED BY

PASCO LARET SUITER & ASSOCIATES, INC.
535 N. HIGHWAY 101, SUITE A
SOLANA BEACH, CA 92075
(858)259-8212

OWNER

PIRAEUS INVESTOR LLC
158 N MELROSE DR.
VISTA, CA 92083
760.500.7039
EMAIL: HARRINGTONCANNON@ICLOUD.COM

APPLICANT

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16465 VIA ESPRILLO, SUITE 150
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SAN DIEGO, CA 92106
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ENGINEER OF WORK

TYLER LAWSON, RCE 80356 — DATE 12-31-2022

REGISTERED PROFESSIONAL ENGINEER — TYLER G LAWSON — No. 80356 Exp. 12/31/22 — CIVIL — STATE OF CALIFORNIA

SHEET INDEX

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PREPARED BY:

PASCO LARET SUITER & ASSOCIATES
San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com



PLAN VIEW: TENTATIVE MAP - PARCEL A

SCALE: 1" = 40'

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ABBREVIATIONS

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EASEMENTS OF RECORD

1. AN EASEMENT FOR POLE LINES, UNDERGROUND CONDUITS, INGRESS AND EGRESS RIGHTS TO SAN DIEGO GAS & ELECTRIC COMPANY RECORDED OCTOBER 25, 1949 IN BOOK 3363, PAGE 154 OF OFFICIAL RECORDS.
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PROPOSED EASEMENTS

1. PROPOSED EMERGENCY VEHICLE ACCESS EASEMENT
2. PROPOSED PUBLIC SEWER EASEMENT TO THE LEUCADIA WASTE WATER DISTRICT
3. PROPOSED PUBLIC EASEMENT OVER PRIVATE STREETS TO THE CITY OF ENCINITAS
4. PROPOSED OPEN SPACE EASEMENT TO THE CITY OF ENCINITAS

FOUND MONUMENTS

1. FOUND 1" IRON PIPE AND DISK "DIV HWYS" PER R4
2. FOUND CONCRETE MON PER ROS 528
3. FOUND 3/4" IRON PIPE OPEN BROKEN PER R1 DOWN 0.4'
4. FOUND 3/4" IRON PIPE AND DISK "RCE 26175" PER R2

REFERENCES

R4 - MS 775

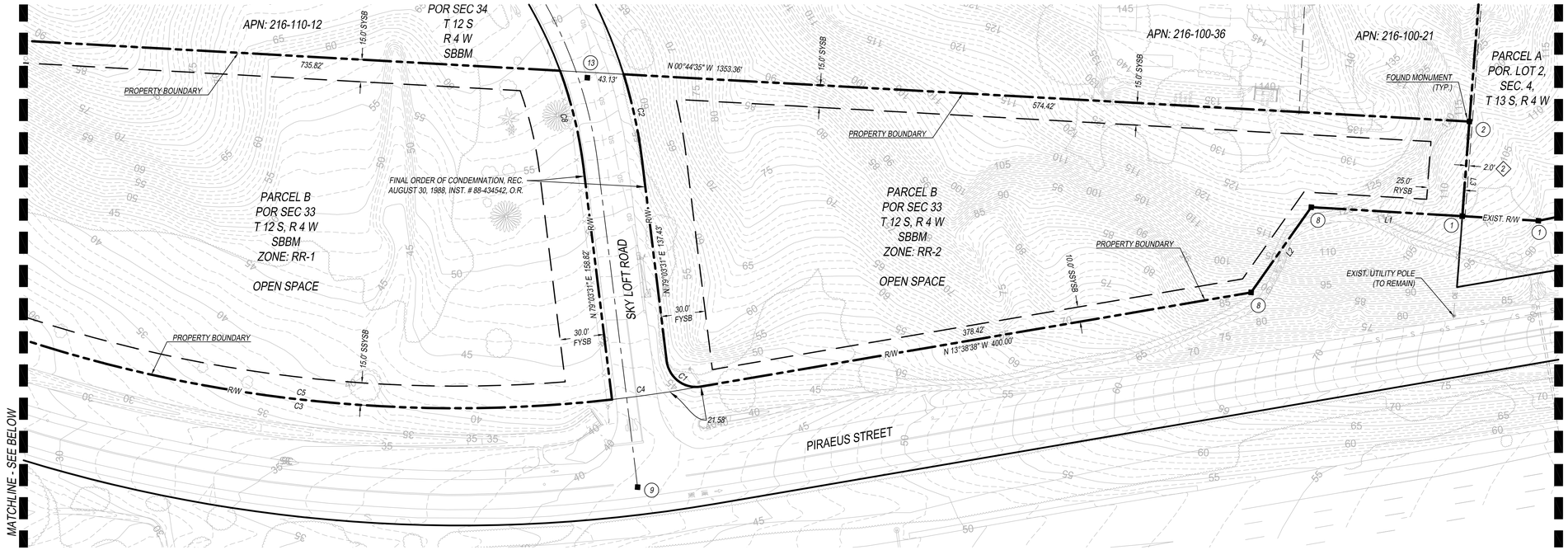
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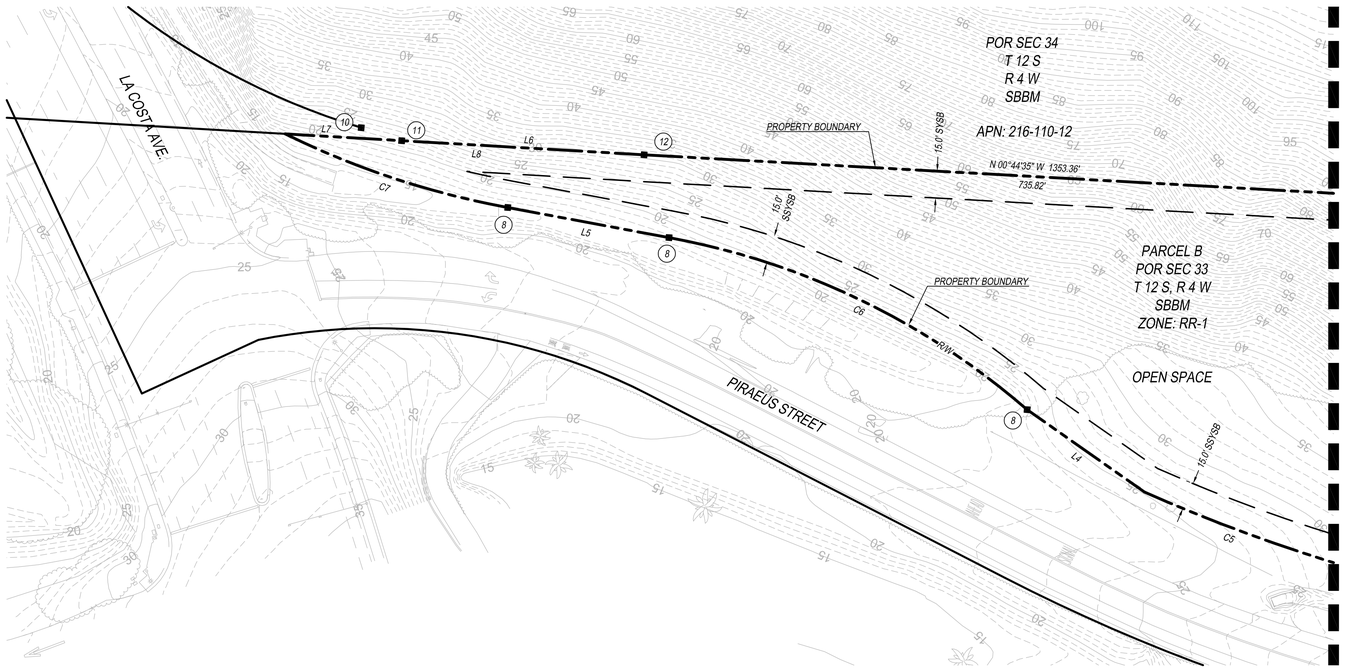
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SCALE: 1" = 40'

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(2) FOUND CONCRETE MON PER ROS 528
(8) FOUND 1" IRON PIPE W/DISK "DIV HWYS" PER MS 637
(9) FOUND M-10 "LS 5134" NO RECORD
(10) FOUND 2" IRON PIPE W/DISK "RCE 29577"
(11) FOUND 1" IRON PIPE W/DISK "DIV HWYS" PER MS 637, MAP 12012
(12) FOUND 1.5" IRON PIPE W/CAP "NW COR, SW1/4, SW1/4, SEC.34 PER ROS 1652, ROS 10467
(13) FOUND M-10 "LS 5134" AT P.I. PER MAP 12012

LINE TABLE

L1 - N 00°32'05" W 102.59' (N 00°30'57" W 102.41' R2)
L2 - N 58°43'24" W 70.76' (N 58°39'00" W 70.71' R2)
L3 - N 89°38'14" W 64.35' (64.35' MS 775)
L4 - N 31°07'57" E 80.15' (N 31°07'35" E 80.15' R2)
L5 - N 06°38'28" E 91.66' (N 06°28'42" E 91.60' R2)
L6 - N 00°36'36" W 201.02' (N 00°42'07" W 201.01' R2)
L7 - N 00°36'36" W 65.29' (N 00°42'07" W 65.19' R2)
L8 - N 00°36'36" W 135.73' (N 00°42'07" W 135.83' R2)

CURVE TABLE

C1 - L=32.36' R=20.00' D=92°42'09"
C2 - L=59.42' R=330.00' D=10°19'03"
C3 - L=541.20' R=950.00' D=32°38'26" (L=541.20' R=950.00' D=32°38'26" R2)
C4 - L=39.39' R=950.00' D=2°22'32"
C5 - L=501.81' R=950.00' D=30°15'54"
C6 - L=224.76' R=419.98' D=30°39'44" (L=224.92' R=419.98' D=30°41'05" R2)
C7 - L=131.51' R=479.98' D=15°41'55" (L=131.47' R=479.98' D=15°41'36"-R2)
C8 - L=67.34' R=290.00' D=13°18'19"

LEGEND

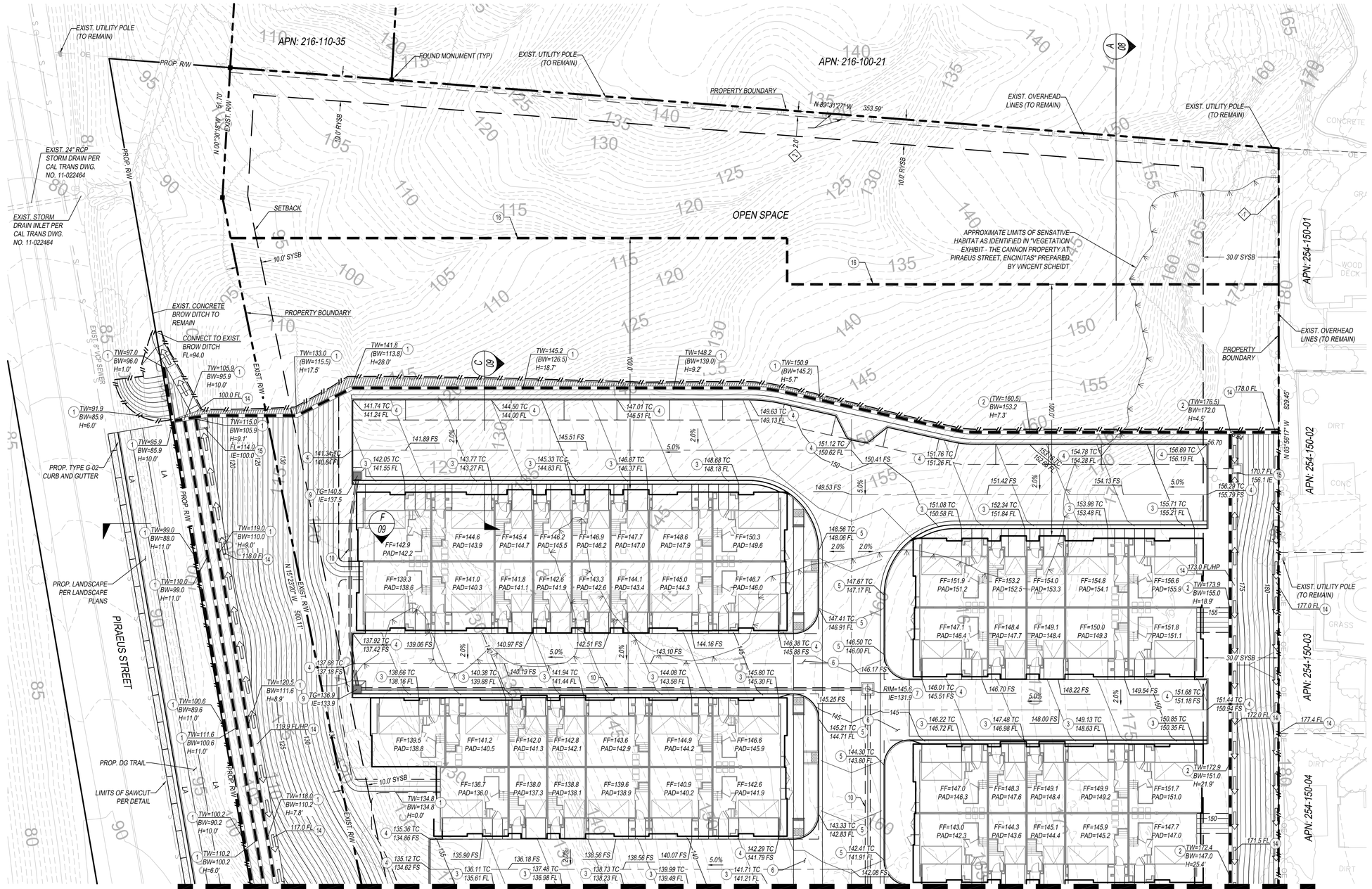
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0 40 80 120
SCALE: 1" = 40'

PLAN VIEW: TENTATIVE MAP - PARCEL B

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PRELIMINARY GRADING AND DRAINAGE PLAN

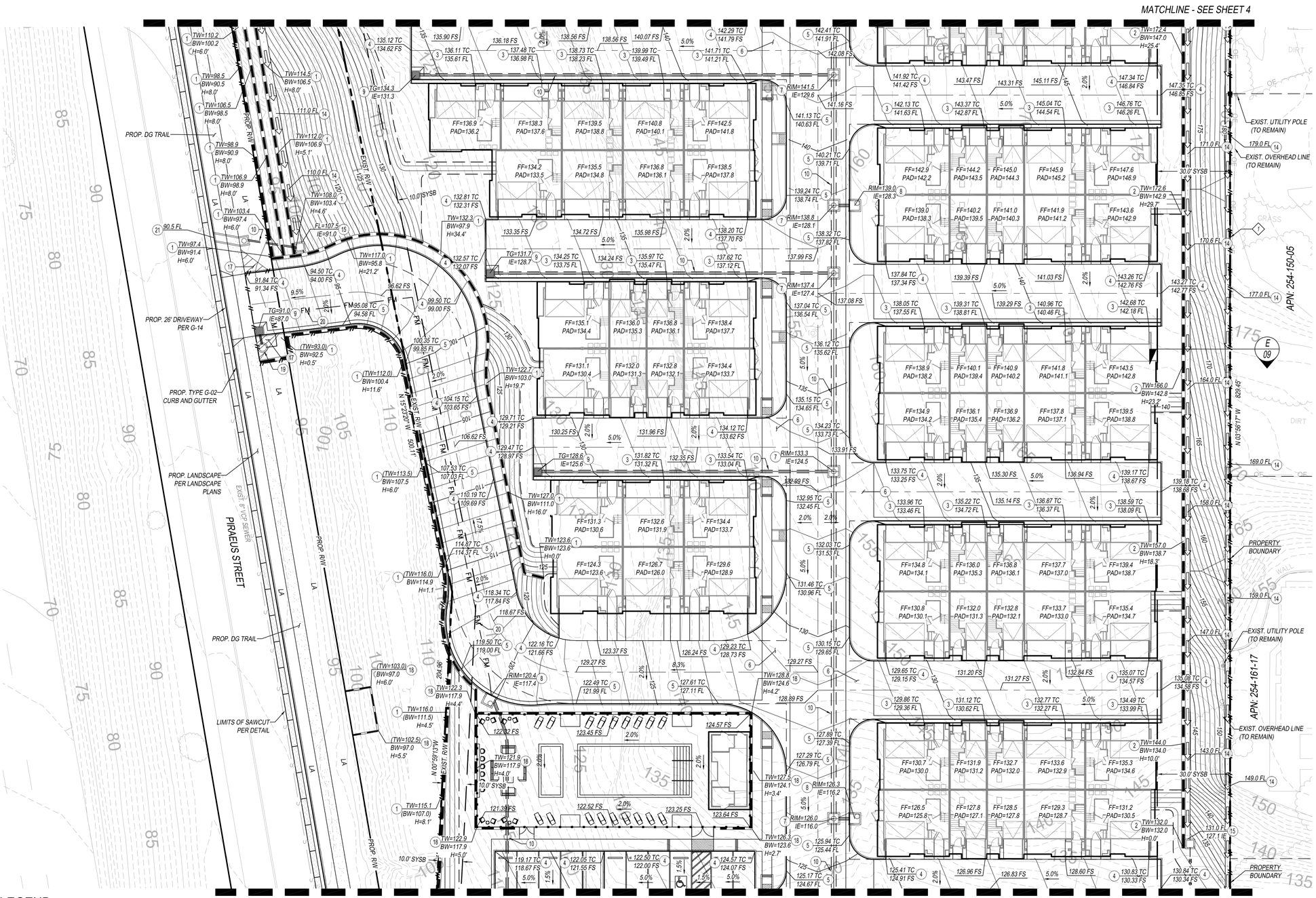
SCALE: 1" = 20'

MATCHLINE - SEE SHEET 5

0 20 40 60

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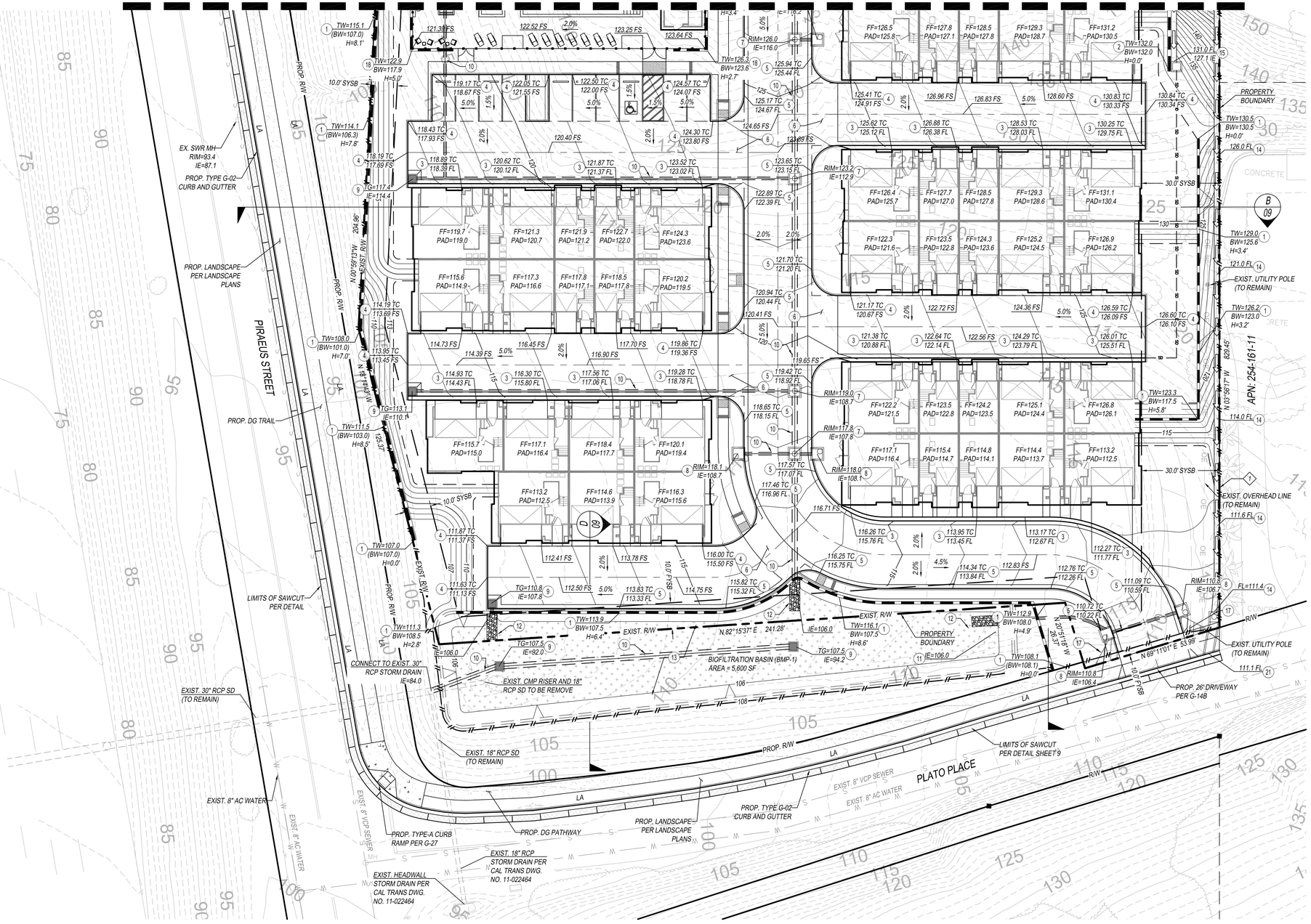
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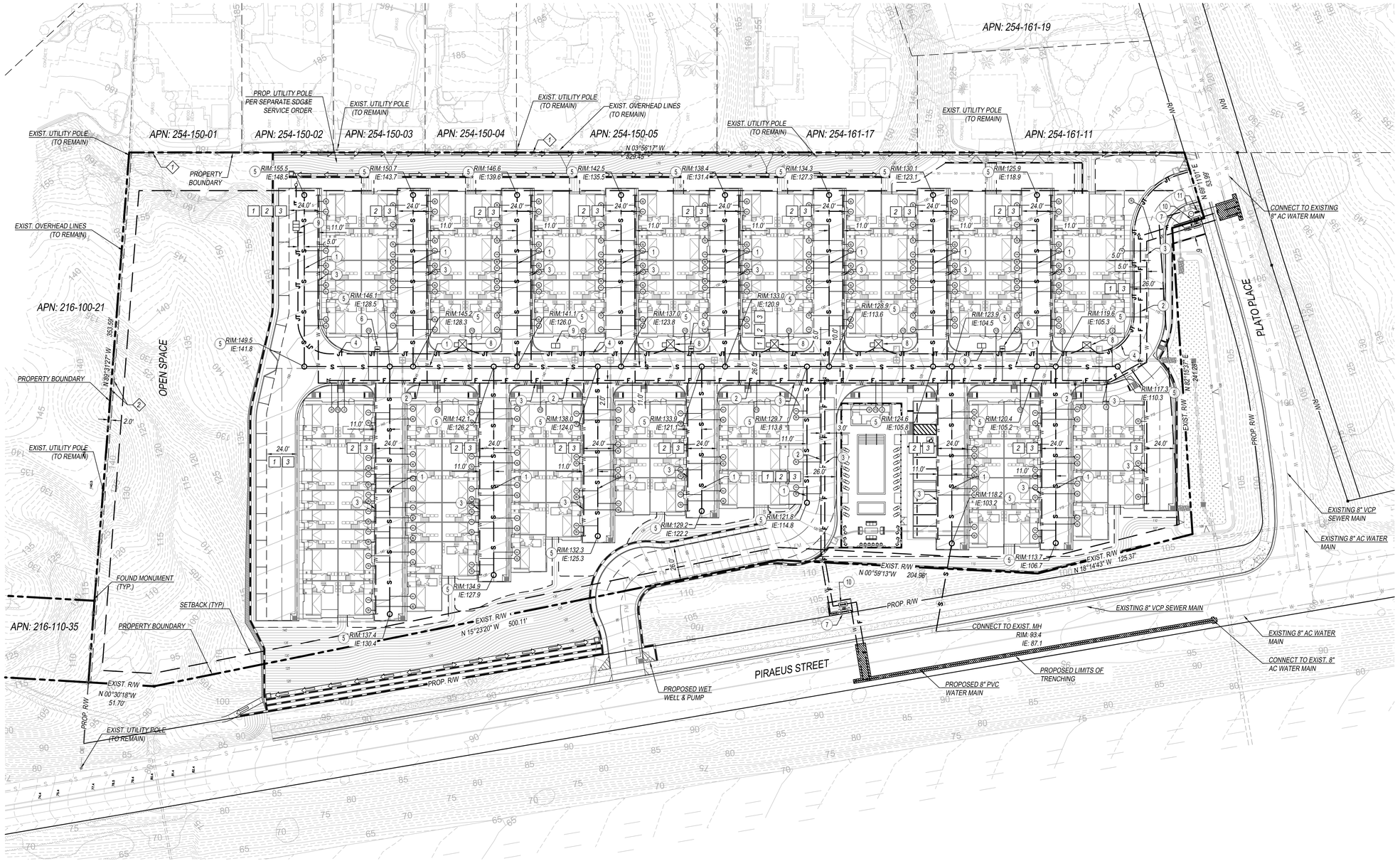
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- EXISTING STRIPING
- EXISTING CURB AND GUTTER
- OE — EXISTING OVERHEAD LINE
- EXISTING UTILITY POLE
- EXISTING STORM DRAIN
- EXISTING STORM DRAIN STRUCTURE
- (100.0) EXISTING GROUND ELEVATION
- FOUND MONUMENT AS NOTED ON SHEET 2

0 20 40 60

SCALE: 1" = 20'

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com



GENERAL NOTES

1. PUBLIC IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED TO THE SATISFACTION OF THE CITY INSPECTOR.
2. EXISTING SURVEY MONUMENTS SHALL BE PROTECTED IN PLACE. ANY MONUMENT THAT IS DISTURBED OR DESTROYED SHALL BE REPLACED BY A LICENSED LAND SURVEYOR WHO SHALL FILE A CORNER RECORD OR RECORD OF SURVEY WITH THE COUNTY.
3. ALL EXISTING ONSITE STRUCTURES TO BE DEMOLISHED.
4. REFER TO LANDSCAPE PLAN FOR ONSITE TREES TO BE REMOVED. ADDITIONALLY, ANY LANDSCAPE WORK WITHIN THE RIGHT-OF-WAY SHALL BE MONITORED BY THE PARKS AND RECREATION DEPARTMENT.
5. FOR INFORMATION ON THE PROPOSED STORM DRAIN, SEE PRELIMINARY GRADING AND DRAINGAGE PLAN ON SHEETS 04-06.

ABBREVIATIONS

BW = BOTTOM OF WALL
FF = FINISH FLOOR
FG = FINISH GRADE
FL = FLOW LINE
FS = FINISH SURFACE
HP = HIGH POINT
IE = INVERT ELEVATION
LA = LANDSCAPE AREA
LP = LOW POINT
PUB = PUBLIC
PVT = PRIVATE
TC = TOP OF CURB
TG = TOP OF GRATE
TW = TOP OF WALL

EASEMENTS OF RECORD

(1) AN EASEMENT FOR POLE LINES, UNDERGROUND CONDUITS, INGRESS AND EGRESS RIGHTS TO SAN DIEGO GAS & ELECTRIC COMPANY RECORDED OCTOBER 25, 1949 IN BOOK 3363, PAGE 154 OF OFFICIAL RECORDS.

(2) AN EASEMENT FOR EITHER OR BOTH POLE LINES, UNDERGROUND CONDUITS, WITH THE RIGHT OF INGRESS AND EGRESS AND INCIDENTAL PURPOSES TO TO SAN DIEGO GAS & ELECTRIC COMPANY, RECORDED JULY 06, 1926 AS BOOK 1220, PAGE 410 OF OFFICIAL RECORDS. (2 FEET IN WIDTH)

STATE OF CALIFORNIA, RELINQUISHMENT OF ACCESS RIGHTS TO AND FROM INTERSTATE 5 RECORDED DECEMBER 4, 1961 AS DOC. NO. 209054 OF OFFICIAL RECORDS. (NOT PLOTTED, PERTAINS TO EAST SIDE OF INTERSTATE 5.

CONSTRUCTION NOTES

1. PROPOSED 8" PVC SEWER MAIN PER LWDSD S-11 (PUB)
2. PROPOSED 8" PVC FIRE MAIN (CLASS 305) PER WAS SPEC 15064 (PVT)
3. PROPOSED 4" PVC WATER MAIN (CLASS 305) PER WAS SPEC 15064 (PVT)
4. PROPOSED 24"X42" JOINT TRENCH
5. PROPOSED SEWER MANHOLE PER LWDSD S-4 (PUB)
6. PROPOSED RESIDENTIAL FIRE HYDRANT PER WAS WF-01 (PVT)
7. PROPOSED 3" METER AND BACKFLOW PER WAS WS-04
8. PROPOSED ELECTRICAL TRANSFORMER
9. PROPOSED ELECTRICAL VAULT
10. PROPOSED 8" FIRE LINE PER WF-05 & 8" RPDA (PVT) PER WAS WR-02
11. PROPOSED 2" IRRIGATION SERVICE AND METER PER WAS WS-02 & 2" RP PER WAS WR-01

PROPOSED EASEMENTS

1. PROPOSED EMERGENCY VEHICLE ACCESS EASEMENT
2. PROPOSED PUBLIC SEWER EASEMENT TO THE LEUCADIA WASTE WATER DISTRICT
3. PROPOSED PUBLIC EASEMENT OVER PRIVATE STREETS TO THE CITY OF ENCINITAS

LEGEND

- SUBDIVISION BOUNDARY
- R/W — RIGHT-OF-WAY
- SETBACK
- PROPOSED 1" DOMESTIC WATER SERVICE PER WAS WS-01 (PVT)
- PROPOSED 4" FIRE SERVICE PER WAS WF-05 (PVT)
- PROPOSED 4" SEWER LATERAL PER LWDSD S-17 (PUB)
- S — PROPOSED 8" PVC SEWER MAIN (PUB)
- F — PROPOSED 8" PVC FIRE MAIN CLASS 305) PER WAS SPEC 15064 (PVT)
- W — PROPOSED 4" PVC WATER MAIN (CLASS 305) PER WAS SPEC 15064 (PVT)
- JT — PROPOSED 24"X42" JOINT TRENCH
- PROPOSED MANHOLE PER LWDSD S-4 (PUB)
- PROPOSED PVT FIRE HYDRANT (RESIDENTIAL) PER WAS WF-01
- PROPOSED LIMITS OF TRENCHING
- PROPOSED DG TRAIL
- ROAD CENTERLINE
- RETAINING WALL (PER PLAN)
- PROPOSED EASEMENT

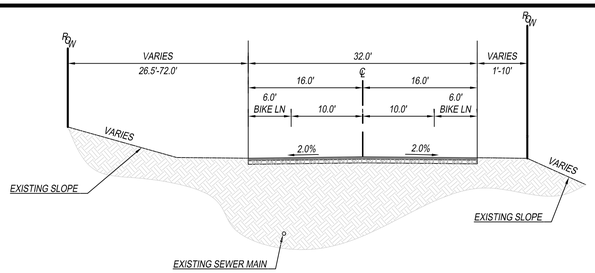
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SCALE: 1" = 40'

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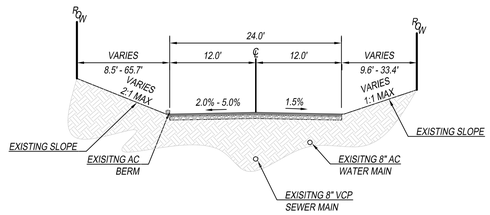
SCALE: 1" = 40'

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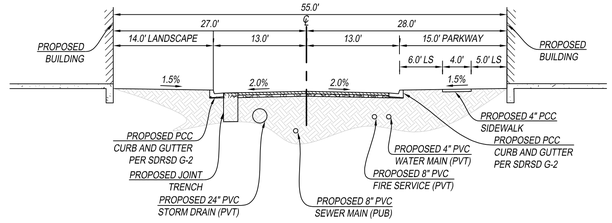
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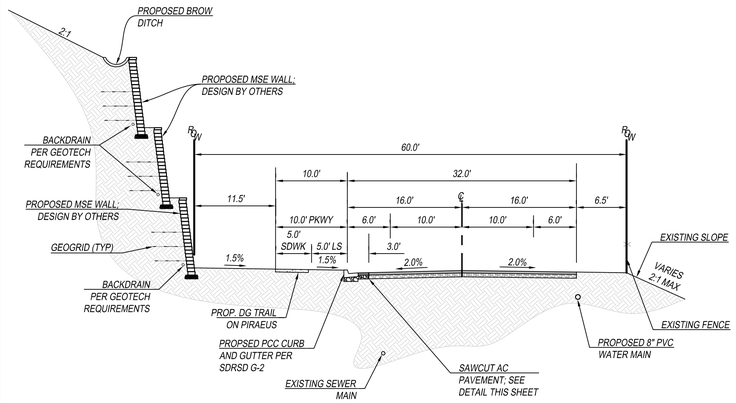
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NOT TO SCALE



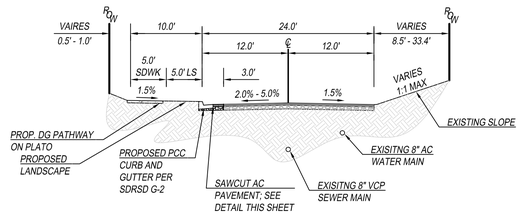
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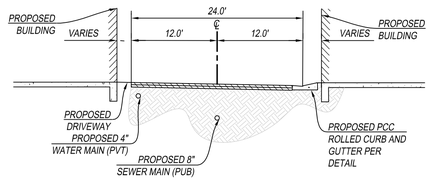
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NOT TO SCALE



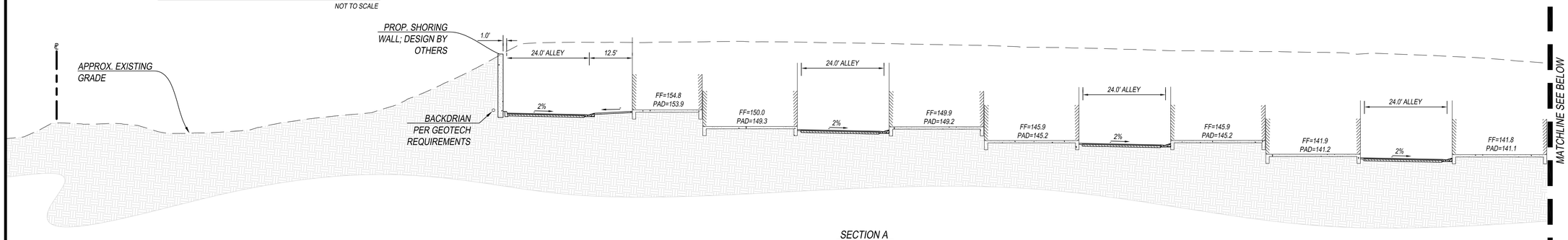
TYPICAL SECTION - PROPOSED PLATO PALACE

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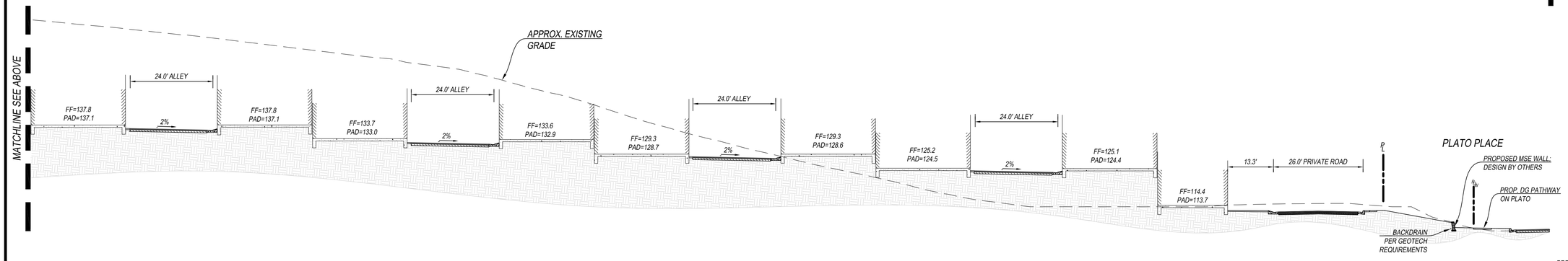
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SECTION A

NOT TO SCALE



SECTION A (CONTINUED)

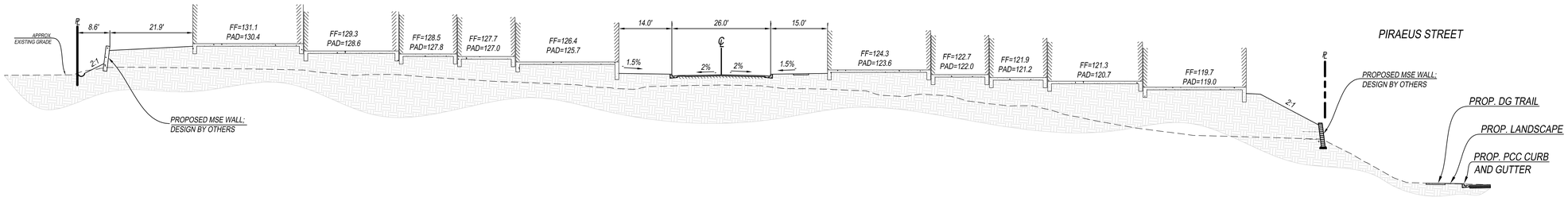
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PREPARED BY:

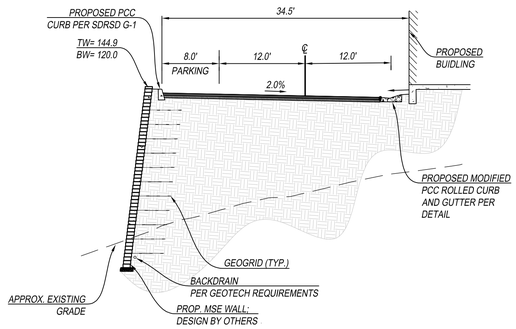
PASCO LARET SUITER & ASSOCIATES

San Diego | Encinitas | Orange County

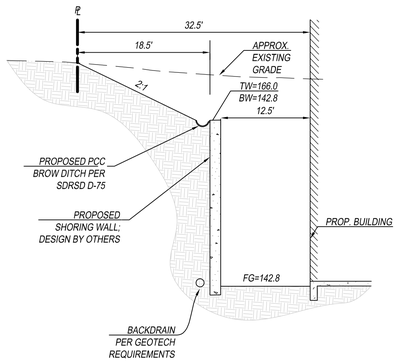
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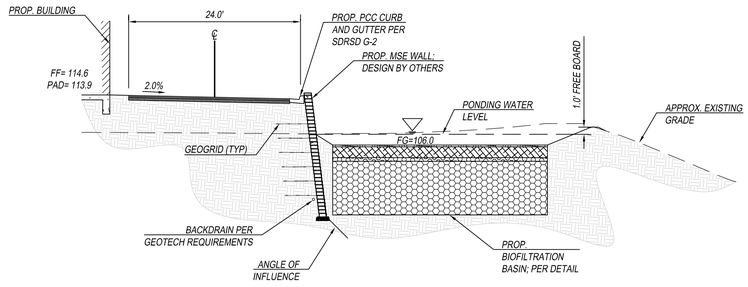
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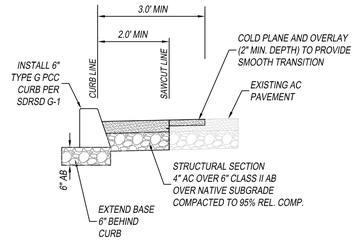
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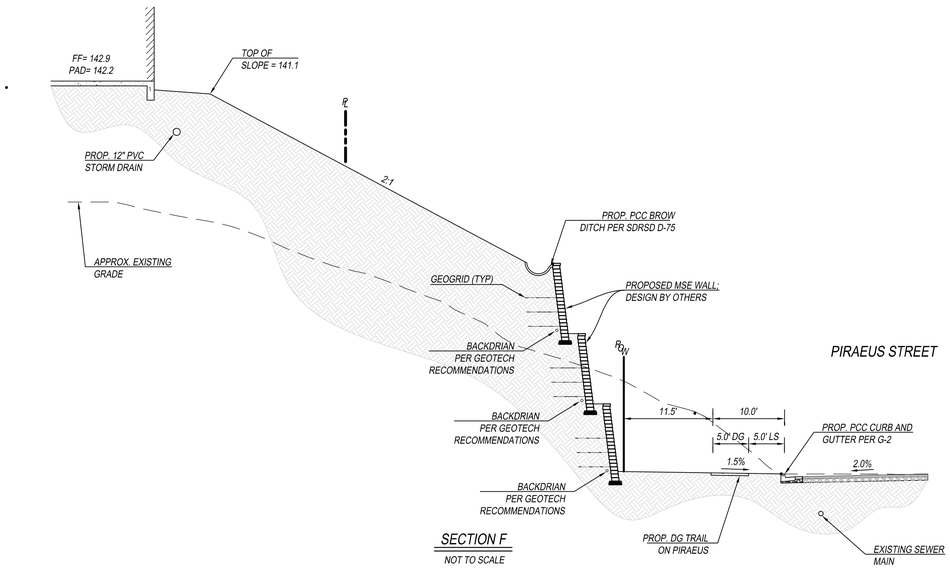
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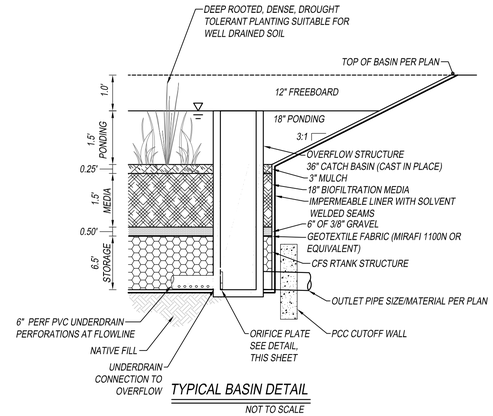
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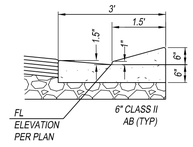
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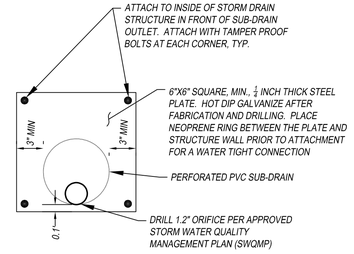
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TYPICAL DETAIL - ROLLED CURB
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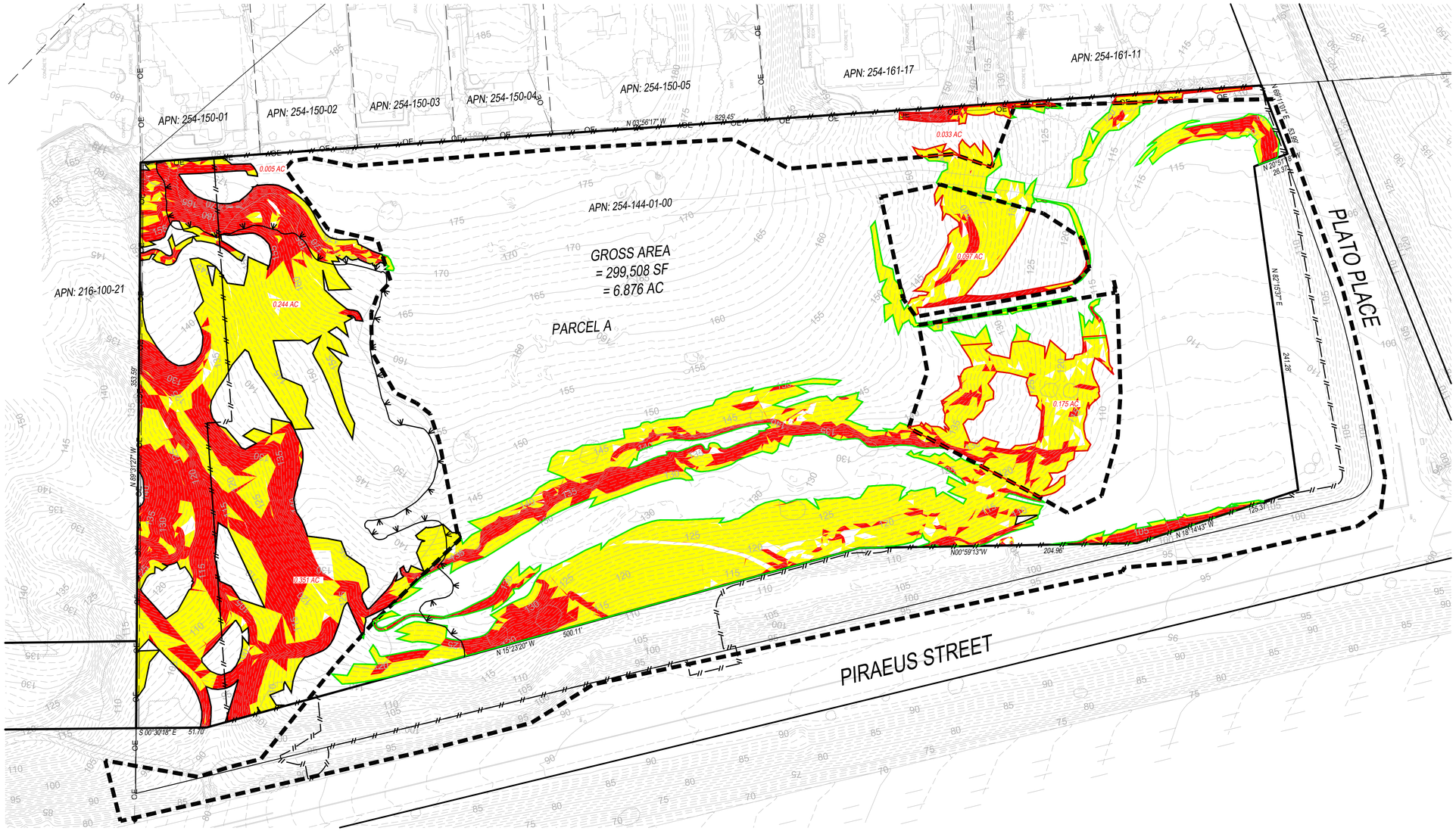


ORIFICE PLATE DETAIL
NOT TO SCALE

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com

SLOPE ANALYSIS PARCEL A

PIRAEUS STREET, ENCINITAS, CA



SITE ADDRESS

PIRAEUS STREET (AT INTERSECTION OF PLATO PLACE)
ENCINITAS, CA 92024
APN: 254-144-01-00

PREVIOUS GROUND DISTURBANCE

LIMITS OF PREVIOUSLY DISTURBED AREAS PER LETTER PREPARED BE GEOCON INCORPORATED ON OCTOBER 22, 2019 TITLED "CONSULTATION: LIMITS OF AREAS OF PREVIOUS GRADING DISTURBANCE, ENCINITAS APARTMENTS"

PROPOSED GROUND DISTURBANCE

PROPOSED ENCROACHMENT INTO NATURAL STEEP SLOPE AREA DUE TO PROPOSED SITE PLAN AND GRADING / CONSTRUCTION OPERATIONS

PROPOSED ENCROACHMENT INTO STEEP SLOPE AREA PREVIOUSLY GRADED OR DISTURBED

PROPOSED LIMITS OF DISTURBANCE

APPROXIMATE LIMITS OF SENSITIVE HABITAT AREAS AS IDENTIFIED IN "VEGETATION EXHIBIT - THE CANNON PROPERTY AT PIRAEUS STREET, ENCINITAS" PREPARED BY VINCENT SCHEIDT

HILLSIDE INLAND BLUFF OVERLAY CALCULATIONS

GROSS AREA OF PARCEL	= 299,508 SF / 6.876 AC
EXISTING SLOPES GREATER THAN 25%	= 97,918 SF / 2.248 AC
EXISTING **STEEP SLOPE AREA MANUFACTURED OR PREVIOUSLY DISTURBED	= 40,835 SF / 0.937 AC
EXISTING NATURAL STEEP SLOPE AREA	= 57,083 SF / 1.311 AC
PROPOSED ENCROACHMENT INTO NATURAL STEEP SLOPE AREA	= 39,489 SF / 0.906 AC
NATURAL STEEP SLOPE AREAS TO REMAIN / BE PRESERVED IN THEIR NATURAL STATE	= 17,594 SF / 0.404 AC
PROPOSED ENCROACHMENT INTO SENSITIVE HABITAT	= 46,829 SF / 1.075 AC

**PER ENCINITAS MUNICIPAL CODE 30.34.030, STEEP SLOPE AREA IS DEFINED AS SLOPES OF GREATER THAN 25% GRADE

HILLSIDE INLAND BLUFF OVERLAY NOTES

PER CITY MUNICIPAL CODE SECTION 30.34.030, IF MORE THAN 10% OF PARCEL SLOPE EXCEED 25%, PARCEL IS SUBJECT TO HILLSIDE / INLAND BLUFF OVERLAY REGULATIONS AND SLOPES GREATER THAN 25% GRADE SHALL BE PRESERVED IN THEIR NATURAL STATE.

EXISTING SLOPES GREATER THAN 25% = 4.82 AC (PARCEL A + PARCEL B) = 40.8% OF PROJECT SITE. THEREFORE, PARCEL IS SUBJECT TO HILLSIDE / INLAND BLUFF OVERLAY ZONE REGULATION.

PER SECTION 30.34.030, MAXIMUM ENCROACHMENT IN AREAS OF SLOPE GREATER OR EQUAL TO 25% GRADE FOR PARCELS SUBJECT TO HILLSIDE / INLAND BLUFF OVERLAY ZONE REGULATIONS IS 10% OF STEEP SLOPES. THEREFORE, PROJECT MAY ENCROACH UP TO 20,983 SF INTO SLOPES GREATER THAN 25% GRADE.

SOURCE OF TOPOGRAPHY

TOPOGRAPHY OBTAINED BY AERIAL MAPPING METHODS, FLOWN BY SAN DIEGO AERIAL SURVEYS DATED AUGUST 14, 2019

PARCEL A TOTAL GROSS LOT AREA = 6.876 AC

EXISTING SLOPES	0 - 25%	4.628 AC	(67.3% OF PROJECT SITE)
EXISTING SLOPES	25 - 40%	1.471 AC	(21.4% OF PROJECT SITE)
EXISTING SLOPES	40% +	0.777 AC	(11.3% OF PROJECT SITE)
EXISTING SLOPES	25% +	2.248 AC**	(32.7% OF PROJECT SITE)

**PER LETTER TITLED "CONSULTATION: LIMITS OF AREAS OF PREVIOUS GRADING DISTURBANCE, ENCINITAS APARTMENTS" PREPARED BY GEOCON INCORPORATED DATED OCTOBER 22, 2019, APPROXIMATELY 12,025 SF OF EXISTING STEEP SLOPE IS MANUFACTURED.

GRAPHIC SCALE 1" = 40'

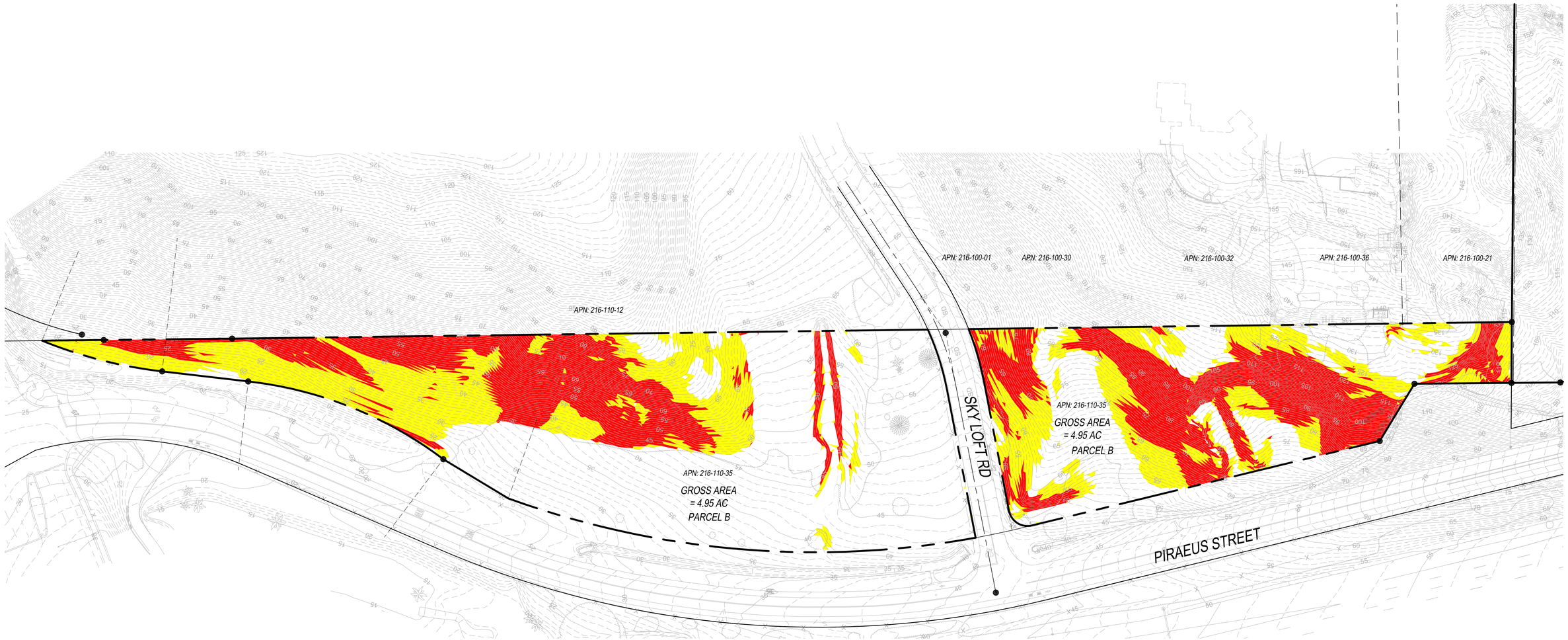
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PREPARED BY:

PASCO LARET SUITER & ASSOCIATES
San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com

SLOPE ANALYSIS PARCEL B

PIRAEUS STREET, ENCINITAS, CA



SITE ADDRESS

PIRAEUS STREET (AT INTERSECTION OF SKY LOFT ROAD)
ENCINITAS, CA 92024
APN: 216-110-35

SOURCE OF TOPOGRAPHY

PREPARED BY: PASCO LARET SUITER & ASSOCIATES
DATED: JANUARY 2022

PARCEL B TOTAL GROSS LOT AREA (OFFSITE) = 4.949 AC

EXISTING SLOPES	0 - 25%	2.38 AC	(48.1% OF PROJECT SITE)
EXISTING SLOPES	25 - 40%	1.208 AC	(24.4% OF PROJECT SITE)
EXISTING SLOPES	40% +	1.361 AC	(27.5% OF PROJECT SITE)
EXISTING SLOPES	25% +	2.569 AC	(51.9% OF PROJECT SITE)

HILLSIDE INLAND BLUFF OVERLAY CALCULATIONS

	PARCEL A	PARCEL B	TOTAL
GROSS AREA	299,519 SF / 6.876 AC	215,578 SF / 4.949 AC	515,097 SF / 11.825 AC
SLOPES GREATER THAN 25%	97,923 SF/ 2.248 AC	111,906 SF / 2.569 AC	209,829 SF / 4.817 AC
ALLOWABLE ENCROACHMENT INTO STEEP SLOPE AREA			20,987 SF / 0.482 AC
PROPSED ENCROACHMENT INTO STEEP SLOPE AREA			39,489 SF / 0.906 AC

GRAPHIC SCALE 1" = 40'

40 0 40 80 120

PREPARED BY:
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San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com

FIRE ACCESS PLAN

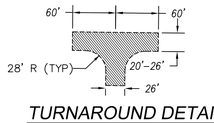
PIRAEUS POINT



LEGEND

- PROPERTY BOUNDARY
- MOUNTABLE CURB
- PROPOSED FUEL MOD ZONE
- HOSE PULL
- FIRE ACCESS ROUTE (AC PAVEMENT)
- FIRE ACCESS ROUTE (CONCRETE PAVEMENT W/DEEP BROOM FINISH)
- NO PARKING SIGN
- FIRE HYDRANT RADIUS (300')

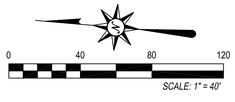
FIRE ACCESS PLAN
SCALE: 1" = 40'



TURNAROUND DETAIL
NTS



NO PARKING SIGN DETAIL
NTS



SCALE: 1" = 40'

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
San Diego | Encinitas | Orange County
Phone 858.259.8212 | www.plsaengineering.com

ATTACHMENT 5 - COPY OF PRELIMINARY DRAINAGE STUDY

PRELIMINARY HYDROLOGY STUDY

FOR

PIRAEUS POINT
PIRAEUS STREET, ENCINITAS, CA 92024
MULTI-005158-2022

CITY OF ENCINITAS, CA

PREPARED FOR:

LENNAR HOMES OF CALIFORNIA, LLC
16465 VIA ESPRILLO, SUITE 150
ENCINITAS, CA 92024

PREPARED BY:

PASCO LARET SUITER & ASSOCIATES, INC.
1911 SAN DIEGO AVE, SUITE 100
SAN DIEGO, CA 92115
PH: (858) 259-8212

Prepared: January 19, 2022
Revised: April 5, 2022
Revised September 8,2022



TYLER G. LAWSON, RCE 80356 DATE

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Introduction	1.1
Existing Conditions	1.2
Proposed Project	1.3
Conclusions	1.4
References	1.5
Methodology	**2.0**
Introduction	2.1
County of San Diego Criteria	2.2
City of Encinitas Standards	2.3
Runoff Coefficient Determination	2.4
Detention Basin Routing	2.5

Appendix
Appendix A: Existing and Post-Development Hydrology Node Maps
Appendix B: Hydrology Support Material
Appendix C: AES Existing Condition and Post-Development Output Reports
Appendix D: Hydrograph and Detention Calculations

1.0 EXECUTIVE SUMMARY

1.1 Introduction

This Preliminary Hydrology Study for the proposed development at the intersection of Piraeus Street and Plato Place has been prepared to analyze the hydrologic and hydraulic characteristics of the existing and proposed project site. This report intends to present both the methodology and the calculations used for determining the runoff from the project site in both the existing condition and the post-developed (proposed) condition produced by the 100-year, 6-hour storm.

1.2 Existing Conditions

The subject property is located east of Interstate 5 and is geographically settled between Piraeus Street to the east and Plato Place to the south. The site is bordered by single family homes to the east, Interstate 5 to the west, and undeveloped open space to the north and south. The site is currently vacant and has not previously been developed. Existing site topography is generally steep with slopes ranging from 4 to over 75 percent and elevations ranging from 175 to 69 feet.

The existing site is comprised of approximately 8.16 acres. In its current state, about 70% of the site drains north via surface/sheet flow before entering an existing storm drain conveyance system at the northwest corner of the property. This is shown as drainage areas B-1 and B-2 on the Existing Condition Hydrology Node Map included in Appendix A. Once in the storm drain system, runoff from Drainage area B-1 and B-2 flows west, crossing Interstate-5 into an earthen ditch. The remainder of the site, areas A-1 and A-2, as shown on the Existing Condition Hydrology Node Map in Appendix A, flow south via surface/sheet flow and enters the existing storm drain system at the southwest corner of the property. The existing system carries runoff across Interstate-5 and discharges into an existing concrete lined ditch where it will meet runoff from Drainage Area B-1 and B-2. From this point, drainage from both basins continues north until the runoff reaches Batiquitos Lagoon and finally the Pacific Ocean.

An existing condition and post-development hydrology analysis of the existing system has been included as a part of this study to ensure the proposed project will not negatively impact the existing storm drain system. Results of the offsite analysis are provided in the Conclusions section of this report. Supporting calculations and AES output reports are provided in Appendix C.

In the existing condition, pavement, and various hardscape results in a 0% impervious basin. Based City of Encinitas Engineering Design Manual, the basin was analyzed assuming Type D soils. Based upon soil type and the lack of existing impervious area onsite, a runoff coefficient of 0.45 was used for each basin. Using the Rational Method Procedure outlined in the San Diego County Hydrology Manual, a peak flow rate and time of concentration was calculated for the basin for the 100-year, 6-hour storm event. Refer to the existing condition hydrology calculations included in Appendix C of this report for detailed analysis and the

Existing Condition Hydrology Node Map included in Appendix A of this report for existing drainage basin delineation and POC'S.

1.3 Proposed Project

As shown on the Post-Development Hydrology Node Map, runoff from Drainage Area's A-1 thru A-18 is picked up in the on-site storm drain system and conveyed to the south to the proposed biofiltration basin located adjacent to Plato Place. Once the runoff is treated and stored it is discharged into the existing storm drain system identified as POC-A.

Runoff generated in Drainage Areas B-1 thru B-6 primarily sheet flows west towards Piraeus Street where it is collected in a concrete ditch and discharges into an existing headwall at the northwest corner of the site. This is identified as POC-B on the Post-Construction Node Map.

A Runoff coefficient was calculated for Drainage Basin- A based on the methodology described in the City of Encinitas Engineering Design Manual and the formula provided therein. See Section 2.4 of this report for post-development runoff coefficient calculations. For a breakdown of the existing condition and post development peak flow rates for the 100-year, 6-hour storm event, see the conclusion section of this report.

In an effort to comply with the City of Encinitas' Stormwater standards and the MS4 Permit, all runoff generated onsite will be conveyed to a biofiltration basin adjacent to Plato Place as shown on the Post Development Hydrology Node Map. The biofiltration basin has been sized for pollution and flow control purposes. Flow rates generated on-site will be controlled via a small low-flow orifice consistent with HMP requirements as outlined in the City of Encinitas BMP Manual. In larger storm events, runoff not filtered through the engineered soil will be conveyed via an overflow outlet structure consisting of a 3-foot by 3-foot grate located on top of the outlet structure. Runoff conveyed via the outlet structure will bypass the treatment and flow control BMP's and will be conveyed directly to the proposed storm drain system perpendicular to Piraeus Street.

Conclusions

Onsite

As illustrated in the Peak Flow Rate Comparison Table shown below, the project has been designed to adequately convey the 100-year, 6-hour storm event. In addition, in the mitigated post development condition, the site has been designed to attenuate the 100-year storm event and reduce flow rates below what is currently leaving the site today. Based on our analysis, the proposed storm drain system has sufficient capacity to convey the flows that are generated by this development.

Peak Flow Rate Comparison Table (100 Year, 6 Hour)			
Existing Condition		Post Development (Unmitigated)	
Drainage Area	Peak Flow (CFS)	Drainage Area	Peak Flow (CFS)
A-1 THRU A-2	4.90	A-1 THRU A-18	29.89
B-1 THRU B-2	10.17	B-1 THRU B-9	4.90

Peak Flow Rate Comparison Table (100 Year, 6 Hour)			
Existing Condition		Post Development (Mitigated)	
Drainage Area	Peak Flow (CFS)	Drainage Area	Peak Flow (CFS)
A-1 THRU A-2	4.90	A-1 THRU A-18	0.12
B-1 THRU B-2	10.17	B-1 THRU B-9	4.83

1.4 References

"Encinitas Stormwater Manual Chapter 7", Version 1.3, adopted March 17, 2010, City of Encinitas, Engineering Department

"Engineering Design Manual Chapter 6: Drainage Design Requirements", revised February 2016, City of Encinitas

"Engineering Design Manual Appendix 6: Drainage Design Requirements", October 28, 2009, City of Encinitas

"Engineering Design Manual Chapter 7: BMP Design Manual", revised February 2016, City of Encinitas

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov. Accessed May 2015

2.0 METHODOLOGY

2.1 Introduction

The hydrologic model used to perform the hydrologic analysis presented in this report utilizes the Rational Method (RM) equation, Q = CIA. The RM formula estimates the peak rate of runoff based on the variables of area, runoff coefficient, and rainfall intensity. The rainfall intensity (I) is equal to:

$$I = 7.44 \times P_6 \times D^{-0.645}$$

Where:

I = Intensity (in/hr)
P_6 = 6-hour precipitation (inches)
D = duration (minutes – use Tc)

Using the Time of Concentration (Tc), which is the time required for a given element of water that originates at the most remote point of the basin being analyzed to reach the point at which the runoff from the basin is being analyzed. The RM equation determines the storm water runoff rate (Q) for a given basin in terms of flow (typically in cubic feet per second (cfs) but sometimes as gallons per minute (gpm)). The RM equation is as follows:

$$Q = CIA$$

Where:

Q = flow (in cfs)
C = runoff coefficient, ratio of rainfall that produces storm water runoff (runoff vs. infiltration/evaporation/absorption/etc)
I = average rainfall intensity for a duration equal to the Tc for the area, in inches per hour.
A = drainage area contributing to the basin in acres.

The RM equation assumes that the storm event being analyzed delivers precipitation to the entire basin uniformly, and therefore the peak discharge rate will occur when a raindrop that falls at the most remote portion of the basin arrives at the point of analysis. The RM also assumes that the fraction of rainfall that becomes runoff or the runoff coefficient C is not affected by the storm intensity, I, or the precipitation zone number.

Rational Method calculations were performed using the AES-2016 computer program. To perform the hydrology routing, the total watershed area is divided into sub-areas which discharge at designated nodes. The procedure for the sub-area summation model is as follows:

1. Subdivide the watershed into an initial sub-area (generally 1 lot) and subsequent sub-areas, which are generally less than 10 acres in size. Assign upstream and downstream node numbers to each sub-area.

2. Estimate an initial Tc by using the appropriate nomograph or overland flow velocity estimation. The minimum Tc considered is 5.0 minutes.

3. Using the initial Tc, determine the corresponding values of I. Then Q = CIA.

4. Using Q, estimate the travel time between this node and the next by Manning's equation as applied to particular channel or conduit linking the two nodes. Then, repeat the calculation for Q based on the revised intensity (which is a function of the revised time of concentration)

The nodes are joined together by links, which may be street gutter flows, drainage swales, drainage ditches, pipe flow, or various channel flows. The AES computer sub-area menu is as follows:

SUBAREA HYDROLOGIC PROCESS

1. Confluence analysis at node.
2. Initial sub-area analysis (including time of concentration calculation).
3. Pipe flow travel time (computer estimated).
4. Pipe flow travel time (user specified).
5. Trapezoidal channel travel time.
6. Street flow analysis through sub-area.
7. User-specified information at node.
8. Addition of sub-area runoff to main line.
9. V-gutter flow through area.
10. Copy main stream data to memory bank
11. Confluence main stream data with a memory bank
12. Clear a memory bank.
31. Compute pipe-flow travel time thru subarea using computer estimated pipe size.
51. Compute trapezoidal channel flow travel time thru subarea.
81. Addition of subarea to mainline peak flow.

At the confluence point of two or more basins, the following procedure is used to combine peak flow rates to account for differences in the basin's times of concentration. This adjustment is based on the assumption that each basin's hydrographs are triangular in shape.

1. If the collection streams have the same times of concentration, then the Q values are directly summed,

$$Qp = Qa + Qb; \; Tp = Ta = Tb$$

2. If the collection streams have different times of concentration, the smaller of the tributary Q values may be adjusted as follows:
    a. The most frequent case is where the collection stream with the longer time of concentration has the larger Q. The smaller Q value is adjusted by a ratio of rainfall intensities.

        $$Qp = Qb + Qa\ (Ib/Ia);\ Tp = Ta$$

    b. In some cases, the collection stream with the shorter time of concentration has the larger Q. Then the smaller Q is adjusted by a ratio of the T values.

        $$Qp = Qb + Qa\ (Tb/Ta);\ Tp = Tb$$

2.2 County of San Diego Criteria

As defined by the San Diego County Hydrology Manual (SDCHM) dated June 2003, the Rational Method is the preferred equation for determining the hydrologic characteristics of basins up to approximately one square mile in size. The County of San Diego has developed its own tables, nomographs, and methodologies for analyzing storm water runoff for areas within the county. The County has also developed precipitation isopluvial contour maps that show even lines of rainfall anticipated from a given storm event (i.e. 100-year, 6-hour storm).

One of the variables of the RM equation is the runoff coefficient, C. The runoff coefficient is dependent only upon land use and soil type and the County of San Diego has developed a table of Runoff Coefficients for Urban Areas to be applied to basin located within the County of San Diego. The table categorizes the land use, the associated development density (dwelling units per acre) and the percentage of impervious area. Each of the categories listed has an associated runoff coefficient, C, for each soil type class.

The County has also illustrated in detail the methodology for determining the Time of Concentration, in particular the Initial Time of Concentration (Ti). The County has adopted the Federal Aviation Agency's (FAA) overland time of flow equation. For this project, High Density Residential at 43 DU/acre maximum overland flow lengths are used. This equation essentially limits the flow path length for the initial time of concentration to lengths to 100 feet for slopes of 10% and greater and 95 feet for slopes up to 5%, and is dependent on land use and slope. See the "Rational Formula – Overland Time of Flow Nomograph," shown in Figure 3-3 or Table 3-2 of the San Diego County Hydrology Manual (June 2003).

The travel time (Tt) is computed by dividing the length of the flow path by the computed velocity. Figure 3-6 of the SDCHM is used to estimate time of travel for street gutter flow. Velocity in a channel is estimated by using the nomograph show in Figure 3-7 (Manning's Equation Nomograph). Travel time in natural watersheds is calculated from the Kirpich nomograph in Figure 3-4 or from the Kirpich equation.

See Appendix B of this report for San Diego County Hydrology Manual reference material.

2.3 City of Encinitas Standards

The City of Encinitas Engineering Design Manual Chapter 6 and Appendix 6 has additional requirements for hydrology reports which are outlined in the Grading, Erosion and Sediment Control Ordinance. Please refer to this manual for further details. The drainage analysis used in this study is also consistent with the requirements set forth in Section 2.3 of the City of Encinitas Engineering Design Manual.

2.4 Runoff Coefficient Determination

In accordance with City of Encinitas Engineering Design Manual, runoff coefficients are based on land use and soil type. Per the City of Encinitas Engineering Manual the soil condition used in this study is assumed to be Type D. An appropriate area-weighted runoff coefficient (C) for each Drainage Basin A and B was calculated using the methodology presented in Chapter 6 of the City of Encinitas Engineering Design Manual. Impervious areas will use a runoff coefficient of 0.90 while pervious areas will use a runoff coefficient of 0.45. These coefficients are multiplied by the percentage of total area (A) included in that class. The sum of products for all land uses is the weighted runoff coefficient (∑[C]). See the table below for weighted runoff coefficient "C" calculations. The Existing and Post-Development Hydrology Maps show the drainage basin subareas, on-site drainage system and nodal points.

$$\frac{\sum C = C_1A_1 \text{ x } C_2A_2}{A_1+A_2}$$

Summary of Existing Condition Weighted Runoff Coefficients						
Drainage Basin	Total Area, A (ac)	C_1	A_1	C_2	A_2	C
A	2.48	0.9	0	0.45	2.48	0.45
B	5.89	0.9	0	0.45	5.89	0.45

Summary of Proposed Condition Weighted Runoff Coefficients						
Drainage Basin	Total Area, A (ac)	C_1	A_1	C_2	A_2	C
A	5.80	0.9	4.62	0.45	1.18	0.81
B	2.57	0.9	0	0.45	2.58	0.45

2.5 Hydraulics

The hydraulics of existing and proposed storm drain pipes were analyzed using the AES computer program. For pipe flow, a Manning's N value of 0.013 was used to reflect the use of HDPE and RCP pipe. All proposed storm drain pipes have been sized based on the proposed unmitigated flow condition for the 100-year storm event. Pipe, curb, gutter, curb inlet and catch basin capacity calculations are included in the Appendix of this report.

2.6 Detention Analysis

The HMP Biofiltration basins (BMP) provide pollutant control, hydromodification management flow control and mitigation of the 100-year storm event peak flow rate. The 100-year storm event detention analysis was performed using HydroCAD Stormwater Modeling software. The inflow runoff hydrographs to the BMPs were modeled using RatHydro which is a Rational Method Design Storm Hydrograph software that creates a hydrograph using the results of the Rational Method calculations. HydroCAD has the ability to route the 100-year 6-hour storm event inflow hydrographs through the BMPs and based on the BMP cross sectional geometry, stage storage and outlet structure data, HydroCAD calculates the detained peak flow rates and detained times to peak.

The detained flow rates and time of concentrations from the detention basins were then entered into the project's AES hydrologic study using Process Code 7 (see Section 2.1 of this report for summary of AES process codes). A mitigated condition AES report was produced for the 100-year storm event. See Appendix C for proposed mitigated condition hydrologic calculations. HydroCAD detention output reports will be provided upon final engineering.

The HMP Biofiltration facilities consists of a basin with 18 inches of engineered soil and Rtank structure storage layer of 6.5'. Runoff will be biofiltered through the engineered soil and gravel layers, then collected in a series of small PVC drainpipes and directed to a catch basin located in the HMP Biofiltration basin where runoff will be mitigated via a small HMP orifice to comply with HMP requirements. In larger storm events, runoff not filtered through the engineered soil and gravel layers will be conveyed via an overflow outlet structure. Runoff conveyed via the outlet structure will bypass the small HMP orifice and be conveyed directly to the proposed storm drain discharge pipe.

Based on the results of the HydroCAD analysis, the HMP Biofiltration facilities provide mitigation for the 100-year storm event peak flow rate, detaining the proposed condition.

APPENDIX A

Existing and Post Development Hydrology Node Maps

EXISTING CONDITION HYDROLOGY NODE MAP

PIRAEUS STREET, ENCINITAS, CA



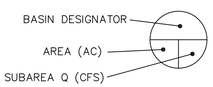
PLAN VIEW - EXISTING CONDITION HYDROLOGY

SCALE: 1" = 50'

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- CENTER LINE OF ROAD
- DRAINAGE BOUNDARY
- INITIAL SUB-BASIN BOUNDARY
- DRAINAGE PATH OF TRAVEL
- EXISTING CONTOURS — 175

BASIN INFORMATION



REGISTERED PROFESSIONAL ENGINEER
TYLER G LAWSON
No. 80356
Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA

0 50 100 150

SCALE: 1" = 50'

PREPARED BY:

PASCO LARET SUITER & ASSOCIATES

San Diego | Encinitas | Orange County

Phone 858.259.8212 | www.plsaengineering.com

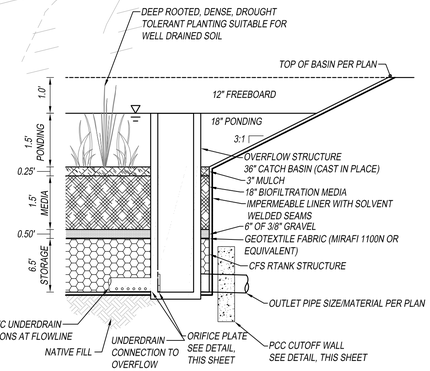
POST-DEVELOPEMENT HYDROLOGY NODE MAP

PIRAEUS STREET, ENCINITAS, CA



PLAN VIEW - POST-DEVELOPMENT HYDROLOGY

SCALE: 1" = 50'



TYPICAL BASIN DETAIL

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY
- ADJACENT PROPERTY LINE
- CENTER LINE OF ROAD
- DRAINAGE BOUNDARY
- INITIAL SUB-BASIN BOUNDARY
- DRAINAGE PATH OF TRAVEL
- EXISTING CONTOURS (175)
- BASIN INFORMATION: BASIN DESIGNATOR / AREA (AC) / SUBAREA Q (CFS)

REGISTERED PROFESSIONAL ENGINEER
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No. 80356
Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA

40 20 0 40 80 120

SCALE: 1" = 40'

PREPARED BY:
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APPENDIX B

Hydrology Support Material

County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 6 Hours

Isopluvial (inches)

Orange County

Riverside County

Imperial County

Mexico

Pacific Ocean

PROJECT SITE

OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
S.D. COUNTY
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
CHULA VISTA
IMPERIAL BEACH
SD

33°30'
33°15'
33°00'
32°45'
32°30'
117°30'
117°15'
117°00'
116°45'
116°30'
116°15'

DPW GIS
Department of Public Works
Geographic Information Services

SanGIS
We Have San Diego Covered!

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3 0 3 Miles

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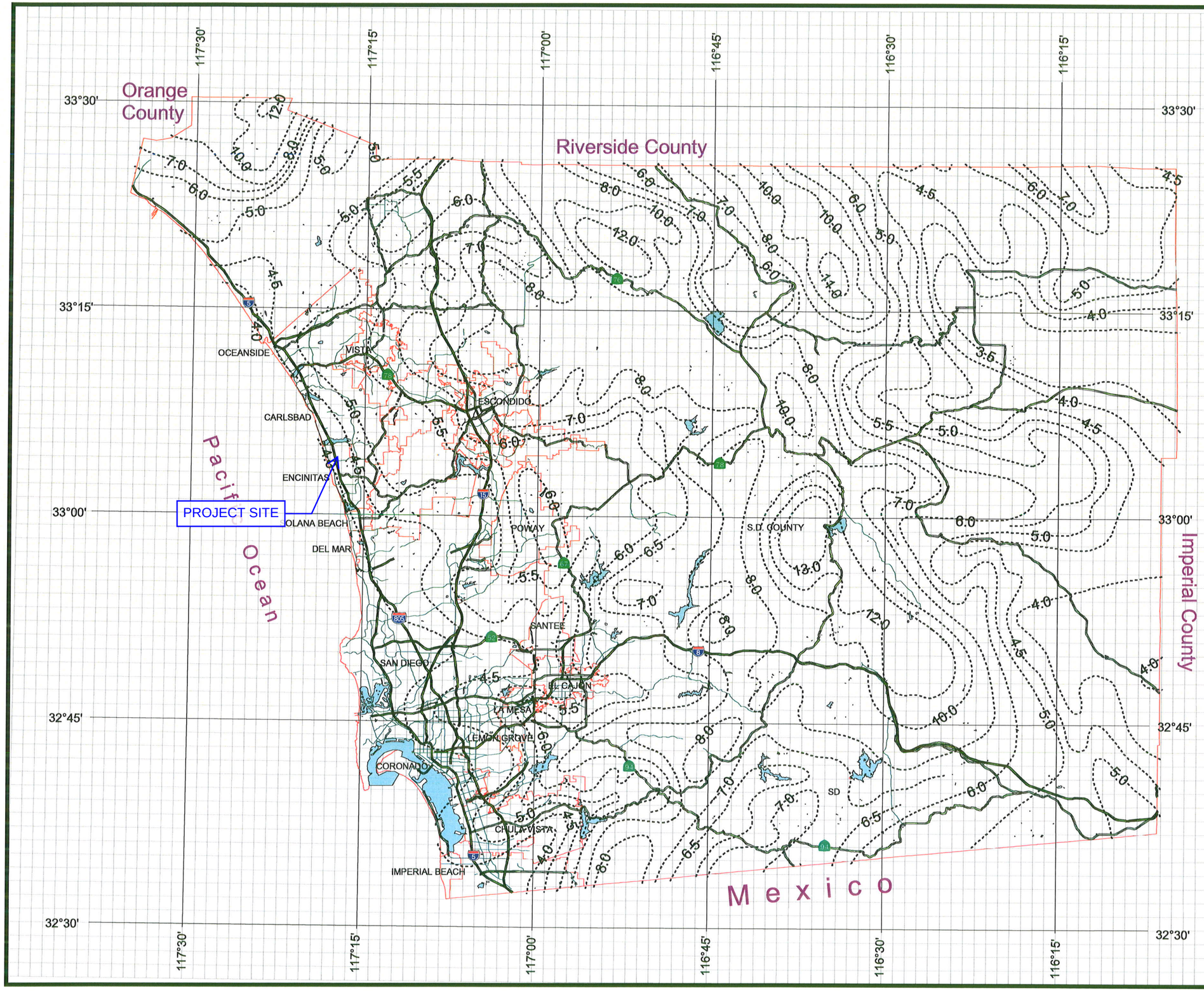
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County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 24 Hours

Isopluvial (inches)



DPW GIS
Department of Public Works
Geographic Information Services

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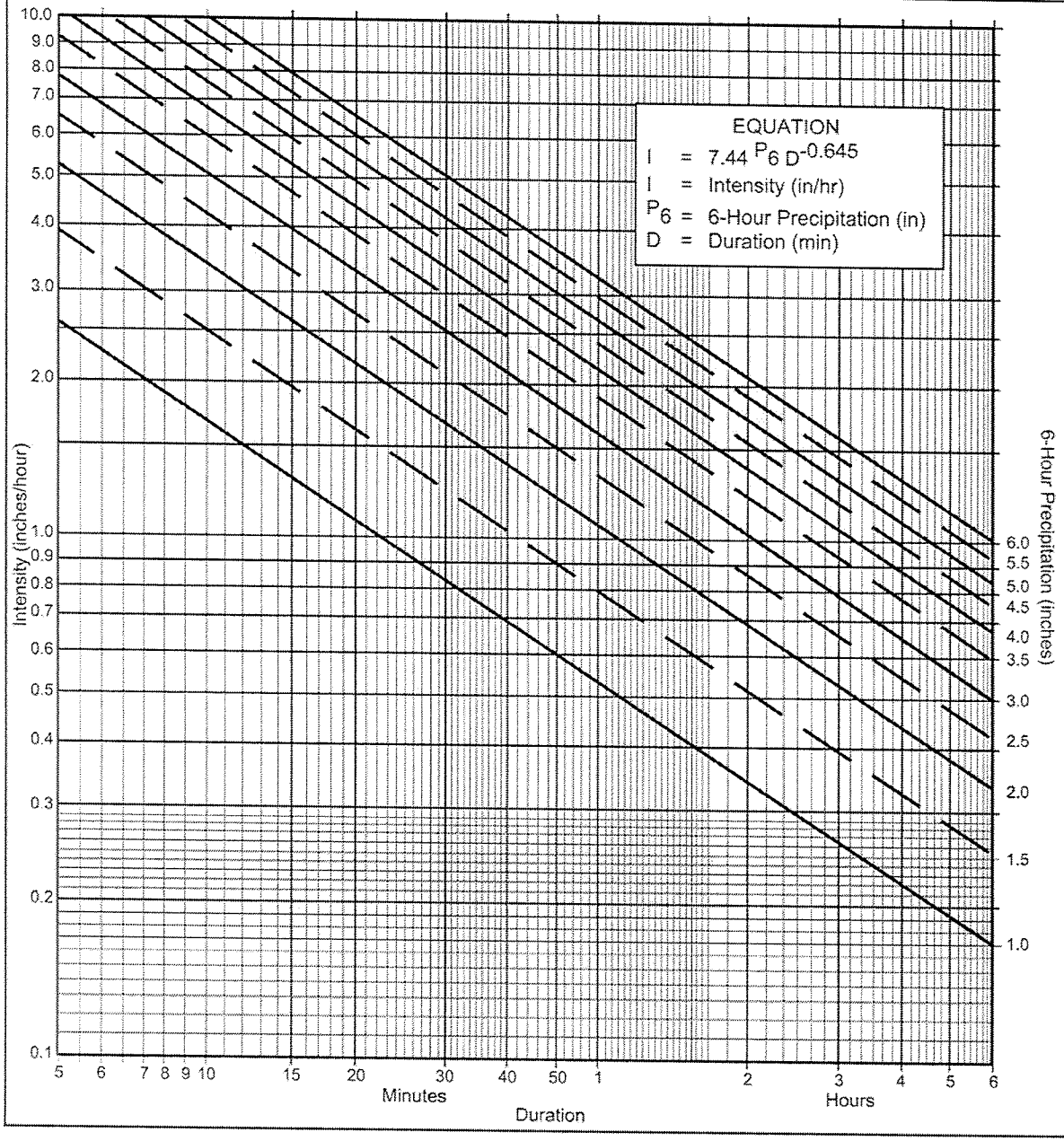
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3 0 3 Miles



Directions for Application:

(1) From precipitation maps determine 6 hr and 24 hr amounts for the selected frequency. These maps are included in the County Hydrology Manual (10, 50, and 100 yr maps included in the Design and Procedure Manual).

(2) Adjust 6 hr precipitation (if necessary) so that it is within the range of 45% to 65% of the 24 hr precipitation (not applicaple to Desert).

(3) Plot 6 hr precipitation on the right side of the chart.

(4) Draw a line through the point parallel to the plotted lines.

(5) This line is the intensity-duration curve for the location being analyzed.

Application Form:

(a) Selected frequency 100 year

(b) P_6 = 2.5 in., P_{24} = 4.2, $\frac{P_6}{P_{24}}$ = 60 %(2)

(c) Adjusted P_6(2) = 2.5 in.

(d) t_x = 5.52 min.

(e) I = 6.18 in./hr.

Note: This chart replaces the Intensity-Duration-Frequency curves used since 1965.

P6	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Duration	I	I	I	I	I	I	I	I	I	I	I
5	2.63	3.95	5.27	6.59	7.90	9.22	10.54	11.86	13.17	14.49	15.81
7	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54	10.60	11.66	12.72
10	1.68	2.53	3.37	4.21	5.05	5.90	6.74	7.58	8.42	9.27	10.11
15	1.30	1.95	2.59	3.24	3.89	4.54	5.19	5.84	6.49	7.13	7.78
20	1.08	1.62	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.93	6.46
25	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67	5.13	5.60
30	0.83	1.24	1.66	2.07	2.49	2.90	3.32	3.73	4.15	4.56	4.98
40	0.69	1.03	1.38	1.72	2.07	2.41	2.76	3.10	3.45	3.79	4.13
50	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.98	3.28	3.58
60	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18
90	0.41	0.61	0.82	1.02	1.23	1.43	1.63	1.84	2.04	2.25	2.45
120	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	1.87	2.04
150	0.29	0.44	0.59	0.73	0.88	1.03	1.18	1.32	1.47	1.62	1.76
180	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.18	1.31	1.44	1.57
240	0.22	0.33	0.43	0.54	0.65	0.76	0.87	0.98	1.08	1.19	1.30
300	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.85	0.94	1.03	1.13
360	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.84	0.92	1.00

Intensity-Duration Design Chart - Template

FIGURE

3-1

Note that the Initial Time of Concentration should be reflective of the general land-use at the upstream end of a drainage basin. A single lot with an area of two or less acres does not have a significant effect where the drainage basin area is 20 to 600 acres.

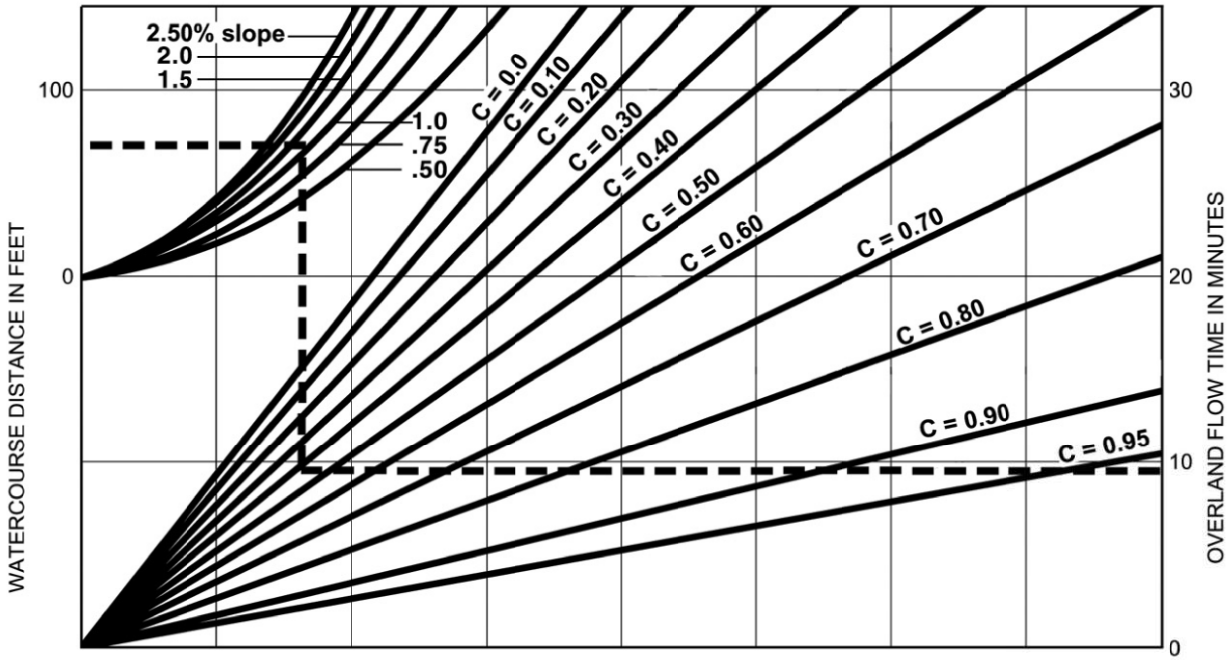
Table 3-2 provides limits of the length (Maximum Length (L_M)) of sheet flow to be used in hydrology studies. Initial T_i values based on average C values for the Land Use Element are also included. These values can be used in planning and design applications as described below. Exceptions may be approved by the "Regulating Agency" when submitted with a detailed study.

Table 3-2

MAXIMUM OVERLAND FLOW LENGTH (L_M)
& INITIAL TIME OF CONCENTRATION (T_i)

Element*	DU/ Acre	.5%		1%		2%		3%		5%		10%	
		L_M	T_i	L_M	T_i	L_M	T_i	L_M	T_i	L_M	T_i	L_M	T_i
Natural		50	13.2	70	12.5	85	10.9	100	10.3	100	8.7	100	6.9
LDR	1	50	12.2	70	11.5	85	10.0	100	9.5	100	8.0	100	6.4
LDR	2	50	11.3	70	10.5	85	9.2	100	8.8	100	7.4	100	5.8
LDR	2.9	50	10.7	70	10.0	85	8.8	95	8.1	100	7.0	100	5.6
MDR	4.3	50	10.2	70	9.6	80	8.1	95	7.8	100	6.7	100	5.3
MDR	7.3	50	9.2	65	8.4	80	7.4	95	7.0	100	6.0	100	4.8
MDR	10.9	50	8.7	65	7.9	80	6.9	90	6.4	100	5.7	100	4.5
MDR	14.5	50	8.2	65	7.4	80	6.5	90	6.0	100	5.4	100	4.3
HDR	24	50	6.7	65	6.1	75	5.1	90	4.9	95	4.3	100	3.5
HDR	43	50	5.3	65	4.7	75	4.0	85	3.8	95	3.4	100	2.7
N. Com		50	5.3	60	4.5	75	4.0	85	3.8	95	3.4	100	2.7
G. Com		50	4.7	60	4.1	75	3.6	85	3.4	90	2.9	100	2.4
O.P./Com		50	4.2	60	3.7	70	3.1	80	2.9	90	2.6	100	2.2
Limited I.		50	4.2	60	3.7	70	3.1	80	2.9	90	2.6	100	2.2
General I.		50	3.7	60	3.2	70	2.7	80	2.6	90	2.3	100	1.9

*See Table 3-1 for more detailed description



EXAMPLE:

Given: Watercourse Distance (D) = 70 Feet
Slope (s) = 1.3%
Runoff Coefficient (C) = 0.41
Overland Flow Time (T) = 9.5 Minutes

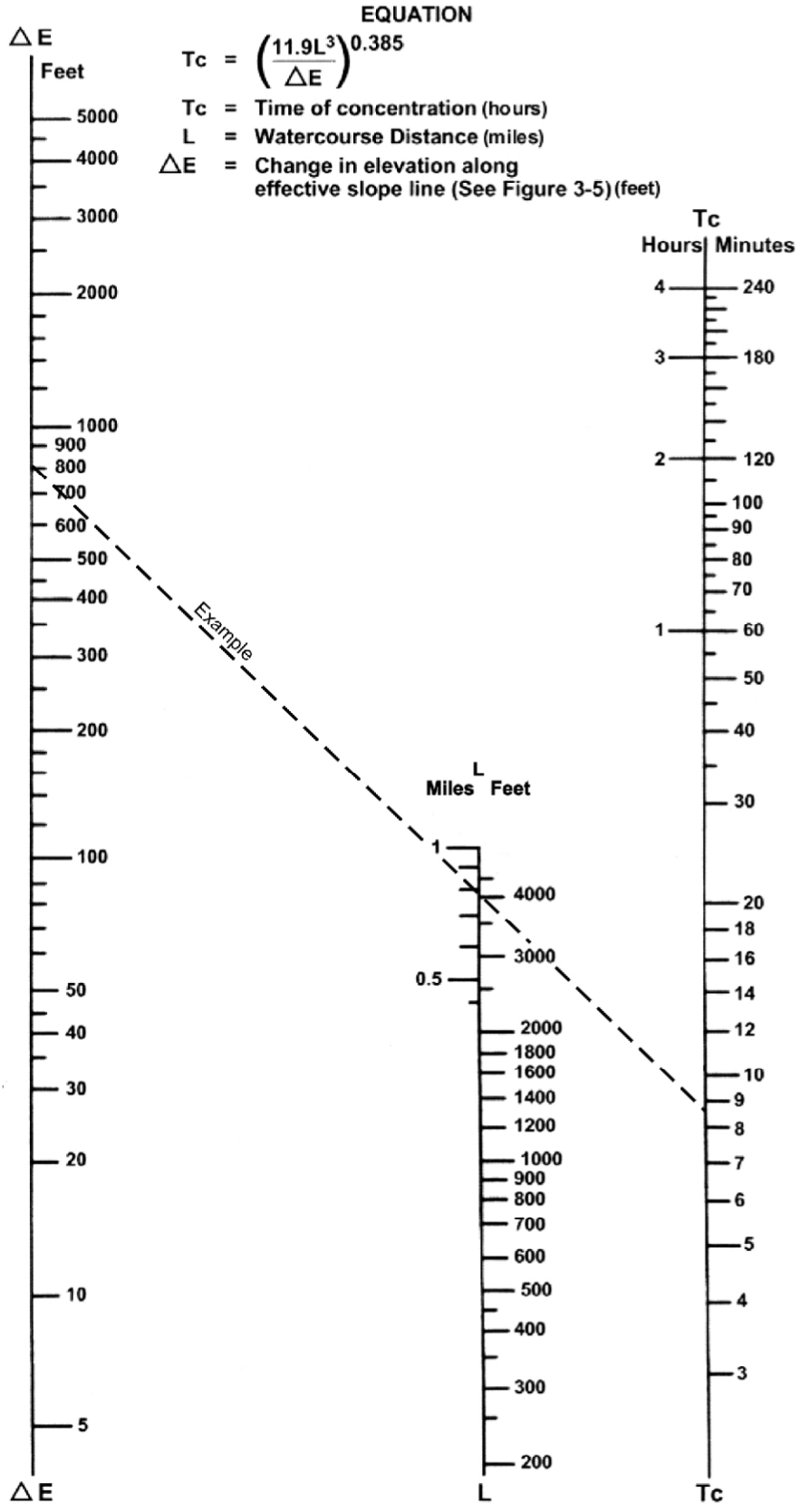
$$T = \frac{1.8\,(1.1-C)\sqrt{D}}{\sqrt[3]{s}}$$

SOURCE: Airport Drainage, Federal Aviation Administration, 1965

FIGURE

3-3

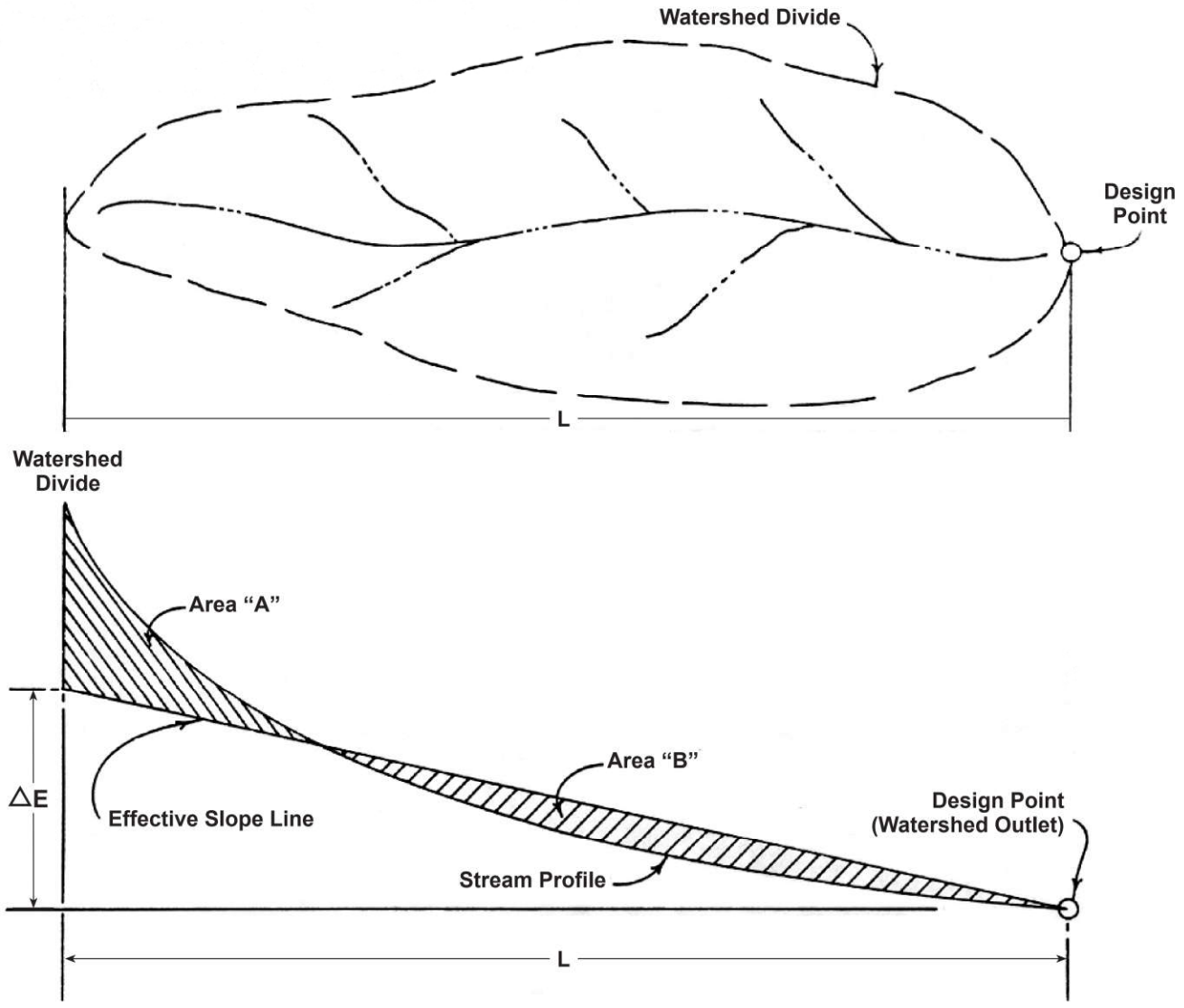
Rational Formula - Overland Time of Flow Nomograph



SOURCE: California Division of Highways (1941) and Kirpich (1940)

FIGURE 3-4

Nomograph for Determination of
Time of Concentration (Tc) or Travel Time (Tt) for Natural Watersheds

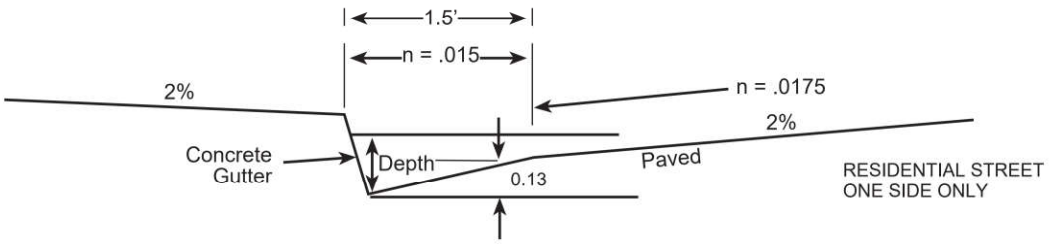


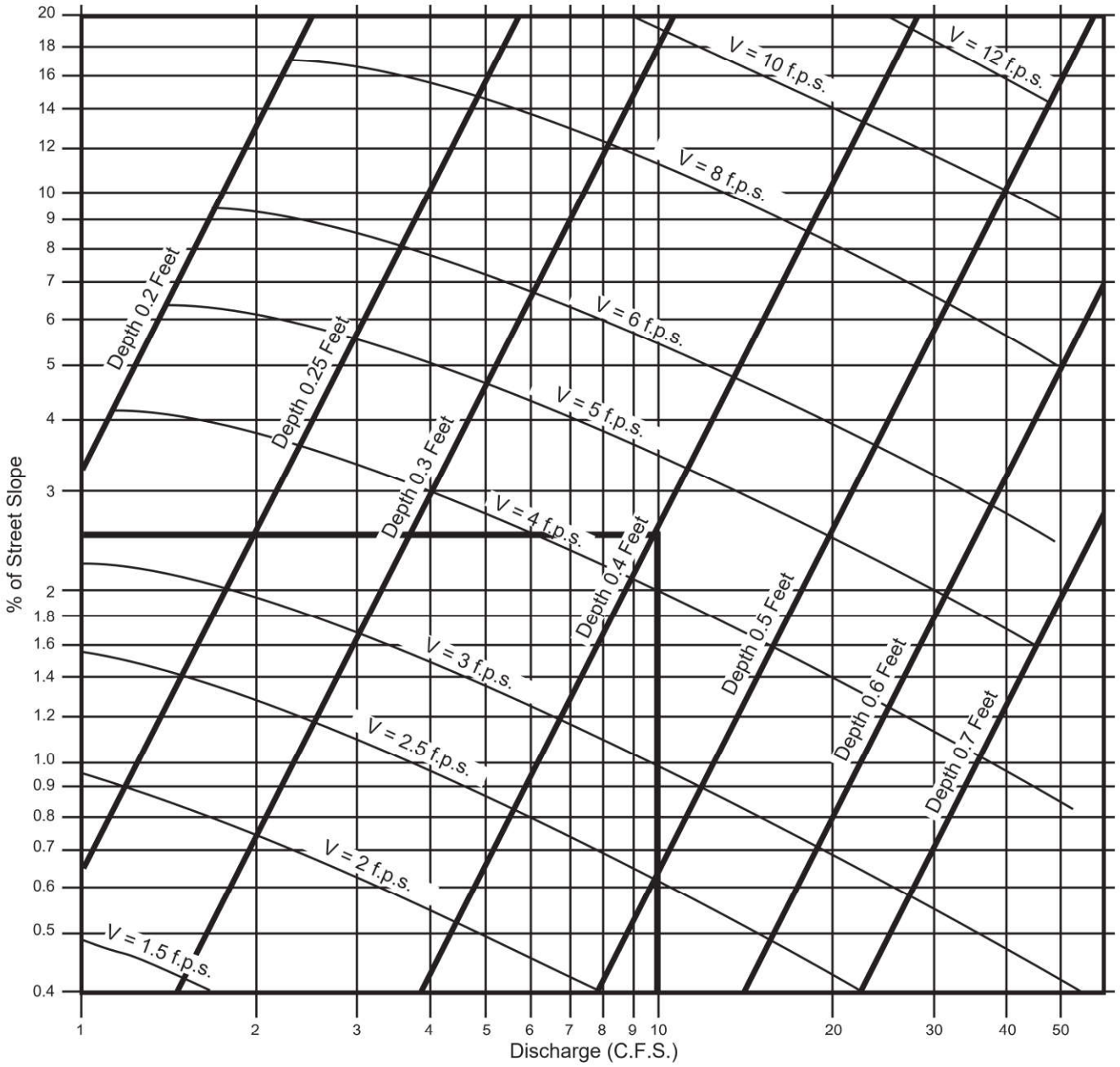
SOURCE: California Division of Highways (1941) and Kirpich (1940)

FIGURE

Computation of Effective Slope for Natural Watersheds

3-5





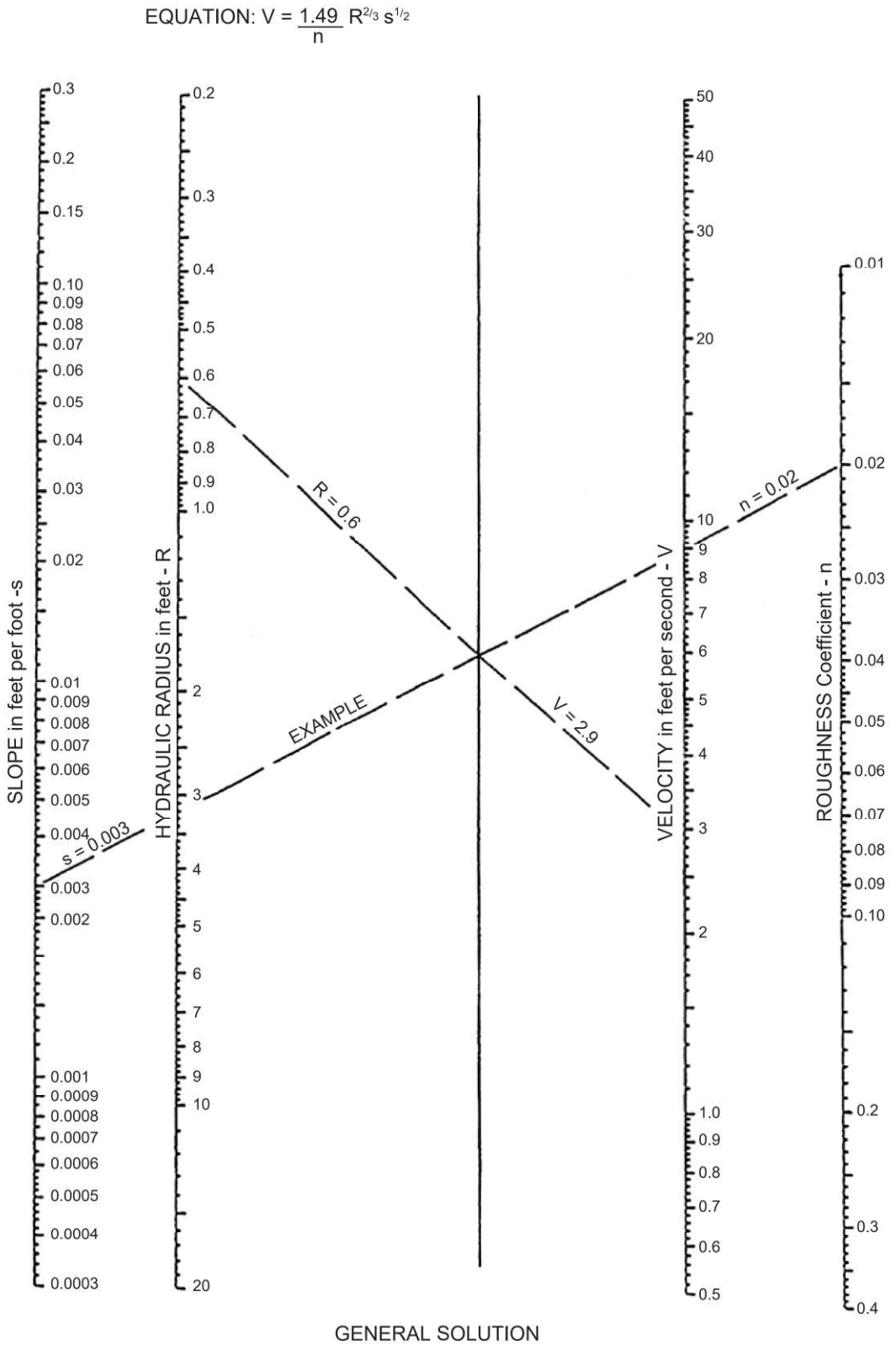
EXAMPLE:
Given: Q = 10 S = 2.5%
Chart gives: Depth = 0.4, Velocity = 4.4 f.p.s.

SOURCE: San Diego County Department of Special District Services Design Manual

FIGURE

Gutter and Roadway Discharge - Velocity Chart

3-6



SOURCE: USDOT, FHWA, HDS-3 (1961)

FIGURE 3-7

Manning's Equation Nomograph



Map Scale: 1:1,550 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 16, Sep 13, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 23, 2020—Feb 13, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX C

AES Existing Condition and Post-Development Output Reports

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
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              Ver. 23.0 Release Date: 07/01/2016  License ID 1452

                              Analysis prepared by:

                          PASCO LARET SUITER & ASSOCIATES
                           1911 SAN DIEGO AVE. SUITE 100
                                SAN DIEGO, CA 92110


 ************************* DESCRIPTION OF STUDY *************************
* PIRAEUS STREET, ENCINITAS                                              *
* PRE-DEVELOPMENT ANALYSIS                                               *
*                                                                        *
 **************************************************************************

  FILE NAME: 3733PRE.DAT
  TIME/DATE OF STUDY: 09:47 09/02/2022
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   2.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   6.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+--------------------------------------------------------------------------+
```

```
| BEGIN FLOWS TO POC-B                                                        |
|                                                                             |
|                                                                             |
+-----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    182.30
  DOWNSTREAM ELEVATION(FEET) =    174.40
  ELEVATION DIFFERENCE(FEET) =      7.90
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.629
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.102
  SUBAREA RUNOFF(CFS) =      0.47
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.47

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    174.40  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1348.00   CHANNEL SLOPE =  0.0698
  CHANNEL BASE(FEET) =    5.00   "Z" FACTOR =  10.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.839
  *USER SPECIFIED(SUBAREA):
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       5.62
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.80
  AVERAGE FLOW DEPTH(FEET) =   0.21   TRAVEL TIME(MIN.) =   5.92
  Tc(MIN.) =   11.55
  SUBAREA AREA(ACRES) =     5.72       SUBAREA RUNOFF(CFS) =    9.88
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        5.9        PEAK FLOW RATE(CFS) =      10.17

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.29   FLOW VELOCITY(FEET/SEC.) =   4.54
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =    1443.00 FEET.

+-----------------------------------------------------------------------------+
| END FLOWS TO POC-B                                                          |
```

```
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

+----------------------------------------------------------------------------+
| BEGIN FLOWS TO POC-A                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    182.30
  DOWNSTREAM ELEVATION(FEET) =    173.36
  ELEVATION DIFFERENCE(FEET) =      8.94
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.402
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.266
  SUBAREA RUNOFF(CFS) =      0.28
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.28

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    173.36  DOWNSTREAM(FEET) =    106.30
  CHANNEL LENGTH THRU SUBAREA(FEET) =   631.00   CHANNEL SLOPE =  0.1063
  CHANNEL BASE(FEET) =   15.00   "Z" FACTOR =   8.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   1.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.389
  *USER SPECIFIED(SUBAREA):
  NATURAL DESERT LANDSCAPING RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.70
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.64
  AVERAGE FLOW DEPTH(FEET) =   0.07   TRAVEL TIME(MIN.) =   3.98
  Tc(MIN.) =    9.38
  SUBAREA AREA(ACRES) =     2.38       SUBAREA RUNOFF(CFS) =    4.70
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        2.5         PEAK FLOW RATE(CFS) =       4.90

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
```

```
  DEPTH(FEET) =  0.09   FLOW VELOCITY(FEET/SEC.) =   3.29
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    102.00 =     726.00 FEET.

+----------------------------------------------------------------------------+
| END FLOWS TO POC-A                                                         |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        2.5  TC(MIN.) =      9.38
  PEAK FLOW RATE(CFS)   =       4.90
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```



```
**************************************************************************

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                              Analysis prepared by:

                          PASCO LARET SUITER & ASSOCIATES
                           1911 SAN DIEGO AVE. SUITE 100
                                SAN DIEGO, CA 92110


 ************************* DESCRIPTION OF STUDY *************************
* PIRAEUS STREET, ENCINITAS                                              *
* POST-DEVELOPMENT UNMITIGATED ANALYSIS                                  *
*                                                                        *
 **************************************************************************

  FILE NAME: 3733PSTU.DAT
  TIME/DATE OF STUDY: 12:09 09/08/2022
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   2.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   6.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   12.0      1.0    0.020/0.020/0.020   0.50    1.50 0.0313 0.125 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+------------------------------------------------------------------------+
```

```
| BEGIN FLOWS TO POC-B                                                          |
|                                                                               |
|                                                                               |
+-------------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    174.70
  DOWNSTREAM ELEVATION(FEET) =    142.09
  ELEVATION DIFFERENCE(FEET) =     32.61
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.431
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.245
  SUBAREA RUNOFF(CFS) =      0.67
  TOTAL AREA(ACRES) =      0.24   TOTAL RUNOFF(CFS) =      0.67

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    142.09  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   492.00   CHANNEL SLOPE =  0.1255
  CHANNEL BASE(FEET) =    3.50   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =  28.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.099
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.82
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.09
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   2.01
  Tc(MIN.) =    7.44
  SUBAREA AREA(ACRES) =     0.99       SUBAREA RUNOFF(CFS) =    2.27
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        1.2         PEAK FLOW RATE(CFS) =       2.82

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.16   FLOW VELOCITY(FEET/SEC.) =   4.76
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =     592.00 FEET.

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    7.44
  RAINFALL INTENSITY(INCH/HR) =   5.10
  TOTAL STREAM AREA(ACRES) =     1.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.82

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    204.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    108.00
  DOWNSTREAM ELEVATION(FEET) =     95.20
  ELEVATION DIFFERENCE(FEET) =     12.80
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.431
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.245
  SUBAREA RUNOFF(CFS) =      0.14
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.14

****************************************************************************
  FLOW PROCESS FROM NODE    204.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     95.20  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   790.00   CHANNEL SLOPE =  0.0188
  CHANNEL BASE(FEET) =    1.50   "Z" FACTOR =  12.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.328
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.72
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.47
  AVERAGE FLOW DEPTH(FEET) =   0.15   TRAVEL TIME(MIN.) =   8.98
  Tc(MIN.) =   14.41
  SUBAREA AREA(ACRES) =     0.75       SUBAREA RUNOFF(CFS) =    1.12
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        0.8         PEAK FLOW RATE(CFS) =       1.20
```

```
  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.19   FLOW VELOCITY(FEET/SEC.) =   1.62
  LONGEST FLOWPATH FROM NODE    203.00 TO NODE    202.00 =     890.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   14.41
  RAINFALL INTENSITY(INCH/HR) =   3.33
  TOTAL STREAM AREA(ACRES) =     0.80
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.20

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    153.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.328
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5036
  SUBAREA AREA(ACRES) =    0.14   SUBAREA RUNOFF(CFS) =    0.38
  TOTAL AREA(ACRES) =        0.9   TOTAL RUNOFF(CFS) =       1.58
  TC(MIN.) =   14.41

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    500.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    93.00  DOWNSTREAM(FEET) =    90.52
  FLOW LENGTH(FEET) =    29.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   4.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.29
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.58
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   14.46
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    500.00 =      29.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
================================================================================
  UPSTREAM ELEVATION(FEET) =   90.52  DOWNSTREAM ELEVATION(FEET) =   80.34
  STREET LENGTH(FEET) =   333.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.59
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.25
    HALFSTREET FLOOD WIDTH(FEET) =    6.21
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.15
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.79
  STREET FLOW TRAVEL TIME(MIN.) =   1.76   Tc(MIN.) =   16.23
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.083
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.507
  SUBAREA AREA(ACRES) =    0.01      SUBAREA RUNOFF(CFS) =    0.02
  TOTAL AREA(ACRES) =        0.9        PEAK FLOW RATE(CFS) =       1.58

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.25   HALFSTREET FLOOD WIDTH(FEET) =   6.21
  FLOW VELOCITY(FEET/SEC.) =  3.12   DEPTH*VELOCITY(FT*FT/SEC.) =   0.78
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    202.00 =     362.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =   16.23
  RAINFALL INTENSITY(INCH/HR) =   3.08
  TOTAL STREAM AREA(ACRES) =     0.95
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.58

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 IS CODE =  81
----------------------------------------------------------------------------
```

```
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.083
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5458
  SUBAREA AREA(ACRES) =    0.14   SUBAREA RUNOFF(CFS) =    0.35
  TOTAL AREA(ACRES) =        1.1   TOTAL RUNOFF(CFS) =       1.83
  TC(MIN.) =   16.23

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     90.00  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   114.00   CHANNEL SLOPE =  0.0847
  CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.048
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.85
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.57
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   0.29
  Tc(MIN.) =   16.52
  SUBAREA AREA(ACRES) =     0.01       SUBAREA RUNOFF(CFS) =    0.02
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.548
  TOTAL AREA(ACRES) =        1.1         PEAK FLOW RATE(CFS) =       1.84

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.12   FLOW VELOCITY(FEET/SEC.) =   6.54
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    202.00 =     114.00 FEET.

+--------------------------------------------------------------------------+
| ADD SUBAREA B-7 AT NODE 510                                              |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    510.00 TO NODE    510.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.048
  *USER SPECIFIED(SUBAREA):
```

```
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5378
  SUBAREA AREA(ACRES) =    0.13   SUBAREA RUNOFF(CFS) =    0.18
  TOTAL AREA(ACRES) =        1.2   TOTAL RUNOFF(CFS) =       2.02
  TC(MIN.) =   16.52

****************************************************************************
  FLOW PROCESS FROM NODE    510.00 TO NODE    143.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
  UPSTREAM ELEVATION(FEET) =    150.50
  DOWNSTREAM ELEVATION(FEET) =    127.00
  ELEVATION DIFFERENCE(FEET) =     23.50
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.345
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.12
  TOTAL AREA(ACRES) =      0.04   TOTAL RUNOFF(CFS) =      0.12

****************************************************************************
  FLOW PROCESS FROM NODE    143.00 TO NODE    145.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    127.00  DOWNSTREAM(FEET) =    111.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   180.00   CHANNEL SLOPE =  0.0870
  CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.354
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.27
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.18
  AVERAGE FLOW DEPTH(FEET) =   0.04   TRAVEL TIME(MIN.) =   0.94
  Tc(MIN.) =    5.29
  SUBAREA AREA(ACRES) =     0.06       SUBAREA RUNOFF(CFS) =    0.31
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.666
  TOTAL AREA(ACRES) =        0.1         PEAK FLOW RATE(CFS) =       0.42

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.05   FLOW VELOCITY(FEET/SEC.) =   3.98
```

```
 LONGEST FLOWPATH FROM NODE    510.00 TO NODE    145.00 =     244.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    145.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  111.34  DOWNSTREAM ELEVATION(FEET) =   80.34
 STREET LENGTH(FEET) =  1213.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 12.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.44
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.17
   HALFSTREET FLOOD WIDTH(FEET) =    2.13
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.68
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.45
 STREET FLOW TRAVEL TIME(MIN.) =   7.55   Tc(MIN.) =   12.84
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.585
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8100
 S.C.S. CURVE NUMBER (AMC II) =   0
 AREA-AVERAGE RUNOFF COEFFICIENT =  0.679
 SUBAREA AREA(ACRES) =    0.01      SUBAREA RUNOFF(CFS) =    0.03
 TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.42

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.16   HALFSTREET FLOOD WIDTH(FEET) =   1.50
 FLOW VELOCITY(FEET/SEC.) =  3.02   DEPTH*VELOCITY(FT*FT/SEC.) =   0.47
 LONGEST FLOWPATH FROM NODE    510.00 TO NODE    202.00 =    1457.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  5
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  5 ARE:
 TIME OF CONCENTRATION(MIN.) =   12.84
```

```
  RAINFALL INTENSITY(INCH/HR) =   3.58
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.42

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.82     7.44        5.099          1.23
      2        1.20    14.41        3.328          0.80
      3        1.58    16.23        3.083          0.95
      5        0.42    12.84        3.585          0.11

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  5 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.00     0.00       6.587
      2        4.41     7.44       5.099
      3        4.72    12.84       3.585
      4        4.83    14.41       3.328
      5        4.76    16.23       3.083

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.83   Tc(MIN.) =   14.41
  TOTAL AREA(ACRES) =        3.1
  LONGEST FLOWPATH FROM NODE    510.00 TO NODE    202.00 =    1457.00 FEET.

+----------------------------------------------------------------------------+
| END FLOWS TO POC-B                                                         |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

+----------------------------------------------------------------------------+
| BEGIN FLOWS TO POC-A                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    45.00
```

```
  UPSTREAM ELEVATION(FEET) =    181.00
  DOWNSTREAM ELEVATION(FEET) =    172.00
  ELEVATION DIFFERENCE(FEET) =      9.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.625
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.16
  TOTAL AREA(ACRES) =      0.03   TOTAL RUNOFF(CFS) =      0.16

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    151.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   156.53  DOWNSTREAM(FEET) =   156.00
  FLOW LENGTH(FEET) =    10.50   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO  6.000
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.39
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.16
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    1.67
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    151.00 =      55.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    102.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  156.00  DOWNSTREAM ELEVATION(FEET) =  138.54
  STREET LENGTH(FEET) =   321.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.35
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.26
    HALFSTREET FLOOD WIDTH(FEET) =    6.58
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.26
```

```
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.10
  STREET FLOW TRAVEL TIME(MIN.) =   1.26   Tc(MIN.) =    2.92
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.82      SUBAREA RUNOFF(CFS) =    4.37
  TOTAL AREA(ACRES) =        0.8        PEAK FLOW RATE(CFS) =       4.54

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   8.96
  FLOW VELOCITY(FEET/SEC.) =  4.93   DEPTH*VELOCITY(FT*FT/SEC.) =   1.50
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =     376.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   128.34  DOWNSTREAM(FEET) =   128.12
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.19
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.54
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    2.93
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     381.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    104.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    150.62
  DOWNSTREAM ELEVATION(FEET) =    146.63
  ELEVATION DIFFERENCE(FEET) =      3.99
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.086
```

```
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    91.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.13   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE    104.00 TO NODE    105.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  146.63  DOWNSTREAM ELEVATION(FEET) =  140.51
  STREET LENGTH(FEET) =    97.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.17
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.21
    HALFSTREET FLOOD WIDTH(FEET) =    4.13
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.06
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.85
  STREET FLOW TRAVEL TIME(MIN.) =   0.40   Tc(MIN.) =    3.48
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.18      SUBAREA RUNOFF(CFS) =    0.96
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.65

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.17
  FLOW VELOCITY(FEET/SEC.) =  4.29   DEPTH*VELOCITY(FT*FT/SEC.) =   0.98
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    105.00 =     192.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    105.00 TO NODE    106.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   137.51  DOWNSTREAM(FEET) =   133.85
 FLOW LENGTH(FEET) =    82.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   4.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   7.67
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.65
 PIPE TRAVEL TIME(MIN.) =   0.18    Tc(MIN.) =    3.66
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    106.00 =     274.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    106.00 TO NODE    106.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =    3.66
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.31
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.65

****************************************************************************
 FLOW PROCESS FROM NODE    107.00 TO NODE    108.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8100
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
 UPSTREAM ELEVATION(FEET) =    146.18
 DOWNSTREAM ELEVATION(FEET) =    140.74
 ELEVATION DIFFERENCE(FEET) =      5.44
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.844
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.96
 TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
 FLOW PROCESS FROM NODE    108.00 TO NODE    106.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
```

```
  UPSTREAM ELEVATION(FEET) =  140.74  DOWNSTREAM ELEVATION(FEET) =  136.85
  STREET LENGTH(FEET) =    70.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.36
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.80
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.90
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.87
  STREET FLOW TRAVEL TIME(MIN.) =   0.30   Tc(MIN.) =    3.14
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.15      SUBAREA RUNOFF(CFS) =    0.80
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.76

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.24   HALFSTREET FLOOD WIDTH(FEET) =   5.62
  FLOW VELOCITY(FEET/SEC.) =  4.06   DEPTH*VELOCITY(FT*FT/SEC.) =   0.97
  LONGEST FLOWPATH FROM NODE    107.00 TO NODE    106.00 =     165.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    106.00 TO NODE    106.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.14
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.33
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.76

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
```

```
     1        1.65     3.66        6.587          0.31
     2        1.76     3.14        6.587          0.33

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        3.18     3.14       6.587
     2        3.41     3.66       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.41   Tc(MIN.) =    3.66
  TOTAL AREA(ACRES) =        0.6
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    106.00 =     274.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    106.00 TO NODE    109.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   133.85  DOWNSTREAM(FEET) =   131.86
  FLOW LENGTH(FEET) =   199.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.03
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.41
  PIPE TRAVEL TIME(MIN.) =   0.66    Tc(MIN.) =    4.32
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    109.00 =     473.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    109.00 TO NODE    110.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   131.86  DOWNSTREAM(FEET) =   129.61
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.78
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.41
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    4.49
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    110.00 =     551.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    110.00 IS CODE =   1
----------------------------------------------------------------------------
```

```
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
================================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.49
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.64
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.41

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    142.09
  DOWNSTREAM ELEVATION(FEET) =    136.65
  ELEVATION DIFFERENCE(FEET) =      5.44
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.844
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.96
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  136.65  DOWNSTREAM ELEVATION(FEET) =  134.29
  STREET LENGTH(FEET) =    41.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.28
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.58
```

```
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.91
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.85
  STREET FLOW TRAVEL TIME(MIN.) =   0.17   Tc(MIN.) =    3.02
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.12      SUBAREA RUNOFF(CFS) =    0.64
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.60

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.25
  FLOW VELOCITY(FEET/SEC.) =  4.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.94
  LONGEST FLOWPATH FROM NODE    111.00 TO NODE    113.00 =     136.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    113.00 TO NODE    110.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   131.29  DOWNSTREAM(FEET) =   129.61
  FLOW LENGTH(FEET) =   168.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.16
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.60
  PIPE TRAVEL TIME(MIN.) =   0.67    Tc(MIN.) =    3.69
  LONGEST FLOWPATH FROM NODE    111.00 TO NODE    110.00 =     304.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    110.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.69
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.60

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.41     4.49        6.587          0.64
      2        1.60     3.69        6.587          0.30
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        5.02     3.69       6.587
      2        5.02     4.49       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.02   Tc(MIN.) =    4.49
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    110.00 =     551.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   129.61  DOWNSTREAM(FEET) =   128.12
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.55
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.02
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    4.59
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    114.00 =     601.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        5.02     4.59       6.587        0.94
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    114.00 =     601.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        4.54     2.93       6.587        0.85
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     381.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
```

```
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1       7.74       2.93        6.587
      2       9.55       4.59        6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       9.55   Tc(MIN.) =    4.59
  TOTAL AREA(ACRES) =        1.8

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    115.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   128.12  DOWNSTREAM(FEET) =   127.37
  FLOW LENGTH(FEET) =    24.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.19
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       9.55
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    4.63
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    115.00 =     625.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    115.00 TO NODE    115.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.63
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     1.79
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      9.55

****************************************************************************
  FLOW PROCESS FROM NODE    116.00 TO NODE    530.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    30.00
```

```
  UPSTREAM ELEVATION(FEET) =    138.00
  DOWNSTREAM ELEVATION(FEET) =    136.30
  ELEVATION DIFFERENCE(FEET) =      1.70
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.604
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.32
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.32

****************************************************************************
  FLOW PROCESS FROM NODE    530.00 TO NODE    117.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  136.30  DOWNSTREAM ELEVATION(FEET) =  131.74
  STREET LENGTH(FEET) =    78.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.80
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.19
    HALFSTREET FLOOD WIDTH(FEET) =    3.02
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.82
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.71
  STREET FLOW TRAVEL TIME(MIN.) =   0.34   Tc(MIN.) =    1.94
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.18      SUBAREA RUNOFF(CFS) =    0.96
  TOTAL AREA(ACRES) =        0.2        PEAK FLOW RATE(CFS) =       1.28

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.22   HALFSTREET FLOOD WIDTH(FEET) =   4.51
  FLOW VELOCITY(FEET/SEC.) =  3.99   DEPTH*VELOCITY(FT*FT/SEC.) =   0.86
  LONGEST FLOWPATH FROM NODE    116.00 TO NODE    117.00 =     108.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    117.00 TO NODE    115.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   128.74  DOWNSTREAM(FEET) =   127.37
 FLOW LENGTH(FEET) =   137.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.05
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.28
 PIPE TRAVEL TIME(MIN.) =   0.56    Tc(MIN.) =    2.51
 LONGEST FLOWPATH FROM NODE    116.00 TO NODE    115.00 =     245.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    155.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =    2.51
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.24
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.28

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        9.55     4.63        6.587          1.79
     2        1.28     2.51        6.587          0.24

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        6.46     2.51       6.587
     2       10.83     4.63       6.587

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      10.83   Tc(MIN.) =    4.63
 TOTAL AREA(ACRES) =        2.0
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    155.00 =     625.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    118.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   127.37  DOWNSTREAM(FEET) =   124.46
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.20
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      10.83
  PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =    4.74
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    118.00 =     703.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    118.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.74
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     2.03
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     10.83

****************************************************************************
  FLOW PROCESS FROM NODE    119.00 TO NODE    120.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    93.00
  UPSTREAM ELEVATION(FEET) =    133.92
  DOWNSTREAM ELEVATION(FEET) =    128.64
  ELEVATION DIFFERENCE(FEET) =      5.28
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.822
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.96
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
  FLOW PROCESS FROM NODE    120.00 TO NODE    118.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   125.64  DOWNSTREAM(FEET) =   124.46
  FLOW LENGTH(FEET) =   118.00   MANNING'S N =  0.013
```

```
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.82
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.96
  PIPE TRAVEL TIME(MIN.) =   0.52    Tc(MIN.) =    3.34
  LONGEST FLOWPATH FROM NODE    119.00 TO NODE    118.00 =     211.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    118.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.34
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.96

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       10.83     4.74        6.587          2.03
      2        0.96     3.34        6.587          0.18

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       11.79     3.34       6.587
      2       11.79     4.74       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      11.79   Tc(MIN.) =    4.74
  TOTAL AREA(ACRES) =        2.2
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    118.00 =     703.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    121.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   124.46  DOWNSTREAM(FEET) =   116.01
  FLOW LENGTH(FEET) =   139.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.92
```

```
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      11.79
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    4.91
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    121.00 =     842.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    121.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.91
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     2.21
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     11.79

****************************************************************************
  FLOW PROCESS FROM NODE    156.00 TO NODE    123.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    143.00
  DOWNSTREAM ELEVATION(FEET) =    138.63
  ELEVATION DIFFERENCE(FEET) =      4.37
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.027
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    93.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.91
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.91

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    124.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  138.63  DOWNSTREAM ELEVATION(FEET) =  125.78
  STREET LENGTH(FEET) =   245.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
```

```
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.75
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.27
    HALFSTREET FLOOD WIDTH(FEET) =    7.18
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.34
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.17
  STREET FLOW TRAVEL TIME(MIN.) =   0.94   Tc(MIN.) =    3.97
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.69      SUBAREA RUNOFF(CFS) =    3.68
  TOTAL AREA(ACRES) =        0.9        PEAK FLOW RATE(CFS) =       4.59

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   9.03
  FLOW VELOCITY(FEET/SEC.) =  4.91   DEPTH*VELOCITY(FT*FT/SEC.) =   1.51
  LONGEST FLOWPATH FROM NODE    156.00 TO NODE    124.00 =     340.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    121.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   116.23  DOWNSTREAM(FEET) =   116.01
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.21
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.59
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    3.98
  LONGEST FLOWPATH FROM NODE    156.00 TO NODE    121.00 =     344.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    121.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
```

```
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.98
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.86
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.59

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       11.79     4.91        6.587          2.21
      2        4.59     3.98        6.587          0.86

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       16.38     3.98       6.587
      2       16.38     4.91       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      16.38   Tc(MIN.) =    4.91
  TOTAL AREA(ACRES) =        3.1
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    121.00 =     842.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    125.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   116.01  DOWNSTREAM(FEET) =   112.93
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.28
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      16.38
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =    4.96
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    125.00 =     892.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    125.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    148.00 TO NODE    149.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    129.50
  DOWNSTREAM ELEVATION(FEET) =    119.80
  ELEVATION DIFFERENCE(FEET) =      9.70
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.362
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.75
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.75

+----------------------------------------------------------------------------+
| AREA FORCE DRAINED VIA PUMP                                                |
| ADDED AS SUBAREA AT PRESSURE PIPE DISCHARGE POINT                          |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    149.00 TO NODE    149.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.8100
  SUBAREA AREA(ACRES) =    0.23   SUBAREA RUNOFF(CFS) =    1.23
  TOTAL AREA(ACRES) =        0.4   TOTAL RUNOFF(CFS) =       1.97
  TC(MIN.) =    2.36

****************************************************************************
  FLOW PROCESS FROM NODE    149.00 TO NODE    590.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   115.80  DOWNSTREAM(FEET) =   114.25
  FLOW LENGTH(FEET) =   103.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.11
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.97
```

```
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    2.70
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    590.00 =     198.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    590.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.70
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.37
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.97

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    540.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    53.00
  UPSTREAM ELEVATION(FEET) =    124.30
  DOWNSTREAM ELEVATION(FEET) =    121.10
  ELEVATION DIFFERENCE(FEET) =      3.20
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.087
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.48
  TOTAL AREA(ACRES) =      0.09   TOTAL RUNOFF(CFS) =      0.48

****************************************************************************
  FLOW PROCESS FROM NODE    540.00 TO NODE    132.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  121.10  DOWNSTREAM ELEVATION(FEET) =  117.36
  STREET LENGTH(FEET) =    65.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
```

```
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.04
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.20
    HALFSTREET FLOOD WIDTH(FEET) =    3.91
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.84
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.78
  STREET FLOW TRAVEL TIME(MIN.) =   0.28   Tc(MIN.) =    2.37
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.21      SUBAREA RUNOFF(CFS) =    1.12
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.60

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.25
  FLOW VELOCITY(FEET/SEC.) =  4.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.94
  LONGEST FLOWPATH FROM NODE    131.00 TO NODE    132.00 =     118.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    590.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   114.36  DOWNSTREAM(FEET) =   114.25
  FLOW LENGTH(FEET) =    11.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.16
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.60
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    2.41
  LONGEST FLOWPATH FROM NODE    131.00 TO NODE    590.00 =     129.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    590.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.41
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.60
```

```
  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.97     2.70        6.587          0.37
      2        1.60     2.41        6.587          0.30

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.37     2.41       6.587
      2        3.57     2.70       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.57   Tc(MIN.) =    2.70
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    590.00 =     198.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    125.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   114.25  DOWNSTREAM(FEET) =   112.93
  FLOW LENGTH(FEET) =   132.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.30
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.57
  PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =    3.11
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    125.00 =     330.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    125.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        3.57     3.11       6.587        0.67
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    125.00 =     330.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
```

```
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       16.38     4.96       6.587        3.07
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    125.00 =     892.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      13.85       3.11        6.587
      2      19.95       4.96        6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      19.95   Tc(MIN.) =    4.96
  TOTAL AREA(ACRES) =        3.7

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    126.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   112.93  DOWNSTREAM(FEET) =   108.69
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.12
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      19.95
  PIPE TRAVEL TIME(MIN.) =   0.09    Tc(MIN.) =    5.05
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    126.00 =     970.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    126.00 TO NODE    126.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.05
  RAINFALL INTENSITY(INCH/HR) =   6.55
  TOTAL STREAM AREA(ACRES) =     3.74
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     19.95

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    550.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    37.00
```

```
  UPSTREAM ELEVATION(FEET) =    119.66
  DOWNSTREAM ELEVATION(FEET) =    117.30
  ELEVATION DIFFERENCE(FEET) =      2.36
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.712
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.37
  TOTAL AREA(ACRES) =      0.07   TOTAL RUNOFF(CFS) =      0.37

****************************************************************************
  FLOW PROCESS FROM NODE    550.00 TO NODE    134.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  117.30  DOWNSTREAM ELEVATION(FEET) =  113.12
  STREET LENGTH(FEET) =    77.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.80
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.19
    HALFSTREET FLOOD WIDTH(FEET) =    3.10
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.74
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.70
  STREET FLOW TRAVEL TIME(MIN.) =   0.34   Tc(MIN.) =    2.06
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.16      SUBAREA RUNOFF(CFS) =    0.85
  TOTAL AREA(ACRES) =        0.2        PEAK FLOW RATE(CFS) =       1.23

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.22   HALFSTREET FLOOD WIDTH(FEET) =   4.51
  FLOW VELOCITY(FEET/SEC.) =  3.82   DEPTH*VELOCITY(FT*FT/SEC.) =   0.83
  LONGEST FLOWPATH FROM NODE    133.00 TO NODE    134.00 =     114.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    134.00 TO NODE    126.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   110.12  DOWNSTREAM(FEET) =   108.69
 FLOW LENGTH(FEET) =   143.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.01
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.23
 PIPE TRAVEL TIME(MIN.) =   0.59    Tc(MIN.) =    2.65
 LONGEST FLOWPATH FROM NODE    133.00 TO NODE    126.00 =     257.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    126.00 TO NODE    126.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =    2.65
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.23
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.23

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1       19.95     5.05        6.546          3.74
     2        1.23     2.65        6.587          0.23

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1       11.70     2.65       6.587
     2       21.17     5.05       6.546

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      21.17   Tc(MIN.) =    5.05
 TOTAL AREA(ACRES) =        4.0
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    126.00 =     970.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    126.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.69  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =    20.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.16
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      21.17
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =    5.07
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     990.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.07
  RAINFALL INTENSITY(INCH/HR) =   6.53
  TOTAL STREAM AREA(ACRES) =     3.97
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     21.17

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    600.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    181.00
  DOWNSTREAM ELEVATION(FEET) =    172.00
  ELEVATION DIFFERENCE(FEET) =      9.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.390
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.275
  SUBAREA RUNOFF(CFS) =      0.11
  TOTAL AREA(ACRES) =      0.04   TOTAL RUNOFF(CFS) =      0.11

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    160.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    172.00  DOWNSTREAM(FEET) =    132.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   333.00   CHANNEL SLOPE =  0.1201
  CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =   2.000
```

```
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.507
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.29
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.59
  AVERAGE FLOW DEPTH(FEET) =   0.06   TRAVEL TIME(MIN.) =   1.21
  Tc(MIN.) =    6.60
  SUBAREA AREA(ACRES) =     0.14       SUBAREA RUNOFF(CFS) =    0.35
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        0.2         PEAK FLOW RATE(CFS) =       0.45

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.07   FLOW VELOCITY(FEET/SEC.) =   5.46
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    160.00 =     428.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    160.00 TO NODE    128.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   129.00  DOWNSTREAM(FEET) =   125.76
  FLOW LENGTH(FEET) =   122.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   3.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.52
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.45
  PIPE TRAVEL TIME(MIN.) =   0.45    Tc(MIN.) =    7.05
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    128.00 =     550.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    128.00 TO NODE    130.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  125.76  DOWNSTREAM ELEVATION(FEET) =  117.50
  STREET LENGTH(FEET) =   156.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130
```

```
    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.65
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.24
    HALFSTREET FLOOD WIDTH(FEET) =    5.47
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.96
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.93
  STREET FLOW TRAVEL TIME(MIN.) =   0.66   Tc(MIN.) =    7.70
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.984
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.727
  SUBAREA AREA(ACRES) =    0.60      SUBAREA RUNOFF(CFS) =    2.42
  TOTAL AREA(ACRES) =        0.8        PEAK FLOW RATE(CFS) =       2.83

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.27   HALFSTREET FLOOD WIDTH(FEET) =   7.25
  FLOW VELOCITY(FEET/SEC.) =  4.39   DEPTH*VELOCITY(FT*FT/SEC.) =   1.19
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    130.00 =     706.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.06  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.94
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.83
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    7.71
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    127.00 =     710.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    7.71
  RAINFALL INTENSITY(INCH/HR) =   4.98
  TOTAL STREAM AREA(ACRES) =     0.78
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.83

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    136.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    150.62
  DOWNSTREAM ELEVATION(FEET) =    145.21
  ELEVATION DIFFERENCE(FEET) =      5.41
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.849
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.27
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.27

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    137.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  145.21  DOWNSTREAM ELEVATION(FEET) =  117.57
  STREET LENGTH(FEET) =   543.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.25
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.65
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.73
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.82
  STREET FLOW TRAVEL TIME(MIN.) =   2.43   Tc(MIN.) =    5.28
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.361
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.38      SUBAREA RUNOFF(CFS) =    1.96
  TOTAL AREA(ACRES) =        0.4        PEAK FLOW RATE(CFS) =       2.22
```

```
  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.25   HALFSTREET FLOOD WIDTH(FEET) =   6.44
  FLOW VELOCITY(FEET/SEC.) =  4.16   DEPTH*VELOCITY(FT*FT/SEC.) =   1.06
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    137.00 =     638.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    137.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.72  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =    18.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.51
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.22
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    5.31
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     656.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.31
  RAINFALL INTENSITY(INCH/HR) =   6.33
  TOTAL STREAM AREA(ACRES) =     0.43
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.22

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       21.17     5.07        6.526          3.97
      2        2.83     7.71        4.980          0.78
      3        2.22     5.31        6.334          0.43

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  3 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       25.15     5.07       6.526
      2       24.71     5.31       6.334
      3       20.73     7.71       4.980
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      25.15   Tc(MIN.) =    5.07
  TOTAL AREA(ACRES) =        5.2
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     990.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   107.84  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =    46.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  14.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.31
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      25.15
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =    5.13
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    141.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    40.00
  UPSTREAM ELEVATION(FEET) =    117.50
  DOWNSTREAM ELEVATION(FEET) =    114.93
  ELEVATION DIFFERENCE(FEET) =      2.57
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.776
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.16
  TOTAL AREA(ACRES) =      0.03   TOTAL RUNOFF(CFS) =      0.16

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
```

```
  UPSTREAM ELEVATION(FEET) =  114.93  DOWNSTREAM ELEVATION(FEET) =  110.22
  STREET LENGTH(FEET) =   126.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.45
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.16
    HALFSTREET FLOOD WIDTH(FEET) =    1.50
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.65
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.57
  STREET FLOW TRAVEL TIME(MIN.) =   0.58   Tc(MIN.) =    2.35
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.11      SUBAREA RUNOFF(CFS) =    0.59
  TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.75

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.20   HALFSTREET FLOOD WIDTH(FEET) =   3.54
  FLOW VELOCITY(FEET/SEC.) =  3.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.60
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    142.00 =     166.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    142.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.35
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.75

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    142.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
```

```
==============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    70.00
  UPSTREAM ELEVATION(FEET) =    115.00
  DOWNSTREAM ELEVATION(FEET) =    110.22
  ELEVATION DIFFERENCE(FEET) =      4.78
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.160
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.454
  SUBAREA RUNOFF(CFS) =      0.17
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.17

******************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    142.00 IS CODE =   1
------------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.16
  RAINFALL INTENSITY(INCH/HR) =   6.45
  TOTAL STREAM AREA(ACRES) =     0.06
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.17

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.75     2.35        6.587          0.14
      2        0.17     5.16        6.454          0.06

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.83     2.35       6.587
      2        0.91     5.16       6.454

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       0.91   Tc(MIN.) =    5.16
  TOTAL AREA(ACRES) =        0.2
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    142.00 =     166.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    139.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   106.70  DOWNSTREAM(FEET) =   106.40
  FLOW LENGTH(FEET) =    25.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   4.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.04
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.91
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    5.26
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    139.00 =     191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    139.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
================================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.26
  RAINFALL INTENSITY(INCH/HR) =   6.37
  TOTAL STREAM AREA(ACRES) =     0.20
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.91

****************************************************************************
  FLOW PROCESS FROM NODE    137.00 TO NODE    138.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =    117.57
  DOWNSTREAM ELEVATION(FEET) =    114.93
  ELEVATION DIFFERENCE(FEET) =      2.64
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.136
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.27
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.27

****************************************************************************
  FLOW PROCESS FROM NODE    138.00 TO NODE    139.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
================================================================================
  UPSTREAM ELEVATION(FEET) =  114.93  DOWNSTREAM ELEVATION(FEET) =  110.22
  STREET LENGTH(FEET) =    91.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00
```

```
  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.40
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.16
    HALFSTREET FLOOD WIDTH(FEET) =    1.50
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.29
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.67
  STREET FLOW TRAVEL TIME(MIN.) =   0.35   Tc(MIN.) =    3.49
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.05      SUBAREA RUNOFF(CFS) =    0.27
  TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.53

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.16   HALFSTREET FLOOD WIDTH(FEET) =   1.50
  FLOW VELOCITY(FEET/SEC.) =  4.29   DEPTH*VELOCITY(FT*FT/SEC.) =   0.67
  LONGEST FLOWPATH FROM NODE    137.00 TO NODE    139.00 =     171.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    139.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.49
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.53

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.91     5.26        6.372          0.20
      2        0.53     3.49        6.587          0.10
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.41     3.49       6.587
      2        1.42     5.26       6.372

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.42   Tc(MIN.) =    5.26
  TOTAL AREA(ACRES) =        0.3
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    139.00 =     191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   106.40  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =    40.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.11
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.42
  PIPE TRAVEL TIME(MIN.) =   0.16    Tc(MIN.) =    5.43
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    140.00 =     231.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        1.42     5.43       6.249        0.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    140.00 =     231.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       25.15     5.13       6.482        5.18
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
```

```
      1      26.49       5.13        6.482
      2      25.66       5.43        6.249

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      26.49   Tc(MIN.) =    5.13
  TOTAL AREA(ACRES) =        5.5

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    146.00 TO NODE    147.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    116.27
  DOWNSTREAM ELEVATION(FEET) =    110.79
  ELEVATION DIFFERENCE(FEET) =      5.48
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.837
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.13   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE    147.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   107.79  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =     3.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.91
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.69
  PIPE TRAVEL TIME(MIN.) =   0.00    Tc(MIN.) =    2.84
```

```
  LONGEST FLOWPATH FROM NODE    146.00 TO NODE    140.00 =      98.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        0.69     2.84       6.587        0.13
  LONGEST FLOWPATH FROM NODE    146.00 TO NODE    140.00 =      98.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       26.49     5.13       6.482        5.48
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      15.37       2.84        6.587
      2      27.17       5.13        6.482

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      27.17   Tc(MIN.) =    5.13
  TOTAL AREA(ACRES) =        5.6

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.482
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.7951
  SUBAREA AREA(ACRES) =    0.19   SUBAREA RUNOFF(CFS) =    1.00
  TOTAL AREA(ACRES) =        5.8   TOTAL RUNOFF(CFS) =      29.89
  TC(MIN.) =    5.13

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    300.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
```

```
  ELEVATION DATA: UPSTREAM(FEET) =    94.20  DOWNSTREAM(FEET) =    92.00
  FLOW LENGTH(FEET) =   110.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  18.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.30
  ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      29.89
  PIPE TRAVEL TIME(MIN.) =   0.16    Tc(MIN.) =    5.29
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    300.00 =    1146.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    700.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    92.00  DOWNSTREAM(FEET) =    84.00
  FLOW LENGTH(FEET) =    25.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  32.51
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      29.89
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    5.30
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    700.00 =    1171.00 FEET.

+--------------------------------------------------------------------------+
| END FLOWS TO POC-A                                                       |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        5.8  TC(MIN.) =      5.30
  PEAK FLOW RATE(CFS)   =      29.89
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
          (c) Copyright 1982-2016 Advanced Engineering Software (aes)
              Ver. 23.0 Release Date: 07/01/2016  License ID 1452

                              Analysis prepared by:

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 ************************* DESCRIPTION OF STUDY *************************
* PIRAEUS STREET, ENCINITAS                                              *
* POST-DEVELOPMENT MITIGATED ANALYSIS                                    *
*                                                                        *
 **************************************************************************

  FILE NAME: 3733PSTM.DAT
  TIME/DATE OF STUDY: 15:24 09/08/2022
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   2.500
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   6.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   12.0      1.0    0.020/0.020/0.020   0.50    1.50 0.0313 0.125 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

+-------------------------------------------------------------------------+
```

```
| BEGIN FLOWS TO POC-B                                                          |
|                                                                               |
|                                                                               |
+-------------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    174.70
  DOWNSTREAM ELEVATION(FEET) =    142.09
  ELEVATION DIFFERENCE(FEET) =     32.61
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.431
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.245
  SUBAREA RUNOFF(CFS) =      0.67
  TOTAL AREA(ACRES) =      0.24   TOTAL RUNOFF(CFS) =      0.67

****************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    142.09  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   492.00   CHANNEL SLOPE =  0.1255
  CHANNEL BASE(FEET) =    3.50   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =  28.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.099
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.82
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.09
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   2.01
  Tc(MIN.) =    7.44
  SUBAREA AREA(ACRES) =     0.99       SUBAREA RUNOFF(CFS) =    2.27
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        1.2         PEAK FLOW RATE(CFS) =       2.82

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.16   FLOW VELOCITY(FEET/SEC.) =   4.76
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =     592.00 FEET.

****************************************************************************
```

```
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    7.44
  RAINFALL INTENSITY(INCH/HR) =   5.10
  TOTAL STREAM AREA(ACRES) =     1.23
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.82

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    204.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    108.00
  DOWNSTREAM ELEVATION(FEET) =     95.20
  ELEVATION DIFFERENCE(FEET) =     12.80
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.431
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.245
  SUBAREA RUNOFF(CFS) =      0.14
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.14

****************************************************************************
  FLOW PROCESS FROM NODE    204.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     95.20  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   790.00   CHANNEL SLOPE =  0.0188
  CHANNEL BASE(FEET) =    1.50   "Z" FACTOR =  12.000
  MANNING'S FACTOR = 0.030   MAXIMUM DEPTH(FEET) =   0.50
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.328
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.72
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.47
  AVERAGE FLOW DEPTH(FEET) =   0.15   TRAVEL TIME(MIN.) =   8.98
  Tc(MIN.) =   14.41
  SUBAREA AREA(ACRES) =     0.75       SUBAREA RUNOFF(CFS) =    1.12
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        0.8         PEAK FLOW RATE(CFS) =       1.20
```

```
  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.19   FLOW VELOCITY(FEET/SEC.) =   1.62
  LONGEST FLOWPATH FROM NODE    203.00 TO NODE    202.00 =     890.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   14.41
  RAINFALL INTENSITY(INCH/HR) =   3.33
  TOTAL STREAM AREA(ACRES) =     0.80
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.20

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    153.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.328
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5036
  SUBAREA AREA(ACRES) =    0.14   SUBAREA RUNOFF(CFS) =    0.38
  TOTAL AREA(ACRES) =        0.9   TOTAL RUNOFF(CFS) =       1.58
  TC(MIN.) =   14.41

****************************************************************************
  FLOW PROCESS FROM NODE    153.00 TO NODE    500.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    93.00  DOWNSTREAM(FEET) =    90.52
  FLOW LENGTH(FEET) =    29.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   4.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.29
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.58
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =   14.46
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    500.00 =      29.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
================================================================================
  UPSTREAM ELEVATION(FEET) =   90.52  DOWNSTREAM ELEVATION(FEET) =   80.34
  STREET LENGTH(FEET) =   333.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.59
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.25
    HALFSTREET FLOOD WIDTH(FEET) =    6.21
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.15
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.79
  STREET FLOW TRAVEL TIME(MIN.) =   1.76   Tc(MIN.) =   16.23
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.083
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.507
  SUBAREA AREA(ACRES) =    0.01      SUBAREA RUNOFF(CFS) =    0.02
  TOTAL AREA(ACRES) =        0.9        PEAK FLOW RATE(CFS) =       1.58

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.25   HALFSTREET FLOOD WIDTH(FEET) =   6.21
  FLOW VELOCITY(FEET/SEC.) =  3.12   DEPTH*VELOCITY(FT*FT/SEC.) =   0.78
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    202.00 =     362.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  5
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =   16.23
  RAINFALL INTENSITY(INCH/HR) =   3.08
  TOTAL STREAM AREA(ACRES) =     0.95
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.58

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    154.00 IS CODE =  81
----------------------------------------------------------------------------
```

```
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.083
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5458
  SUBAREA AREA(ACRES) =    0.14   SUBAREA RUNOFF(CFS) =    0.35
  TOTAL AREA(ACRES) =        1.1   TOTAL RUNOFF(CFS) =       1.83
  TC(MIN.) =   16.23

****************************************************************************
  FLOW PROCESS FROM NODE    154.00 TO NODE    202.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     90.00  DOWNSTREAM(FEET) =     80.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   114.00   CHANNEL SLOPE =  0.0847
  CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.048
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.85
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.57
  AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   0.29
  Tc(MIN.) =   16.52
  SUBAREA AREA(ACRES) =     0.01       SUBAREA RUNOFF(CFS) =    0.02
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.548
  TOTAL AREA(ACRES) =        1.1         PEAK FLOW RATE(CFS) =       1.84

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.12   FLOW VELOCITY(FEET/SEC.) =   6.54
  LONGEST FLOWPATH FROM NODE      0.00 TO NODE    202.00 =     114.00 FEET.

+--------------------------------------------------------------------------+
| ADD SUBAREA B-7 AT NODE 510                                              |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    510.00 TO NODE    510.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.048
  *USER SPECIFIED(SUBAREA):
```

```
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.5378
  SUBAREA AREA(ACRES) =    0.13   SUBAREA RUNOFF(CFS) =    0.18
  TOTAL AREA(ACRES) =        1.2   TOTAL RUNOFF(CFS) =       2.02
  TC(MIN.) =   16.52

****************************************************************************
  FLOW PROCESS FROM NODE    510.00 TO NODE    143.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    64.00
  UPSTREAM ELEVATION(FEET) =    150.50
  DOWNSTREAM ELEVATION(FEET) =    127.00
  ELEVATION DIFFERENCE(FEET) =     23.50
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.345
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.12
  TOTAL AREA(ACRES) =      0.04   TOTAL RUNOFF(CFS) =      0.12

****************************************************************************
  FLOW PROCESS FROM NODE    143.00 TO NODE    145.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    127.00  DOWNSTREAM(FEET) =    111.34
  CHANNEL LENGTH THRU SUBAREA(FEET) =   180.00   CHANNEL SLOPE =  0.0870
  CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.354
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.27
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.18
  AVERAGE FLOW DEPTH(FEET) =   0.04   TRAVEL TIME(MIN.) =   0.94
  Tc(MIN.) =    5.29
  SUBAREA AREA(ACRES) =     0.06       SUBAREA RUNOFF(CFS) =    0.31
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.666
  TOTAL AREA(ACRES) =        0.1         PEAK FLOW RATE(CFS) =       0.42

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.05   FLOW VELOCITY(FEET/SEC.) =   3.98
```

```
 LONGEST FLOWPATH FROM NODE    510.00 TO NODE    145.00 =     244.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    145.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  111.34  DOWNSTREAM ELEVATION(FEET) =   80.34
 STREET LENGTH(FEET) =  1213.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 12.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.44
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.17
   HALFSTREET FLOOD WIDTH(FEET) =    2.13
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.68
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.45
 STREET FLOW TRAVEL TIME(MIN.) =   7.55   Tc(MIN.) =   12.84
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.585
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8100
 S.C.S. CURVE NUMBER (AMC II) =   0
 AREA-AVERAGE RUNOFF COEFFICIENT =  0.679
 SUBAREA AREA(ACRES) =    0.01      SUBAREA RUNOFF(CFS) =    0.03
 TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.42

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.16   HALFSTREET FLOOD WIDTH(FEET) =   1.50
 FLOW VELOCITY(FEET/SEC.) =  3.02   DEPTH*VELOCITY(FT*FT/SEC.) =   0.47
 LONGEST FLOWPATH FROM NODE    510.00 TO NODE    202.00 =    1457.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    202.00 TO NODE    202.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  5
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  5 ARE:
 TIME OF CONCENTRATION(MIN.) =   12.84
```

```
  RAINFALL INTENSITY(INCH/HR) =   3.58
  TOTAL STREAM AREA(ACRES) =     0.11
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.42

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        2.82     7.44        5.099          1.23
      2        1.20    14.41        3.328          0.80
      3        1.58    16.23        3.083          0.95
      5        0.42    12.84        3.585          0.11

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  5 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.00     0.00       6.587
      2        4.41     7.44       5.099
      3        4.72    12.84       3.585
      4        4.83    14.41       3.328
      5        4.76    16.23       3.083

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       4.83   Tc(MIN.) =   14.41
  TOTAL AREA(ACRES) =        3.1
  LONGEST FLOWPATH FROM NODE    510.00 TO NODE    202.00 =    1457.00 FEET.

+----------------------------------------------------------------------------+
| END FLOWS TO POC-B                                                         |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

+----------------------------------------------------------------------------+
| BEGIN FLOWS TO POC-A                                                       |
|                                                                            |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    45.00
```

```
  UPSTREAM ELEVATION(FEET) =    181.00
  DOWNSTREAM ELEVATION(FEET) =    172.00
  ELEVATION DIFFERENCE(FEET) =      9.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.625
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.16
  TOTAL AREA(ACRES) =      0.03   TOTAL RUNOFF(CFS) =      0.16

****************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    151.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   156.53  DOWNSTREAM(FEET) =   156.00
  FLOW LENGTH(FEET) =    10.50   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO  6.000
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.39
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.16
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    1.67
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    151.00 =      55.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    151.00 TO NODE    102.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  156.00  DOWNSTREAM ELEVATION(FEET) =  138.54
  STREET LENGTH(FEET) =   321.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.35
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.26
    HALFSTREET FLOOD WIDTH(FEET) =    6.58
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.26
```

```
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.10
  STREET FLOW TRAVEL TIME(MIN.) =   1.26   Tc(MIN.) =    2.92
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.82      SUBAREA RUNOFF(CFS) =    4.37
  TOTAL AREA(ACRES) =        0.8        PEAK FLOW RATE(CFS) =       4.54

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   8.96
  FLOW VELOCITY(FEET/SEC.) =  4.93   DEPTH*VELOCITY(FT*FT/SEC.) =   1.50
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =     376.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   128.34  DOWNSTREAM(FEET) =   128.12
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.19
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.54
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    2.93
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     381.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    104.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    150.62
  DOWNSTREAM ELEVATION(FEET) =    146.63
  ELEVATION DIFFERENCE(FEET) =      3.99
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.086
```

```
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    91.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.13   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE    104.00 TO NODE    105.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  146.63  DOWNSTREAM ELEVATION(FEET) =  140.51
  STREET LENGTH(FEET) =    97.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.17
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.21
    HALFSTREET FLOOD WIDTH(FEET) =    4.13
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.06
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.85
  STREET FLOW TRAVEL TIME(MIN.) =   0.40   Tc(MIN.) =    3.48
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.18      SUBAREA RUNOFF(CFS) =    0.96
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.65

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.17
  FLOW VELOCITY(FEET/SEC.) =  4.29   DEPTH*VELOCITY(FT*FT/SEC.) =   0.98
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    105.00 =     192.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    105.00 TO NODE    106.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   137.51  DOWNSTREAM(FEET) =   133.85
 FLOW LENGTH(FEET) =    82.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   4.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   7.67
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.65
 PIPE TRAVEL TIME(MIN.) =   0.18    Tc(MIN.) =    3.66
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    106.00 =     274.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    106.00 TO NODE    106.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =    3.66
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.31
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.65

****************************************************************************
 FLOW PROCESS FROM NODE    107.00 TO NODE    108.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8100
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
 UPSTREAM ELEVATION(FEET) =    146.18
 DOWNSTREAM ELEVATION(FEET) =    140.74
 ELEVATION DIFFERENCE(FEET) =      5.44
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.844
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.96
 TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
 FLOW PROCESS FROM NODE    108.00 TO NODE    106.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
```

```
  UPSTREAM ELEVATION(FEET) =  140.74  DOWNSTREAM ELEVATION(FEET) =  136.85
  STREET LENGTH(FEET) =    70.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.36
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.80
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.90
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.87
  STREET FLOW TRAVEL TIME(MIN.) =   0.30   Tc(MIN.) =    3.14
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.15      SUBAREA RUNOFF(CFS) =    0.80
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.76

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.24   HALFSTREET FLOOD WIDTH(FEET) =   5.62
  FLOW VELOCITY(FEET/SEC.) =  4.06   DEPTH*VELOCITY(FT*FT/SEC.) =   0.97
  LONGEST FLOWPATH FROM NODE    107.00 TO NODE    106.00 =     165.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    106.00 TO NODE    106.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.14
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.33
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.76

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
```

```
     1        1.65     3.66        6.587          0.31
     2        1.76     3.14        6.587          0.33

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        3.18     3.14       6.587
     2        3.41     3.66       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.41   Tc(MIN.) =    3.66
  TOTAL AREA(ACRES) =        0.6
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    106.00 =     274.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    106.00 TO NODE    109.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   133.85  DOWNSTREAM(FEET) =   131.86
  FLOW LENGTH(FEET) =   199.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.03
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.41
  PIPE TRAVEL TIME(MIN.) =   0.66    Tc(MIN.) =    4.32
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    109.00 =     473.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    109.00 TO NODE    110.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   131.86  DOWNSTREAM(FEET) =   129.61
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.78
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.41
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    4.49
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    110.00 =     551.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    110.00 IS CODE =   1
----------------------------------------------------------------------------
```

```
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
================================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.49
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.64
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      3.41

****************************************************************************
  FLOW PROCESS FROM NODE    111.00 TO NODE    112.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    142.09
  DOWNSTREAM ELEVATION(FEET) =    136.65
  ELEVATION DIFFERENCE(FEET) =      5.44
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.844
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.96
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
  FLOW PROCESS FROM NODE    112.00 TO NODE    113.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  136.65  DOWNSTREAM ELEVATION(FEET) =  134.29
  STREET LENGTH(FEET) =    41.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.28
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.58
```

```
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.91
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.85
  STREET FLOW TRAVEL TIME(MIN.) =   0.17   Tc(MIN.) =    3.02
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.12      SUBAREA RUNOFF(CFS) =    0.64
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.60

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.25
  FLOW VELOCITY(FEET/SEC.) =  4.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.94
  LONGEST FLOWPATH FROM NODE    111.00 TO NODE    113.00 =     136.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    113.00 TO NODE    110.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   131.29  DOWNSTREAM(FEET) =   129.61
  FLOW LENGTH(FEET) =   168.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.16
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.60
  PIPE TRAVEL TIME(MIN.) =   0.67    Tc(MIN.) =    3.69
  LONGEST FLOWPATH FROM NODE    111.00 TO NODE    110.00 =     304.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    110.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.69
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.60

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        3.41     4.49        6.587          0.64
      2        1.60     3.69        6.587          0.30
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        5.02     3.69       6.587
      2        5.02     4.49       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       5.02   Tc(MIN.) =    4.49
  TOTAL AREA(ACRES) =        0.9
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    110.00 =     551.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    110.00 TO NODE    114.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   129.61  DOWNSTREAM(FEET) =   128.12
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   8.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.55
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       5.02
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    4.59
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    114.00 =     601.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        5.02     4.59       6.587        0.94
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    114.00 =     601.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        4.54     2.93       6.587        0.85
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =     381.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
```

```
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1       7.74       2.93        6.587
      2       9.55       4.59        6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       9.55   Tc(MIN.) =    4.59
  TOTAL AREA(ACRES) =        1.8

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    114.00 TO NODE    115.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   128.12  DOWNSTREAM(FEET) =   127.37
  FLOW LENGTH(FEET) =    24.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  10.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.19
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       9.55
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    4.63
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    115.00 =     625.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    115.00 TO NODE    115.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.63
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     1.79
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      9.55

****************************************************************************
  FLOW PROCESS FROM NODE    116.00 TO NODE    530.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    30.00
```

```
  UPSTREAM ELEVATION(FEET) =    138.00
  DOWNSTREAM ELEVATION(FEET) =    136.30
  ELEVATION DIFFERENCE(FEET) =      1.70
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.604
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.32
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.32

****************************************************************************
  FLOW PROCESS FROM NODE    530.00 TO NODE    117.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  136.30  DOWNSTREAM ELEVATION(FEET) =  131.74
  STREET LENGTH(FEET) =    78.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.80
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.19
    HALFSTREET FLOOD WIDTH(FEET) =    3.02
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.82
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.71
  STREET FLOW TRAVEL TIME(MIN.) =   0.34   Tc(MIN.) =    1.94
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.18      SUBAREA RUNOFF(CFS) =    0.96
  TOTAL AREA(ACRES) =        0.2        PEAK FLOW RATE(CFS) =       1.28

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.22   HALFSTREET FLOOD WIDTH(FEET) =   4.51
  FLOW VELOCITY(FEET/SEC.) =  3.99   DEPTH*VELOCITY(FT*FT/SEC.) =   0.86
  LONGEST FLOWPATH FROM NODE    116.00 TO NODE    117.00 =     108.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    117.00 TO NODE    115.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   128.74  DOWNSTREAM(FEET) =   127.37
 FLOW LENGTH(FEET) =   137.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.05
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.28
 PIPE TRAVEL TIME(MIN.) =   0.56    Tc(MIN.) =    2.51
 LONGEST FLOWPATH FROM NODE    116.00 TO NODE    115.00 =     245.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    155.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =    2.51
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.24
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.28

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        9.55     4.63        6.587          1.79
     2        1.28     2.51        6.587          0.24

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1        6.46     2.51       6.587
     2       10.83     4.63       6.587

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      10.83   Tc(MIN.) =    4.63
 TOTAL AREA(ACRES) =        2.0
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    155.00 =     625.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    115.00 TO NODE    118.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   127.37  DOWNSTREAM(FEET) =   124.46
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS  11.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  11.20
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      10.83
  PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =    4.74
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    118.00 =     703.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    118.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.74
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     2.03
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     10.83

****************************************************************************
  FLOW PROCESS FROM NODE    119.00 TO NODE    120.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    93.00
  UPSTREAM ELEVATION(FEET) =    133.92
  DOWNSTREAM ELEVATION(FEET) =    128.64
  ELEVATION DIFFERENCE(FEET) =      5.28
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.822
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.96
  TOTAL AREA(ACRES) =      0.18   TOTAL RUNOFF(CFS) =      0.96

****************************************************************************
  FLOW PROCESS FROM NODE    120.00 TO NODE    118.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   125.64  DOWNSTREAM(FEET) =   124.46
  FLOW LENGTH(FEET) =   118.00   MANNING'S N =  0.013
```

```
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.82
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.96
  PIPE TRAVEL TIME(MIN.) =   0.52    Tc(MIN.) =    3.34
  LONGEST FLOWPATH FROM NODE    119.00 TO NODE    118.00 =     211.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    118.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.34
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.18
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.96

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       10.83     4.74        6.587          2.03
      2        0.96     3.34        6.587          0.18

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       11.79     3.34       6.587
      2       11.79     4.74       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      11.79   Tc(MIN.) =    4.74
  TOTAL AREA(ACRES) =        2.2
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    118.00 =     703.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    118.00 TO NODE    121.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   124.46  DOWNSTREAM(FEET) =   116.01
  FLOW LENGTH(FEET) =   139.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   9.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  13.92
```

```
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      11.79
  PIPE TRAVEL TIME(MIN.) =   0.17    Tc(MIN.) =    4.91
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    121.00 =     842.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    121.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    4.91
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     2.21
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     11.79

****************************************************************************
  FLOW PROCESS FROM NODE    156.00 TO NODE    123.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    143.00
  DOWNSTREAM ELEVATION(FEET) =    138.63
  ELEVATION DIFFERENCE(FEET) =      4.37
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.027
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    93.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.91
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.91

****************************************************************************
  FLOW PROCESS FROM NODE    123.00 TO NODE    124.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  138.63  DOWNSTREAM ELEVATION(FEET) =  125.78
  STREET LENGTH(FEET) =   245.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
```

```
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.75
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.27
    HALFSTREET FLOOD WIDTH(FEET) =    7.18
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.34
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.17
  STREET FLOW TRAVEL TIME(MIN.) =   0.94   Tc(MIN.) =    3.97
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.69      SUBAREA RUNOFF(CFS) =    3.68
  TOTAL AREA(ACRES) =        0.9        PEAK FLOW RATE(CFS) =       4.59

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   9.03
  FLOW VELOCITY(FEET/SEC.) =  4.91   DEPTH*VELOCITY(FT*FT/SEC.) =   1.51
  LONGEST FLOWPATH FROM NODE    156.00 TO NODE    124.00 =     340.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    124.00 TO NODE    121.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   116.23  DOWNSTREAM(FEET) =   116.01
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.21
  ESTIMATED PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.59
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    3.98
  LONGEST FLOWPATH FROM NODE    156.00 TO NODE    121.00 =     344.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    121.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
```

```
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.98
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.86
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      4.59

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       11.79     4.91        6.587          2.21
      2        4.59     3.98        6.587          0.86

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       16.38     3.98       6.587
      2       16.38     4.91       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      16.38   Tc(MIN.) =    4.91
  TOTAL AREA(ACRES) =        3.1
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    121.00 =     842.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    121.00 TO NODE    125.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   116.01  DOWNSTREAM(FEET) =   112.93
  FLOW LENGTH(FEET) =    50.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  10.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.28
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      16.38
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =    4.96
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    125.00 =     892.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    125.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    148.00 TO NODE    149.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    129.50
  DOWNSTREAM ELEVATION(FEET) =    119.80
  ELEVATION DIFFERENCE(FEET) =      9.70
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.362
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.75
  TOTAL AREA(ACRES) =      0.14   TOTAL RUNOFF(CFS) =      0.75

+----------------------------------------------------------------------------+
| AREA FORCE DRAINED VIA PUMP                                                |
| ADDED AS SUBAREA AT PRESSURE PIPE DISCHARGE POINT                          |
|                                                                            |
+----------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    149.00 TO NODE    149.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.8100
  SUBAREA AREA(ACRES) =    0.23   SUBAREA RUNOFF(CFS) =    1.23
  TOTAL AREA(ACRES) =        0.4   TOTAL RUNOFF(CFS) =       1.97
  TC(MIN.) =    2.36

****************************************************************************
  FLOW PROCESS FROM NODE    149.00 TO NODE    590.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   115.80  DOWNSTREAM(FEET) =   114.25
  FLOW LENGTH(FEET) =   103.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.11
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.97
```

```
  PIPE TRAVEL TIME(MIN.) =   0.34    Tc(MIN.) =    2.70
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    590.00 =     198.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    590.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.70
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.37
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.97

****************************************************************************
  FLOW PROCESS FROM NODE    131.00 TO NODE    540.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    53.00
  UPSTREAM ELEVATION(FEET) =    124.30
  DOWNSTREAM ELEVATION(FEET) =    121.10
  ELEVATION DIFFERENCE(FEET) =      3.20
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.087
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.48
  TOTAL AREA(ACRES) =      0.09   TOTAL RUNOFF(CFS) =      0.48

****************************************************************************
  FLOW PROCESS FROM NODE    540.00 TO NODE    132.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  121.10  DOWNSTREAM ELEVATION(FEET) =  117.36
  STREET LENGTH(FEET) =    65.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
```

```
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.04
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.20
    HALFSTREET FLOOD WIDTH(FEET) =    3.91
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.84
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.78
  STREET FLOW TRAVEL TIME(MIN.) =   0.28   Tc(MIN.) =    2.37
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.21      SUBAREA RUNOFF(CFS) =    1.12
  TOTAL AREA(ACRES) =        0.3        PEAK FLOW RATE(CFS) =       1.60

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.23   HALFSTREET FLOOD WIDTH(FEET) =   5.25
  FLOW VELOCITY(FEET/SEC.) =  4.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.94
  LONGEST FLOWPATH FROM NODE    131.00 TO NODE    132.00 =     118.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    132.00 TO NODE    590.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   114.36  DOWNSTREAM(FEET) =   114.25
  FLOW LENGTH(FEET) =    11.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   7.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.16
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.60
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    2.41
  LONGEST FLOWPATH FROM NODE    131.00 TO NODE    590.00 =     129.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    590.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.41
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.30
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.60
```

```
  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        1.97     2.70        6.587          0.37
      2        1.60     2.41        6.587          0.30

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        3.37     2.41       6.587
      2        3.57     2.70       6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       3.57   Tc(MIN.) =    2.70
  TOTAL AREA(ACRES) =        0.7
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    590.00 =     198.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    590.00 TO NODE    125.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   114.25  DOWNSTREAM(FEET) =   112.93
  FLOW LENGTH(FEET) =   132.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  15.0 INCH PIPE IS   8.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.30
  ESTIMATED PIPE DIAMETER(INCH) =  15.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.57
  PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =    3.11
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    125.00 =     330.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    125.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        3.57     3.11       6.587        0.67
  LONGEST FLOWPATH FROM NODE    148.00 TO NODE    125.00 =     330.00 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
```

```
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       16.38     4.96       6.587        3.07
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    125.00 =     892.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      13.85       3.11        6.587
      2      19.95       4.96        6.587

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      19.95   Tc(MIN.) =    4.96
  TOTAL AREA(ACRES) =        3.7

****************************************************************************
  FLOW PROCESS FROM NODE    125.00 TO NODE    126.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   112.93  DOWNSTREAM(FEET) =   108.69
  FLOW LENGTH(FEET) =    78.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.12
  ESTIMATED PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      19.95
  PIPE TRAVEL TIME(MIN.) =   0.09    Tc(MIN.) =    5.05
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    126.00 =     970.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    126.00 TO NODE    126.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.05
  RAINFALL INTENSITY(INCH/HR) =   6.55
  TOTAL STREAM AREA(ACRES) =     3.74
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     19.95

****************************************************************************
  FLOW PROCESS FROM NODE    133.00 TO NODE    550.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    37.00
```

```
  UPSTREAM ELEVATION(FEET) =    119.66
  DOWNSTREAM ELEVATION(FEET) =    117.30
  ELEVATION DIFFERENCE(FEET) =      2.36
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.712
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.37
  TOTAL AREA(ACRES) =      0.07   TOTAL RUNOFF(CFS) =      0.37

****************************************************************************
  FLOW PROCESS FROM NODE    550.00 TO NODE    134.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  117.30  DOWNSTREAM ELEVATION(FEET) =  113.12
  STREET LENGTH(FEET) =    77.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.80
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.19
    HALFSTREET FLOOD WIDTH(FEET) =    3.10
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.74
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.70
  STREET FLOW TRAVEL TIME(MIN.) =   0.34   Tc(MIN.) =    2.06
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.16      SUBAREA RUNOFF(CFS) =    0.85
  TOTAL AREA(ACRES) =        0.2        PEAK FLOW RATE(CFS) =       1.23

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.22   HALFSTREET FLOOD WIDTH(FEET) =   4.51
  FLOW VELOCITY(FEET/SEC.) =  3.82   DEPTH*VELOCITY(FT*FT/SEC.) =   0.83
  LONGEST FLOWPATH FROM NODE    133.00 TO NODE    134.00 =     114.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    134.00 TO NODE    126.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   110.12  DOWNSTREAM(FEET) =   108.69
 FLOW LENGTH(FEET) =   143.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   4.01
 ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =       1.23
 PIPE TRAVEL TIME(MIN.) =   0.59    Tc(MIN.) =    2.65
 LONGEST FLOWPATH FROM NODE    133.00 TO NODE    126.00 =     257.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    126.00 TO NODE    126.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =    2.65
 RAINFALL INTENSITY(INCH/HR) =   6.59
 TOTAL STREAM AREA(ACRES) =     0.23
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.23

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1       19.95     5.05        6.546          3.74
     2        1.23     2.65        6.587          0.23

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF      Tc      INTENSITY
 NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
     1       11.70     2.65       6.587
     2       21.17     5.05       6.546

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      21.17   Tc(MIN.) =    5.05
 TOTAL AREA(ACRES) =        4.0
 LONGEST FLOWPATH FROM NODE    103.00 TO NODE    126.00 =     970.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    126.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.69  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =    20.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.5 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.16
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      21.17
  PIPE TRAVEL TIME(MIN.) =   0.02    Tc(MIN.) =    5.07
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     990.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.07
  RAINFALL INTENSITY(INCH/HR) =   6.53
  TOTAL STREAM AREA(ACRES) =     3.97
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     21.17

****************************************************************************
  FLOW PROCESS FROM NODE    100.00 TO NODE    600.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    181.00
  DOWNSTREAM ELEVATION(FEET) =    172.00
  ELEVATION DIFFERENCE(FEET) =      9.00
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.390
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.275
  SUBAREA RUNOFF(CFS) =      0.11
  TOTAL AREA(ACRES) =      0.04   TOTAL RUNOFF(CFS) =      0.11

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    160.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    172.00  DOWNSTREAM(FEET) =    132.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   333.00   CHANNEL SLOPE =  0.1201
  CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =   2.000
```

```
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.507
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.29
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.59
  AVERAGE FLOW DEPTH(FEET) =   0.06   TRAVEL TIME(MIN.) =   1.21
  Tc(MIN.) =    6.60
  SUBAREA AREA(ACRES) =     0.14       SUBAREA RUNOFF(CFS) =    0.35
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.450
  TOTAL AREA(ACRES) =        0.2         PEAK FLOW RATE(CFS) =       0.45

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.07   FLOW VELOCITY(FEET/SEC.) =   5.46
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    160.00 =     428.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    160.00 TO NODE    128.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   129.00  DOWNSTREAM(FEET) =   125.76
  FLOW LENGTH(FEET) =   122.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   3.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.52
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.45
  PIPE TRAVEL TIME(MIN.) =   0.45    Tc(MIN.) =    7.05
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    128.00 =     550.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    128.00 TO NODE    130.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  125.76  DOWNSTREAM ELEVATION(FEET) =  117.50
  STREET LENGTH(FEET) =   156.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130
```

```
    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.65
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.24
    HALFSTREET FLOOD WIDTH(FEET) =    5.47
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.96
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.93
  STREET FLOW TRAVEL TIME(MIN.) =   0.66   Tc(MIN.) =    7.70
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.984
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.727
  SUBAREA AREA(ACRES) =    0.60      SUBAREA RUNOFF(CFS) =    2.42
  TOTAL AREA(ACRES) =        0.8        PEAK FLOW RATE(CFS) =       2.83

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.27   HALFSTREET FLOOD WIDTH(FEET) =   7.25
  FLOW VELOCITY(FEET/SEC.) =  4.39   DEPTH*VELOCITY(FT*FT/SEC.) =   1.19
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    130.00 =     706.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.06  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =     4.50   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.94
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.83
  PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =    7.71
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    127.00 =     710.50 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    7.71
  RAINFALL INTENSITY(INCH/HR) =   4.98
  TOTAL STREAM AREA(ACRES) =     0.78
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.83

****************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    136.00 IS CODE =  21
```

```
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    150.62
  DOWNSTREAM ELEVATION(FEET) =    145.21
  ELEVATION DIFFERENCE(FEET) =      5.41
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.849
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.27
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.27

****************************************************************************
  FLOW PROCESS FROM NODE    136.00 TO NODE    137.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  145.21  DOWNSTREAM ELEVATION(FEET) =  117.57
  STREET LENGTH(FEET) =   543.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.25
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.22
    HALFSTREET FLOOD WIDTH(FEET) =    4.65
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.73
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.82
  STREET FLOW TRAVEL TIME(MIN.) =   2.43   Tc(MIN.) =    5.28
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.361
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.38      SUBAREA RUNOFF(CFS) =    1.96
  TOTAL AREA(ACRES) =        0.4        PEAK FLOW RATE(CFS) =       2.22
```

```
  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.25   HALFSTREET FLOOD WIDTH(FEET) =   6.44
  FLOW VELOCITY(FEET/SEC.) =  4.16   DEPTH*VELOCITY(FT*FT/SEC.) =   1.06
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    137.00 =     638.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    137.00 TO NODE    127.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   108.72  DOWNSTREAM(FEET) =   107.84
  FLOW LENGTH(FEET) =    18.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   5.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.51
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.22
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    5.31
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     656.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    127.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  3
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  3 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.31
  RAINFALL INTENSITY(INCH/HR) =   6.33
  TOTAL STREAM AREA(ACRES) =     0.43
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      2.22

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1       21.17     5.07        6.526          3.97
      2        2.83     7.71        4.980          0.78
      3        2.22     5.31        6.334          0.43

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  3 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1       25.15     5.07       6.526
      2       24.71     5.31       6.334
      3       20.73     7.71       4.980
```

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      25.15   Tc(MIN.) =    5.07
  TOTAL AREA(ACRES) =        5.2
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    127.00 =     990.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    127.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   107.84  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =    46.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  21.0 INCH PIPE IS  14.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.31
  ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      25.15
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =    5.13
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    130.00 TO NODE    141.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    40.00
  UPSTREAM ELEVATION(FEET) =    117.50
  DOWNSTREAM ELEVATION(FEET) =    114.93
  ELEVATION DIFFERENCE(FEET) =      2.57
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.776
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.16
  TOTAL AREA(ACRES) =      0.03   TOTAL RUNOFF(CFS) =      0.16

****************************************************************************
  FLOW PROCESS FROM NODE    141.00 TO NODE    142.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
```

```
  UPSTREAM ELEVATION(FEET) =  114.93  DOWNSTREAM ELEVATION(FEET) =  110.22
  STREET LENGTH(FEET) =   126.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.45
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.16
    HALFSTREET FLOOD WIDTH(FEET) =    1.50
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.65
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.57
  STREET FLOW TRAVEL TIME(MIN.) =   0.58   Tc(MIN.) =    2.35
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.11      SUBAREA RUNOFF(CFS) =    0.59
  TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.75

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.20   HALFSTREET FLOOD WIDTH(FEET) =   3.54
  FLOW VELOCITY(FEET/SEC.) =  3.07   DEPTH*VELOCITY(FT*FT/SEC.) =   0.60
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    142.00 =     166.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    142.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    2.35
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.14
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.75

****************************************************************************
  FLOW PROCESS FROM NODE    144.00 TO NODE    142.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
```

```
==============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    70.00
  UPSTREAM ELEVATION(FEET) =    115.00
  DOWNSTREAM ELEVATION(FEET) =    110.22
  ELEVATION DIFFERENCE(FEET) =      4.78
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.160
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.454
  SUBAREA RUNOFF(CFS) =      0.17
  TOTAL AREA(ACRES) =      0.06   TOTAL RUNOFF(CFS) =      0.17

******************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    142.00 IS CODE =   1
------------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.16
  RAINFALL INTENSITY(INCH/HR) =   6.45
  TOTAL STREAM AREA(ACRES) =     0.06
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.17

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.75     2.35        6.587          0.14
      2        0.17     5.16        6.454          0.06

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        0.83     2.35       6.587
      2        0.91     5.16       6.454

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       0.91   Tc(MIN.) =    5.16
  TOTAL AREA(ACRES) =        0.2
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    142.00 =     166.00 FEET.

******************************************************************************
  FLOW PROCESS FROM NODE    142.00 TO NODE    139.00 IS CODE =  31
------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   106.70  DOWNSTREAM(FEET) =   106.40
  FLOW LENGTH(FEET) =    25.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   4.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.04
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.91
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =    5.26
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    139.00 =     191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    139.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
================================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =    5.26
  RAINFALL INTENSITY(INCH/HR) =   6.37
  TOTAL STREAM AREA(ACRES) =     0.20
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.91

****************************************************************************
  FLOW PROCESS FROM NODE    137.00 TO NODE    138.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
  UPSTREAM ELEVATION(FEET) =    117.57
  DOWNSTREAM ELEVATION(FEET) =    114.93
  ELEVATION DIFFERENCE(FEET) =      2.64
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.136
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.27
  TOTAL AREA(ACRES) =      0.05   TOTAL RUNOFF(CFS) =      0.27

****************************************************************************
  FLOW PROCESS FROM NODE    138.00 TO NODE    139.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
================================================================================
  UPSTREAM ELEVATION(FEET) =  114.93  DOWNSTREAM ELEVATION(FEET) =  110.22
  STREET LENGTH(FEET) =    91.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 12.00
```

```
  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   1.00
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0130

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.40
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.16
    HALFSTREET FLOOD WIDTH(FEET) =    1.50
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.29
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.67
  STREET FLOW TRAVEL TIME(MIN.) =   0.35   Tc(MIN.) =    3.49
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.810
  SUBAREA AREA(ACRES) =    0.05      SUBAREA RUNOFF(CFS) =    0.27
  TOTAL AREA(ACRES) =        0.1        PEAK FLOW RATE(CFS) =       0.53

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.16   HALFSTREET FLOOD WIDTH(FEET) =   1.50
  FLOW VELOCITY(FEET/SEC.) =  4.29   DEPTH*VELOCITY(FT*FT/SEC.) =   0.67
  LONGEST FLOWPATH FROM NODE    137.00 TO NODE    139.00 =     171.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    139.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =    3.49
  RAINFALL INTENSITY(INCH/HR) =   6.59
  TOTAL STREAM AREA(ACRES) =     0.10
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.53

  ** CONFLUENCE DATA **
  STREAM     RUNOFF       Tc      INTENSITY      AREA
  NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
      1        0.91     5.26        6.372          0.20
      2        0.53     3.49        6.587          0.10
```

```
  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF      Tc      INTENSITY
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)
      1        1.41     3.49       6.587
      2        1.42     5.26       6.372

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       1.42   Tc(MIN.) =    5.26
  TOTAL AREA(ACRES) =        0.3
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    139.00 =     191.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    139.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   106.40  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =    40.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   9.0 INCH PIPE IS   6.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.11
  ESTIMATED PIPE DIAMETER(INCH) =   9.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       1.42
  PIPE TRAVEL TIME(MIN.) =   0.16    Tc(MIN.) =    5.43
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    140.00 =     231.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        1.42     5.43       6.249        0.30
  LONGEST FLOWPATH FROM NODE    130.00 TO NODE    140.00 =     231.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       25.15     5.13       6.482        5.18
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
```

```
      1      26.49       5.13        6.482
      2      25.66       5.43        6.249

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      26.49   Tc(MIN.) =    5.13
  TOTAL AREA(ACRES) =        5.5

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    146.00 TO NODE    147.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
  UPSTREAM ELEVATION(FEET) =    116.27
  DOWNSTREAM ELEVATION(FEET) =    110.79
  ELEVATION DIFFERENCE(FEET) =      5.48
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.837
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.587
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.69
  TOTAL AREA(ACRES) =      0.13   TOTAL RUNOFF(CFS) =      0.69

****************************************************************************
  FLOW PROCESS FROM NODE    147.00 TO NODE    140.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   107.79  DOWNSTREAM(FEET) =   106.00
  FLOW LENGTH(FEET) =     3.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  15.91
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.69
  PIPE TRAVEL TIME(MIN.) =   0.00    Tc(MIN.) =    2.84
```

```
  LONGEST FLOWPATH FROM NODE    146.00 TO NODE    140.00 =      98.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1        0.69     2.84       6.587        0.13
  LONGEST FLOWPATH FROM NODE    146.00 TO NODE    140.00 =      98.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER      (CFS)    (MIN.)   (INCH/HOUR)   (ACRE)
      1       26.49     5.13       6.482        5.48
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    140.00 =    1036.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
      1      15.37       2.84        6.587
      2      27.17       5.13        6.482

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      27.17   Tc(MIN.) =    5.13
  TOTAL AREA(ACRES) =        5.6

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.482
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8100
  S.C.S. CURVE NUMBER (AMC II) =   0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.7951
  SUBAREA AREA(ACRES) =    0.19   SUBAREA RUNOFF(CFS) =    1.00
  TOTAL AREA(ACRES) =        5.8   TOTAL RUNOFF(CFS) =      29.89
  TC(MIN.) =    5.13

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    140.00 IS CODE =   7
----------------------------------------------------------------------------
  >>>>>USER SPECIFIED HYDROLOGY INFORMATION AT NODE<<<<<
============================================================================
  USER-SPECIFIED VALUES ARE AS FOLLOWS:
```

```
  TC(MIN) = 124.30   RAIN INTENSITY(INCH/HOUR) =  0.83
  TOTAL AREA(ACRES) =     5.80   TOTAL RUNOFF(CFS) =      0.12

****************************************************************************
  FLOW PROCESS FROM NODE    140.00 TO NODE    300.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    94.20  DOWNSTREAM(FEET) =    92.00
  FLOW LENGTH(FEET) =   110.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO  6.000
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   1.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.78
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.12
  PIPE TRAVEL TIME(MIN.) =   0.66    Tc(MIN.) =  124.96
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    300.00 =    1146.00 FEET.

+--------------------------------------------------------------------------+
| ENTER HYDROCAD OUTPUT REPORT AT THE FOLLOWING NODE 140 TO 140            |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    700.00 IS CODE =  31
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    92.00  DOWNSTREAM(FEET) =    84.00
  FLOW LENGTH(FEET) =    25.00   MANNING'S N =  0.013
  ESTIMATED PIPE DIAMETER(INCH) INCREASED TO  6.000
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   0.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.59
  ESTIMATED PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.12
  PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =  125.01
  LONGEST FLOWPATH FROM NODE    103.00 TO NODE    700.00 =    1171.00 FEET.

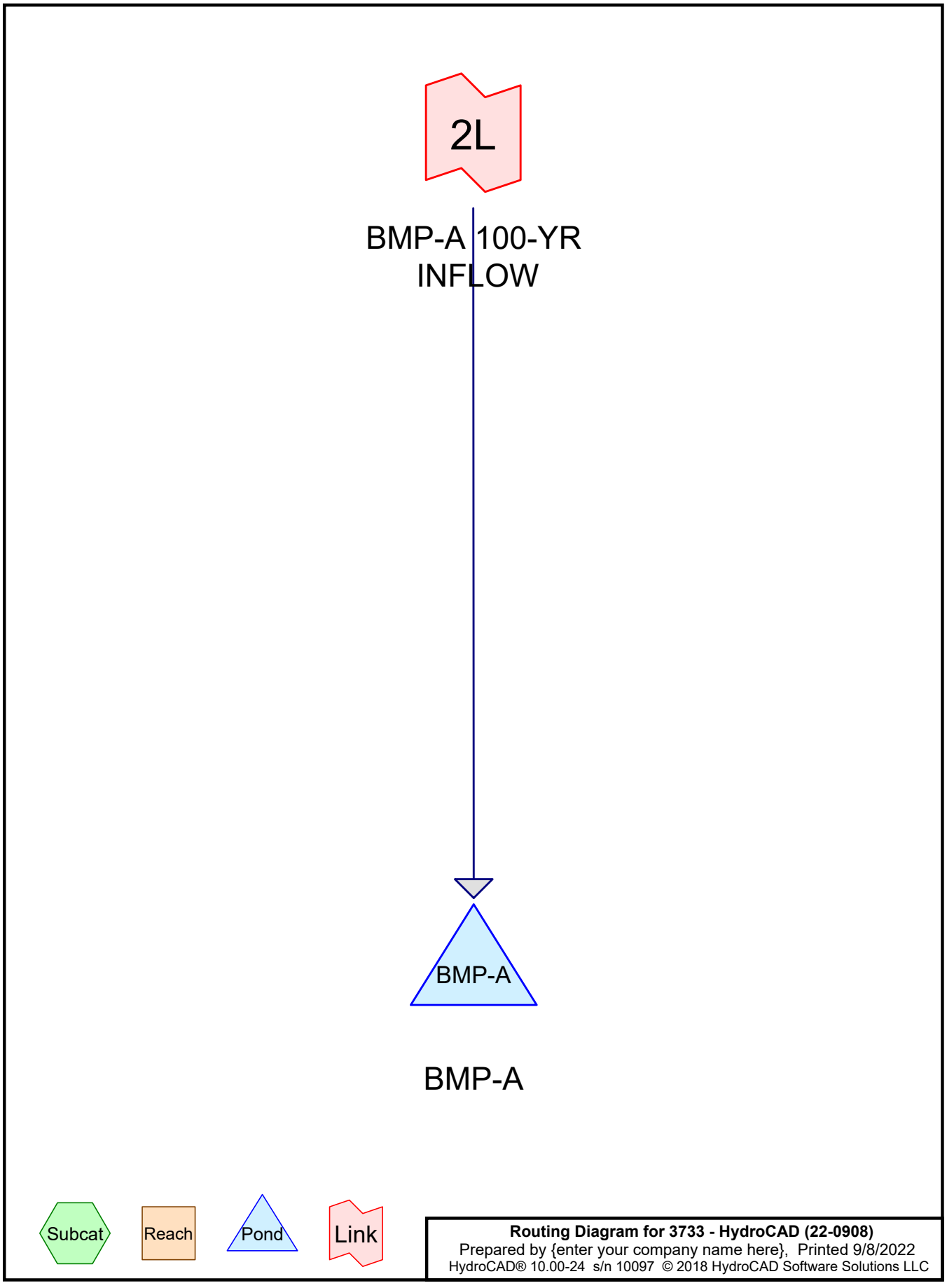
+--------------------------------------------------------------------------+
| END FLOWS TO POC-A                                                       |
|                                                                          |
|                                                                          |
+--------------------------------------------------------------------------+
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        5.8  TC(MIN.) =    125.01
  PEAK FLOW RATE(CFS)   =       0.12
```

```
================================================================================
================================================================================
  END OF RATIONAL METHOD ANALYSIS
```



APPENDIX D

Hydrograph and Detention Calculations



Routing Diagram for 3733 - HydroCAD (22-0908)
Prepared by {enter your company name here}, Printed 9/8/2022
HydroCAD® 10.00-24 s/n 10097 © 2018 HydroCAD Software Solutions LLC

Summary for Pond BMP-A: BMP-A

Inflow	=	29.89 cfs @	4.08 hrs,	Volume=	0.974 af
Outflow	=	0.12 cfs @	6.07 hrs,	Volume=	0.655 af, Atten= 100%, Lag= 119.3 min
Primary	=	0.12 cfs @	6.07 hrs,	Volume=	0.655 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 106.71' @ 6.07 hrs Surf.Area= 5,600 sf Storage= 41,051 cf

Plug-Flow detention time= 2,479.3 min calculated for 0.655 af (67% of inflow)
Center-of-Mass det. time= 2,448.3 min (2,660.7 - 212.4)

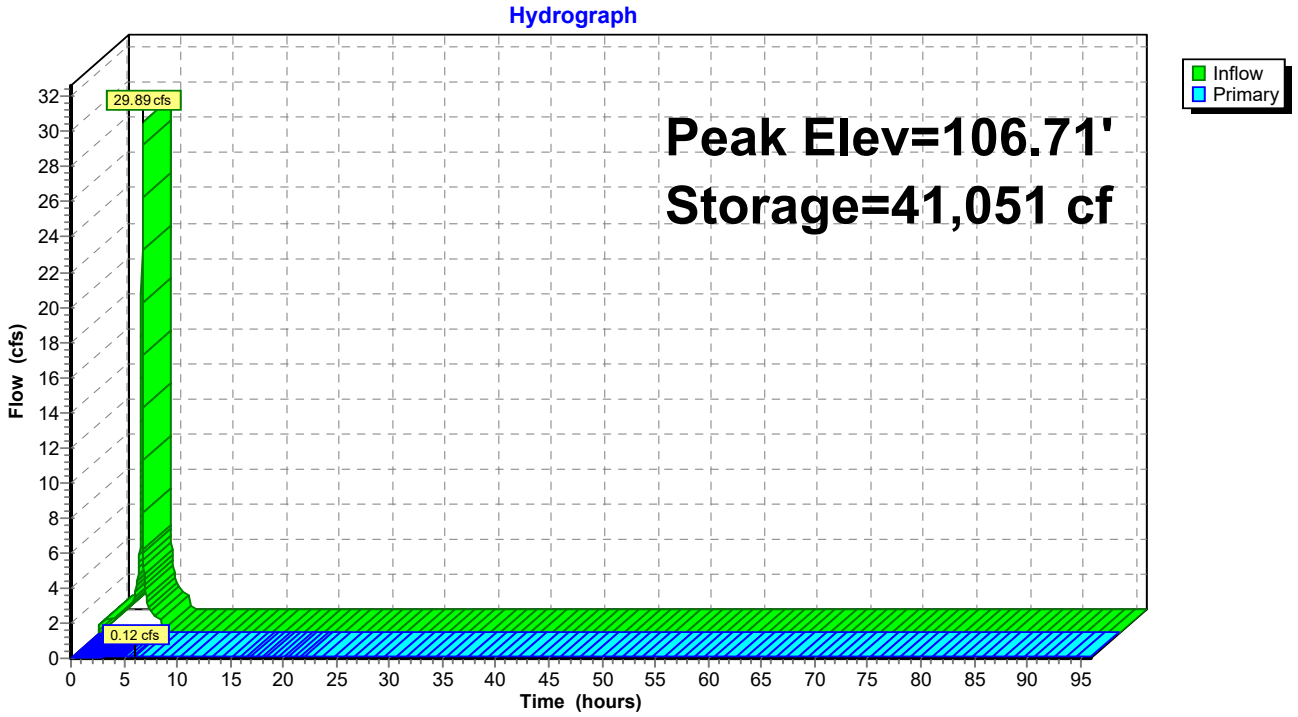
Volume	Invert	Avail.Storage	Storage Description
#1	97.25'	51,100 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
97.25	5,600	0.0	0	0	5,600
103.75	5,600	95.0	34,580	34,580	7,324
106.00	5,600	20.0	2,520	37,100	7,921
108.50	5,600	100.0	14,000	51,100	8,584

Device	Routing	Invert	Outlet Devices
#1	Primary	97.25'	**24.0" Round Culvert** L= 25.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 97.25' / 84.00' S= 0.5300 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#2	Device 1	97.25'	**1.2" Vert. Orifice** C= 0.600
#3	Device 1	107.50'	**36.0" x 36.0" Horiz. Grate** C= 0.600 in 36.0" x 36.0" Grate (100% open area) Limited to weir flow at low heads
#4	Device 1	107.50'	**36.0" x 36.0" Horiz. Grate** C= 0.600 in 36.0" x 36.0" Grate (100% open area) Limited to weir flow at low heads
#5	Device 2	97.25'	**5.000 in/hr Exfiltration over Surface area below 106.00'**

Primary OutFlow Max=0.12 cfs @ 6.07 hrs HW=106.71' (Free Discharge)
- **1=Culvert** (Passes 0.12 cfs of 54.98 cfs potential flow)
  - **2=Orifice** (Orifice Controls 0.12 cfs @ 14.77 fps)
    - **5=Exfiltration** (Passes 0.12 cfs of 0.65 cfs potential flow)
  - **3=Grate** (Controls 0.00 cfs)
  - **4=Grate** (Controls 0.00 cfs)

Pond BMP-A: BMP-A



Grate Capacity Calculator

Using Sharp Crested Weir Formula equation (5-10) $Q=CLH^{1.5}$ where Coefficient C is 3.3 (Brater and King)

Weir Coefficient 3.3

GRATE INLET CAPACITY				
INLET TYPE	**PERIMETER (FT)**	**HEAD (FT)**	**GRATE/CLOG FACTOR**	**Q_{CAP} (CFS)**
3' Catch Basin (BMP-A)	12	1.0	2	19.800
3' Catch Basin (BMP-A)	12	1.0	2	19.800
TOTAL CAPACITY =				39.600

VOLUME AREA CALCULATION - POC-A					
EXISTING			**PROPOSED**		
P_6 =	0.208	(FT)	P_6 =	0.208	(FT)
C =	0.45		C =	0.81	
A =	108,029	(FT^2)	A =	252,567	(FT^2)
VOL =	10,128	(FT^3)	VOL =	42,621	(FT^3)
		Δ =	32,493	(FT^3)	

VOLUME AREA CALCULATION - POC-B					
EXISTING			**PROPOSED**		
P_6 =	0.208	(FT)	P_6 =	0.208	(FT)
C =	0.45		C =	0.45	
A =	256,568	(FT^2)	A =	111,949	(FT^2)
VOL =	24,053	(FT^3)	VOL =	10,495	(FT^3)
		Δ =	(13,558)	(FT^3)	

BASIN-A STORAGE CAPACITY			
MEDIA	**SURFACE AREA (S_A) (FT^2)**	**DEPTH OF MEDIA (D) (FT)**	**VOID RATIO (VR)**
RTANK	5,600	6.5	0.95
SOIL MEDIA	5,600	1.5	0.2
PONDING	5,600	1.5	1.0
TOTAL BASIN VOL =	44,660	(FT^3)	

BASIN SUMMARY		
REQUIRED STORAGE VOLUME =	32,493	(FT^3)
TOTAL PROVIDED BASIN VOLUME =	44,660	(FT^3)
MEETS VOLUME REQUIREMENTS?	YES	

ATTACHMENT 6 - COPY OF GEOTECHNICAL INVESTIGATION

GEOTECHNICAL INVESTIGATION

PIRAEUS POINT
ENCINITAS, CALIFORNIA

GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

LENNAR
SAN DIEGO, CALIFORNIA

JANUARY 31, 2022
PROJECT NO. G2307-32-05

Project No. G2307-32-05
January 31, 2022

Lennar
16465 Via Esprillo, Suite 150
San Diego, California 92127

Attention: Mr. David Shepherd

Subject: GEOTECHNICAL INVESTIGATION
PIRAEUS POINT
ENCINITAS, CALIFORNIA

Dear Mr. Shepherd:

In accordance with your request, we have performed a geotechnical investigation on the subject property located in Encinitas, California. The accompanying report presents our findings, conclusions and recommendations relative to the geotechnical aspects of developing the property as presently proposed.

The results of our study indicate that the site can be developed as planned, provided the recommendations of this report are incorporated into the design and construction of the project. If there are any questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

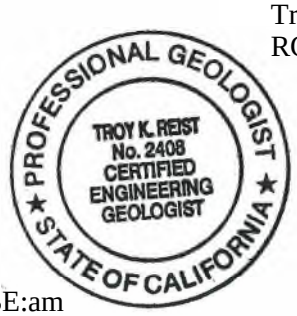
Very truly yours,

GEOCON INCORPORATED

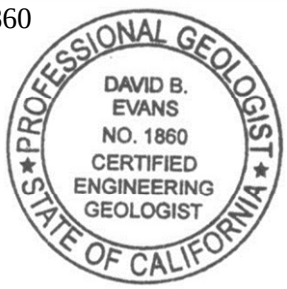
Troy K. Reist
CEG 2408

Trevor E. Myers
RCE 63773

David B. Evans
CEG 1860







TKR:TEM:DBE:am

(e-mail) Addressee
(e-mail) Pasco Laret Suiter & Associates
Attention: Mr. Tadd Dolfo

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GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

The purpose of this study was to evaluate the proposed grading for a residential development in Encinitas, California (see *Vicinity Map,* Figure 1). This report provides recommendations relative to the geotechnical engineering aspects of developing the property as presently proposed based on the conditions encountered during two field investigations.

The scope of our previous and recent studies consisted of the following:

- Reviewing aerial photographs and readily available published and unpublished geologic literature.
- Reviewing the digital plans prepared by Pasco Laret Suiter & Associates.
- Down-hole logging and sampling of four large-diameter borings (see Appendix A).
- Logging and sampling of six hollow-stem auger borings (see Appendix A).
- Performing laboratory tests on selected soil samples to evaluate their physical characteristics for engineering analysis (see Appendix B).
- Performing slope stability analyses along representative geologic cross sections (see Appendix C).
- Performing liquefaction analyses (see Appendix D).
- Preparing this report, geologic cross sections and a geologic map presenting our exploratory information and our conclusions and recommendations regarding the geotechnical aspects of developing the property as presently proposed.

The approximate locations of the exploratory borings are shown on the *Geologic Map,* Figure 2. *Geologic Cross-Sections* A-A′ through G-G′ (Figures 3 through 5) represent our interpretation of the geologic conditions across the site and served as the basis for our slope stability analysis.

2. SITE AND PROJECT DESCRIPTION

The roughly 7-acre property is primarily in a natural condition and consists of a rectangular-shaped parcel that slopes westward with elevations ranging from 180 feet Mean Sea Level (MSL) along the northeast property boundary to 80 feet MSL at the northwest corner of the site. A generally west-flowing drainage is located along the northern portion of the property and has created localized steep topography. A residential development is located to the east, Plato Place to the south and Piraeus Street to the west.

The site is essentially undeveloped other than a slope excavation along the western property margin presumed to be associated with grading of Piraeus Street. In 2001, a landslide occurred on the site that closed adjacent Piraeus Street. We understand that the City of Encinitas removed portions of the slide and installed two groundwater observation wells and two horizontal drains. The excavated soil was placed within a depression on the southern portion of the property. The western property margin currently contains the landslide remnant with an upper scarp area that has down dropped approximately 5 to 10 feet. The lower portion of the slope face adjacent to Piraeus Street was track walked with a bull dozer during repair operations.

It is our understanding that the property will be developed to create a residential development with approximately 15 building pads to support 149, 3-story condominium homes with parking garages, including 15 affordable homes, a pool house and swimming pool. In addition, associated infrastructure improvements consisting of wet and dry utilities, roadways, off-street parking, retaining walls and sidewalks are planned throughout the project.

Maximum cut and fill thicknesses not considering remedial grading will be on the order of 30 feet. Fill slopes are designed at 2:1 (horizontal:vertical) or flatter, with maximum heights of approximately 20 feet. Retaining walls are planned with a maximum height of approximately 30 feet. We understand cantilevered micropile and soil nail walls are proposed along the eastern property boundary with mechanically-stabilized earth (MSE) retaining walls along the western and northern property lines.

The site location, descriptions, and proposed development discussed above are based on site investigations, review of the project plans, and our discussions with you. Once project grading plans are prepared, Geocon Incorporated should be contacted to update this geotechnical report.

3. SOIL AND GEOLOGIC CONDITIONS

During our field investigations, we encountered three surficial soil deposits (previously-placed fill, landslide debris and alluvium) and two geologic units (Quaternary-age Very Old Paralic Deposits and Eocene-age Santiago Formation). The estimated lateral extent of these units is shown on the Geologic Map, Figure 2. Figures 3 through 5 present Geologic Cross-Sections providing our interpretation of the subsurface geologic conditions. The descriptions of the soil and geologic conditions are presented on the boring logs located in Appendix A and described herein in order of increasing age.

3.1 Previously-Placed Fill (Qpf)

Previously-placed fill exists within the southern portion of the site. This material was likely placed during construction of Plato Place and during the landslide removal in 2001. We encountered approximately 15 feet of previously placed fill in our borings. The material generally consists of loose to very dense, moist, yellowish to grayish brown, clayey, fine to coarse sand with trace gravel and

some organics. The upper approximately 5 feet of this soil has a variable moisture content and density, and is considered unsuitable for support of additional fill and/or structural loads in its present condition and will require remedial grading. The lower portion of the fill was evaluated for its density, moisture content, and compression characteristics, and was found to be generally suitable for support of additional fill and/or structural loads in its present condition.

3.2 Landslide Debris (Qls)

Landslide debris is present on the western approximately one-third of the site as shown on Figure 2. During our review of the 1953 stereo photographs of the property, the landslide was not distinguishable. Later aerial photographs suggest the first movement of the landslide occurred in 2001. The landslide extends from Piraeus Street at its toe roughly 140 feet into the property to the east. The landslide debris is unsuitable to be left in place and complete removal will be required during remedial grading operations. The complete removal will result in a buttress fill which will mitigate potential future instabilities.

3.3 Alluvium (Qal)

Alluvium exists below the previously-placed fill on the southern portion of the site to depths up to 55 feet below existing grades. The alluvium is generally composed of medium dense, damp to wet, dark yellowish brown, clayey to silty, fine to coarse sand. Perched groundwater was encountered within the alluvium at depths varying from 38 to 49 feet below the ground surface. The alluvium is considered generally suitable in its current condition for support of additional fill and/or structural loads based on laboratory analysis, as discussed herein.

3.4 Very Old Paralic Deposits ($Qvop_{13}$)

Very Old Paralic Deposits are exposed across the majority of the site above elevations of approximately 138 feet MSL. These deposits lie unconformably on the older Santiago Formation with a slightly undulating contact. The Very Old Paralic Deposits consist of medium dense to dense, damp to moist, reddish to yellowish brown, silty, fine to coarse sand with some cobble layers and cohesionless sand layers. The Very Old Paralic Deposits have adequate strength characteristics for support of the proposed improvements.

3.5 Santiago Formation (Tsa)

We encountered the Santiago Formation in our large diameter borings at depths ranging from approximately 14 feet to 32 feet below existing grades; and in our small diameter borings below the alluvium at depths ranging from 50 feet to 55 feet below existing ground. In addition, the Santiago Formation is exposed in the natural slopes within the drainage to the north of proposed development and in the adjacent to Piraeus Street. The Santiago Formation consists of dense to very dense, moist,

olive to yellowish brown, massive to weakly laminated, silty, fine to coarse sandstone. In addition, the Santiago Formation contains interbeds of hard, moist, grayish olive, claystone. Discrete seepage zones were encountered within this unit as shown on the boring logs.

Our study revealed a continuous 1- to 1.5-foot-thick bedding plane shear zone (BPS) at a depth varying from 43 to 63 feet below the existing ground. The orientation of this zone appears to be westerly dipping with elevations varying from 110 feet to 117 feet MSL. A second BPS zone was encountered roughly 15 feet above the lower BPS. The sheared material consists of soft, remolded plastic clay gouge. The lower BPS was appears to be the causative feature that resulted in landsliding in the western portion of the site.

4. GROUNDWATER/SEEPAGE

We encountered seepage within the alluvial soils located below the previously placed fill in the southern portion of the site. The seepage elevations varied from approximately 38 to 49 feet below the existing ground surface and the seepage appeared to be perched within the lower 12 feet of the alluvium. Some perched seepage was also observed within the Santiago Formation. Groundwater/seepage conditions are dependent on seasonal precipitation, irrigation, and land use, among other factors, and vary as a result. Proper surface drainage will be important for future performance of the project.

A static groundwater table was not observed in the excavations performed during this study. The existing seepage elevations in buried alluvial areas, however, may fluctuate seasonally. It should be noted that areas where perched water or seepage was not encountered may exhibit groundwater during rainy periods.

5. SLOPE STABILITY EVALUATION

Six geologic cross-sections, A-A′ through C-C’ and E-E’ through G-G′ (Figures 3 through 5), were prepared to aid in evaluating the stability of the proposed slopes and retaining walls. Shear strength parameters for the soil and geologic materials encountered were determined from laboratory direct shear tests. Residual shear strengths were used for bedding plane shear features determined from laboratory test results, using the *Journal of Geotechnical and Geoenvironmental Engineering, Drained Shear Strength Parameters for Analysis of Landslides (Stark, Choi, McCone, 2005)* and engineering judgment.

Table 5.1 presents the soil strength parameters that were utilized in the slope stability analyses. The values were derived from laboratory test results and experience with similar soil and geologic conditions.

TABLE 5.1
SOIL STRENGTH PARAMETERS

Soil Condition	Angle of Internal Friction ϕ (degrees)	Cohesion c (psf)
Compacted Fill	28	300
Very Old Paralic Deposits	28	350
Santiago Formation (ML/CL)	23	500
Santiago Formation (SM/SP)	33	750
Alluvium	28	200
Bedding Plane Shear (BPS)	8	100

In accordance with Special Publication 117 guidelines, site-specific seismic slope stability analyses are required for sites located within mapped hazard zones. Seismic Hazard Zone maps published by CDMG, including landslide hazard zones, have not been published for San Diego County due to the relatively low seismic risk compared with other jurisdictions in Southern California. Therefore, it is our opinion that seismic slope stability analyses are not required in San Diego County. However, to satisfy City of Encinitas requirements, seismic slope stability analyses on the most critical failure surfaces have been performed in accordance with *Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Landslide Hazards in California*, prepared by the Southern California Earthquake Center (SCEC), dated June 2002.

The seismic slope stability analysis was performed using an acceleration of 0.23g, corresponding to a 10 percent probability of exceedance in 50 years, based on a deaggregation analysis for the site. A modal magnitude and modal distance of 6.9 and 6.3 kilometers, respectively, was used in the analysis. A plot of the hazard contribution from the deaggregation analysis is presented as Figure C-42.

Using the parameters discussed herein, an equivalent site acceleration, k_{EQ}, of 0.132g was calculated to perform the screening analysis. The screening analysis was performed using an acceleration of 0.132g resulting in factors of safety ranging between 1.0 and 2.7. A slope is considered acceptable by the screening analysis if the calculated factor of safety is greater than 1.0 using k_{EQ}; therefore, the most critical failure surfaces depicted on Cross-sections A-A′ through C-C′ and E-E’ through G-G’, pass the screening analysis for the seismic slope stability, as shown on Figure C-43.

The output files and calculated factor of safety for the cross sections used for the stability analyses are presented in Appendix C and summarized in Table 5.2.

TABLE 5.2
SLOPE STABILITY SUMMARY

Cross Section	Figure Number	Condition Analyzed	Factor of Safety	
			Static	Pseudo-Static
A-A'	C-1/C-2	Block type failure on BPS thru fill (west portion)	4.4	2.7
	C-3/C-4	Circular type failure behind MSE wall	1.7	1.5
	C-5/C-6	Block type failure on BPS (east portion)	2.2	1.2
	C-7/C-8	Circular type failure behind shoring wall	1.5	1.2
	C-9/C-10	Circular type failure behind soil nail wall	3.0	2.2
B-B'	C-11/C-12	Circular type failure behind MSE wall	2.0	1.7
	C-13/C-14	Block type failure on upper BPS	1.5	1.0
	C-15/C-16	Circular type failure behind shoring walls	1.5	1.2
	C-17/C-18	Block type failure on lower BPS	1.8	1.0
	C-19/C-20	Block type failure on upper BPS	1.6	1.0
C-C'	C-21/C-22	Circular type failure behind MSE wall	3.1	2.3
	C-23/C-24	Block type failure on lower BPS	2.7	1.1
	C-25/C-26	Block type failure on upper BPS	1.8	1.5
	C-27/C-28	Circular type failure behind shoring walls	1.8	1.3
E-E'	C-29/C-30	Block type failure on BPS	1.6	1.2
	C-31/C-32	Circular type failure behind MSE wall	1.5	1.2
F-F'	C-33/C-34	Block type failure on BPS	2.0	1.3
	C-35/C-36	Circular type failure behind MSE wall	1.8	1.4
G-G'	C-37/C-38	Block type failure on BPS	2.3	1.4
	C-39/C-40	Circular type failure behind MSE wall	1.6	1.2

Note – Groundwater was incorporated into the analysis and generally placed at the first occurrence of seepage as encountered in our borings.

The results of the analyses indicate that full removal of the existing landslide and replacement with compacted fill will result in a static factor of safety of at least 1.5. The approximate limits of remedial grading are shown on the *Geologic Map* and depicted on the *Geologic Cross-Sections* (red landslide area). The depth and extent of remedial grading of these areas may need to be modified depending on the conditions observed during grading.

6. GEOLOGIC HAZARDS

6.1 Faulting and Seismicity

Based on our recent exploratory borings and a review of published geologic maps and reports, the site is not located on any known "active," "potentially active" or "inactive" fault traces as defined by the California Geological Survey (CGS).

The Newport-Inglewood Fault and Rose Canyon Fault Zone, located approximately 13 miles west of the site, are the closest known active faults. The CGS considers a fault seismically active when evidence suggests seismic activity within roughly the last 11,000 years. The CGS has included portions of the Rose Canyon Fault zone within an Alquist-Priolo Earthquake Fault Zone. Based upon a review of available geologic data and published reports, the site is not located within a State of California Earthquake Fault Zone.

6.2 Seismicity

Considerations important in seismic design include the frequency and duration of motion and the soil conditions underlying the site. Seismic design of structures should be evaluated in accordance with the California Building Code (CBC) guidelines currently adopted by the local agency. The risk associated with strong ground motion due to earthquake at the site is high; however, the risk is no greater than that for the region.

6.3 Liquefaction and Seismically Induced Settlement

Liquefaction typically occurs when a site is located in a zone with seismic activity, onsite soils are cohesionless, groundwater is encountered within 50 feet of the surface, and soil densities are less than about 70 percent of the maximum dry densities. If the four previous criteria are met, a seismic event could result in a rapid pore water pressure increase from the earthquake-generated ground accelerations. We performed liquefaction analyses and the results indicate a low potential for liquefaction and seismically-induced settlement. Our analysis assumed that the first occurrence of perched seepage in the borings represents a "water table". The results of the analyses are presented in Appendix D.

The site is not located within a state-designated liquefaction hazard zone. The County of San Diego Hazard Mitigation Plan (2017) maps the site within a zone with a low liquefiable risk. The current standard of practice, as outlined in the *Recommended Procedures for Implementation of DMG Special Publication 117A, Guidelines for Analyzing and Mitigating Liquefaction in California* requires liquefaction analysis to a depth of 50 feet below the lowest portion of the proposed structures. We analyzed our recent Borings B-1 through B-3 located within the southern area of the site where deep alluvium and perched seepage was encountered. We explored to a maximum depth of approximately 52-1/2 feet in this area. We do not expect there is a liquefaction potential within areas of the site

mapped as Very Old Paralic Deposits or Santiago Formation due to the dense nature of the materials and lack of groundwater.

We used the methods following the methodology of NCEER (2001 and 2008) to perform a liquefaction evaluation. We used a computed site acceleration of 0.56g (based on ASCE 7-16) and a modal magnitude of 6.9 as evaluated from the NSHM 2014 Dynamic edition using a recurrence interval of 2,475 years (2% in 50 years) on the United States Geological Survey web site.

We used the blow counts for the liquefaction analysis based on the driven samplers in the field. In addition, we adjusted blow counts using a California sampler by two-thirds to obtain equivalent Standard Penetration Test (SPT) values. The blow counts were also adjusted for boring diameter, sampling method, rod length, overburden pressure, and energy delivered to the sampler corresponding to a driving-energy of 60 percent ($N_{1|60}$). We further adjusted the blow counts for estimated fines content and calculated a factor of safety. A site is considered to be susceptible to liquefaction when the computed factor of safety is less than 1.0. The results of our liquefaction analysis indicate factors of safety greater than 1.0 within the alluvial soil below the assumed groundwater table and the liquefaction potential is considered low.

6.4 Landslides

A landslide was encountered on the site as described in Section 2. This deposit will be completely removed during remedial grading for the proposed development.

6.5 Settlement Considerations

Estimates of potential settlement are generally based on the thickness of alluvium left-in-place, the thickness of additional fill to achieve finish grade, and the compressibility characteristics of the alluvial materials. The rate of settlement is generally based on the drainage path that would allow for pore water pressure dissipation.

The alluvial deposits beneath the southern portion of the site were found to be slightly to moderately compressible when subjected to increased vertical stress. Laboratory consolidation tests were performed on samples of the alluvium to aid in evaluating the magnitude and time rate of settlement that could occur from the proposed fill and building loads presently planned. We have conservatively assumed a groundwater elevation at first occurrence of seepage for the analysis. Based on the test results and analysis, it is estimated that approximately 4 to 5 inches of settlement could occur and take approximately 2 months without geotechnical mitigation. Construction of improvements in the area where alluvium is left in place should be delayed until primary consolidation is essentially complete. It should be noted that the magnitude of the total settlement and the associated time rate of consolidation may not be uniform throughout the site. Settlement monitoring during grading will verify when primary compression has occurred, and improvement construction may commence.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 General

7.1.1 From a geotechnical engineering standpoint, it is our opinion that the site is suitable for development provided the recommendations presented herein are implemented in design and construction of the project.

7.1.2 The site is underlain by surficial soil consisting of previously-placed fill, landslide debris, and alluvium. Two geologic units consisting of Very Old Paralic Deposits and the Santiago Formation are also present on the site. Remedial grading of the upper portion of previously-placed fill and complete removal of the landslide debris will be required. The Very Old Paralic Deposits and the Santiago Formation are considered adequate for the support of compacted fill and/or structural loads.

7.1.3 Removal of the landslide in the western approximately one-third of the property will provide adequate slope stability for the central portion of the site. A buttress will be necessary along the northwest development margin to mitigate naturally occurring bedrock shear zones and provide acceptable slope stability. Details of these mitigation features are provided in Sections 7.4 and 7.8 and on Figures 2 through 5. This information should be updated once detailed grading plans are prepared.

7.1.4 The alluvium encountered beneath the previously placed fill in the southern portion of the site is considered slightly to moderately compressible when subjected to increased vertical stress due to fill or structural loads. Our settlement analysis indicates approximately 4 to 5 inches of settlement may occur as a result of placing approximately 10 feet of additional fill. As a consequence, construction of the proposed improvements, including underground utilities should be delayed until the primary consolidation of the alluvial deposits is essentially complete. Surcharge loading of this area may be considered to reduce the amount of time to achieve primary consolidation.

7.1.5 We encountered seepage within the alluvium in the southern portion of the site at depths ranging from approximately 38 to 49 feet below the existing ground surface. We also encountered seepage conditions within the formational materials in large-diameter Borings LB-1, 2 and 4 at depths of approximately 40½, 44 and 40 feet below existing grade, respectively.

7.1.6 We expect the proposed structures in areas underlain by Very Old Paralic Deposits, Santiago Formation, or properly compacted fill overlying these formations can be founded on conventional shallow foundations. The proposed structures in areas underlain by

significant differential fill thickness or previously placed fill and alluvium left in place should be founded on mat slabs or post-tensioned foundations designed to accommodate the anticipated settlement. Any proposed buildings within the influence of the reinforced zones of MSE retaining walls should be supported on deep foundations.

7.1.7 Soil nail wall construction may encounter flowing cohesionless sand within the Very Old Paralic Deposits. This condition was encountered in Boring LB-2 from 22.5 to 28 feet. Special drilling/construction techniques may be necessary if these conditions are encountered during project development.

7.2 Excavation and Soil Characteristics

7.2.1 Excavation of the surficial soil should generally be possible with moderate to heavy effort using conventional, heavy-duty equipment during grading and trenching operations. Excavation of the Very Old Paralic Deposits and the Santiago Formation should generally be possible with heavy to very heavy effort using conventional, heavy-duty equipment during grading and trenching operations.

7.2.2 We performed laboratory tests on samples of the site materials to evaluate the expansion potential of the site soils. Appendix B presents results of the laboratory expansion index tests. The soil encountered in the field investigation is considered to be "non-expansive" and "expansive" (expansion index [EI] of 20 or less and greater than 20, respectively) as defined by 2019 California Building Code [CBC] Section 1803.5.3. Table 7.2.1 presents soil classifications based on the expansion index. We expect a majority of the soil encountered possess a "very low" to "low" expansion potential (EI of 50 or less) in accordance with ASTM D 4829. However, the claystone and siltstone layers within the Santiago Formation would likely consist of "medium" to "high" expansive soils EI of 51 to 130).

TABLE 7.2.1
EXPANSION CLASSIFICATION BASED ON EXPANSION INDEX

Expansion Index (EI)	ASTM D 4829 Expansion Classification	2019 CBC Expansion Classification
0 – 20	Very Low	Non-Expansive
21 – 50	Low	Expansive
51 – 90	Medium	
91 – 130	High	
Greater Than 130	Very High	

7.2.3 The laboratory test results indicate that the near-surface on-site materials at the locations tested possess *Not Applicable* sulfate severity and *S0* exposure to concrete structures as defined by 2019 CBC Section 1904 and ACI 318-14 Chapter 19. Table 7.2.2 presents a summary of concrete requirements set forth by 2019 CBC Section 1904 and ACI 318. ACI guidelines should be followed when determining the type of concrete to be used. The presence of water-soluble sulfates is not a visually discernible characteristic; therefore, other soil samples from the site could yield different concentrations. Additionally, over time landscaping activities (i.e., addition of fertilizers and other soil nutrients) may affect the concentration.

TABLE 7.2.2
REQUIREMENTS FOR CONCRETE EXPOSED TO SULFATE-CONTAINING SOLUTIONS

Exposure Class		Water-Soluble Sulfate (SO_4) Percent by Weight	Cement Type (ASTM C 150)	Maximum Water to Cement Ratio by Weight[1]	Minimum Compressive Strength (psi)
S0		SO_4<0.10	No Type Restriction	n/a	2,500
S1		0.10≤SO_4<0.20	II	0.50	4,000
S2		0.20≤SO_4≤2.00	V	0.45	4,500
S3	Option 1	SO_4>2.00	V+Pozzolan or Slag	0.45	4,500
	Option 2		V	0.40	5,000

[1] Maximum water to cement ratio limits do not apply to lightweight concrete

7.2.4 Geocon Incorporated does not practice in the field of corrosion engineering; therefore, further evaluation by a corrosion engineer may be needed to incorporate the necessary precautions to avoid premature corrosion of underground pipes and buried metal in direct contact with the soils.

7.3 Soil Nail Wall

7.3.1 In general, ground conditions are moderately suited to soil nail wall construction techniques. However, relatively cohesionless sands were encountered in Boring LB-2 indicating the potential for raveling or caving of the unsupported excavation. Casing or specialized drilling techniques may be required where low cohesion sands are encountered.

7.3.2 Testing of the soil nails should be performed in accordance with the guidelines of the Federal Highway Administration or similar guidelines. At least two verification tests should be performed to confirm design assumptions for each soil/rock type encountered. Verification tests nails should be sacrificial and should not be used to support the proposed wall. The bond length should be adjusted to allow for pullout testing of the verification nails

to evaluate the ultimate bond stress. A minimum of 5 percent of the production nails should also be proof tested and a minimum of 4 sacrificial nails should be tested at the discretion of Geocon Incorporated. Consideration should be given to testing sacrificial nails with an adjusted bond length rather than testing production nails. Geocon Incorporated should observe the nail installation and perform the nail testing.

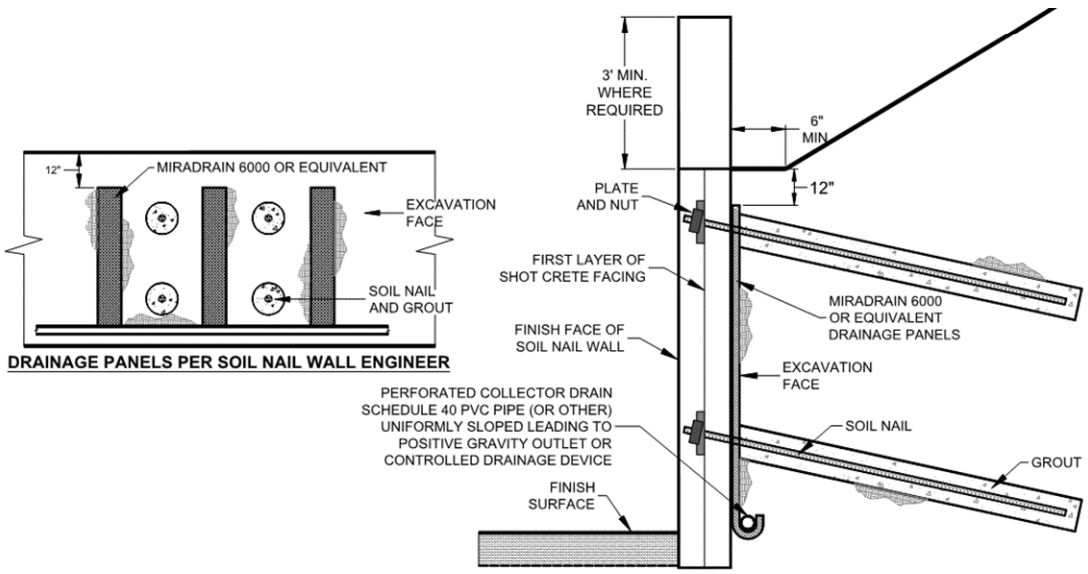
7.3.3 The soil strength parameters listed in Table 7.3.1 can be used in design of the soil nails. The bond stress is dependent on drilling method, diameter, and construction method. Therefore, the designer should evaluate the bond stress based on the existing soil conditions and the construction method.

TABLE 7.3.1
SOIL STRENGTH PARAMETERS FOR SOIL NAIL WALLS

Description	Cohesion (psf)	Friction Angle (degrees)	Estimated Ultimate Bond Stress (psi)*
Previously Placed Fill	300	28	10
Very Old Paralic Deposits	350	28	10
Santiago Formation	750	33	20

*Assuming gravity fed, open hole drilling techniques.

7.3.4 A drain system should be incorporated into the design of the soil nail wall as shown herein. Corrosion protection should also be provided if the wall is intended to be a permanent structure.



7.4 Buttresses

7.4.1 A drained buttress will be required on the north and northwest portion of the property to provide an acceptable factor of safety for the proposed MSE wall and slope. In addition, removal of the landslide debris in the western approximately one-third of the property will effectively provide adequate buttressing of the hillside in this area.

7.4.2 A typical buttress detail is shown on Figure 6. *Section 7* in Appendix E provides cut off wall and headwall details for the heel drains. Depending on the geologic conditions exposed, deeper and/or wider keyways may be necessary. The actual recommended keyway dimensions, as well as backdrain geometry and drain connection points should be determined as grading plans progress.

7.5 Grading

7.5.1 All grading should be performed in accordance with the attached *Recommended Grading Specifications* (Appendix E). Where the recommendations of this section conflict with Appendix E, the recommendations of this section take precedence. All earthwork should be observed and all fills tested for proper compaction by Geocon Incorporated.

7.5.2 Site preparation should begin with the removal of all deleterious material and vegetation. The depth of removal should be such that material exposed in cut areas or soils to be used as fill are relatively free of organic matter. Material generated during stripping and/or site demolition should be exported from the site.

7.5.3 All potentially compressible surficial soils within areas where structural improvements are planned, or where discussed herein, should be removed to firm natural ground and properly compacted prior to placing additional fill and/or structural load (i.e. the upper 5 feet of previously-placed fill, landslide debris, and other surficial deposits). Deeper than normal benching and/or stripping operations for sloping ground surfaces will be required where the thickness of potentially compressible surficial deposits exceeds 3 feet. The actual extent of unsuitable soil removals will be determined in the field during grading by the engineering geologist and/or geotechnical engineer.

7.5.4 A pre-construction meeting with a city inspector, owner, grading contractor, civil engineer, and a representative of Geocon Incorporated should be held prior to the beginning of grading and development operations. Grading requirements and construction methods can be discussed at that time.

7.5.5 Grading of the site should commence with the removal of vegetation and debris within the limits of development. Existing underground improvements should be removed and the resulting depressions properly backfilled in accordance with the procedures described herein.

7.5.6 To reduce the potential for differential settlement, it is recommended that the cut portion of cut/fill transition building pads be undercut at least 3 feet and replaced with properly compacted "very low" to "low" expansive fill soils. Where the thickness of the fill below the building pad exceeds 15 feet, the depth of the undercut should be increased to one-fifth of the maximum fill thickness.

7.5.7 Sharp fill differentials may result from removal of the landslide. Where these conditions occur beneath proposed buildings, additional undercutting or special foundation design considerations may be necessary.

7.5.8 The site should be brought to final subgrade elevations with structural fill compacted in layers. In general, soil native to the site is suitable for use as fill if relatively free from vegetation, debris and other deleterious material. Layers of fill should be no thicker than will allow for adequate bonding and compaction. Fill, including backfill and scarified ground surfaces, should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content, as determined in accordance with ASTM D 1557. Fill materials placed below optimum moisture content may require additional moisture conditioning prior to placing additional fill.

7.5.9 Import fill, if necessary, should consist of granular materials with a "very low" to "low" expansion potential (EI of 50 or less) free of deleterious material or rock larger than 3 inches and should be compacted as recommended above. Geocon Incorporated should be notified of the import soil source and should perform laboratory testing of import soil prior to its arrival at the site to determine its suitability as fill material.

7.5.10 It is the responsibility of the contractor and their competent person to ensure that all excavations, temporary slopes and trenches are properly constructed and maintained in accordance with applicable OSHA regulations in order to maintain safety and the stability of adjacent existing improvements.

7.6 Settlement Monitoring

7.6.1 The proposed structural areas underlain by previously-placed fill and alluvium should be monitored for settlement after the additional fill is placed to achieve finish grades. In general,

surface settlement plates should be placed at several locations within the southern development footprint and read periodically until primary consolidation has essentially ceased. Survey readings should be performed regularly following placement of the proposed fill. Specific details regarding the location and type of monitoring device as well as monitoring frequency will be provided once the development plans have been finalized. The possibility of surcharge loading to accelerate the magnitude of settlement should be considered as grading plans progress.

7.7 Seismic Design Criteria

7.7.1 Table 7.7.1 summarizes site-specific design criteria obtained from the 2019 California Building Code (CBC; Based on the 2018 International Building Code [IBC] and ASCE 7-16), Chapter 16 Structural Design, Section 1613 Earthquake Loads. We used the computer program *U.S. Seismic Design Maps*, provided by the Structural Engineers Association (SEA) to calculate the seismic design parameters. The short spectral response uses a period of 0.2 second. We evaluated the Site Class based on the discussion in Section 1613.2.2 of the 2019 CBC and Table 20.3-1 of ASCE 7-16. The values presented herein are for the risk-targeted maximum considered earthquake (MCE_R). Sites designated as Site Class D, E and F may require additional analyses if requested by the project structural engineer and client.

TABLE 7.7.1
2019 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2019 CBC Reference
Site Class	D	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	1.134g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.406g	Figure 1613.2.1(2)
Site Coefficient, F_A	1.046	Table 1613.2.3(1)
Site Coefficient, F_V	1.894	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	1.187g	Section 1613.2.3 (Eqn 16-36)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	0.769g	Section 1613.2.3 (Eqn 16-37)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	0.791g	Section 1613.2.4 (Eqn 16-38)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.512g	Section 1613.2.4 (Eqn 16-39)

***Note:** Using the code-based values presented in this table, in lieu of a performing a ground motion hazard analysis, requires the exceptions outlined in ASCE 7-16 Section 11.4.8 be followed by the project structural engineer. Per Section 11.4.8 of ASCE/SEI 7-16, a ground motion hazard analysis should be performed for projects for Site Class "E" sites with Ss greater than or equal to 1.0g and for Site Class "D" and "E" sites with S1 greater than 0.2g. Section 11.4.8 also provides exceptions which indicates that the ground motion hazard analysis may be waived provided the exceptions are followed.

7.7.2 Table 7.7.2 presents the mapped maximum considered geometric mean (MCE_G) seismic design parameters for projects located in Seismic Design Categories of D through F in accordance with ASCE 7-16.

TABLE 7.7.2
ASCE 7-16 PEAK GROUND ACCELERATION

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.505g	Figure 22-9
Site Coefficient, F_{PGA}	1.1	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	0.556g	Section 11.8.3 (Eqn 11.8-1)

7.7.3 Conformance to the criteria in Tables 7.7.1 and 7.7.2 for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur in the event of a large earthquake. The primary goal of seismic design is to protect life, not to avoid all damage, since such design may be economically prohibitive.

7.7.4 The project structural engineer and architect should evaluate the appropriate Risk Category and Seismic Design Category for the planned structures. The values presented herein assume a Risk Category of I and resulting in a Seismic Design Category D. Table 7.7.3 presents a summary of the risk categories in accordance with ASCE 7-16.

TABLE 7.7.3
ASCE 7-16 RISK CATEGORIES

Risk Category	Building Use	Examples
I	Low risk to Human Life at Failure	Barn, Storage Shelter
II	Nominal Risk to Human Life at Failure (Buildings Not Designated as I, III or IV)	Residential, Commercial and Industrial Buildings
III	Substantial Risk to Human Life at Failure	Theaters, Lecture Halls, Dining Halls, Schools, Prisons, Small Healthcare Facilities, Infrastructure Plants, Storage for Explosives/Toxins
IV	Essential Facilities	Hazardous Material Facilities, Hospitals, Fire and Rescue, Emergency Shelters, Police Stations, Power Stations, Aviation Control Facilities, National Defense, Water Storage

7.8 Slope Stability

7.8.1 We performed slope stability analyses using the two-dimensional computer program GeoStudio 2018 created by Geo-Slope International Ltd. We calculated the factor of safety for the planned slopes for rotational-mode and block-mode analyses using the Spencer's method. Output of the computer program including the calculated factor of safety and the failure surfaces are presented in Appendix C.

7.8.2 We used average drained direct shear strength parameters based on laboratory tests and our experience with similar soil types in nearby areas for the slope stability analyses. Our calculations indicate the proposed slopes, constructed of on-site materials, should have calculated factors of safety (FOS) of at least 1.5 and 1.0 under static and pseudo-static conditions, respectively, for deep-seated failure when the recommendations of this report are followed.

7.8.3 We selected Cross-Sections A-A' through C-C' and E-E' through G-G' to perform the slope stability analyses.

7.8.4 The results of the slope stability analyses are presented as Figures C-1 through C-43. The results of the surficial slope stability analyses are presented in Figure C-41. A plot of the seismic deaggregation hazard contribution is shown as Figure C-42. The seismic slope stability screening analysis results are presented as Figure C-43.

7.8.5 Based on the compression characteristics of the landslide debris and results of the slope stability analyses, complete removal of landslide materials is required. In addition, a buttress will be required within the Bedding Plane Shear (BPS) zone shown on Cross-Sections E-E' through G-G' is recommended. A buttress with an approximately 15-foot wide keyway is required to achieve an acceptable factor of safety. The buttress design has assumed a 1:1 (horizontal to vertical) backcut extending down to intercept the critical bedding plane shear zones. Figure 6 provides a general buttress detail for use in design and construction.

7.8.6 The planned buttress keyway and heel drains should be surveyed during construction. We based the buttress width and depth presented on the Geologic Map on the results of the slope stability analysis. The buttress and landslide removal will require drains located at the heel of the excavations as shown on Figure 6 and should be as-built and surveyed by the project civil engineer. Prior to outletting, the final 20-foot segment of the buttress subdrain should consist of non-perforated drainpipe. At the non-perforated/perforated interface, a seepage cutoff wall should be constructed on the downslope side of the junction. Subdrains that

discharge into a natural drainage course or open space area should be provided with a permanent headwall structure, as presented in Appendix E.

7.8.7 Excavations, including buttress fills, should be observed during grading by an engineering geologist with Geocon to evaluate whether soil and geologic conditions do not differ significantly from those expected or identified in this report.

7.8.8 We performed the slope stability analyses based on the interpretation of geologic conditions encountered during our field investigation. We should evaluate the geologic conditions during the grading operations to check if the conditions observed during grading are consistent with our interpretations. Additional slope stability analyses and modifications to the proposed buttress may be required during the grading operations as conditions warrant.

7.8.9 Slopes should be landscaped with drought-tolerant vegetation having variable root depths and requiring minimal landscape irrigation. In addition, slopes should be drained and properly maintained to reduce erosion.

7.9 Foundation Recommendations - General

7.9.1 Proposed structures supported on compacted fill over Very Old Paralic Deposits or Santiago Formation may be designed using conventional shallow foundations. Proposed structures supported on compacted fill over previously-placed fill and alluvium, should be designed using mat slabs or post-tensioned slabs with 2-inches of total settlement or drilled pier foundations. Proposed structures supported on MSE retaining wall backfill should be designed using drilled pier foundations.

7.10 Shallow Foundation and Concrete Slabs-On-Grade Recommendations

7.10.1 Proposed structures supported on compacted fill over Very Old Paralic Deposits or Santiago Formation may be designed using conventional shallow foundations. Proposed structures supported on compacted fill over previously-placed fill and alluvium, should be designed using mat slabs or post-tensioned slabs with 2-inches of total settlement or drilled pier foundations. Proposed structures supported on MSE retaining wall backfill should be design using drilled pier foundations.

7.10.2 The foundation recommendations herein are for proposed one- to three-story residential structures. The foundation recommendations have been separated into three categories based on either the maximum and differential fill thickness or Expansion Index. The foundation category criteria are presented in Table 7.10.1.

TABLE 7.10.1
FOUNDATION CATEGORY CRITERIA

Foundation Category	Maximum Fill Thickness, T (Feet)	Differential Fill Thickness, D (Feet)	Expansion Index (EI)
I	T<20	--	EI≤50
II	20≤T<50	10≤D<20	50<EI≤90
III	T≥50	D≥20	90<EI≤130

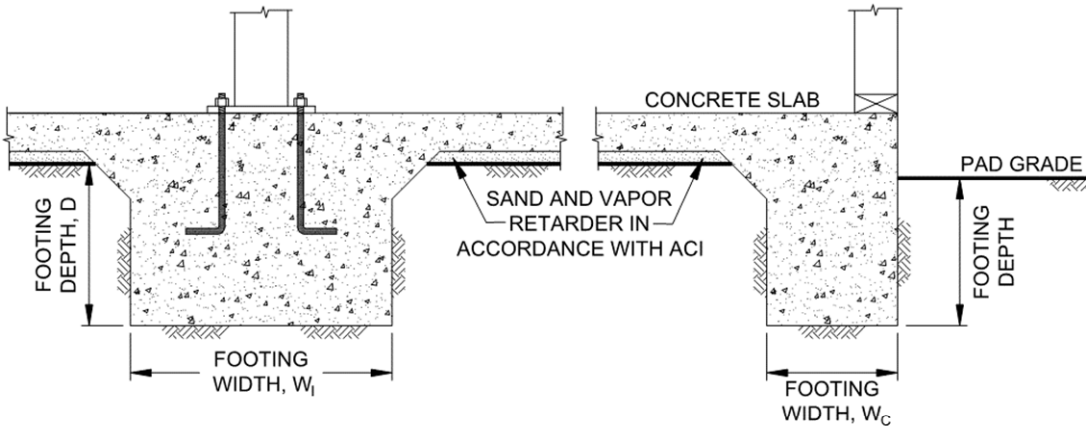
7.10.3 We will provide final foundation categories for each building or lot after finish pad grades have been achieved, the underlying underlying fill-bedrock geometry is evaluated and we perform laboratory testing of the subgrade soil. However, any structures supported on previously-placed fill and alluvium should be designed using Foundation Category III parameters and consider the total settlement due to additional structural loads and additional settlement due to the potential for hydrocollapse.

7.10.4 Table 7.10.2 presents minimum foundation and interior concrete slab design criteria for conventional foundation systems.

TABLE 7.10.2
CONVENTIONAL FOUNDATION RECOMMENDATIONS BY CATEGORY

Foundation Category	Minimum Footing Embedment Depth, D (inches)	Minimum Continuous Footing Reinforcement	Minimum Footing Width (Inches)
I	12	Two No. 4 bars, one top and one bottom	12 – Continuous, W_C 24 – Isolated, W_I
II	18	Four No. 4 bars, two top and two bottom	
III	24	Four No. 5 bars, two top and two bottom	

7.10.5 The foundations should be embedded in accordance with the recommendations herein and the Wall/Column Footing Dimension Detail. The embedment depths should be measured from the lowest adjacent pad grade for both interior and exterior footings. Footings should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope (unless designed with a post-tensioned foundation system as discussed herein).



Wall/Column Footing Dimension Detail

7.10.6 The proposed structures can be supported on a shallow foundation system founded in the compacted fill/formational materials. Table 7.10.3 provides a summary of the foundation design recommendations.

TABLE 7.10.3
SUMMARY OF FOUNDATION RECOMMENDATIONS

Parameter	Value
Allowable Bearing Capacity	2,000 psf
Bearing Capacity Increase	500 psf per Foot of Depth
	300 psf per Foot of Width
Maximum Allowable Bearing Capacity	3,500 psf
Estimated Total Settlement*	1 Inch
Estimated Differential Settlement	½ Inch in 40 Feet

(*) The estimated total settlement is 2-inches with 1-inch differential in 40 feet beneath structures supported by previously-placed fill and alluvium

7.10.7 The bearing capacity values presented herein are for dead plus live loads and may be increased by one-third when considering transient loads due to wind or seismic forces.

7.10.8 The concrete slab-on-grades should be a designed in accordance with Table 7.10.4.

TABLE 7.10.4
CONVENTIONAL SLAB-ON-GRADE RECOMMENDATIONS BY CATEGORY

Foundation Category	Minimum Concrete Slab Thickness (inches)	Interior Slab Reinforcement	Typical Slab Underlayment
I	4	6 x 6 - 10/10 welded wire mesh at slab mid-point	3 to 4 Inches of Sand/Gravel/Base
II	4	No. 3 bars at 24 inches on center, both directions	
III	5	No. 3 bars at 18 inches on center, both directions	

7.10.9 Slabs that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder. The vapor retarder design should be consistent with the guidelines presented in the American Concrete Institute's (ACI) *Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials* (ACI 302.2R-06). The vapor retarder used should be specified by the project architect or developer based on the type of floor covering that will be installed and if the structure will possess a humidity controlled environment.

7.10.10 The bedding sand thickness should be determined by the project foundation engineer, architect, and/or developer. However, we should be contacted to provide recommendations if the bedding sand is thicker than 6 inches. It is common to see 3 inches and 4 inches of sand below the concrete slab-on-grade for 5-inch and 4-inch thick slabs, respectively, in the southern California area. The foundation design engineer should provide appropriate concrete mix design criteria and curing measures to assure proper curing of the slab by reducing the potential for rapid moisture loss and subsequent cracking and/or slab curl. We suggest that the foundation design engineer present the concrete mix design and proper curing methods on the foundation plans. It is critical that the foundation contractor understands and follows the recommendations presented on the foundation plans.

7.10.11 As an alternative to the conventional foundation recommendations, consideration should be given to the use of post-tensioned concrete slab and foundation systems for the support of the proposed structures. The post-tensioned systems (foundation dimensions and embedment depths, slab thickness and steel placement) should be designed by a structural engineer experienced in post-tensioned slab design and design criteria of the Post-Tensioning Institute (PTI) DC 10.5-12 *Standard Requirements for Design and Analysis of Shallow Post-Tensioned Concrete Foundations on Expansive Soils* or *WRI/CRSI Design of Slab-on-Ground Foundations*, as required by the 2019 California Building Code (CBC Section 1808.6.2). Although this procedure was developed for expansive soil conditions, it can

also be used to reduce the potential for foundation distress due to differential fill settlement. The post-tensioned design should incorporate the geotechnical parameters presented in Table 7.10.5 for the particular Foundation Category designated. The parameters presented in Table 7.10.5 are based on the guidelines presented in the PTI DC 10.5 design manual.

TABLE 7.10.5
POST-TENSIONED FOUNDATION SYSTEM DESIGN PARAMETERS

Post-Tensioning Institute (PTI) DC10.5 Design Parameters	Foundation Category		
	I	II	III
Thornthwaite Index	-20	-20	-20
Equilibrium Suction	3.9	3.9	3.9
Edge Lift Moisture Variation Distance, e_M (Feet)	5.3	5.1	4.9
Edge Lift, y_M (Inches)	0.61	1.10	1.58
Center Lift Moisture Variation Distance, e_M (Feet)	9.0	9.0	9.0
Center Lift, y_M (Inches)	0.30	0.47	0.66

7.10.12 The foundations for the post-tensioned slabs should be embedded in accordance with the recommendations of the structural engineer. If a post-tensioned mat foundation system is planned, the slab should possess a thickened edge with a minimum width of 12 inches and extend below the clean sand or crushed rock layer.

7.10.13 If the structural engineer proposes a post-tensioned foundation design method other than PTI, DC 10.5:

- The deflection criteria presented in Table 7.10.5 are still applicable.
- Interior stiffener beams should be used for Foundation Categories II and III.
- The width of the perimeter foundations should be at least 12 inches.
- The perimeter footing embedment depths should be at least 12 inches, 18 inches and 24 inches for foundation categories I, II, and III, respectively. The embedment depths should be measured from the lowest adjacent pad grade.

7.10.14 Foundation systems for the lots that possess a foundation Category I and a “very low” expansion potential (expansion index of 20 or less) can be designed using the method described in Section 1808 of the 2019 CBC. If post-tensioned foundations are planned, an alternative, commonly accepted design method (other than PTI) can be used. However, the post-tensioned foundation system should be designed with a total and differential deflection of 1 inch. Geocon Incorporated should be contacted to review the plans and provide additional information, if necessary.

7.10.15 If an alternate design method is contemplated, Geocon Incorporated should be contacted to evaluate if additional expansion index testing should be performed to identify the lots that possess a “very low” expansion potential (expansion index of 20 or less).

7.10.16 Our experience indicates post-tensioned slabs may be susceptible to excessive edge lift from tensioning, regardless of the underlying soil conditions. Placing reinforcing steel at the bottom of the perimeter footings and the interior stiffener beams may mitigate this potential. The structural engineer should design the foundation system to reduce the potential of edge lift occurring for the proposed structures.

7.10.17 During the construction of the post-tension foundation system, the concrete should be placed monolithically. Under no circumstances should cold joints form between the footings/grade beams and the slab during the construction of the post-tension foundation system unless designed by the structural engineer.

7.10.18 Isolated footings outside of the slab area, if present, should have the minimum embedment depth and width recommended for conventional foundations for a particular Foundation Category. The use of isolated footings, which are located beyond the perimeter of the building and support structural elements connected to the building, are not recommended for Category III. Where this condition cannot be avoided, the isolated footings should be connected to the building foundation system with grade beams in both directions. In addition, consideration should be given to connecting patio slabs, which exceed 5 feet in width, to the building foundation to reduce the potential for future separation to occur.

7.10.19 Interior stiffening beams should be incorporated into the design of the foundation system in accordance with the PTI design procedures.

7.10.20 Special subgrade presaturation is not deemed necessary prior to placing concrete; however, the exposed foundation and slab subgrade soil should be moisture conditioned, as necessary, to maintain a moist condition as would be expected in any such concrete placement.

7.10.21 Where buildings or other improvements are planned near the top of a slope 3:1 (horizontal:vertical) or steeper, special foundation and/or design considerations are recommended due to the tendency for lateral soil movement to occur.

- For fill slopes less than 20 feet high or cut slopes regardless of height, footings should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.

- When located next to a descending 3:1 (horizontal:vertical) fill slope or steeper, the foundations should be extended to a depth where the minimum horizontal distance is equal to H/3 (where H equals the vertical distance from the top of the fill slope to the base of the fill soil) with a minimum of 7 feet but need not exceed 40 feet. The horizontal distance is measured from the outer, deepest edge of the footing to the face of the slope. A post-tensioned slab and foundation system or mat foundation system can be used to reduce the potential for distress in the structures associated with strain softening and lateral fill extension. Specific design parameters or recommendations for either of these alternatives can be provided once the building location and fill slope geometry have been determined.

- If swimming pools are planned, Geocon Incorporated should be contacted for a review of specific site conditions.

- Swimming pools located within 7 feet of the top of cut or fill slopes are not recommended. Where such a condition cannot be avoided, the portion of the swimming pool wall within 7 feet of the slope face be designed assuming that the adjacent soil provides no lateral support. This recommendation applies to fill slopes up to 30 feet in height, and cut slopes regardless of height. For swimming pools located near the top of fill slopes greater than 30 feet in height, additional recommendations may be required and Geocon Incorporated should be contacted for a review of specific site conditions.

- Although other improvements, which are relatively rigid or brittle, such as concrete flatwork or masonry walls, may experience some distress if located near the top of a slope, it is generally not economical to mitigate this potential. It may be possible, however, to incorporate design measures which would permit some lateral soil movement without causing extensive distress. Geocon Incorporated should be consulted for specific recommendations.

7.10.22 The recommendations of this report are intended to reduce the potential for cracking of slabs and foundations due to expansive soil (if present), differential settlement of fill soil with varying thicknesses. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade placed on such conditions may still exhibit some cracking due to soil movement and/or shrinkage. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

7.10.23 Concrete slabs should be provided with adequate crack-control joints, construction joints and/or expansion joints to reduce unsightly shrinkage cracking. The design of joints should consider criteria of the American Concrete Institute when establishing crack-control spacing. Additional steel reinforcing, concrete admixtures and/or closer crack control joint spacing should be considered where concrete-exposed finished floors are planned.

7.10.24 Geocon Incorporated should be consulted to provide additional design parameters as required by the structural engineer.

7.10.25 We should observe the foundation excavations prior to the placement of reinforcing steel to check that the exposed soil conditions are similar to those expected and that they have been extended to the appropriate bearing strata. If unexpected soil conditions are encountered, foundation modifications may be required.

7.11 Mat Foundation

7.11.1 We understand the proposed structures underlain by compacted fill over previously-placed fill and alluvium may be supported on a mat foundation. A mat foundation consists of a thick, rigid concrete mat that allows the entire footprint of the structure to carry building loads. In addition, the mat can tolerate significantly greater differential movements such as those associated with expansive soils or differential settlement. In this case, the mat foundation may be used below the water table if adequately waterproofed to reduce the potential for seepage. Table 7.11 provides a summary of the foundation design recommendations.

TABLE 7.11
SUMMARY OF MAT FOUNDATION RECOMMENDATIONS

Parameter	Value
Design Perimeter Foundation Width	12 inches
Minimum Foundation Depth	Extend Below Slab Underlayment
Minimum Steel Reinforcement	Per Structural Engineer
Bearing Capacity	500 psf
Estimated Total Settlement	2 Inches
Estimated Differential Settlement	1 Inch in 40 Feet
Modulus of Subgrade Reaction	125 pci
Design Expansion Index	50 or less

7.11.2 The modulus of subgrade reaction values should be modified as necessary using standard equations for mat size as required by the structural engineer. This value is a unit value for use with a 1-foot square footing. The modulus should be reduced in accordance with the following equation when used with larger foundations:

$$K_R = K\left[\frac{B+1}{2B}\right]^2$$

where: K_R = reduced subgrade modulus
K = unit subgrade modulus
B = foundation width (in feet)

7.11.3 A mat foundation system will allow the structure to settle with the ground and should have sufficient rigidity to allow the structure to move as a single unit. Re-leveling of the mat foundation could be necessary through the use of mud jacking, compaction grouting or other similar techniques if differential settlement occurs

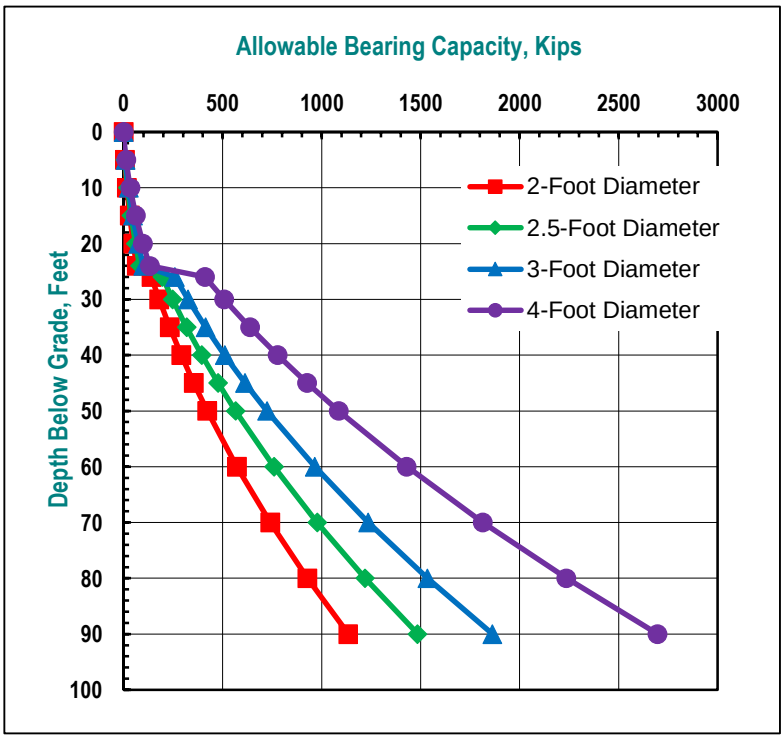
7.11.4 Slabs that may receive moisture-sensitive floor coverings or may be used to store moisture-sensitive materials should be underlain by a vapor retarder. The vapor retarder design should be consistent with the guidelines presented in the American Concrete Institute's (ACI) *Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials* (ACI 302.2R-06). In addition, the membrane should be installed in accordance with manufacturer's recommendations and ASTM requirements and installed in a manner that prevents puncture. The vapor retarder used should be specified by the project architect or developer based on the type of floor covering that will be installed and if the structure will possess a humidity controlled environment.

7.11.5 The bedding sand thickness should be determined by the project foundation engineer, architect, and/or developer. However, we should be contacted to provide recommendations if the bedding sand is thicker than 6 inches. The foundation design engineer should provide appropriate concrete mix design criteria and curing measures to assure proper curing of the slab by reducing the potential for rapid moisture loss and subsequent cracking and/or slab curl. We suggest that the foundation design engineer present the concrete mix design and proper curing methods on the foundation plans. It is critical that the foundation contractor understands and follows the recommendations presented on the foundation plans.

7.12 Drilled Pier Recommendations

7.12.1 Drilled piers should be used for foundation support for structures supported within the influence of MSE wall backfill or structures supported on compacted fill over previously-placed fill and alluvium if the 2-inches of total settlement is prohibitive for mat or post-tensioned slabs. The foundation recommendations herein assume that the piers will extend through the fill into the Santiago Formation. The piers should be embedded at least 5 feet within the formational materials. For design purposes, a fill thickness of 25 feet was used to compute the allowable bearing capacities shown below. Once actual foundation types and locations are determined, revised allowable capacities may be provided based on actual site conditions.

7.12.2 Piers can be designed to develop support by end bearing within the formational materials and skin friction within the formational materials and portions of the fill soil. The end bearing capacity can be determined by the End Bearing Capacity Chart. These allowable values possess a factor of safety of 2 and 3 for skin friction and end bearing, respectively.



Allowable Bearing Capacity Chart

7.12.3 Piers can be designed to develop support by end bearing within the formational materials and skin friction within the formational materials and portions of the fill soil using the design parameters presented in Table 7.12.

TABLE 7.12
SUMMARY OF DRILLED PIER RECOMMENDATIONS

Parameter	Value
Minimum Pile Diameter	2 Feet
Minimum Pile Spacing	3 Times Pile Diameter
Minimum Foundation Embedment Depth	10 Feet
	5 Feet in Formational Materials
Allowable End Bearing Capacity	Per Chart
Allowable Skin Friction Capacity	300 psf (Fill Materials)
	750 psf (Santiago Formation)
Estimated Total Settlement	½ Inch
Estimated Differential Settlement	½ Inch in 40 Feet

7.12.4 The design length of the drilled piers should be determined by the designer based on the elevation of the pile cap or grade beam and the elevation of the top of the formational materials obtained from the Geologic Map and Geologic Cross-Sections presented herein. It is difficult to evaluate the exact length of the proposed drilled piers due to the variable thickness of the existing fill; therefore, some variation should be expected during drilling operations.

7.12.5 If pier spacing is at least three times the maximum dimension of the pier, no reduction in axial capacity for group effects is considered necessary. If piles are spaced between 2 and 3 pile diameters (center to center), the single pile axial capacity should be reduced by 25 percent. Geocon Incorporated should be contacted to provide single-pile capacity if piers are spaced closer than 2 diameters.

7.12.6 The allowable downward capacity may be increased by one-third when considering transient wind or seismic loads.

7.12.7 The existing materials may contain gravel and cobble and may possess very dense zones; therefore, the drilling contractor should expect difficult drilling conditions during excavations for the piers. Because a significant portion of the piers capacity will be developed by end bearing, the bottom of the borehole should be cleaned of loose cuttings prior to the placement of steel and concrete. Experience indicates that backspinning the auger does not remove loose material and a flat cleanout plate is necessary. We expect localized seepage may be encountered during the drilling operations and casing may be required to maintain the integrity of the pier excavation, particularly if seepage or sidewall instability is encountered. Concrete should be placed within the excavation as soon as possible after the auger/cleanout plate is withdrawn to reduce the potential for discontinuities or caving.

7.12.8 Pile settlement of production piers is expected to be on the order of ½ inch if the piers are loaded to their allowable capacities. Geocon should provide updated settlement estimates once the foundation plans are available. Settlements should be essentially complete shortly after completion of the building superstructure.

7.13 Concrete Flatwork

7.13.1 Exterior concrete flatwork not subject to vehicular traffic should be constructed in accordance with the recommendations herein. Slab panels should be a minimum of 4 inches thick and, when in excess of 8 feet square, should be reinforced with 6 x 6 - W2.9/W2.9 (6 x 6 - 6/6) welded wire mesh or No. 3 reinforcing bars spaced at least

18 inches center-to-center in both directions to reduce the potential for cracking. In addition, concrete flatwork should be provided with crack control joints to reduce and/or control shrinkage cracking. Crack control spacing should be determined by the project structural engineer based upon the slab thickness and intended usage. Criteria of the American Concrete Institute (ACI) should be taken into consideration when establishing crack control spacing. Subgrade soil for exterior slabs not subjected to vehicle loads should be compacted in accordance with criteria presented in the grading section prior to concrete placement. Subgrade soil should be properly compacted and the moisture content of subgrade soil should be checked prior to placing concrete. The recommendations herein assume the upper 3 feet of subgrade soil will possess a "very low" to "medium" expansion potential (expansion index of 90 or less).

7.13.2 Even with the incorporation of the recommendations within this report, the exterior concrete flatwork has a likelihood of experiencing some uplift due to expansive soil beneath grade; therefore, the steel reinforcement should overlap continuously in flatwork to reduce the potential for vertical offsets within flatwork. Additionally, flatwork should be structurally connected to the curbs, where possible, to reduce the potential for offsets between the curbs and the flatwork.

7.13.3 Where exterior flatwork abuts the structure at entrant or exit points, the exterior slab should be dowelled into the structure's foundation stemwall. This recommendation is intended to reduce the potential for differential elevations that could result from differential settlement or minor heave of the flatwork. Dowelling details should be designed by the project structural engineer.

7.13.4 The recommendations presented herein are intended to reduce the potential for cracking of slabs and foundations as a result of differential movement. However, even with the incorporation of the recommendations presented herein, foundations and slabs-on-grade will still crack. The occurrence of concrete shrinkage cracks is independent of the soil supporting characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, the use of crack control joints and proper concrete placement and curing. Literature provided by the Portland Concrete Association (PCA) and American Concrete Institute (ACI) present recommendations for proper concrete mix, construction, and curing practices, and should be incorporated into project construction.

7.14 Retaining Walls

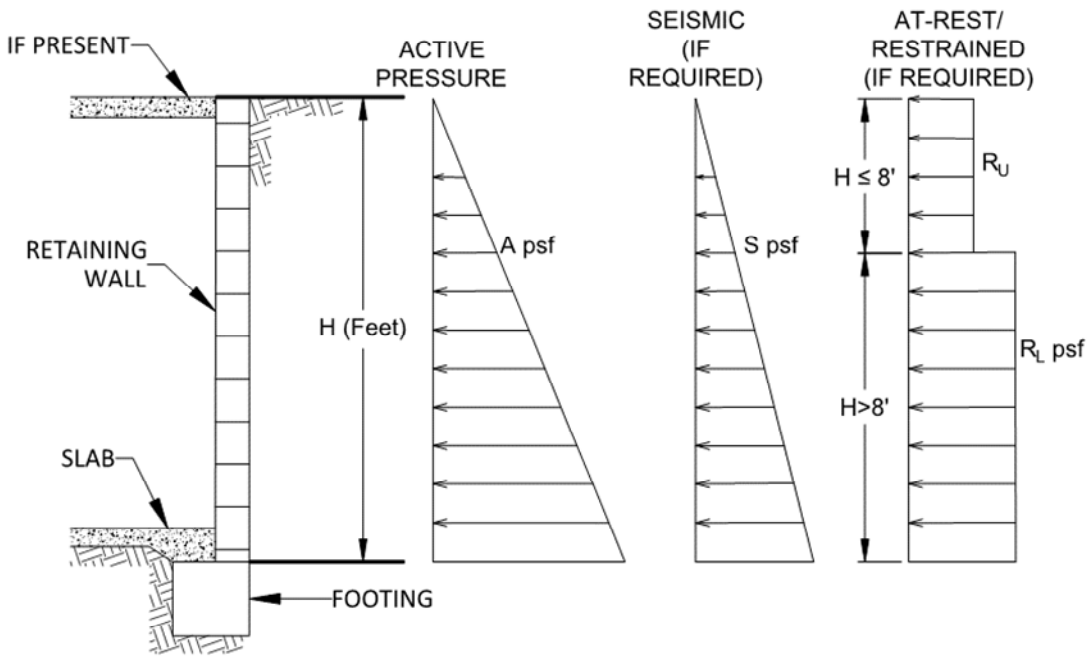
7.14.1 Retaining walls should be designed using the values presented in Table 7.14.1. Soil with an expansion index (EI) of greater than 50 should not be used as backfill material behind retaining walls.

TABLE 7.14.1
RETAINING WALL DESIGN RECOMMENDATIONS

Parameter	Value
Active Soil Pressure, A (Fluid Density, Level Backfill)	35 pcf
Active Soil Pressure, A (Fluid Density, 2:1 Sloping Backfill)	50 pcf
Seismic Pressure, S	21H psf
At-Rest/Restrained Walls Additional Uniform Pressure, R_U (0 to 8 Feet High)	7H psf
At-Rest/Restrained Walls Additional Uniform Pressure, R_L (8+ Feet High)	13H psf
Expected Expansion Index for the Subject Property	EI≤50

H equals the height of the retaining portion of the wall.

7.14.2 The project retaining walls should be designed as shown in the Retaining Wall Loading Diagram.



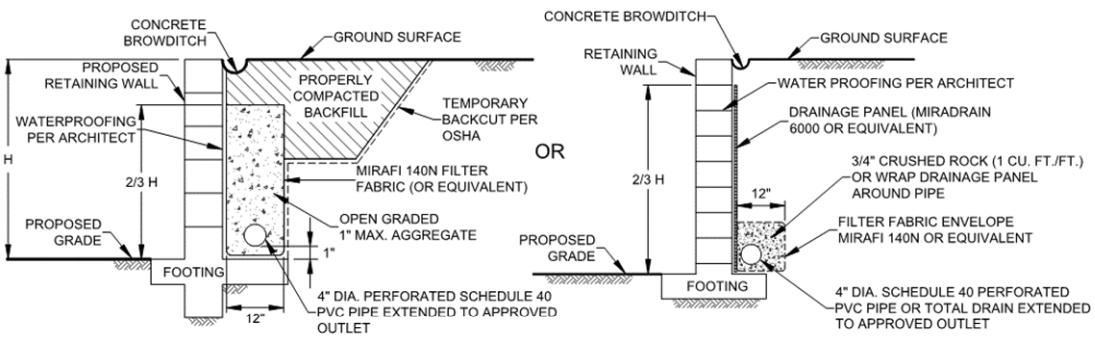
Retaining Wall Loading Diagram

7.14.3 Unrestrained walls are those that are allowed to rotate more than 0.001H (where H equals the height of the retaining portion of the wall) at the top of the wall. Where walls are restrained from movement at the top (at-rest condition), an additional uniform pressure should be applied to the wall. For retaining walls subject to vehicular loads within a horizontal distance equal to two-thirds the wall height, a surcharge equivalent to 2 feet of fill soil should be added.

7.14.4 The structural engineer should determine the Seismic Design Category for the project in accordance with Section 1613.3.5 of the 2019 CBC or Section 11.6 of ASCE 7-16. For structures assigned to Seismic Design Category of D, E, or F, retaining walls that support more than 6 feet of backfill should be designed with seismic lateral pressure in accordance with Section 1803.5.12 of the 2019 CBC. The seismic load is dependent on the retained height where H is the height of the wall, in feet, and the calculated loads result in pounds per square foot (psf) exerted at the base of the wall and zero at the top of the wall.

7.14.5 Retaining walls should be designed to ensure stability against overturning sliding, and excessive foundation pressure. Where a keyway is extended below the wall base with the intent to engage passive pressure and enhance sliding stability, it is not necessary to consider active pressure on the keyway.

7.14.6 Drainage openings through the base of the wall (weep holes) should not be used where the seepage could be a nuisance or otherwise adversely affect the property adjacent to the base of the wall. The recommendations herein assume a properly compacted granular (EI of 90 or less) free-draining backfill material with no hydrostatic forces or imposed surcharge load. The retaining wall should be properly drained as shown in the Typical Retaining Wall Drainage Detail. If conditions different than those described are expected, or if specific drainage details are desired, Geocon Incorporated should be contacted for additional recommendations.



Typical Retaining Wall Drainage Detail

7.14.7 The retaining walls may be designed using either the active and restrained (at-rest) loading condition or the active and seismic loading condition as suggested by the structural engineer. Typically, it appears the design of the restrained condition for retaining wall loading may be adequate for the seismic design of the retaining walls. However, the active earth pressure combined with the seismic design load should be reviewed and also considered in the design of the retaining walls.

7.14.8 In general, wall foundations should be designed in accordance with Table 7.14.2. The proximity of the foundation to the top of a slope steeper than 3:1 could impact the allowable soil bearing pressure. Therefore, retaining wall foundations should be deepened such that the bottom outside edge of the footing is at least 7 feet horizontally from the face of the slope.

TABLE 7.14.2
SUMMARY OF RETAINING WALL FOUNDATION RECOMMENDATIONS

Parameter	Value
Minimum Retaining Wall Foundation Width	12 inches
Minimum Retaining Wall Foundation Depth	12 Inches
Minimum Steel Reinforcement	Per Structural Engineer
Allowable Bearing Capacity	2,000 psf
Estimated Total Settlement	½ Inch
Estimated Differential Settlement	½ Inch in 40 Feet

7.14.9 The recommendations presented herein are generally applicable to the design of rigid concrete or masonry retaining walls. In the event that other types of walls (such as mechanically stabilized earth [MSE] walls, soil nail walls, or soldier pile walls) are planned, Geocon Incorporated should be consulted for additional recommendations.

7.14.10 Unrestrained walls will move laterally when backfilled and loading is applied. The amount of lateral deflection is dependent on the wall height, the type of soil used for backfill, and loads acting on the wall. The retaining walls and improvements above the retaining walls should be designed to incorporate an appropriate amount of lateral deflection as determined by the structural engineer.

7.14.11 Soil contemplated for use as retaining wall backfill, including import materials, should be identified in the field prior to backfill. At that time, Geocon Incorporated should obtain samples for laboratory testing to evaluate its suitability. Modified lateral earth pressures may be necessary if the backfill soil does not meet the required expansion index or shear strength. City or regional standard wall designs, if used, are based on a specific active lateral earth pressure and/or soil friction angle. In this regard, on-site soil to be used as backfill may or may not meet the values for standard wall designs. Geocon Incorporated should be consulted to assess the suitability of the on-site soil for use as wall backfill if standard wall designs will be used.

7.15 Lateral Loading

7.15.1 To resist lateral loads, a passive pressure exerted by an equivalent fluid density of 300 pounds per cubic foot (pcf) should be used for the design of footings or shear keys. The allowable passive pressure assumes a horizontal surface extending at least 5 feet, or three

times the surface generating the passive pressure, whichever is greater. The upper 12 inches of material in areas not protected by floor slabs or pavement should not be included in design for passive resistance.

7.15.2 If friction is to be used to resist lateral loads, an allowable coefficient of friction between soil and concrete of 0.35 should be used for design. The friction coefficient may be reduced depending on the vapor barrier or waterproofing material used for construction in accordance with the manufacturer's recommendations.

7.15.3 The passive and frictional resistant loads can be combined for design purposes. The lateral passive pressures may be increased by one-third when considering transient loads due to wind or seismic forces.

7.16 Mechanically Stabilized Earth (MSE) Retaining Walls

7.16.1 Mechanized stabilized earth (MSE) retaining walls can be used on the property. MSE retaining walls are alternative walls that consist of modular block facing units with geogrid reinforced earth behind the block. The reinforcement grid attaches to the block units and is typically placed at specified vertical intervals and embedment lengths. The grid length and spacing will be determined by the wall designer.

7.16.2 The geotechnical parameters listed in Table 7.16 can be used for preliminary design of the MSE walls. Soil with an expansion index (EI) of greater than 50 should not be used as backfill material behind retaining walls. In addition, some wall designers request soil with a plasticity index greater than 20, a liquid limit greater than 40 and a fines content greater than 35 percent should not be used for soil within the reinforcing zone. This may require import of select materials for the wall backfilling operations or selectively stockpiling of granular soils. Once the backfill source has been determined, laboratory testing should be performed to check that the shear strength parameters used in the design of the MSE walls meet or exceed the required strength within the reinforced zone.

TABLE 7.16
GEOTECHNICAL PARAMETERS FOR MSE WALLS

Parameter	Reinforced Zone	Retained Zone	Foundation Zone
Angle of Internal Friction	28 degrees	28 degrees	28 degrees
Cohesion	0 psf	0 psf	0 psf
Wet Unit Density	125 pcf	125 pcf	125 pcf

7.16.3 The soil parameters presented in Table 7.16 are based on our experience with MSE wall contractors on previous projects. The wet unit density values presented in Table 7.16 can be used for design but actual in-place densities may range from approximately 110 to 135 pounds per cubic foot. Geocon has no way of knowing which materials will actually be used as backfill behind the wall during construction. It is up to the wall designers to use their judgment in selection of the design parameters. As such, once backfill materials have been selected and/or stockpiled, sufficient shear tests should be conducted on samples of the proposed backfill materials to check that they conform to actual design values. Results should be provided to the designer to re-evaluate stability of the walls. Dependent upon test results, the designer may require modifications to the original wall design (e.g., longer reinforcement embedment lengths and/or steel reinforcement).

7.16.4 The foundation zone is the area where the footing is embedded, the reinforced zone is the area of the backfill that possesses the reinforcing fabric, and the retained zone is the area behind the reinforced zone.

7.16.5 Wall foundations having a minimum depth and width of one foot may be designed for an allowable soil bearing pressure of 2,000 psf. The MSE walls should be designed for a total and differential settlement of 1-inch and ½-inch in 40 feet, respectively. The planned MSE walls should be designed to accommodate the anticipated settlement.

7.16.6 Backfill materials within the reinforced zone should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content in accordance with ASTM D 1557. This is applicable to the entire embedment width of the reinforcement. Typically, wall designers specify no heavy compaction equipment within 3 feet of the face of the wall. However, smaller equipment (e.g., walk-behind, self-driven compactors or hand whackers) can be used to compact the materials without causing deformation of the wall. If the designer specifies no compactive effort for this zone, the materials are essentially not properly compacted and the reinforcement grid within the uncompacted zone should not be relied upon for reinforcement, and overall embedment lengths will have to be increased to account for the difference.

7.16.7 The wall should be provided with a drainage system sufficient to prevent excessive seepage through the wall and the base of the wall, thus preventing hydrostatic pressures behind the wall.

7.16.8 Geosynthetic reinforcement must elongate to develop full tensile resistance. This elongation generally results in movement at the top of the wall. The amount of movement is dependent upon the height of the wall (e.g., higher walls rotate more) and the type of reinforcing grid used. In addition, over time the reinforcement grid has been known to exhibit creep

(sometimes as much as 5 percent) and can undergo additional movement. Given this condition, the owner should be aware that structures and pavement placed within the reinforced and retained zones of the wall may undergo movement.

7.16.9 The MSE wall contractor should provide the estimated deformation of wall and adjacent ground in associated with wall construction. The calculated horizontal and vertical deformations should be determined by the wall designer. The estimated movements should be provided to the project structural engineer to determine if the planned improvements can tolerate the expected movements.

7.16.10 The MSE wall designer/contractor should review this report, including the slope stability requirements, and incorporate our recommendations as presented herein. We should be provided the plans for the MSE walls to check if they are in conformance with our recommendations prior to issuance of a permit and construction.

7.17 Preliminary Pavement Recommendations

7.17.1 We calculated the flexible pavement sections in general conformance with the *Caltrans Method of Flexible Pavement Design* (Highway Design Manual, Section 608.4) using estimated Traffic Indices (TI's) of 5.0, 6.0 and 7.0 for the interior roadways. The project civil engineer and owner should review the pavement designations to determine appropriate locations for pavement thickness. We have assumed an R-Value of 15 and 78 for the subgrade soil and base materials, respectively, based on laboratory test results for the purposes of this preliminary analysis. The final pavement sections should be based on the R-Value of the subgrade soil encountered at final subgrade elevation once site grading and utility trench backfill is completed. Table 7.17.1 presents the preliminary flexible pavement sections.

TABLE 7.17.1
PRELIMINARY FLEXIBLE PAVEMENT SECTION

Location	Assumed Traffic Index	Assumed Subgrade R-Value	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Interior Roadways (light-duty)	5.0	15	3	8
Interior Roadways (medium duty)	6.0	15	4	10
Interior Roadways (heavy duty)	7.0	15	4	13

7.17.2 Prior to placing base materials, the upper 12 inches of the subgrade soil should be scarified, moisture conditioned as necessary, and recompacted to a dry density of at least 95 percent of

the laboratory maximum dry density near to slightly above optimum moisture content as determined by ASTM D 1557. Similarly, the base material should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Asphalt concrete should be compacted to a density of at least 95 percent of the laboratory Hveem density in accordance with ASTM D 2726.

7.17.3 Base materials should conform to Section 26-1.02B of the *Standard Specifications for The State of California Department of Transportation (Caltrans)* with a ¾-inch maximum size aggregate. The asphalt concrete should conform to Section 203-6 of the *Standard Specifications for Public Works Construction (Greenbook).*

7.17.4 The base thickness can be reduced if a reinforcement geogrid is used during the installation of the pavement. Geocon should be contact for additional recommendations, if required.

7.17.5 A rigid Portland cement concrete (PCC) pavement section should be placed in driveway entrance aprons, cross-gutters and trash bin loading/storage areas. The concrete pad for trash truck areas should be large enough such that the truck wheels will be positioned on the concrete during loading. We calculated the rigid pavement section in general conformance with the procedure recommended by the American Concrete Institute report ACI 330R-08 *Guide for Design and Construction of Concrete Parking Lots* using the parameters presented in Table 7.17.2.

TABLE 7.17.2
RIGID PAVEMENT DESIGN PARAMETERS

Design Parameter	Design Value
Modulus of subgrade reaction, k	100 pci
Modulus of rupture for concrete, M_R	500 psi
Traffic Category, TC	B and C
Average daily truck traffic, ADTT	25 and 100

7.17.6 Based on the criteria presented herein, the PCC pavement sections should have a minimum thickness as presented in Table 7.17.3.

TABLE 7.17.3
RIGID PAVEMENT RECOMMENDATIONS

Location	Portland Cement Concrete (inches)
Medium Duty Areas (TC=B)	6.0
Heavy Duty Areas (TC=C)	7.0

7.17.7 The PCC pavement should be placed over subgrade soil that is compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. This pavement section is based on a minimum concrete compressive strength of approximately 3,000 psi (pounds per square inch). Base materials will not be required beneath concrete improvements including cross-gutters, curb and gutters, and sidewalks.

7.17.8 A thickened edge or integral curb should be constructed on the outside of concrete slabs subjected to wheel loads. The thickened edge should be 1.2 times the slab thickness or a minimum thickness of 2 inches, whichever results in a thicker edge, and taper back to the recommended slab thickness 4 feet behind the face of the slab (e.g., a 7.5-inch-thick slab would have a 9.5-inch-thick edge). Reinforcing steel will not be necessary within the concrete for geotechnical purposes with the possible exception of dowels at construction joints as discussed herein.

7.17.9 To control the location and spread of concrete shrinkage cracks, crack-control joints (weakened plane joints) should be included in the design of the concrete pavement slab. Crack-control joints should not exceed 30 times the slab thickness with a maximum spacing of 15 feet for slabs 6 inches and thicker and should be sealed with an appropriate sealant to prevent the migration of water through the control joint to the subgrade materials. The depth of the crack-control joints should be determined by the referenced ACI report. The depth of the crack-control joints should be at least ¼ of the slab thickness when using a conventional saw, or at least 1 inch when using early-entry saws on slabs 9 inches or less in thickness, as determined by the referenced ACI report discussed in the pavement section herein. Cuts at least ¼ inch wide are required for sealed joints, and a ⅜ inch wide cut is commonly recommended. A narrow joint width of $^{1}/_{10}$ to $^{1}/_{8}$-inch wide is common for unsealed joints.

7.17.10 Concrete curb/gutter should be placed on soil subgrade compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Cross-gutters should be placed on subgrade soil compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Base materials should not be placed below the curb/gutter, cross-gutters, or sidewalk so water is not able to migrate from the adjacent parkways to the pavement sections.

7.17.11 The performance of pavement is highly dependent on providing positive surface drainage away from the edge of the pavement. Ponding of water on or adjacent to the pavement and subgrade will likely result in pavement distress and subgrade failure. Drainage from landscaped areas should be directed to controlled drainage structures. Landscape areas

adjacent to the edge of asphalt pavements are not recommended due to the potential for surface or irrigation water to infiltrate the underlying permeable aggregate base and cause distress. Where such a condition cannot be avoided, consideration should be given to incorporating measures that will significantly reduce the potential for subsurface water migration into the aggregate base. If planter islands are planned, the perimeter curb should extend at least 6 inches below the level of the base materials.

7.18 Site Drainage and Moisture Protection

7.18.1 Adequate site drainage is critical to reduce the potential for differential soil movement, erosion and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to footings. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2019 CBC 1804.4 or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices. Roof and pavement drainage should be directed into conduits that carry runoff away from the proposed structure.

7.18.2 Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks, and detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.

7.18.3 Landscaping planters adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. Area drains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes can be used. In addition, where landscaping is planned adjacent to the pavement, construction of a cutoff wall along the edge of the pavement that extends at least 6 inches below the bottom of the base material should be considered.

7.18.4 We should perform a storm water management study when grading plans have been prepared detailing the type and location of the proposed BMPs.

7.19 Grading and Foundation Plan Review

7.19.1 Geocon Incorporated should review the grading plans and foundation plans for the project prior to final design submittal to evaluate whether additional analyses and/or recommendations are required.

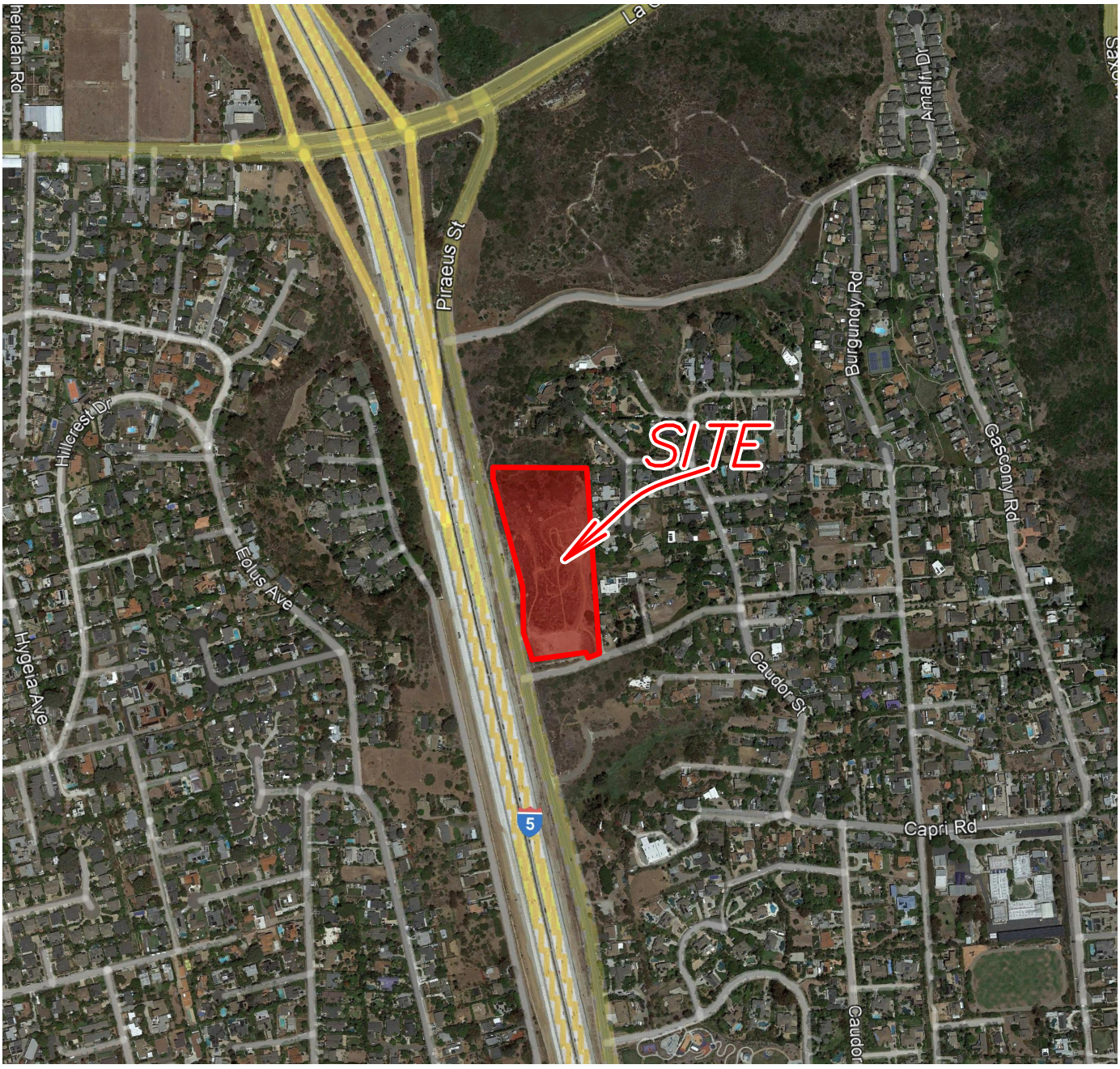
LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

2. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon Incorporated should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon Incorporated.

3. This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

4. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.



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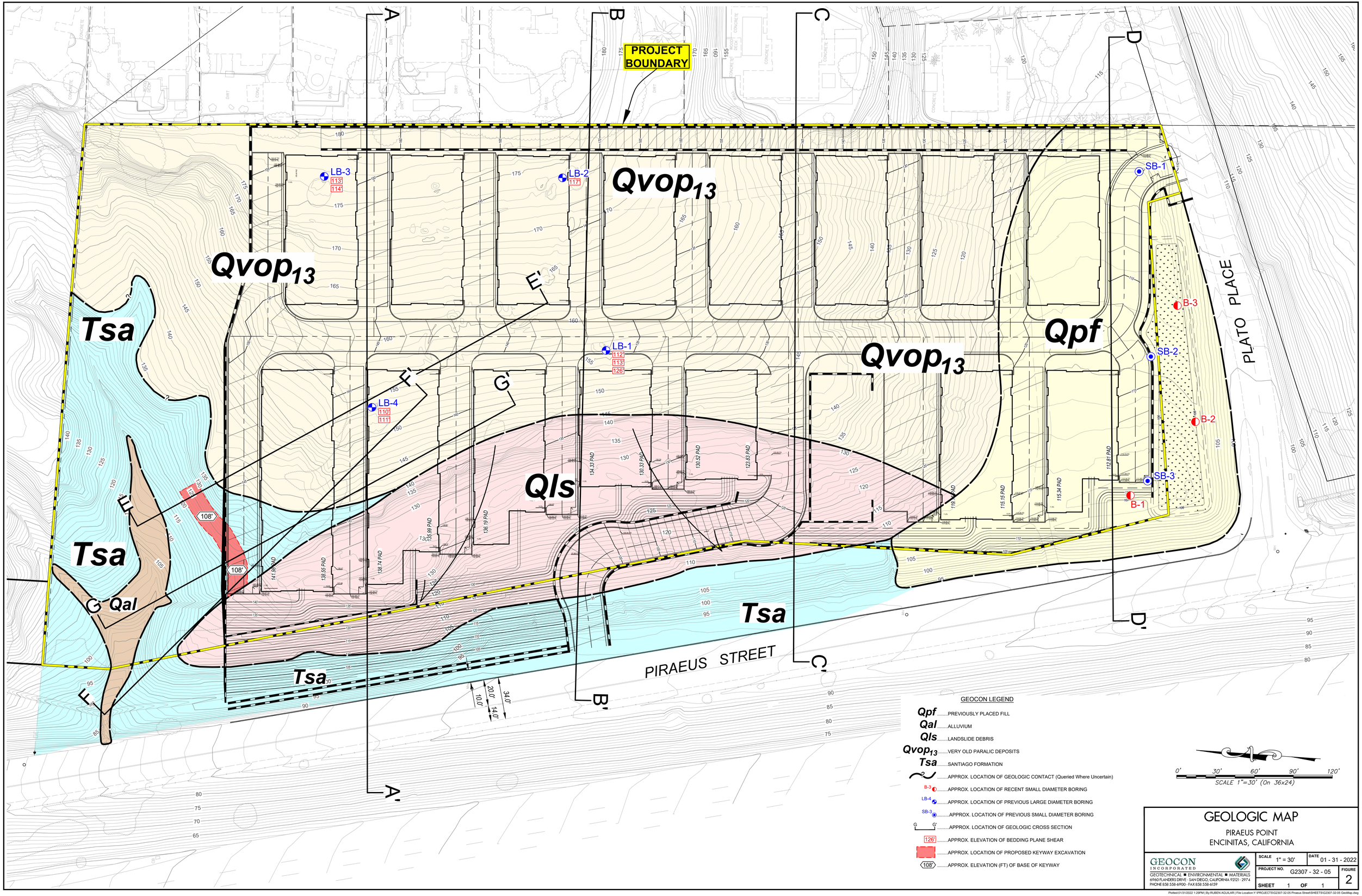
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PIRAEUS POINT
ENCINITAS, CALIFORNIA

TM / RA		DSK/GTYPD

DATE 01 - 31 - 2022	PROJECT NO. G2307 - 32 - 05	FIG. 1

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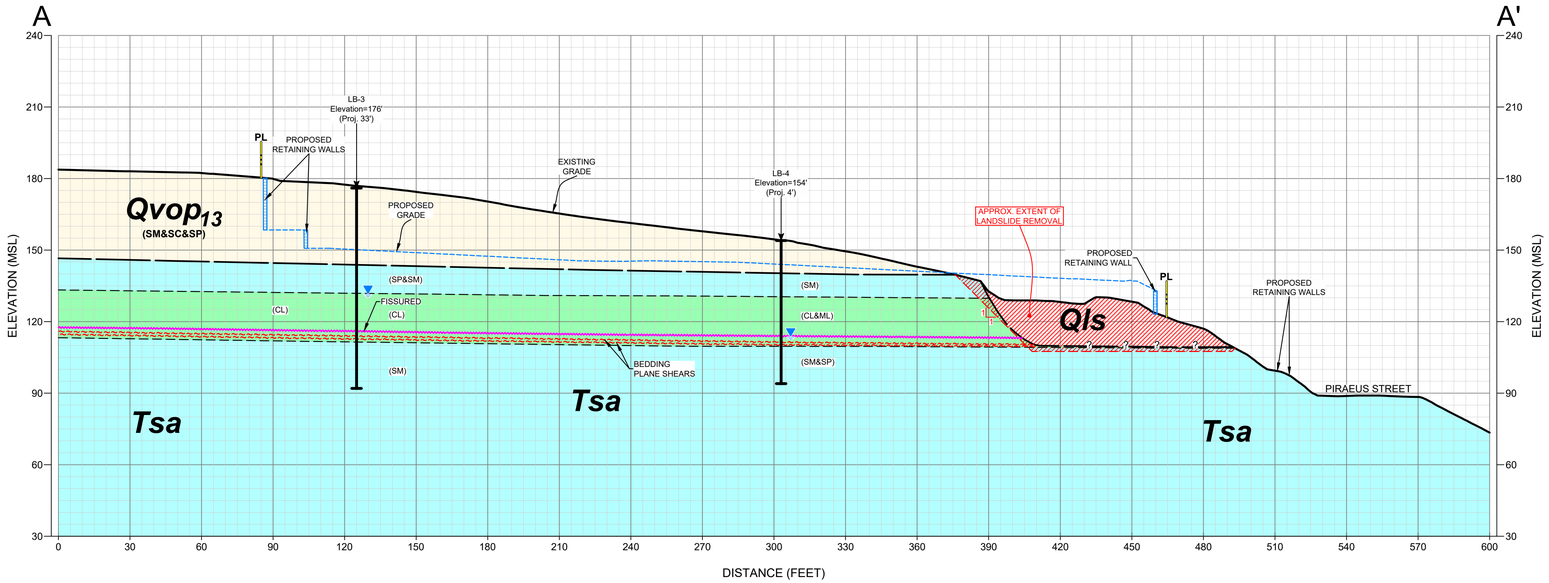
GEOLOGIC MAP

PIRAEUS POINT
ENCINITAS, CALIFORNIA

GEOCON INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
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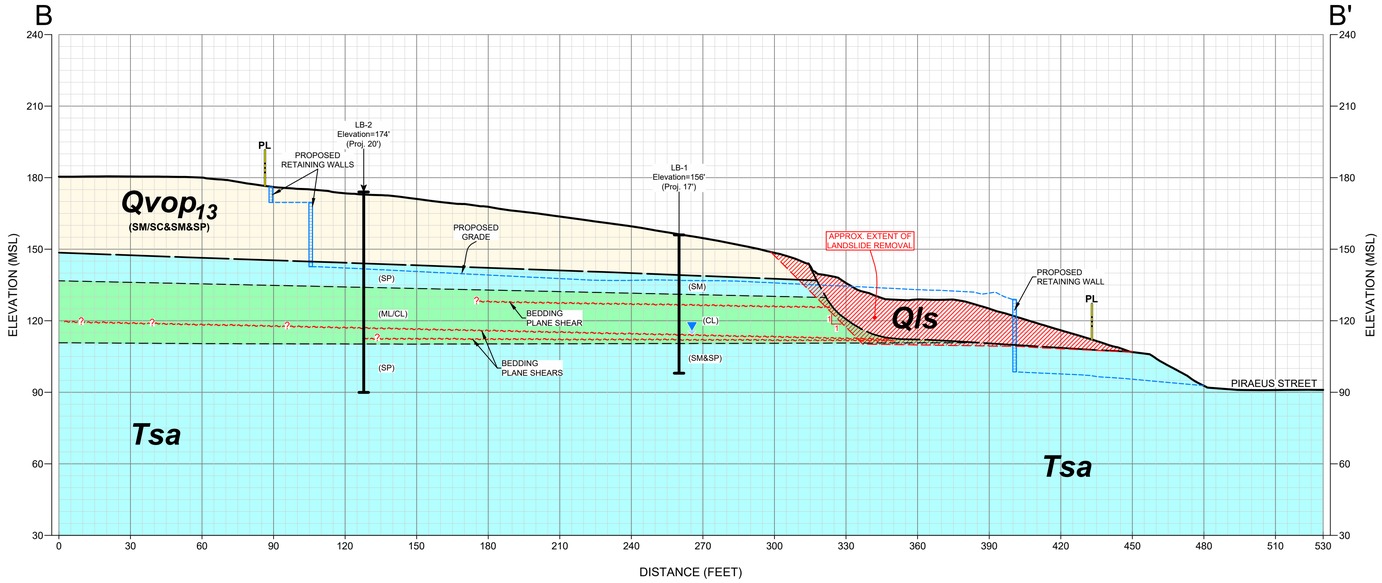
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SHEET	1 OF 1

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GEOLOGIC CROSS-SECTION A-A'

SCALE: 1" = 30' (Vert. = Horiz.)



GEOLOGIC CROSS-SECTION B-B'

SCALE: 1" = 30' (Vert. = Horiz.)

GEOCON LEGEND

- **Qpf** ..... PREVIOUSLY PLACED FILL
- **Qal** ..... ALLUVIUM
- **Qls** ..... LANDSLIDE DEBRIS
- **Qvop$_{13}$** ..... VERY OLD PARALIC DEPOSITS
- **Tsa** ..... SANTIAGO FORMATION
- ..... APPROX. LOCATION OF GEOLOGIC CONTACT
- ..... APPROX. LOCATION OF INTRAFORMATIONAL CONTACT
- B-4 ..... APPROX. LOCATION OF BORING
- ..... APPROX. LOCATION OF BEDDING PLANE SHEAR

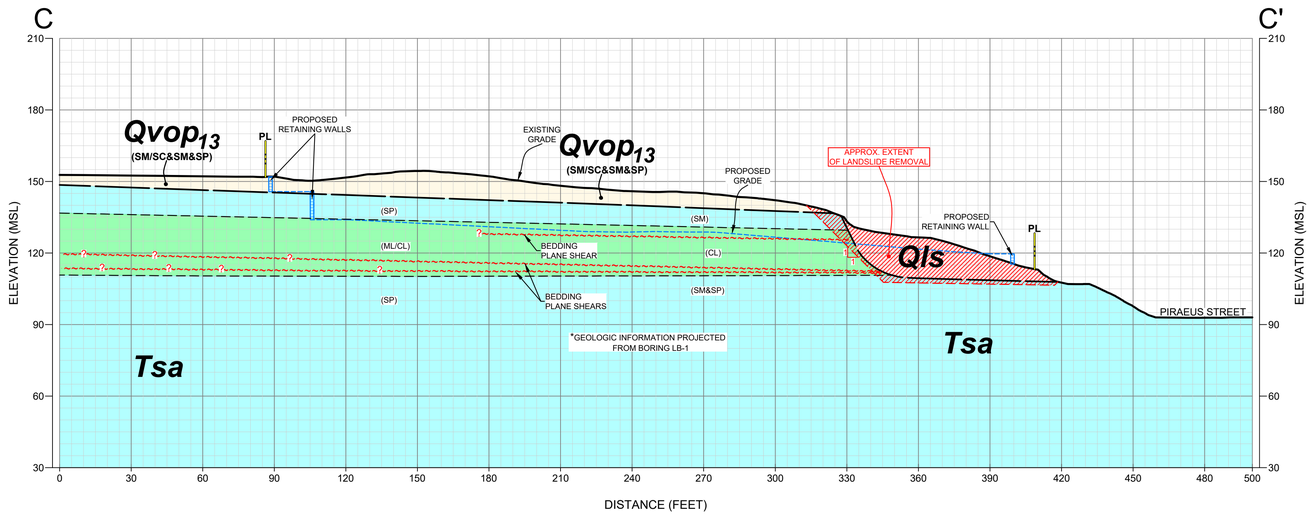
GEOLOGIC CROSS - SECTIONS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

GEOCON INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

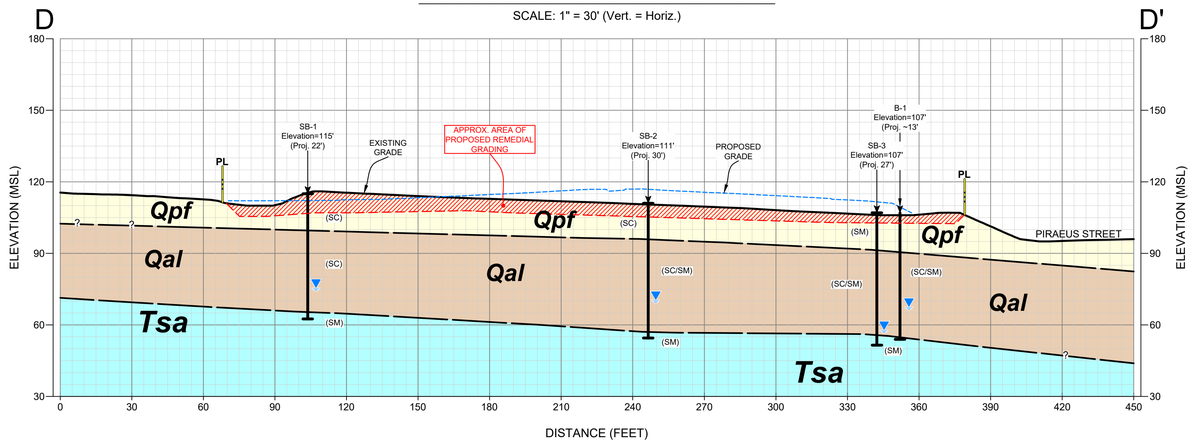
SCALE	1" = 30'	DATE	01 - 31 - 2022
PROJECT NO.	G2307 - 32 - 05	FIGURE	3
SHEET	1 OF 1		

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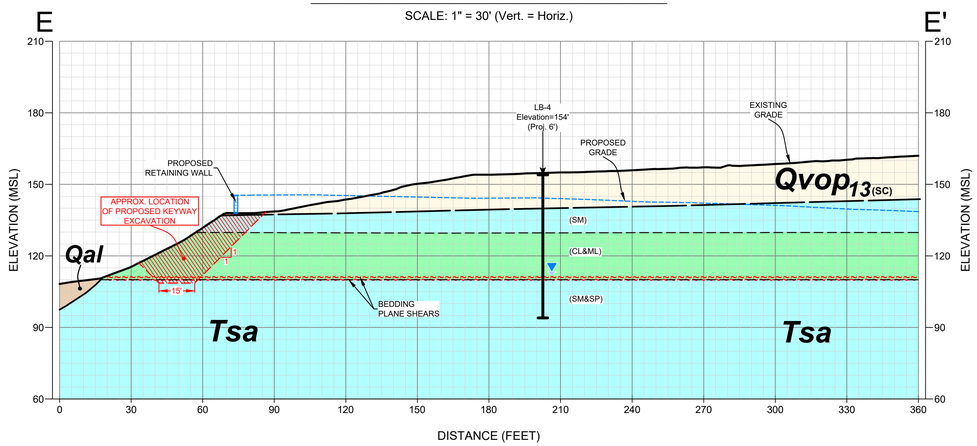
GEOLOGIC CROSS-SECTION C-C'

SCALE: 1" = 30' (Vert. = Horiz.)



GEOLOGIC CROSS-SECTION D-D'

SCALE: 1" = 30' (Vert. = Horiz.)



GEOLOGIC CROSS-SECTION E-E'

SCALE: 1" = 30' (Vert. = Horiz.)

GEOCON LEGEND

- Qpf ..... PREVIOUSLY PLACED FILL
- Qal ..... ALLUVIUM
- Qls ..... LANDSLIDE DEBRIS
- Qvop13 ..... VERY OLD PARALIC DEPOSITS
- Tsa ..... SANTIAGO FORMATION
- ?~~? ..... APPROX. LOCATION OF GEOLOGIC CONTACT
- ..... APPROX. LOCATION OF INTRAFORMATIONAL CONTACT
- B-4 ..... APPROX. LOCATION OF BORING
- ~~~~ ..... APPROX. LOCATION OF BEDDING PLANE SHEAR

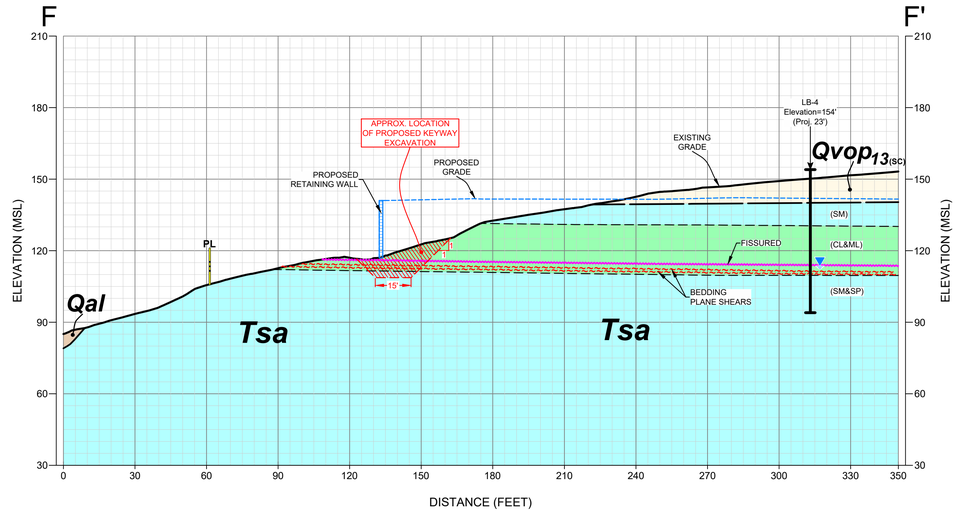
GEOLOGIC CROSS - SECTIONS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

GEOCON INCORPORATED
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6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

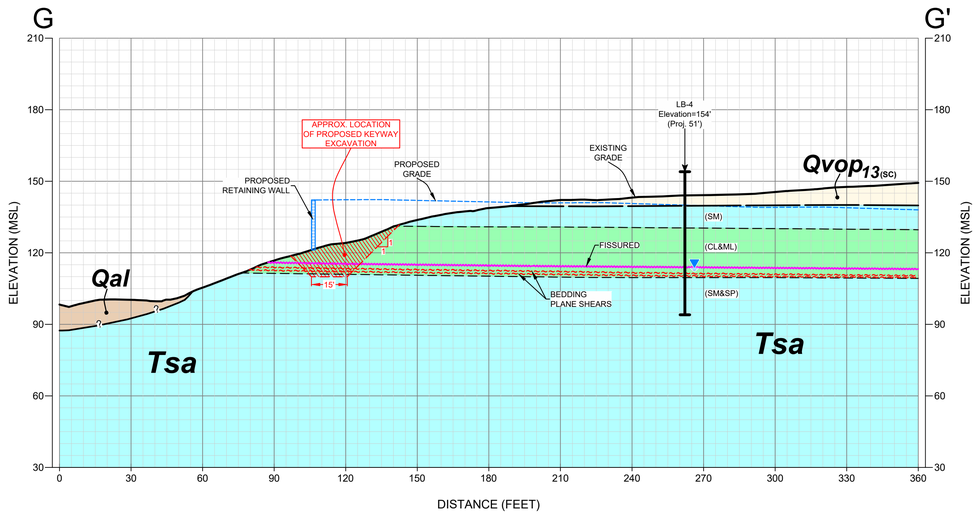
SCALE	1" = 30'	DATE	01 - 31 - 2022
PROJECT NO.	G2307 - 32 - 05	FIGURE	4
SHEET	1 OF 1		

Plotted:02/01/2022 1:42PM | By:RUBEN AGUILAR | File Location:Y:\PROJECTS\G2307-32-05 Piraeus Street\SOURCE\SECTION\G2307-32-05 Profiles_2022-01-12.dwg



GEOLOGIC CROSS-SECTION F-F'

SCALE: 1" = 30' (Vert. = Horiz.)



GEOLOGIC CROSS-SECTION G-G'

SCALE: 1" = 30' (Vert. = Horiz.)

GEOCON LEGEND

- ***Qpf*** ..... PREVIOUSLY PLACED FILL
- ***Qal*** ..... ALLUVIUM
- ***Qls*** ..... LANDSLIDE DEBRIS
- ***Qvop13*** ..... VERY OLD PARALIC DEPOSITS
- ***Tsa*** ..... SANTIAGO FORMATION
- ..... APPROX. LOCATION OF GEOLOGIC CONTACT
- ..... APPROX. LOCATION OF INTRAFORMATIONAL CONTACT
- B-4 ..... APPROX. LOCATION OF BORING
- ..... APPROX. LOCATION OF BEDDING PLANE SHEAR

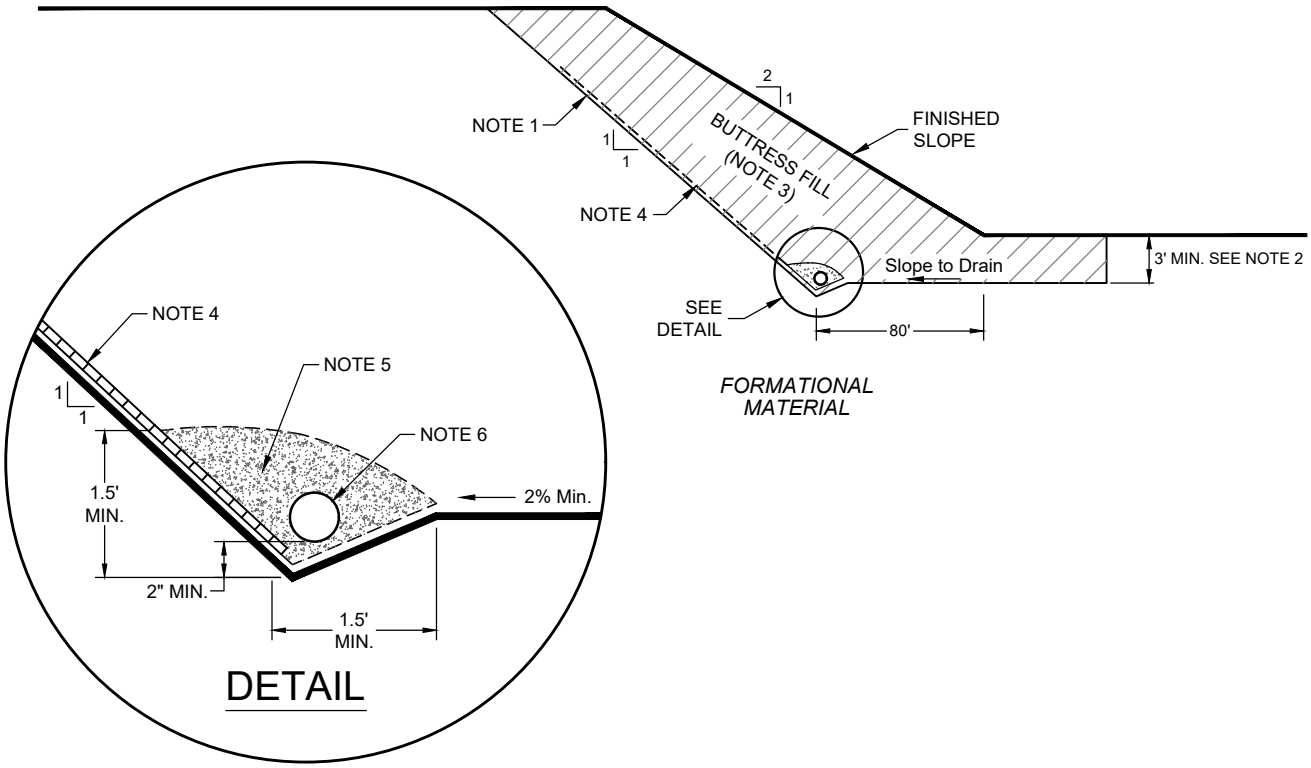
GEOLOGIC CROSS - SECTIONS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

GEOCON INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

SCALE	1" = 30'	DATE	01 - 31 - 2022
PROJECT NO.	G2307 - 32 - 05	FIGURE	5
SHEET	1 OF 1		

Plotted:02/01/2022 1:42PM | By:RUBEN AGUILAR | File Location:Y:\PROJECTS\G2307-32-05 Piraeus Street\SOURCE\SECTION\G2307-32-05 Profiles_2022-01-12.dwg



NOTES:

1.....EXCAVATE BACKCUT AT 1:1 INCLINATION (UNLESS OTHERWISE NOTED).

2.....BASE OF BUTTRESS TO BE 3 FEET INTO FORMATIONAL MATERIAL, SLOPING A MINIMUM 5% INTO SLOPE.

3.....BUTTRESS FILL TO BE COMPOSED OF PROPERLY COMPACTED GRANULAR SOIL.

4.....CHIMNEY DRAINS TO BE APPROVED PREFABRICATED CHIMNEY DRAIN PANELS (MIRADRAIN G200N OR EQUIVALENT) SPACED APPROXIMATELY 10 FEET CENTER TO CENTER AND 4 FEET WIDE. CLOSER SPACING MAY BE REQUIRED IF SEEPAGE IS ENCOUNTERED.

5.....FILTER MATERIAL TO BE 3/4-INCH, OPEN-GRADED CRUSHED ROCK ENCLOSED IN APPROVED FILTER FABRIC (MIRAFI 140NC).

6.....COLLECTOR PIPE TO BE 4-INCH MINIMUM DIAMETER, PERFORATED, THICK-WALLED PVC SCHEDULE 40 OR EQUIVALENT, AND SLOPED TO DRAIN AT 1 PERCENT MINIMUM TO APPROVED OUTLET.

TYPICAL BUTTRESS FILL DETAIL

GEOCON
INCORPORATED
GEOTECHNICAL ■ ENVIRONMENTAL ■ MATERIALS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121 - 2974
PHONE 858 558-6900 - FAX 858 558-6159

PIRAEUS POINT
ENCINITAS, CALIFORNIA

TM / RA		DSK/GTYPD

DATE 01 - 31 - 2022	PROJECT NO. G2307 - 32 - 05	FIG. 6

Plotted:01/31/2022 1:38PM | By:RUBEN AGUILAR | File Location:Y:\PROJECTS\G2307-32-05 Piraeus Street\DETAILS\Typical Slope Fill.dwg

APPENDIX A

APPENDIX A

FIELD INVESTIGATION

We performed a preliminary field investigation on May 6 through 9, 2019. The preliminary investigation consisted of the excavation of three small-diameter borings drilled by Baja Exploration and four large-diameter borings by Dave's Drilling. The small diameter borings were excavated to a maximum depth of 56½ feet using a CME 75 rubber-tire drill rig equipped with 8-inch diameter hollow stem augers. The large diameter borings were excavated to a maximum depth of 84 feet with a truck-mounted drill rig equipped with a 30-inch diameter bucket-auger.

Our recent field investigation on December 17, 2021, consisted of excavating three additional borings by North County Drilling using an Ingersoll Rand A-300 truck-mounted drill rig equipped with 8-inch-diameter hollow-stem augers. The approximate locations of the excavations are shown on the Geologic Map, Figure 2. We located the exploratory borings in the field using a measuring tape and/or existing landmarks; therefore, actual boring locations may vary slightly.

We obtained samples during our boring excavations using either a California sampler or a Standard Penetration Test (SPT) sampler. Both samplers are composed of steel and driven to obtain relatively undisturbed soil samples. The California sampler has an inside diameter of 2.5 inches and an outside diameter of 2.875 inches. Up to 18 rings are placed inside the sampler that is 2.4 inches in diameter and 1 inch in height. The SPT sampler has an inside diameter of 1.5 inches and an outside diameter of 2 inches. We obtained ring samples at appropriate intervals were retained in moisture-tight containers and transported to the laboratory for testing. The type of sample is noted on the exploratory boring logs.

The samplers were driven 12 inches and 18 inches for California sampler and SPT sampler, respectively, with the use of an automatic hammer and the use of A rods. The sampler is connected to the A rods and driven into the bottom of the excavation using a 140-pound hammer with a 30-inch drop. Blow counts are recorded for every 6 inches the sampler is driven. The penetration resistances shown on the boring logs are shown in terms of blows per foot. The values indicated on the boring logs are the sum of the last 12 inches of the sampler if driven 12 inches. If the sampler was not driven for 12 inches, an approximate value is calculated in term of blows per foot or the final 6-inch interval is reported. These values are not to be taken as N-values, adjustments have not been applied.

The large-diameter boring sampler was driven up to 12 inches into the bottom of the excavation with the use of a telescoping Kelly bar. The weight of the Kelly bar (4,500 pounds maximum) drives the sampler and varies in weight with depth. The height of drop is usually 12 inches. Blow counts are recorded for every 12 inches the sampler is driven. The penetration resistance values on the boring

logs are shown in terms of blows per foot. These values are not to be taken as N-values and adjustments have not been applied.

We visually examined, classified and logged the soil conditions encountered in the excavations in general accordance with the Unified Soil Classification System (USCS). Logs of the exploratory borings are presented on Figures A-1 through A-10. The logs depict the general soil and geologic conditions encountered and the depth at which samples were obtained.

PROJECT NO. G2307-32-05

BORING B 1

ELEV. (MSL.) **107'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PREVIOUSLY PLACED FILL (Qpf)** Medium dense, moist, brown, Silty, fine to coarse SAND			
2								
4					-Becomes damp			
6	B1-1					80/11"	116.1	3.8
8								
10	B1-2				-Chunks of gray siltstone present	33	109.0	12.2
12								
14								
16	B1-3				-Becomes very dense	52	115.0	5.4
18				SC/SM	**ALLUVIUM (Qal)** Medium dense, moist, dark brown/reddish brown, Clayey to Silty, fine to coarse SAND			
20	B1-4					18	113.5	14.7
22								
24								
26	B1-5					33	114.2	14.8
28								
30	B1-6					82/11.5"	111.0	8.7
32	B1-7					30		
34								

Figure A-1,
Log of Boring B 1, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING B 1** ELEV. (MSL.) **107'** DATE COMPLETED **12/17/2021** EQUIPMENT **IR A-300** BY: **D. GITHENS**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
36	B1-8					35	104.3	20.6
	B1-9					26		
38			▽		-Seepage encountered at 39 feet			
40	B1-10					49	108.8	5.4
	B1-11					36		
42								
44								
	B1-12					50	113.3	15.3
46	B1-13					31		
48								
50	B1-14					31	107.1	20.0
	B1-15					28		
52					BORING TERMINATED AT 52.5 FEET Backfilled with bentonite Seepage encountered at 39 feet			

Figure A-1,
Log of Boring B 1, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING B 2

ELEV. (MSL.) **109'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**PREVIOUSLY PLACED FILL (Qpf)** Loose to medium dense, moist, yellow to brown, Clayey, fine to coarse SAND; trace gravel			
2								
4								
6	B2-1				-Becomes damp with chunks of gray siltstone	50/5.5"	114.1	9.8
8								
10	B2-2				-Siltstone chunk in shoe	82	108.2	4.2
12								
14								
16	B2-3				-Becomes moist	63	112.7	15.2
					-Contact at 17 feet based on drilling efficiency			
18				SC/SM	**ALLUVIUM (Qal)** Medium dense, moist, dark brown, Clayey to Silty, fine to medium SAND; mottled white			
20	B2-4					42	112.9	9.6
22								
24								
26	B2-5				-Medium dense, dark brown, fine to medium sand; trace fines	44	107.3	4.7
28								
30	B2-6				-Becomes dense	63	120.0	12.5
32	B2-7					39		
34								

Figure A-2,
Log of Boring B 2, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING B 2

ELEV. (MSL.) **109'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	B2-8					71/10"	122.1	12.6
	B2-9					39		
38								
40	B2-10				-Becomes medium dense	36	115.3	15.4
	B2-11					29		
42			▽		-Seepage encountered at 43 feet			
44								
	B2-12					34	118.4	14.5
46	B2-13					16		
48								
50	B2-14					41	106.2	19.5
	B2-15			SM	**SANTIAGO FORMATION (Tsa)**	71/11"		
52					Very dense, saturated, light yellow to gray brown, Silty, fine grained SANDSTONE			
					BORING TERMINATED AT 52.5 FEET Backfilled with bentonite Seepage encountered at 43 feet			

Figure A-2,
Log of Boring B 2, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING B 3

ELEV. (MSL.) **113'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
2				SC	**PREVIOUSLY PLACED FILL (Qpf)** Medium dense, moist, yellow to gray brown, Clayey, fine to coarse SAND with trace gravel			
4								
6	B3-1					50/5.5"	117.2	10.1
8								
10	B3-2				-Chunks of gray siltstone present	63	114.1	11.1
12								
14								
16	B3-3			SC	**ALLUVIUM (Qal)** Medium dense, damp, dark brown, Clayey, fine to medium SAND	36	119.5	10.9
18								
20	B3-4					38	112.9	10.7
22								
24								
26	B3-5				-Becomes moist below 26 feet	35	117.6	10.2
28								
30	B3-6					45	112.5	17.3
32	B3-7					27		
34								

Figure A-3,
Log of Boring B 3, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING B 3

ELEV. (MSL.) **113'** DATE COMPLETED **12/17/2021**

EQUIPMENT **IR A-300** BY: **D. GITHENS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	B3-8			SC	-Becomes wet	35	114.5	14.6
	B3-9					26		
38			▽		-Seepage encountered at 38 feet			
40	B3-10			SM	**SANTIAGO FORMATION (Tsa)**	39	105.9	20.1
	B3-11				Dense, wet, yellow brown, Silty, fine grained SANDSTONE	53		
42								
44								
	B3-12					50/6"	113.3	15.7
46					BORING TERMINATED AT 46 FEET Backfilled with bentonite Seepage encountered at 38 feet			

Figure A-3,
Log of Boring B 3, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR ▽ ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING LB 1

ELEV. (MSL.) **156'** DATE COMPLETED **05-06-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**VERY OLD PARALIC DEPOSITS ($Qvop_{13}$)** Medium dense, damp to moist, reddish brown, Silty, fine to coarse SAND			
2								
4					-Upper 3 feet weathered			
6	LB1-1				-Becomes very dense	10/8"	124.9	5.4
8	LB1-2				-Becomes fine- to medium-grained			
10	LB1-3				-Becomes moist -Cobble up to 5 inches	6	117.7	8.6
12								
14								
16	LB1-4 LB1-5			SM	Dense, moist, brown to yellowish brown, Silty, fine to coarse SAND	8/8"	116.3	10.1
18	LB1-6			SM	-Cobble up to 8 inches -Erosional, undulatory contact			
20	LB1-7				**SANTIAGO FORMATION (Tsa)** Dense to very dense, moist, olive to yellowish brown, Silty, fine- to coarse-grained SANDSTONE; massive and very weakly laminated single undulatory sub vertical sand filled fracture 1/8"-1/4" wide, fracture is completely filled, trace claystone rip up clasts; rounded less than 3/4"	5		
22								
24					-Oxidation			
26	LB1-8			CL	-Bioturbated contact Hard, moist, grayish olive, CLAYSTONE; oxidation			
28								
30	LB1-9				-**BEDDING PLANE SHEAR at 30'**; 1/4" thick soft plastic clay gouge remolded, flat, moderately polished bounding surface with weak strike continuous around hole 1º at N30W DDD -Few, close, iron stained fractures, sub vertical with N_S strike with 1/16" gypsum filling -Few gypsum veins sub-parallel to bedding	8	107.5	20.3
32								
34								

Figure A-4,
Log of Boring LB 1, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING LB 1

ELEV. (MSL.) **156'** DATE COMPLETED **05-06-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	LB1-10					10/10"	100.8	23.1
38	LB1-11							
40	LB1-12		▽		-Open fractures 1/8"-1/4", moderate to heavy seepage	8/10"		
42								
44					-**BEDDING PLANE SHEAR at 43'**; 1/4"-1/2" thick, bluish-gray remolded clay gouge, soft plastic, continuous around hole			
46	LB1-13 LB1-14			SM	-**BEDDING PLANE SHEAR at 44.5'**; 1/2"-2" thick, bluish-gray and brown, fully remolded plastic clay gouge; soft, internally sheared with numerous polished parting surfaces	15/6"		
48				SP	Dense to very dense, wet, bluish-gray, Silty, fine- to medium-grained SANDSTONE; laminated			
50					Very dense, wet, reddish brown and gray, fine- to coarse-grained SANDSTONE; cross bedded, gunbarrel			
52								
54								
56					-End of log due to standing water			
58					BORING TERMINATED AT 58 FEET Seepage encountered at 40.5 feet Backfilled with bentonite chips and soil			

Figure A-4,
Log of Boring LB 1, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 2** ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				SM/SC	**VERY OLD PARALIC DEPOSITS ($Qvop_{13}$)** Medium dense to dense, moist, Silty to Clayey, fine to coarse SAND			
2								
4					-Upper 3 feet weathered			
6					-Vertical fractions, 1/4"-3" wide; completely sand filled with roots			
8								
10								
12								
14				SM	Dense, moist, brown to yellowish brown, Silty, fine to coarse SAND			
16					-Lenses of yellowish brown, fine to coarse sand			
18								
20					-Less cohesion			
22								
24				SP	Dense, damp, light brown, fine- to medium-grained SANDSTONE; oxidized and micaceous planer laminate			
26					-Belling of hole, logged cuttings only below			
28				SM	Medium dense, damp, yellowish brown, Silty, fine to coarse SANDSTONE; cobble up to 8"			
30				SP	**SANTIAGO FORMATION (Tsa)** Dense to very dense, moist, yellowish brown, fine- to coarse-grained SANDSTONE			
32								
34								

Figure A-5,
Log of Boring LB 2, Page 1 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. G2307-32-05

BORING LB 2

ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36								
38								
40				ML/CL	Very stiff to hard, moist, bluish gray, SILTSTONE to CLAYSTONE; oxidized in areas			
42								
44								
46								
48								
50								
52								
54								
56	LB2-1				**-BEDDING PLANE SHEAR observed in cuttings at 57'**			
58								
60								
62								
64				SP	Very dense, damp to moist, light yellowish brown, fine- to coarse-grained SANDSTONE; cobble up to 6 inches			
66								
68								

Figure A-5,
Log of Boring LB 2, Page 2 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 2** ELEV. (MSL.) **174'** DATE COMPLETED **05-07-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
70								
72								
74								
76								
78								
80								
82								
84					BORING TERMINATED AT 84 FEET Groundwater/seepage not encountered Backfilled with bentonite chips and soil			

Figure A-5,
Log of Boring LB 2, Page 3 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

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PROJECT NO. G2307-32-05

BORING LB 3

ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**VERY OLD PARALIC DEPOSITS ($Qvop_{13}$)** Loose to medium dense, dry to damp, Silty, fine- to medium-grained SAND			
2								
4				SC	-Upper 3 feet weathered -Vertical fractures, 1/2" to 3" wide, sand infilled			
6	LB3-1				Medium dense, moist, reddish brown, Clayey, fine to medium SAND	3		
8					Vertical fractures, 1/4" to 2 1/2" wide, sand infilled			
10					-Less fractures			
12					-Becomes dense			
14								
16	LB3-2					5	116.1	5.9
18				SP	Dense, moist, brown, fine to medium SAND			
20					-Yellowish brown, fine to coarse SAND lenses			
22								
24				SC	Dense, moist, reddish brown, Clayey, fine to coarse SAND			
26					-Dark brown, sandy clay rip-up clasts			
28								
30	LB3-3				-Cobble lag up to 8"	8	101.5	7.5
32				SP	**SANTIAGO FORMATION (Tsa)** Dense, moist, yellowish brown, fine- to coarse-grained SANDSTONE			
34					-Lamination, fine to coarse cross-bedding			

Figure A-6,
Log of Boring LB 3, Page 1 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING LB 3

ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019**

EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	LB3-4	SM	Dense, moist, olive gray, Silty, fine- to coarse-grained SANDSTONE	8/10"	117.1	9.1
40		SM	Very dense, moist, dark gray, Silty, fine- to coarse-grained SANDSTONE; mottled yellowish brown oxidation			
44		CL	-Low seepage along contact Hard, damp to moist, light bluish gray, CLAYSTONE			
46	LB3-5			10		
48			-Vertical and horizontal fracturing, oxidized with gypsum in fill			
50	LB3-6			10/8"		
52			-Sub-vertical fractures controlled seepage			
58			-Weakly fissured claystone beds with discontinuous, poorly developed clay gouge; fissile polished parting surfaces in some areas (58'-59.5')			
60	LB3-7			10/8"	101.5	19.4
62	LB3-8		-**BEDDING PLANE SHEAR at 62.5'**; 1/2" to 1" thick, soft and stiff, gray, fully developed, plastic clay bed 2º at N10W DDD			
64		SM	-**BEDDING PLANE SHEAR at 63.3'**; 1" to 1 1/4" thick, soft and stiff, gray, fully developed, moderately to fully remolded, plastic clay bed; numerous polished internal parting surfaces, 1º at N10W DDD			
66			Very dense, moist, bluish gray, fine- to medium-grained SANDSTONE			
68		SM	-Contact interbedded Very dense, moist, olive to yellowish brown, Silty, fine- to medium-grained SANDSTONE			

Figure A-6,
Log of Boring LB 3, Page 2 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 3** ELEV. (MSL.) **176'** DATE COMPLETED **05-08-2019** EQUIPMENT **EZ BORE E-120** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
70	LB3-9					10/4"		
72								
74					-Concretion			
76								
78								
80					-Becomes finer grained			
82								
84					BORING TERMINATED AT 84 FEET Seepage encountered at 44 feet Backfilled with bentonite chips and soil			

Figure A-6,
Log of Boring LB 3, Page 3 of 3

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

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PROJECT NO. G2307-32-05

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING LB 4** ELEV. (MSL.) **154'** DATE COMPLETED **05-09-2019** EQUIPMENT **EZ BORE E-120** BY: **R. ADAMS**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				SC	**VERY OLD PARALIC DEPOSITS ($Qvop_{13}$)** Dense, damp to moist, reddish brown to dark brown, Clayey, fine to coarse SAND; massive to very weakly bedded, few brown paleosol horizons			
2								
4					-Upper 3 feet weathered			
6								
8								
10					-Paleosol, 2"-6" thick, reddish to dark brown sand with trace silt			
12				SC	Medium dense to dense, moist, brown to reddish brown, Clayey, fine to coarse SAND; gravel and cobble up to 6 inches			
14				SM	**SANTIAGO FORMATION (Tsa)** Dense to very dense, damp, grayish to yellowish brown, Silty, fine- to coarse-grained SANDSTONE; massive to very weakly laminated, some cross bedding, few sand filled fractures extending down from contact, narrowing with increasing depth			
16								
18								
20					-Coarse grained			
22								
24					-Mottled -Sharp, bioturbated contact			
26				CL	Stiff to very stiff, damp, bluish gray to mottled orangish gray, CLAYSTONE; interbedded siltstone, oxidated laminae, short closed fractures			
28								
30								
32				ML	Stiff to hard, damp, gray to grayish brown, Clayey, SILTSTONE; massive, occasional closed fracture			
34								

Figure A-7,
Log of Boring LB 4, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING LB 4

ELEV. (MSL.) **154'** DATE COMPLETED **05-09-2019**

EQUIPMENT **EZ BORE E-120** BY: **R. ADAMS**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36								
38				CL	-Transitional contact Stiff to hard, moist, bluish gray, CLAYSTONE; very weakly fissured, oxidized laminae, little seepage, few closed fractures, few thin, 1/8" thick, gypsum veins parallel to bedding			
40			▽					
42								
44				SM	-**BEDDING PLANE SHEAR at 42.9'**; 3/4" to 1" thick, gray, weak to moderately remolded, soft to very soft, plastic clay gouge; increase fissuring above shear			
46					-**BEDDING PLANE SHEAR at 43.9'**; 1 1/2" thick, gayish brown, weakly remolded, fully developed, soft plastic, clay bed, internally sheared with numerous parting surfaces, 1º N63W DDD			
48				SP	Very dense, damp, bluish gray, Silty, medium- to coarse-grained SANDSTONE -1/4" TO 1/2" sub-horizontal fractures with seepage; 40% TO 60% gypsum filled			
50					Very dense, damp, yellowish gray, medium- to coarse-grained SANDSTONE; very weakly laminated			
52					-Concretion bed			
54								
56								
58								
60					BORING TERMINATED AT 60 FEET Seepage encountered at 40 feet Backfilled with bentonite chips and soil			

Figure A-7,
Log of Boring LB 4, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

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GEOCON

PROJECT NO. G2307-32-05

BORING SB 1

ELEV. (MSL.) **115'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB1-1			SC	**PREVIOUSLY PLACED FILL (Qpf)** Loose to medium dense, moist, yellowish to grayish brown, Clayey, fine to coarse SAND; trace gravel			
2								
4					-Becomes medium dense			
6	SB1-2				-Becomes damp; chunks of gray siltstone	46	113.3	8.1
8								
10	SB1-3				-Becomes moist, dark brown	38	123.0	11.1
12								
14								
16	SB1-4			SC	**ALLUVIUM (Qal)** Loose, damp, dark yellowish brown, Clayey, fine to coarse SAND	16	123.0	6.5
18								
20	SB1-5				Becomes medium dense; finer-grained	18	106.1	5.3
22	SB1-6							
24								
26	SB1-7				-Becomes moist; clay content increases	27	114.0	11.8
28								
30	SB1-8					19	108.8	10.8
32								
34								

Figure A-8,
Log of Boring SB 1, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING SB 1

ELEV. (MSL.) **115'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	SB1-9				Becomes loose, wet	15	110.2	15.0
38			▽		-Seepage encountered -Measured after leaving hole open for 15 min.			
40	SB1-10					17		
42								
44								
46	SB1-11					16	109.6	20.5
48								
50	SB1-12			SM	**SANTIAGO FORMATION (Tsa)** Very dense, damp, light yellowish to grayish brown, Silty, fine-grained SANDSTONE	80/10"		
52	SB1-13					50/5"		
					BORING TERMINATED AT 52.5 FEET Seepage encountered at 38 feet Backfilled with 18.3 ft³ of bentonite grout			

Figure A-8,
Log of Boring SB 1, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING SB 2

ELEV. (MSL.) **111'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB2-1			SC	**PREVIOUSLY PLACED FILL (Qpf)** Loose to medium dense, moist, yellowish to grayish brown, Clayey, fine to coarse SAND; trace organics, trace gravel			
2								
4								
6	SB2-2				-Becomes dense; chunks of gray siltstone and sandstone	61	120.2	11.4
8								
10	SB2-3				-Becomes medium dense	32	112.4	16.4
12								
14								
16	SB2-4			SC/SW	**ALLUVIUM (Qal)** Medium dense, moist, dark yellowish brown, Clayey, fine to medium SAND to well-graded, fine to medium SAND	19	115.0	9.1
18								
20	SB2-5			SC	Medium dense, moist, dark yellowish brown, Clayey, fine to medium SAND	22	115.2	10.0
22								
24								
26	SB2-6					18	107.1	6.5
28								
30	SB2-7					16	110.8	12.2
32								
34								

Figure A-9,
Log of Boring SB 2, Page 1 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING SB 2

ELEV. (MSL.) **111'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	SB2-8			SM/SP	Medium dense, moist, dark yellowish brown, Silty, fine SAND to poorly-graded fine SAND	19	112.4	9.6
38								
40	SB2-9		▽	SC	Medium dense, saturated, yellowish brown, Clayey, fine SAND	18	115.4	17.0
42								
44								
46	SB2-10					18		
48								
50	SB2-11				-Becomes light reddish brown	24	114.5	19.5
52								
54								
56	SB2-12			SM	**SANTIAGO FORMATION (Tsa)**	82/8"		
	SB2-13				Very dense, damp, light yellowish brown to gray, Silty, fine-grained SANDSTONE	50/6"		

BORING TERMINATED AT 56.5 FEET
Seepage encountered at 40 feet
Backfilled with 19.7 ft³ of bentonite grout

Figure A-9,
Log of Boring SB 2, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING SB 3

ELEV. (MSL.) **107'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	SB3-1			SM	**PREVIOUSLY PLACED FILL (Qpf)** Loose to medium dense, damp, yellowish brown, Silty, fine to coarse SAND; trace organics; trace gravel -Becomes medium dense			
2								
4								
6	SB3-2				-Becomes dense, dark yellowish brown	56	120.9	3.7
8								
10	SB3-3				-Becomes medium dense, yellowish brown to gray	25	110.8	9.3
12								
14								
16	SB3-4			SC/CL	**ALLUVIUM (Qal)** Loose, moist, dark brown to yellowish brown, Clayey, fine to medium SAND to Sandy CLAY	16	121.1	11.5
18								
20	SB3-5			SC	Loose, moist, dark brown, Clayey, fine to medium SAND	14	116.1	9.4
22								
24								
26								
28								
30	SB3-6				-Becomes light yellowish brown; clay content increases	15	112.6	11.8
32								
34								

G2307-32-05.GPJ

Figure A-10,
Log of Boring SB 3, Page 1 of 2

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ... SEEPAGE

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PROJECT NO. G2307-32-05

BORING SB 3

ELEV. (MSL.) **107'** DATE COMPLETED **05-08-2019**

EQUIPMENT **CME 75** BY: **L. RODRIGUEZ**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
36	SB3-7					17	109.8	14.4
38								
40	SB3-8			SM	Loose, damp, light yellowish to grayish brown, Silty, fine SAND	14	97.8	5.7
42								
44								
46	SB3-9			SC	Loose, moist, light yellowish to grayish brown, Clayey, fine SAND	13	96.0	14.4
48			▽		-Seepage encountered			
50	SB3-10				-Becomes saturated	30		
52				SM	**SANTIAGO FORMATION (Tsa)** Very dense, moist, light yellowish to grayish brown, Silty, fine-grained SANDSTONE			
54	SB3-11					50/6"		
					BORING TERMINATED AT 55.5 FEET Seepage encountered at 49 feet Backfilled with 19.4 ft³ of bentonite grout			

Figure A-10,
Log of Boring SB 3, Page 2 of 2

G2307-32-05.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL ... STANDARD PENETRATION TEST ... DRIVE SAMPLE (UNDISTURBED)

... DISTURBED OR BAG SAMPLE ... CHUNK SAMPLE ... WATER TABLE OR ▽ ... SEEPAGE

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APPENDIX B

APPENDIX B

LABORATORY TESTING

We performed laboratory tests in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. We selected soil samples and tested them for their in-place dry density and moisture content, maximum dry density and optimum moisture content, shear strength, expansion index, water-soluble sulfate, Atterberg limits, resistance value (R-Value), consolidation and grain size characteristics. The results of our laboratory tests from both phases of study are presented on Tables B-I through B-VI and the following figures.

TABLE B-I
SUMMARY OF LABORATORY MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT TEST RESULTS
ASTM D 1557

Sample No. (Geologic Unit)	Description	Maximum Dry Density (pcf)	Optimum Moisture Content (% dry wt.)
LB1-2 (Qvop)	Reddish brown, Silty, fine to coarse SAND	127.5	10.9
LB1-6 (Tsa)	Olive brown, Silty, fine to coarse SAND	120.0	12.0
SB2-1 (Qpf)	Yellowish brown, Clayey, fine SAND	127.5	10.3

TABLE B-II
SUMMARY OF LABORATORY DIRECT SHEAR TEST RESULTS
ASTM D 3080

Sample No. (Geologic Unit)	Dry Density (pcf)	Moisture Content (%)		Peak [Ultimate] Cohesion (psf)	Peak [Ultimate] Angle of Shear Resistance (degrees)
		Initial	After Test		
LB1-3 (Qvop)	117.7	8.6	14.4	725 [475]	29 [29]
LB1-9 (Tsa, CL)	107.5	20.3	23.2	1,300 [600]	32 [32]
LB1-13[2] (BPS)	--	--	--	200 [100]	10 [8]
LB3-2 (Qvop)	116.1	5.9	14.0	480 [375]	34 [34]
LB3-3 (Qvop)	101.5	7.5	21.0	340 [330]	36 [32]
LB3-8[2] (BPS)	--	--	--	240 [180]	11 [11]
SB2-1[1] (Qpf)	114.8	10.7	17.7	430 [430]	29 [29]

[1] Sample remolded to a dry density of approximately 90 percent of the laboratory maximum dry density near optimum moisture content.
[2] Remolded Paste Shear Test.

TABLE B-III
SUMMARY OF LABORATORY EXPANSION INDEX TEST RESULTS
ASTM D 4829

Sample No.	Depth (feet)	Geologic Unit	Moisture Content (%)		Dry Density (pcf)	Expansion Index	2016 CBC Expansion Classification	ASTM Soil Expansion Classification
			Before Test	After Test				
LB1-2	7.5 – 10	Qvop	9.6	18.8	109.6	0	Non-Expansive	Very Low
LB1-6	18 – 20	Tsa	9.8	17.4	110.5	0	Non-Expansive	Very Low
SB2-1	0 – 5	Qpf	9.6	19.2	112.1	40	Expansive	Low

TABLE B-IV
SUMMARY OF LABORATORY WATER-SOLUBLE SULFATE TEST RESULTS
CALIFORNIA TEST NO. 417

Sample No.	Depth (feet)	Geologic Unit	Water-Soluble Sulfate (%)	Sulfate Class
LB1-2	7.5 – 10	Qvop	0.034	S0
LB1-6	18 – 20	Tsa	0.028	S0
SB2-1	0 – 5	Qpf	0.030	S0

TABLE B-V
SUMMARY OF LABORATORY PLASTICITY INDEX TEST RESULTS
ASTM D 4318

Sample No.	Depth (feet)	Geologic Unit	Liquid Limit	Plastic Limit	Plasticity Index	Soil Classification
LB1-13	45	BPS	103	34	69	CH
LB3-8	62.5	BPS	89	34	55	CH
SB1-10	40	Qal	32	16	16	CL
SB2-10	45	Qal	33	16	17	CL
B1-11	41	Qal	-	-	-	NP
B1-13	46	Qal	32	14	18	CL
B2-13	46	Qal	28	17	11	CL
B3-9	36	Qal	30	15	15	CL

TABLE B-VI
SUMMARY OF LABORATORY RESISTANCE VALUE (R-VALUE) TEST RESULTS
ASTM D 2844

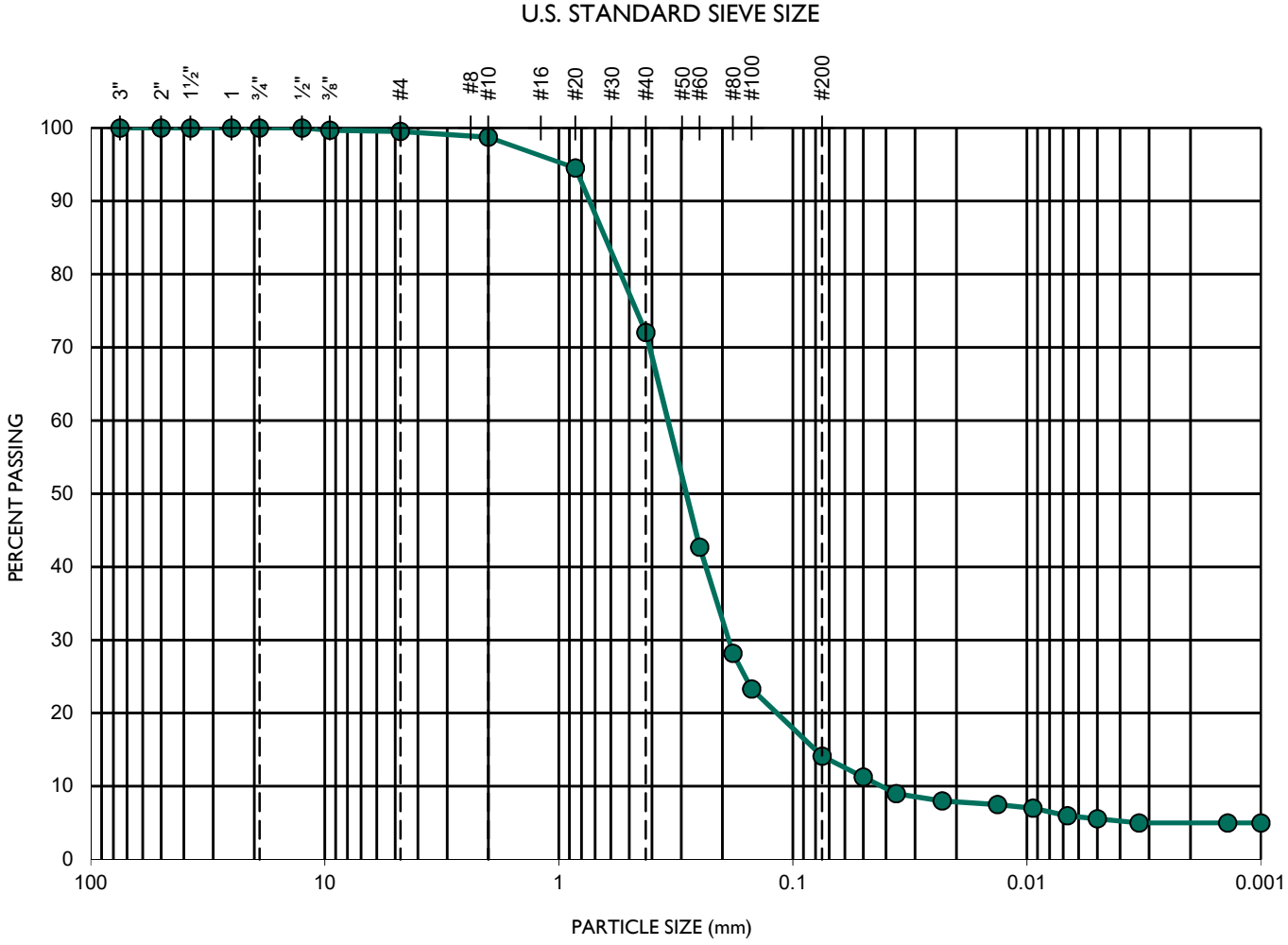
Sample No.	Depth (feet)	Description (Geologic Unit)	R-Value
LB1-2	7.5 – 10	Reddish brown, Silty, fine to coarse SAND (Qvop)	36
SB2-1	0 – 5	Yellowish brown, Clayey, fine SAND (Qpf)	13

SAMPLE NO.: **B1-11**

SAMPLE DEPTH (FT.): **41'**

GEOLOGIC UNIT: **Qal**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
0.04238	0.18887	0.35326	2.4	8.3	Silty SAND

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SIEVE ANALYSES - ASTM D 6913

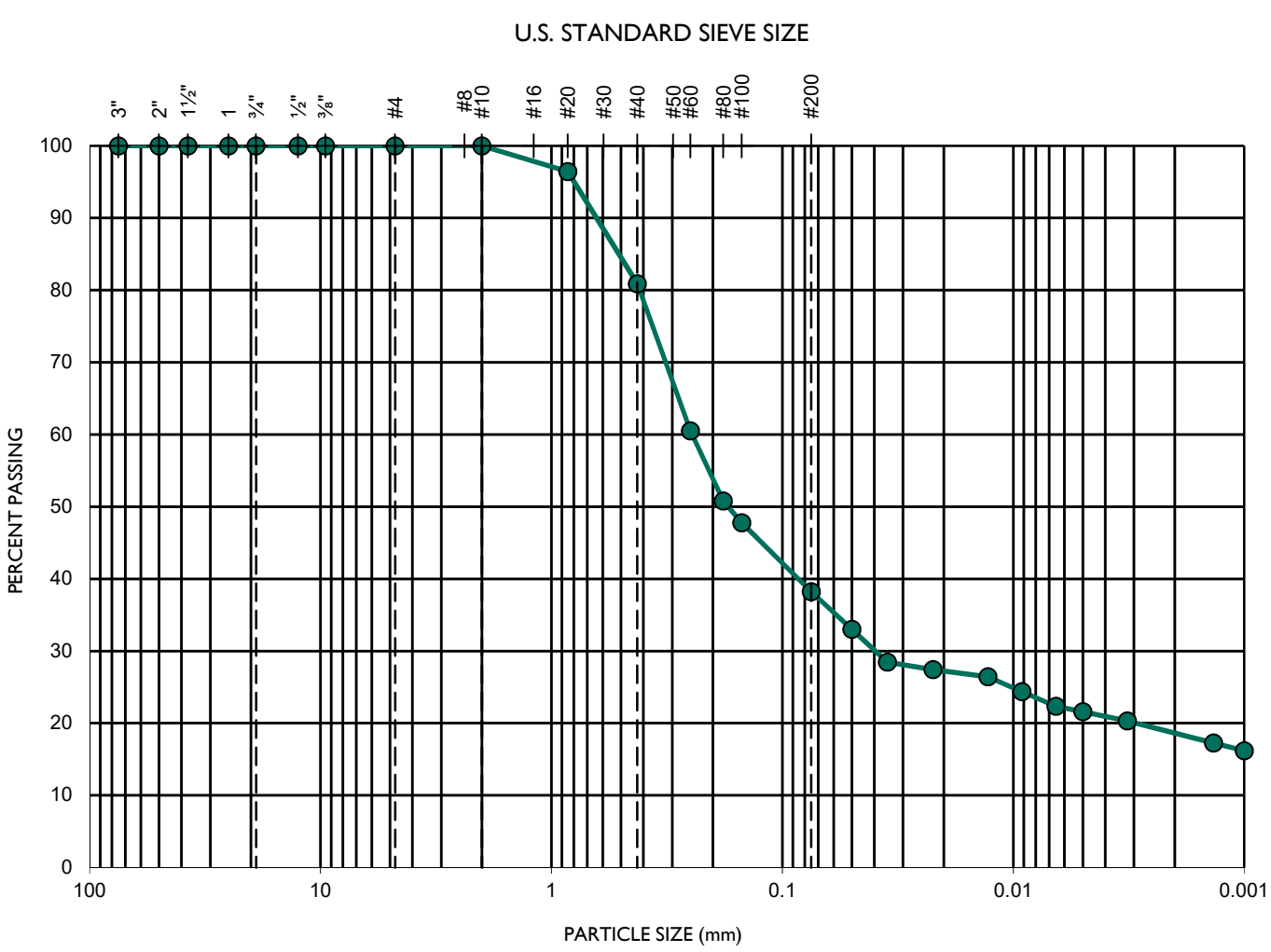
PIRAEUS POINT

PROJECT NO.: G2307-32-05

SAMPLE NO.: **B1-13** GEOLOGIC UNIT: **Qal**

SAMPLE DEPTH (FT.): **46'**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
--	0.04016	0.24651	--	--	Clayey SAND

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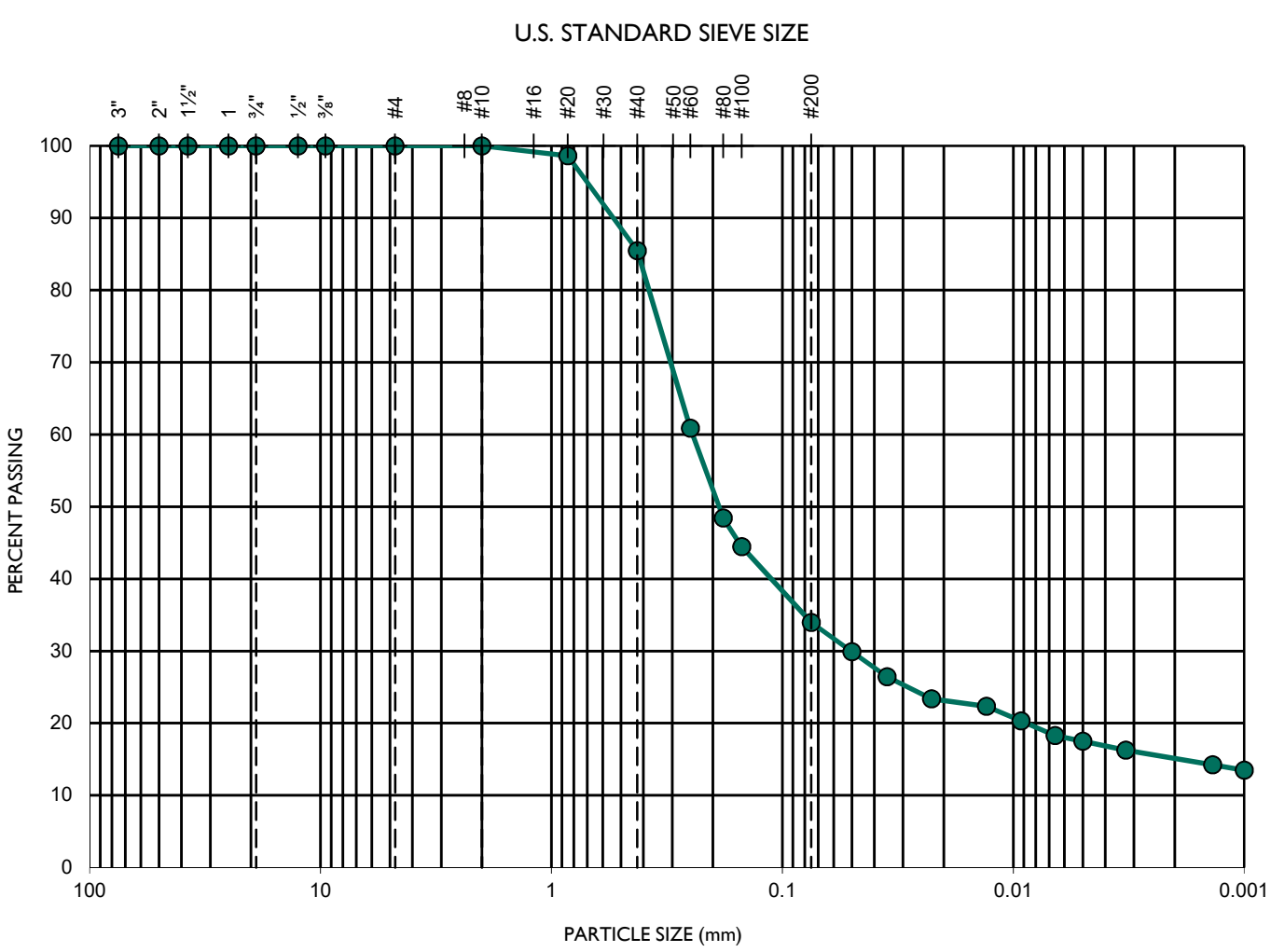
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B2-13**

SAMPLE DEPTH (FT.): **46'**

GEOLOGIC UNIT: **Qal**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
--	0.05058	0.24515	--	--	Silty Clayey SAND

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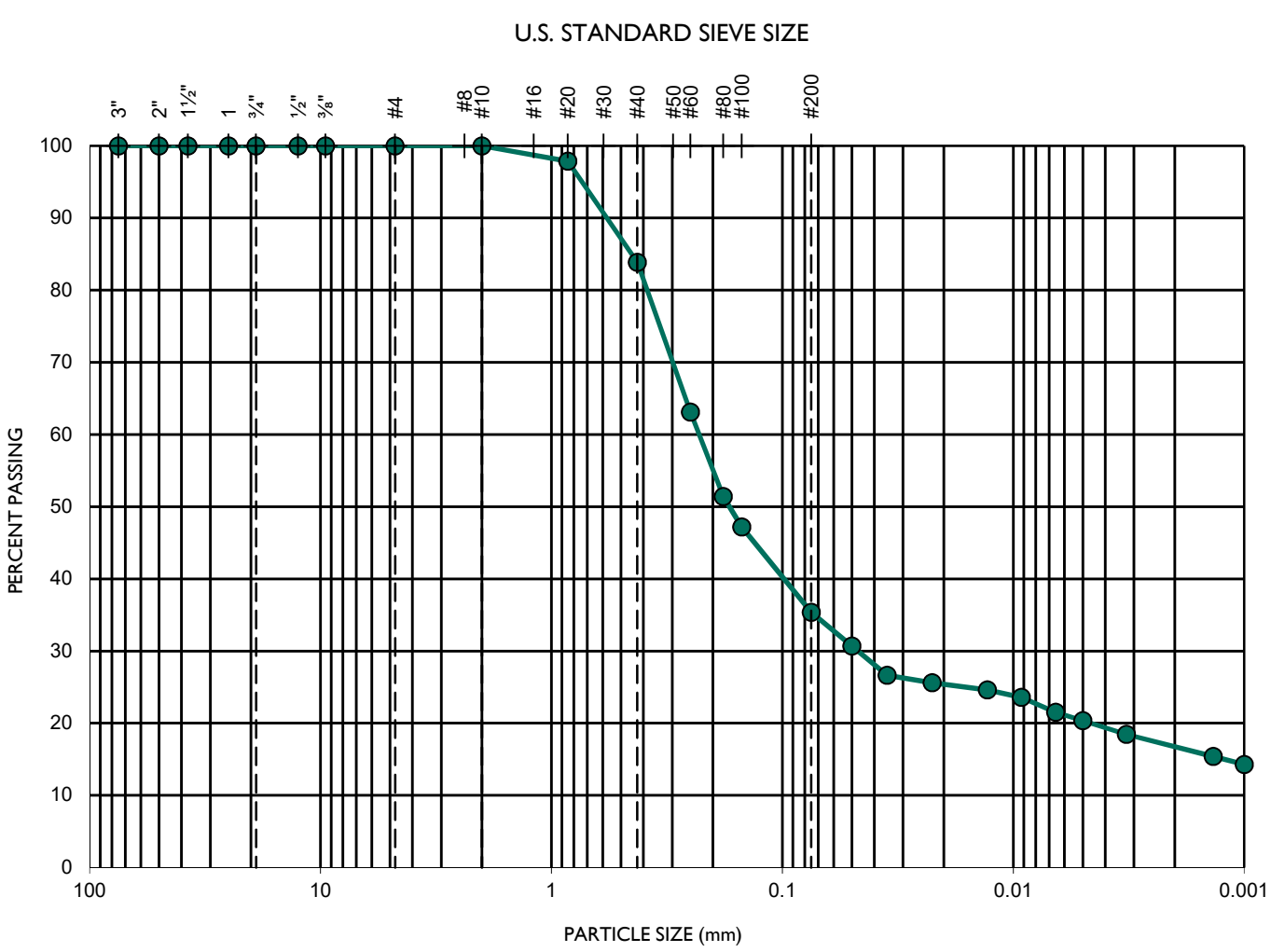
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B3-9**

SAMPLE DEPTH (FT.): **36'**

GEOLOGIC UNIT: **Qal**

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



TEST DATA					
D_{10} (mm)	D_{30} (mm)	D_{60} (mm)	C_c	C_u	SOIL DESCRIPTION
--	0.04749	0.23151	--	--	Silty Clayey SAND

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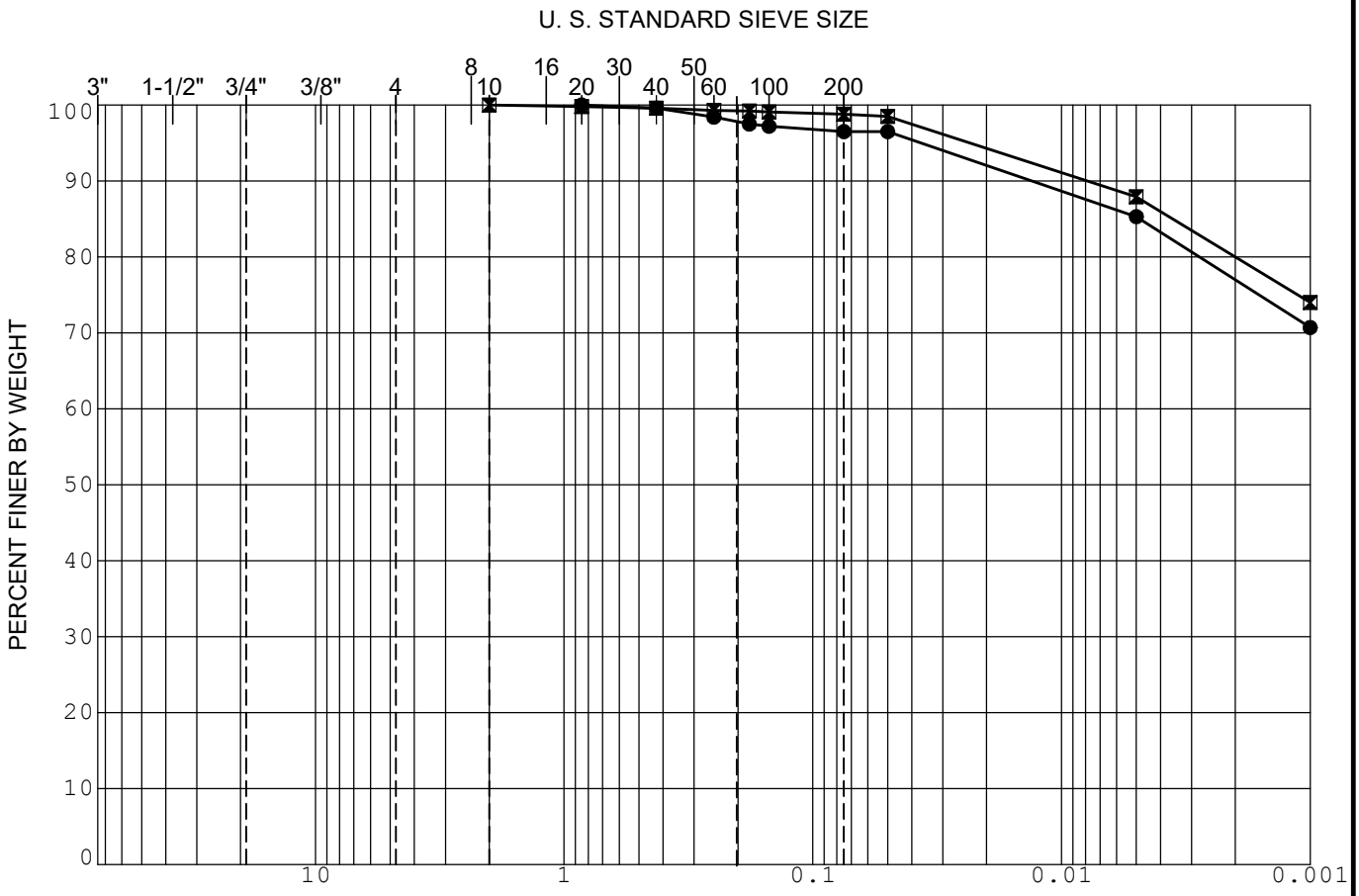
SIEVE ANALYSES - ASTM D 6913

PIRAEUS POINT

PROJECT NO.: G2307-32-05

PROJECT NO. G2307-32-05

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



ASTM D422

	SAMPLE	DEPTH (ft)	CLASSIFICATION	NAT WC	LL	PL	PI
●	LB1-13	44.5	CH - Fat CLAY		103	34	69
⊠	LB3-8	62.5	CH - Fat CLAY		89	34	55
▲							

GRADATION CURVE

PIRAEUS POINT

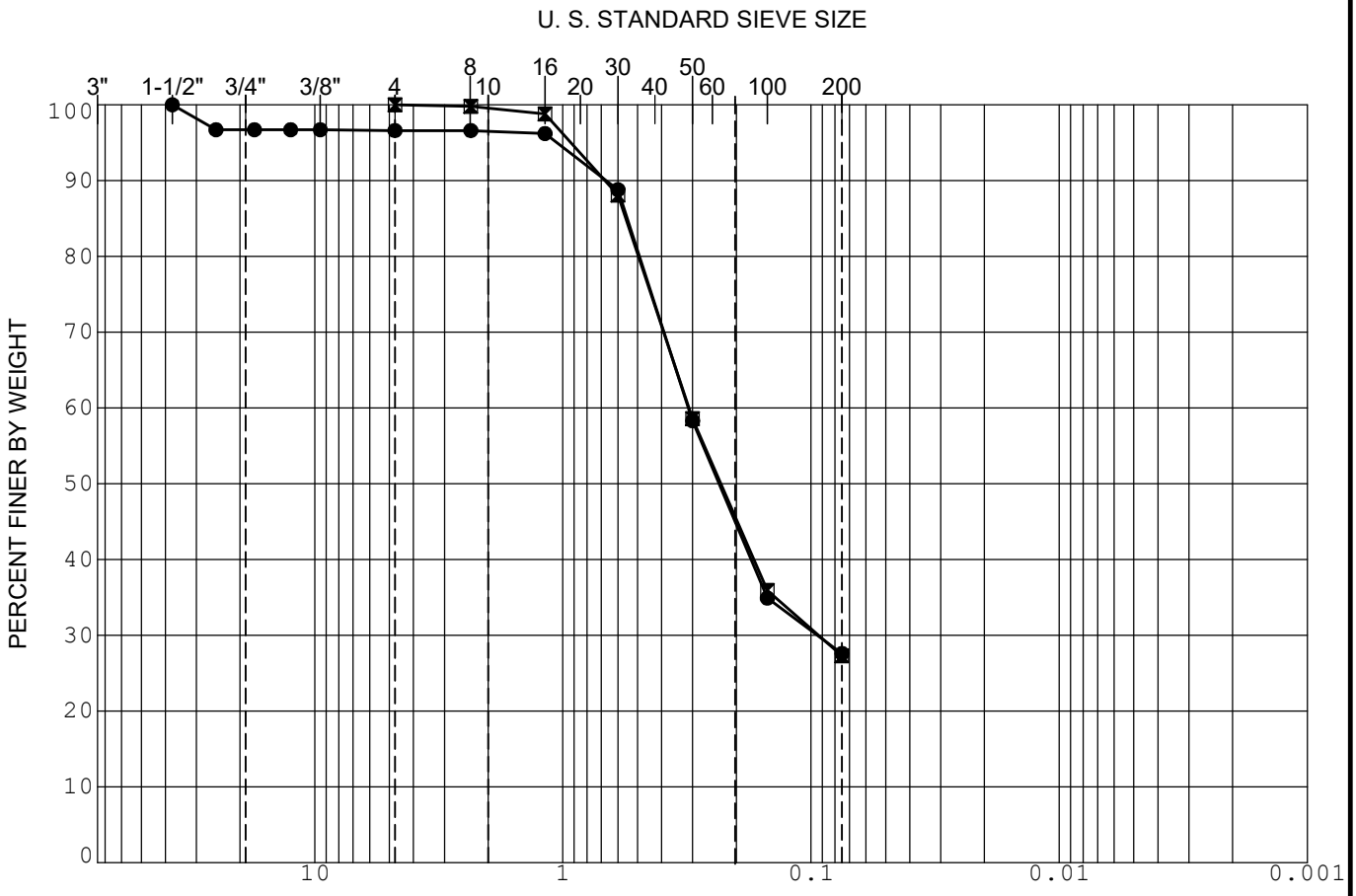
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PROJECT NO. G2307-32-05

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



ASTM D422

	SAMPLE	DEPTH (ft)	CLASSIFICATION	NAT WC	LL	PL	PI
●	SB1-10	40.0	SC - Clayey SAND		32	16	16
⊠	SB2-10	45.0	SC - Clayey SAND		33	16	17
▲							

GRADATION CURVE

PIRAEUS POINT

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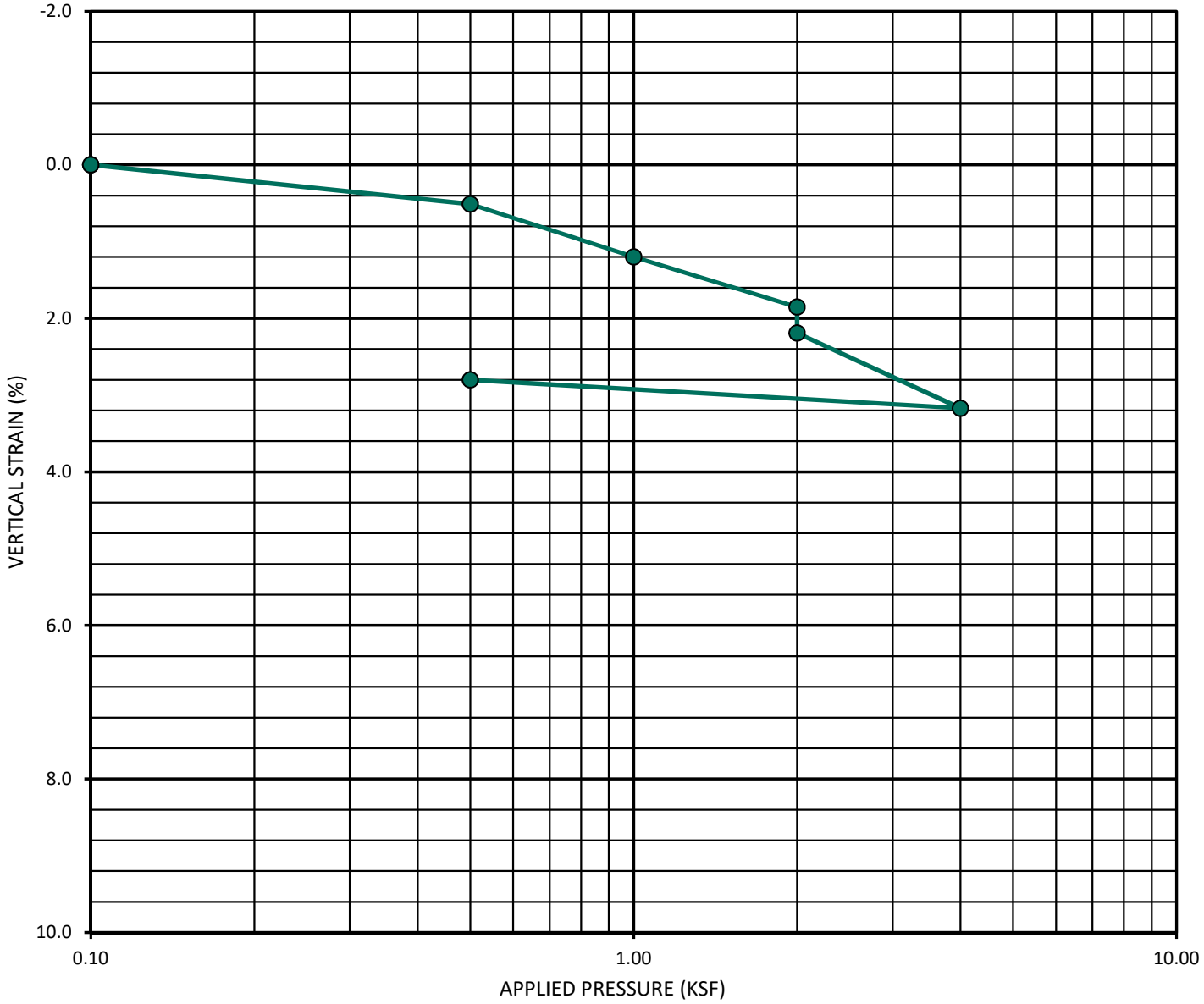
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SAMPLE NO.: **B1-2**

SAMPLE DEPTH (FT): **10'**

GEOLOGIC UNIT: **Qpf**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	109.0
INITIAL WATER CONTENT (%):	12.2%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	62.0%



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PROJECT NO.: G2307-32-05

SAMPLE NO.: **B1-4**

SAMPLE DEPTH (FT): **20'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	113.5
INITIAL WATER CONTENT (%):	14.7%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	84.4%



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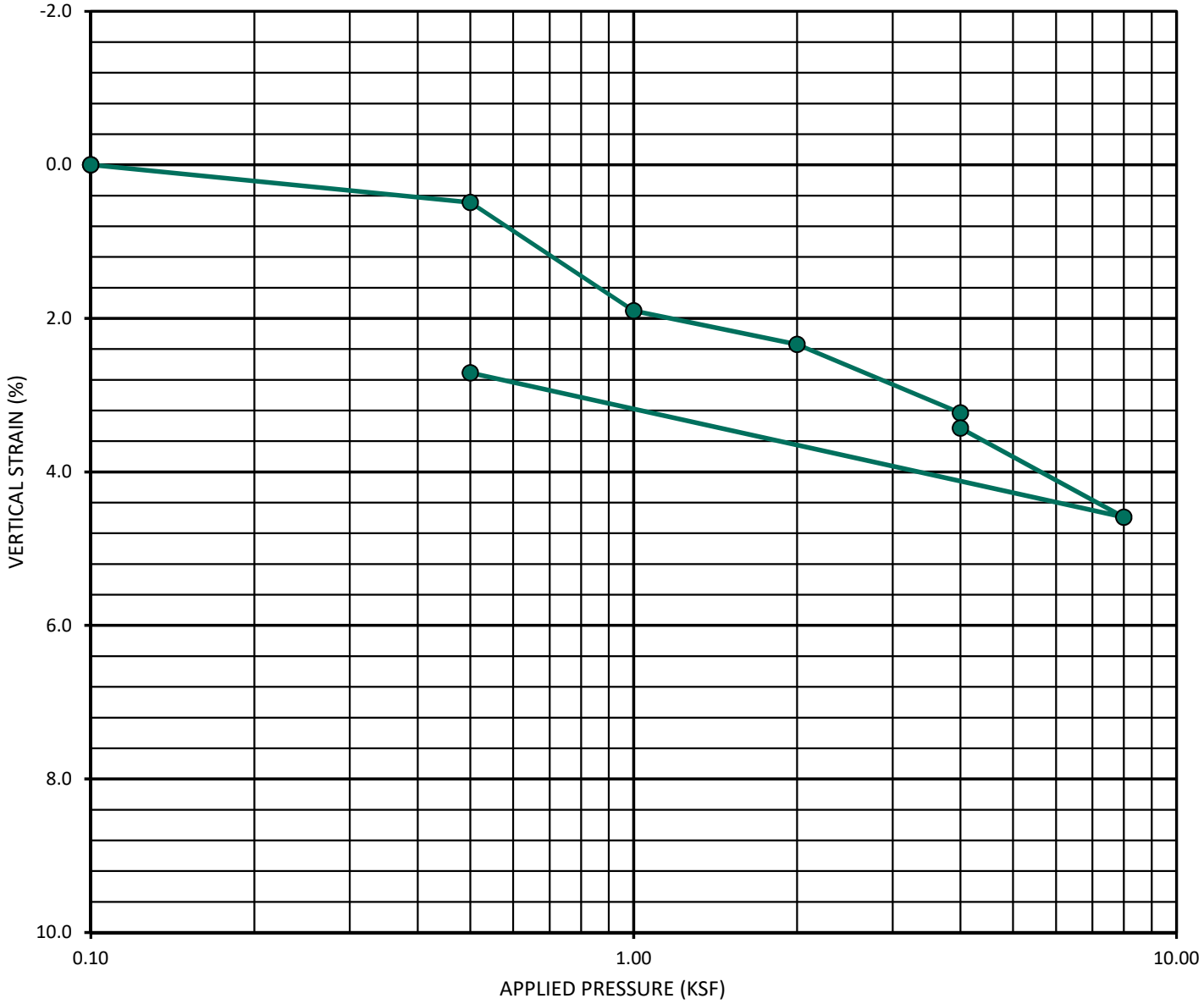
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B1-8**

SAMPLE DEPTH (FT): **35'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	104.3
INITIAL WATER CONTENT (%):	20.6%
SAMPLE SATURATED AT (KSF):	4.0
INITIAL SATURATION (%):	92.5%



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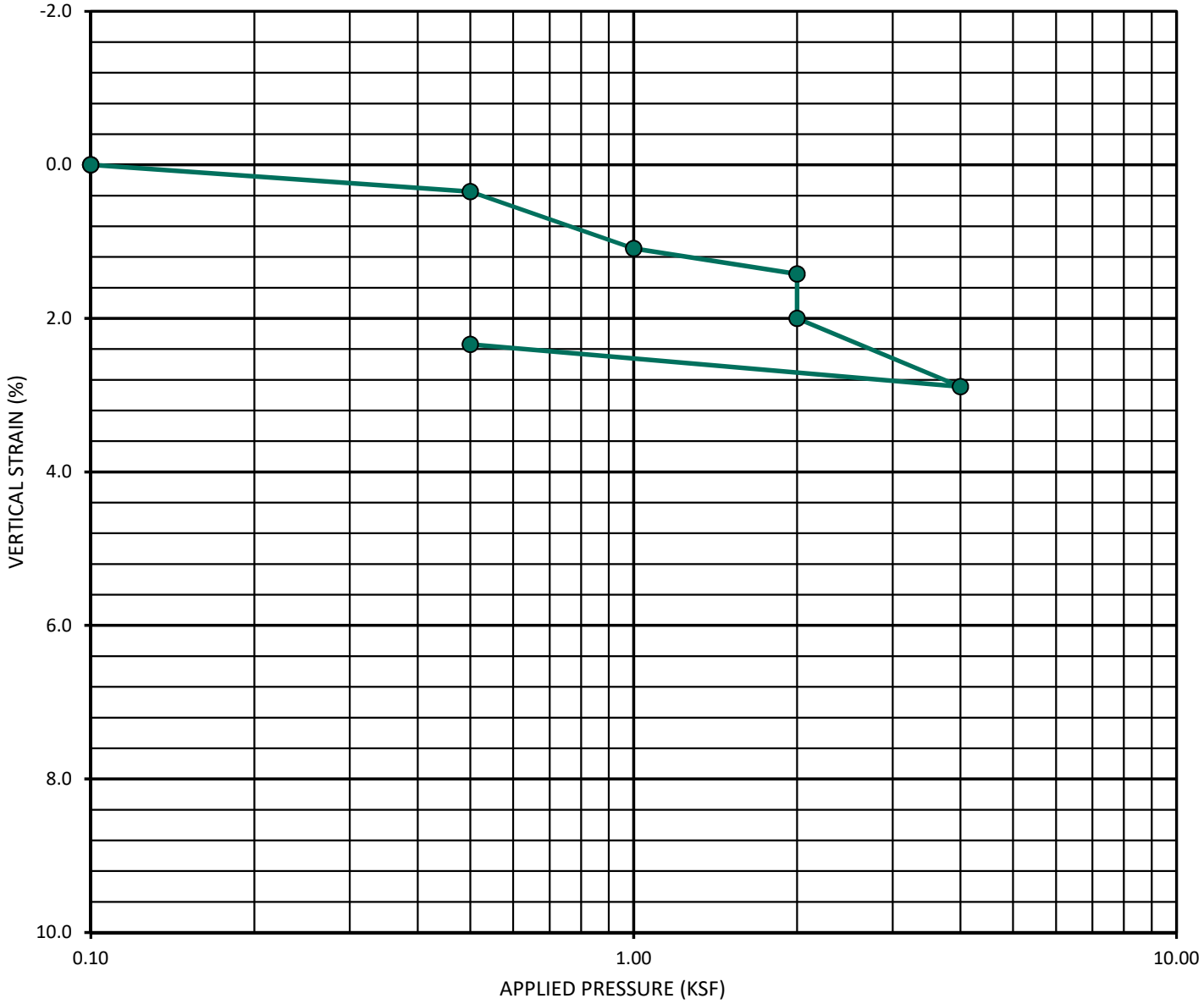
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B2-1**

SAMPLE DEPTH (FT): **5'**

GEOLOGIC UNIT: **Qpf**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	114.1
INITIAL WATER CONTENT (%):	9.8%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	57.5%



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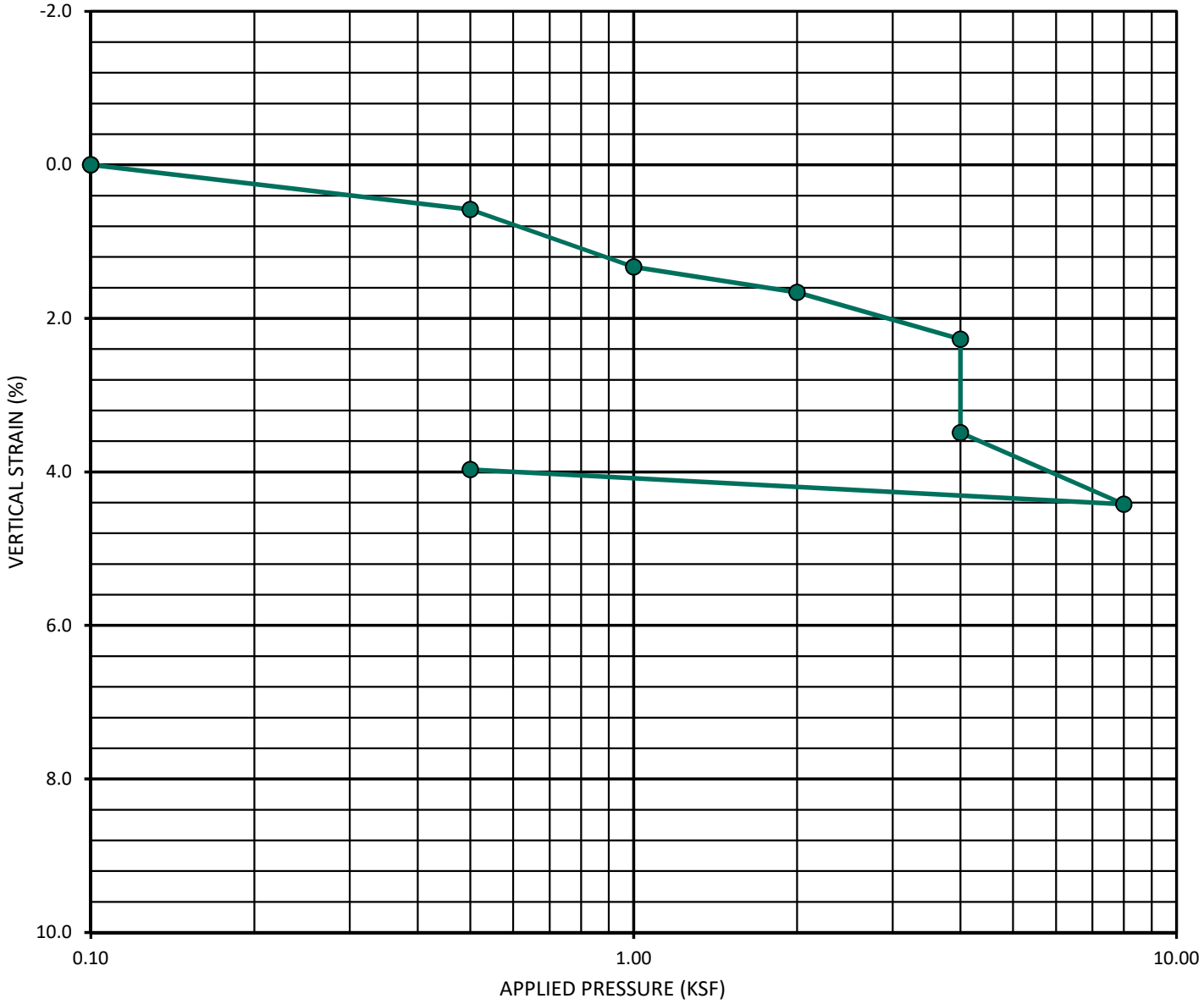
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B2-5**

SAMPLE DEPTH (FT): **25'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	107.3
INITIAL WATER CONTENT (%):	4.7%
SAMPLE SATURATED AT (KSF):	4.0
INITIAL SATURATION (%):	23.1%



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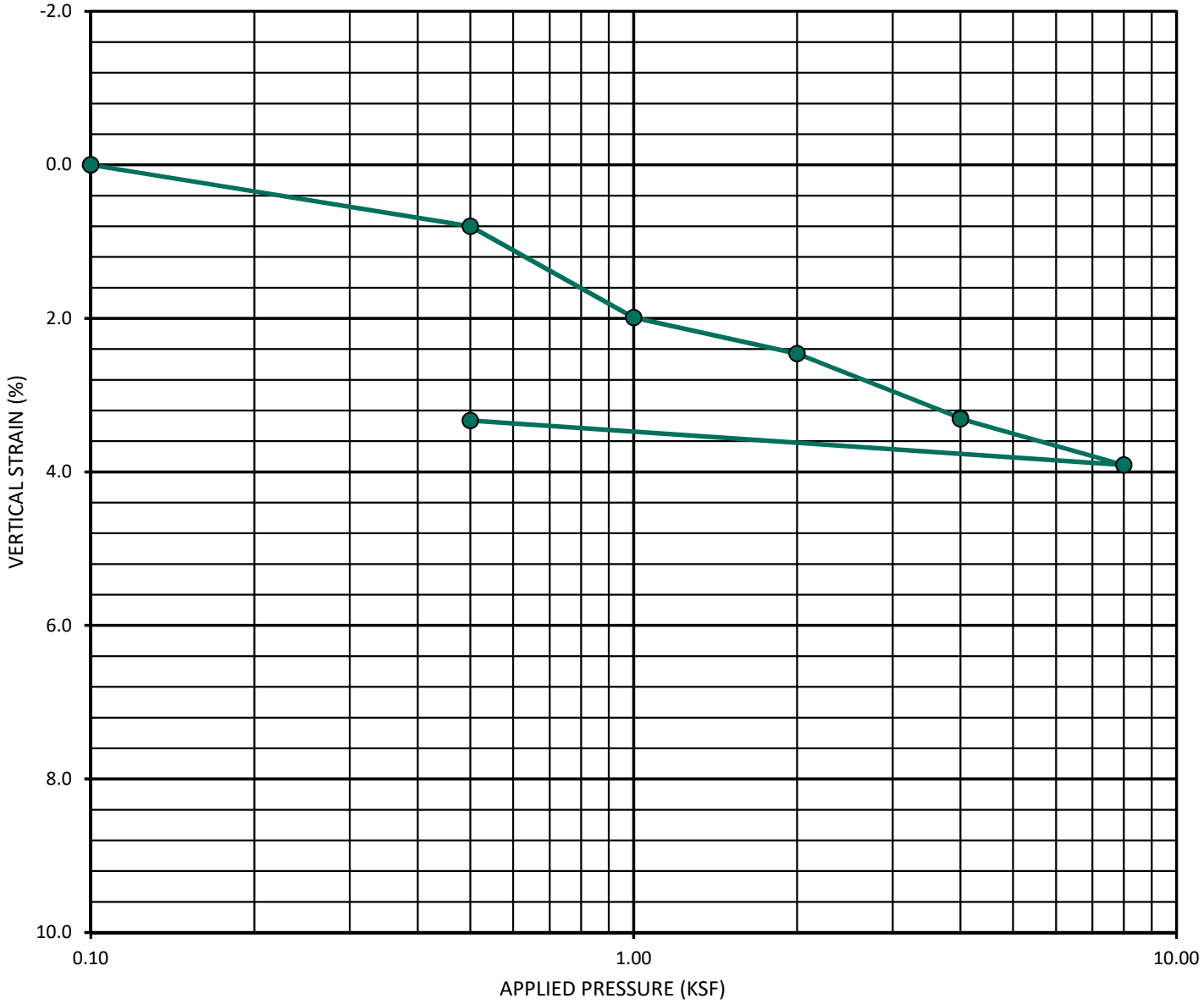
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B2-12**

SAMPLE DEPTH (FT): **45'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	118.4
INITIAL WATER CONTENT (%):	14.5%
SAMPLE SATURATED AT (KSF):	4.0
INITIAL SATURATION (%):	96.1%



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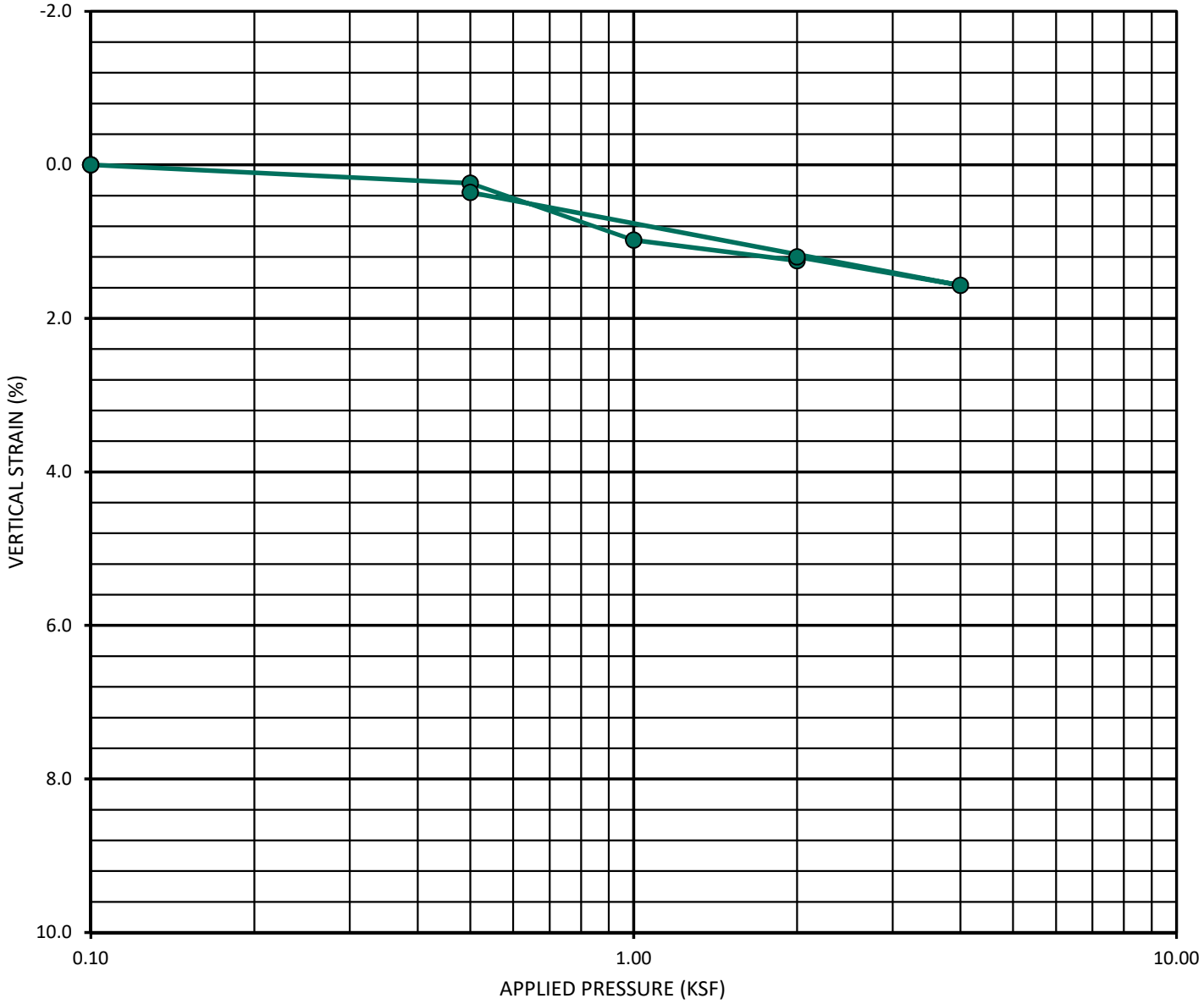
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B3-1**

SAMPLE DEPTH (FT): **5'**

GEOLOGIC UNIT: **Qpf**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	117.2
INITIAL WATER CONTENT (%):	10.1%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	65.0%



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PROJECT NO.: G2307-32-05

SAMPLE NO.: **B3-4**

SAMPLE DEPTH (FT): **20'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	112.9
INITIAL WATER CONTENT (%):	10.7%
SAMPLE SATURATED AT (KSF):	2.0
INITIAL SATURATION (%):	60.5%



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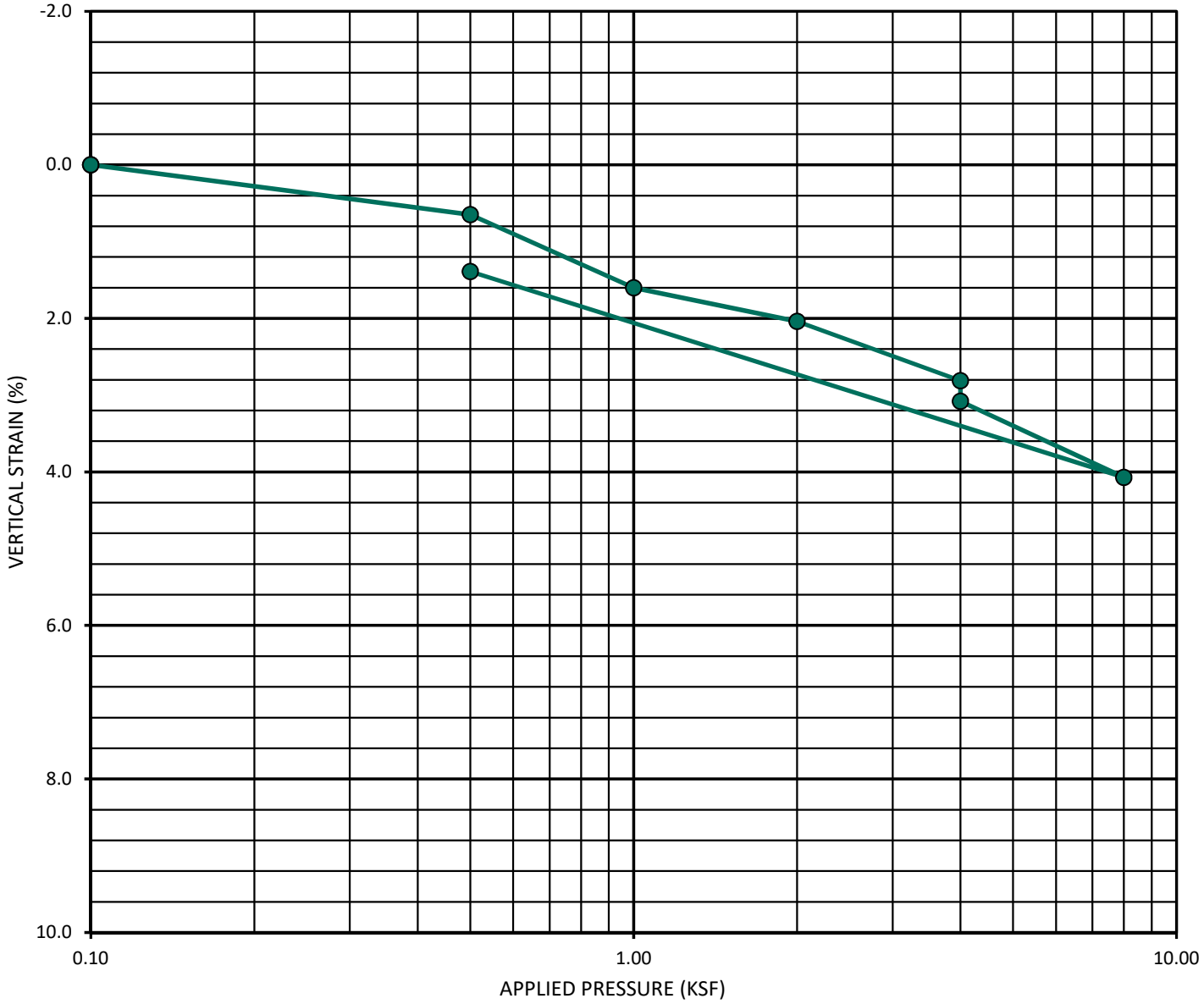
PROJECT NO.: G2307-32-05

SAMPLE NO.: **B3-8**

SAMPLE DEPTH (FT): **35'**

GEOLOGIC UNIT: **Qal**

TEST INFORMATION	
INITIAL DRY DENSITY (PCF):	114.5
INITIAL WATER CONTENT (%):	14.6%
SAMPLE SATURATED AT (KSF):	4.0
INITIAL SATURATION (%):	86.4%



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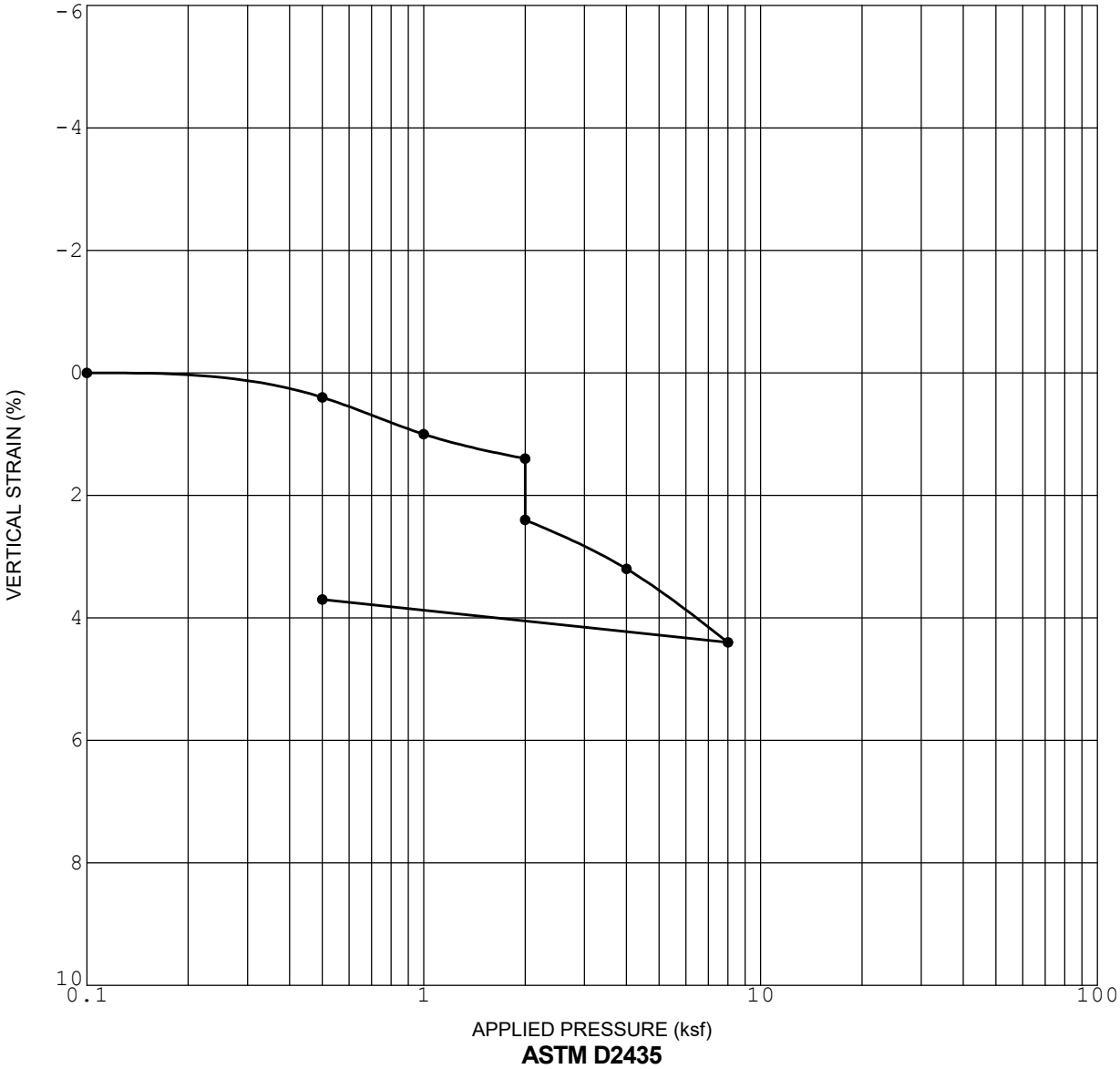
CONSOLIDATION CURVE - ASTM D 2435

PIRAEUS POINT

PROJECT NO.: G2307-32-05

PROJECT NO. G2307-32-05

SAMPLE NO. SB1-2



ASTM D2435

Initial Dry Density (pcf)	113.3	**Initial Saturation (%)**	52.1
Initial Water Content (%)	8.1	**Sample Saturated at (ksf)**	2.0

CONSOLIDATION CURVE

PIRAEUS POINT

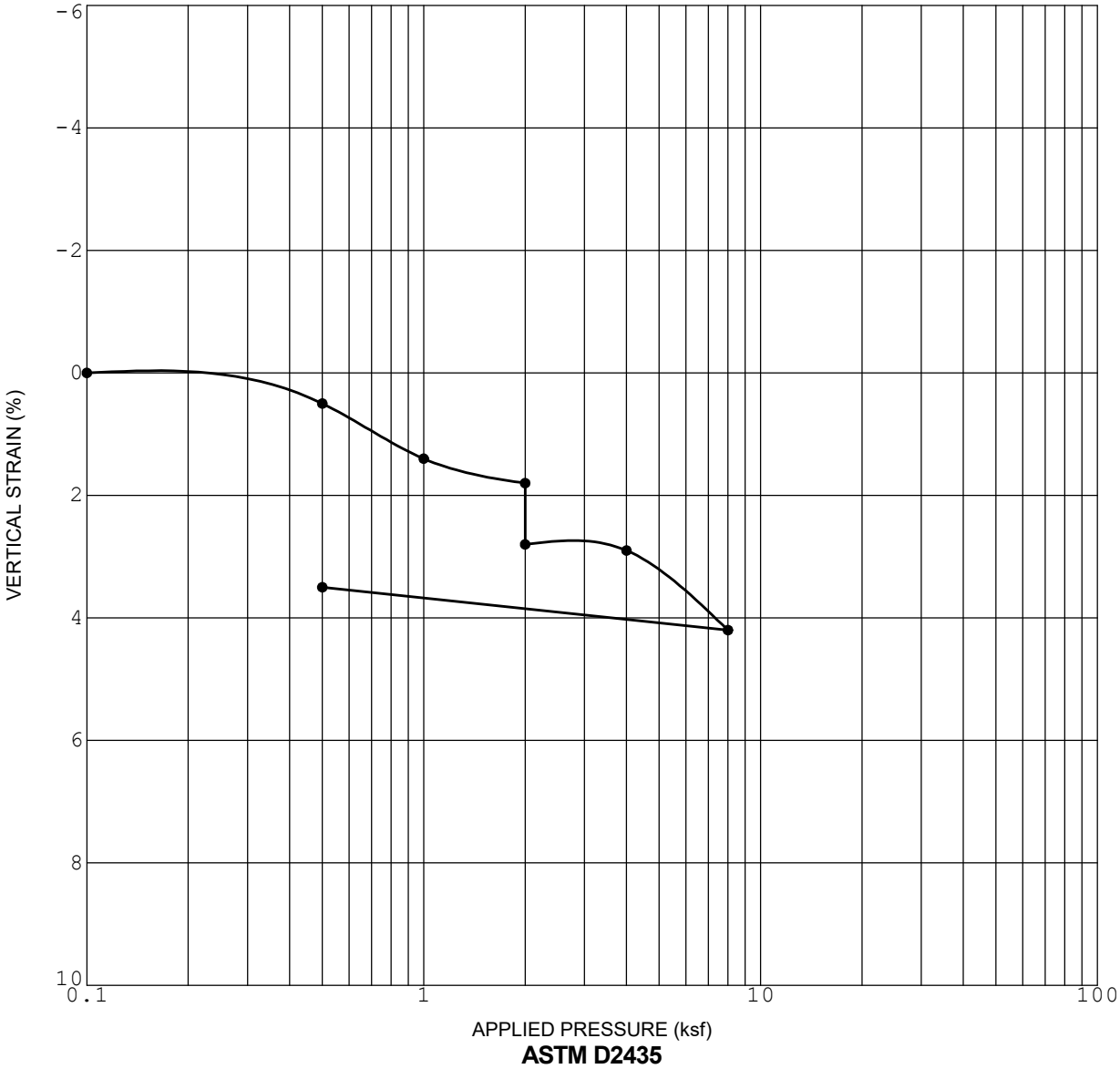
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PROJECT NO. G2307-32-05

SAMPLE NO. SB2-5



ASTM D2435

Initial Dry Density (pcf)	115.2	**Initial Saturation (%)**	60.0
Initial Water Content (%)	10.0	**Sample Saturated at (ksf)**	2.0

CONSOLIDATION CURVE

PIRAEUS POINT

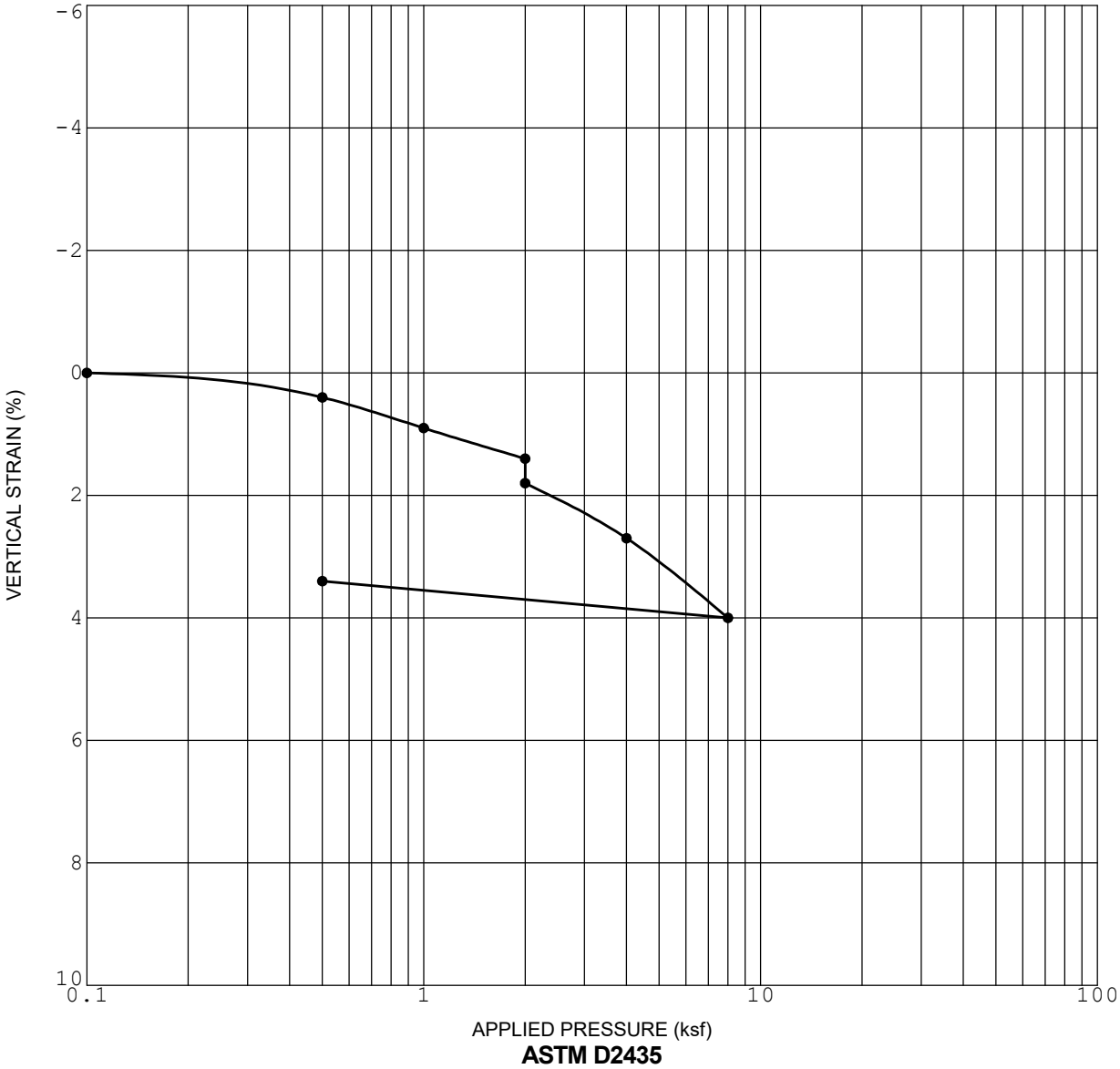
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PROJECT NO. G2307-32-05

SAMPLE NO. SB2-7



ASTM D2435

Initial Dry Density (pcf)	111.7	**Initial Saturation (%)**	61.7
Initial Water Content (%)	11.3	**Sample Saturated at (ksf)**	2.0

CONSOLIDATION CURVE

PIRAEUS POINT

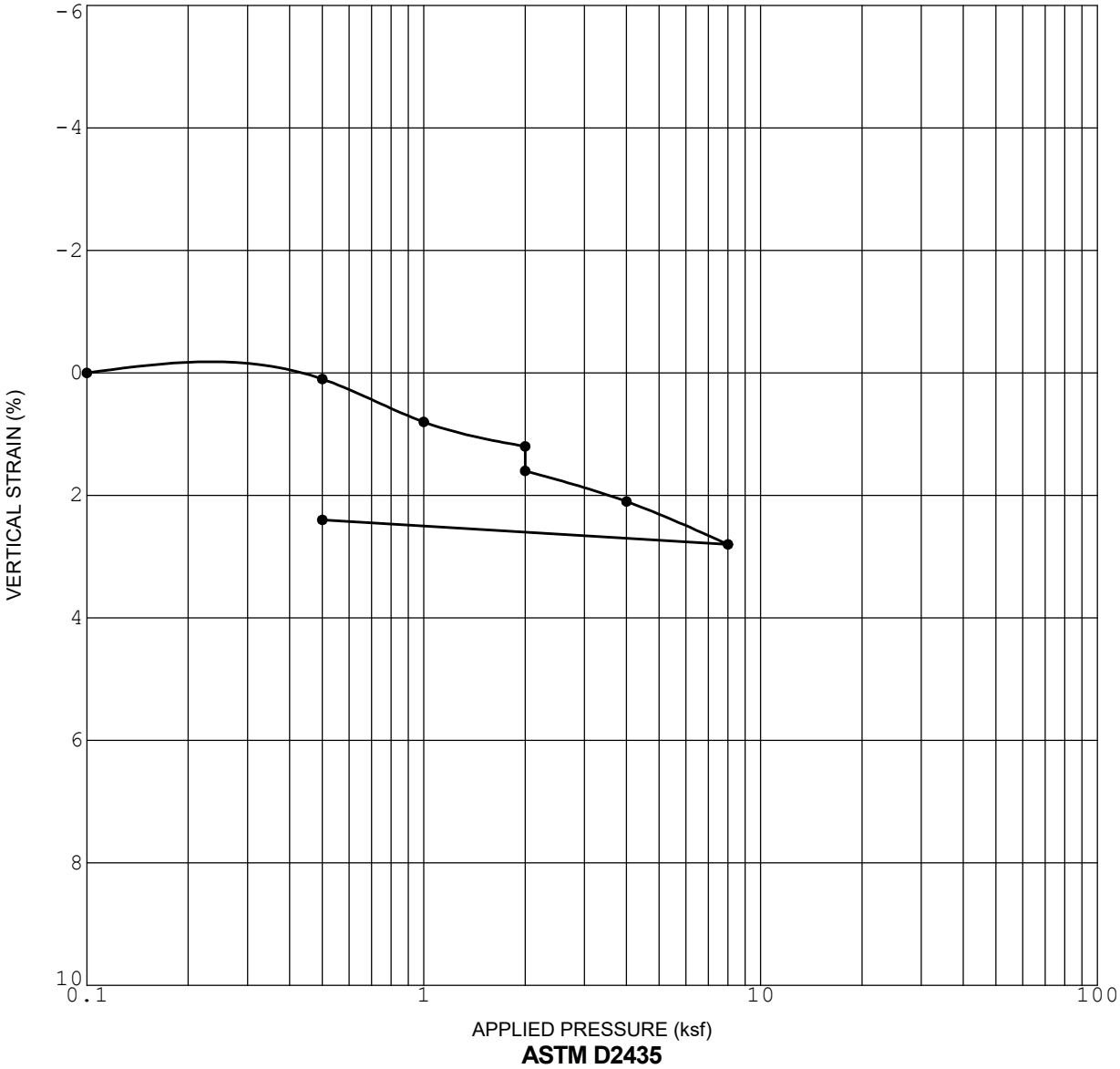
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SAMPLE NO. SB2-11



ASTM D2435

Initial Dry Density (pcf)	115.6	**Initial Saturation (%)**	100
Initial Water Content (%)	18.4	**Sample Saturated at (ksf)**	.1

CONSOLIDATION CURVE

PIRAEUS POINT

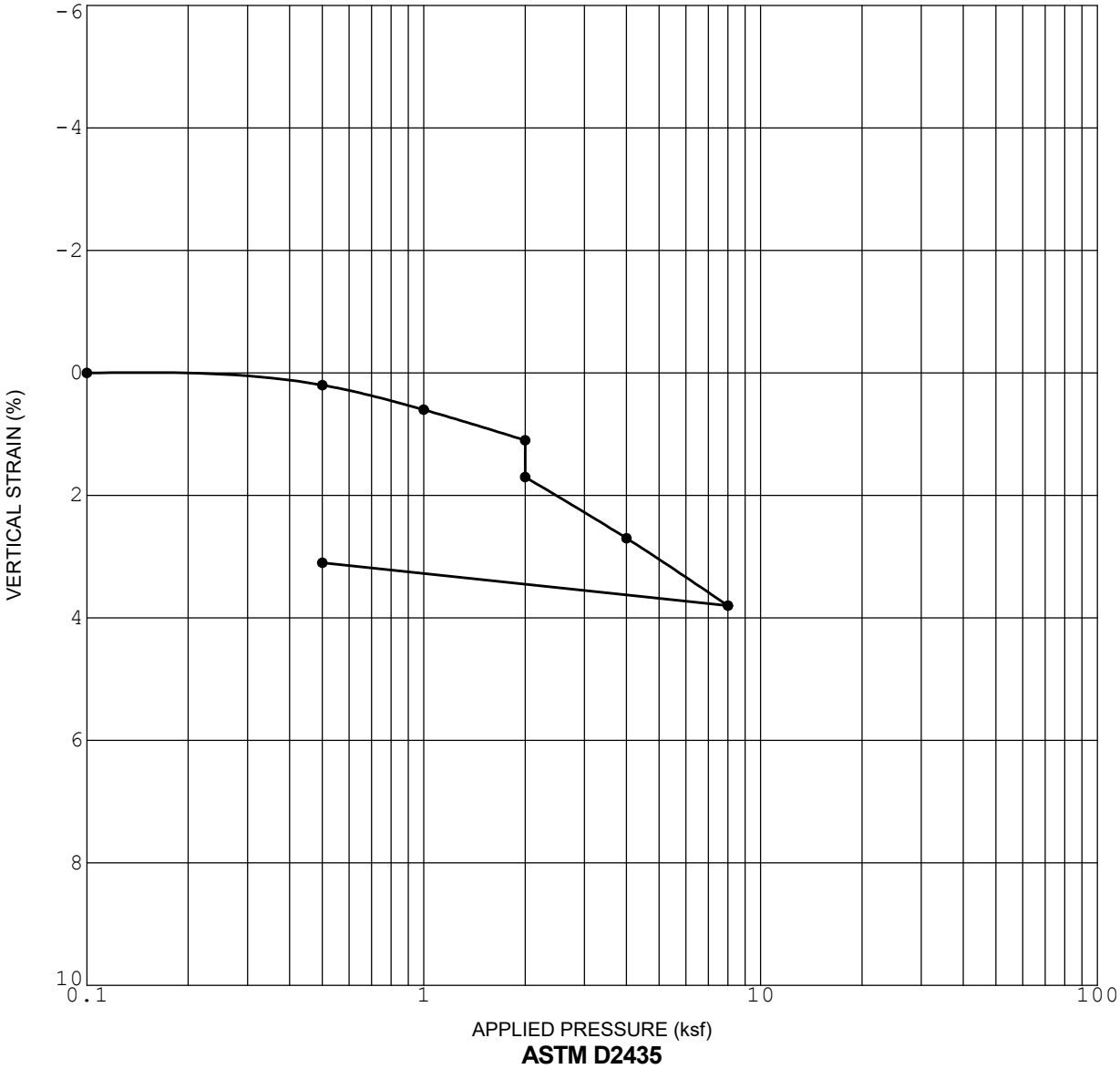
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PROJECT NO. G2307-32-05

SAMPLE NO. SB3-3



ASTM D2435

Initial Dry Density (pcf)	110.8	**Initial Saturation (%)**	49.8
Initial Water Content (%)	9.3	**Sample Saturated at (ksf)**	2.0

CONSOLIDATION CURVE

PIRAEUS POINT

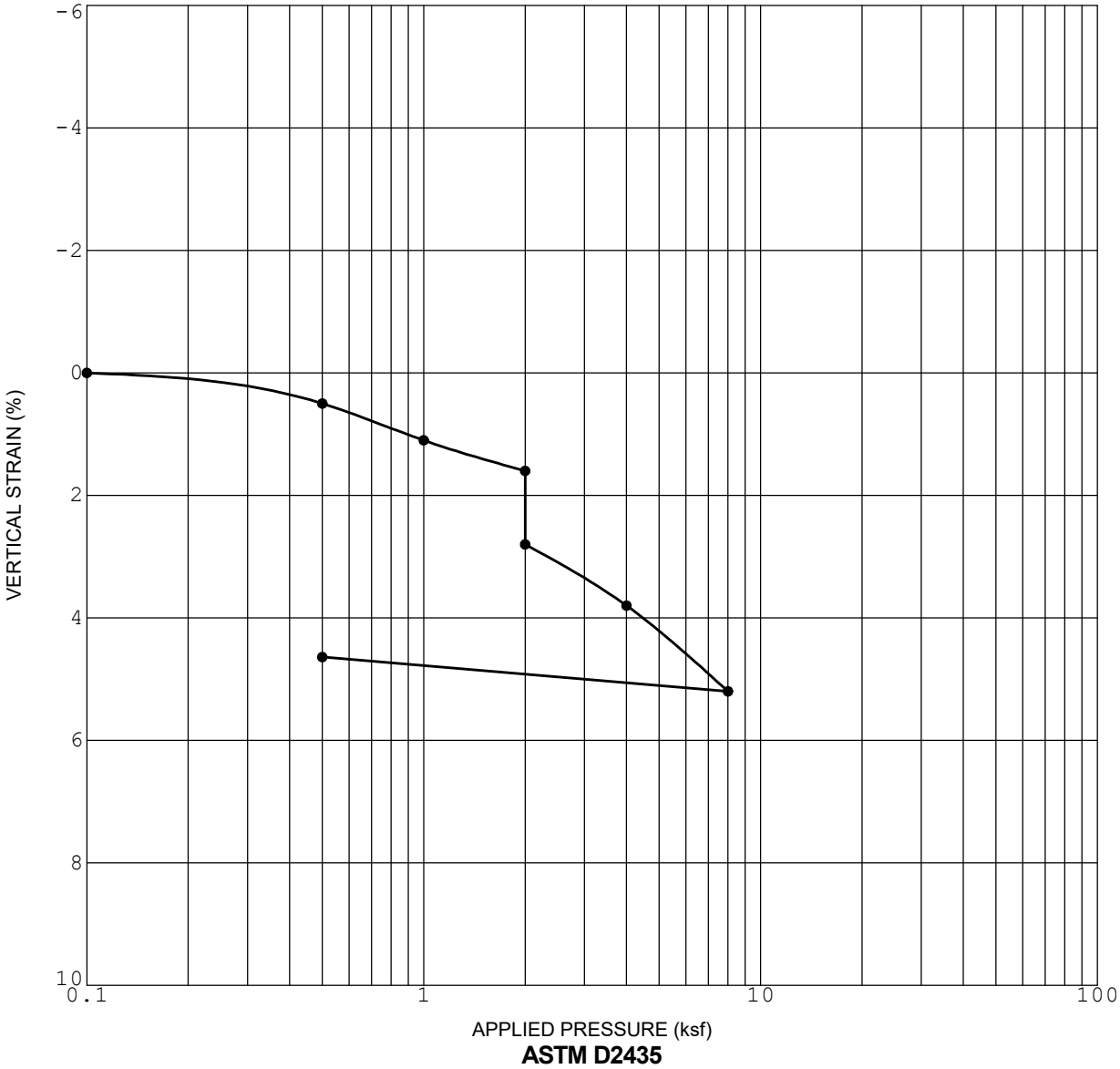
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PROJECT NO. G2307-32-05

SAMPLE NO. SB3-5



ASTM D2435

Initial Dry Density (pcf)	116.1	**Initial Saturation (%)**	58.0
Initial Water Content (%)	9.4	**Sample Saturated at (ksf)**	2.0

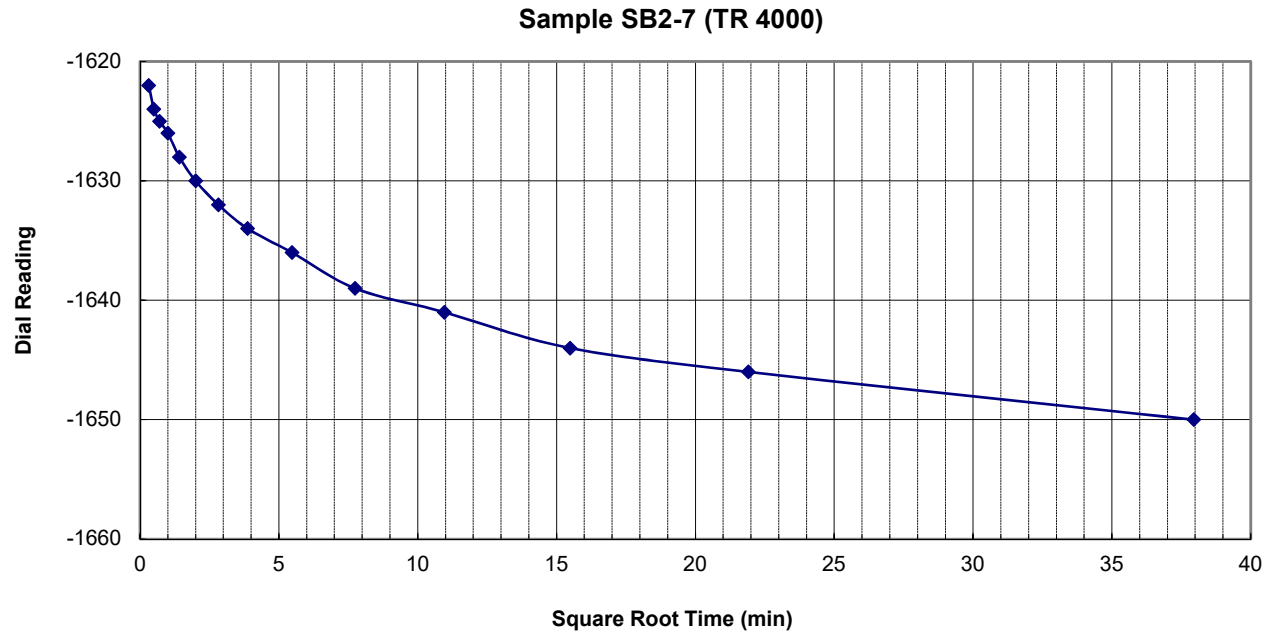
CONSOLIDATION CURVE

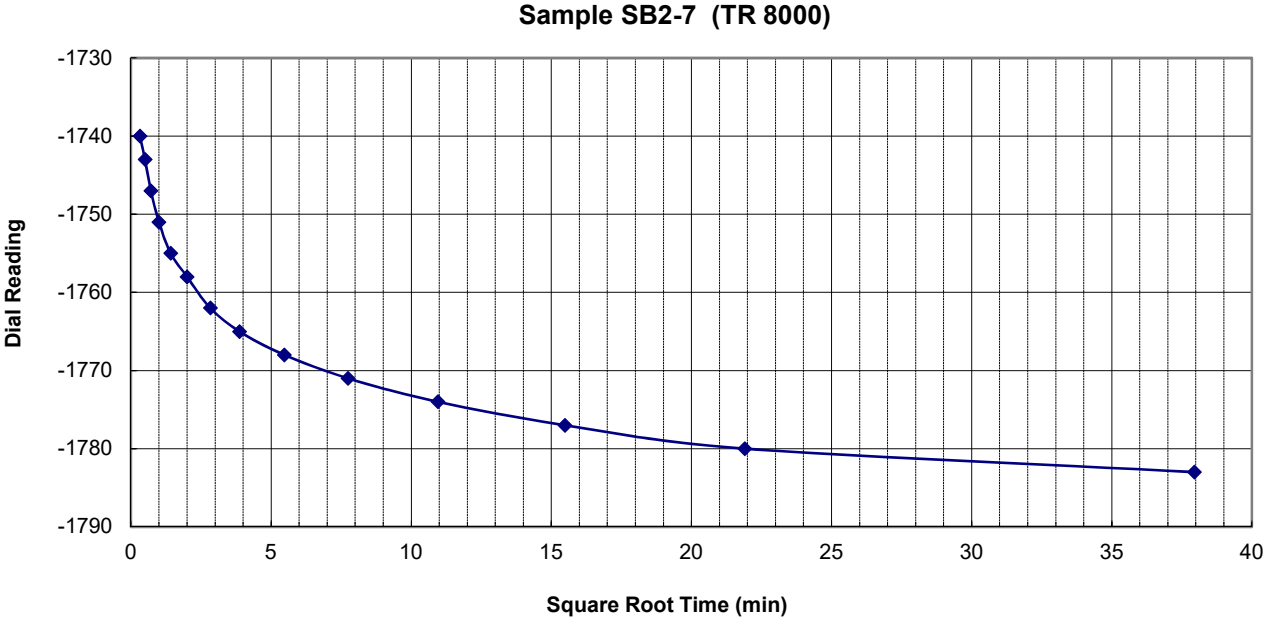
PIRAEUS POINT

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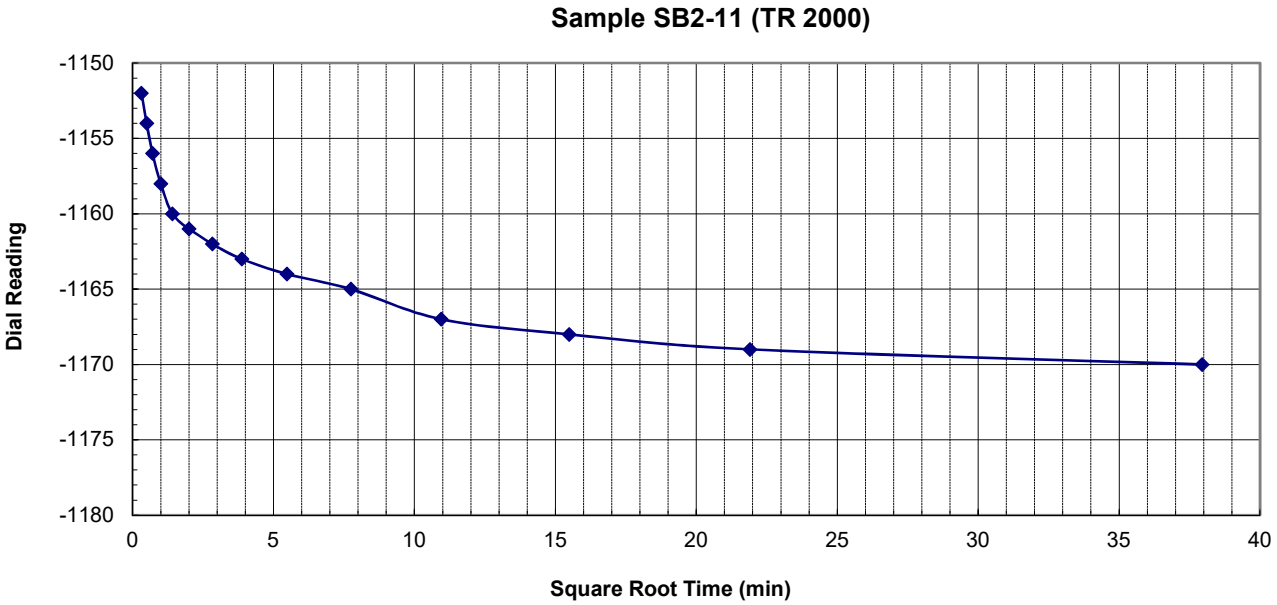
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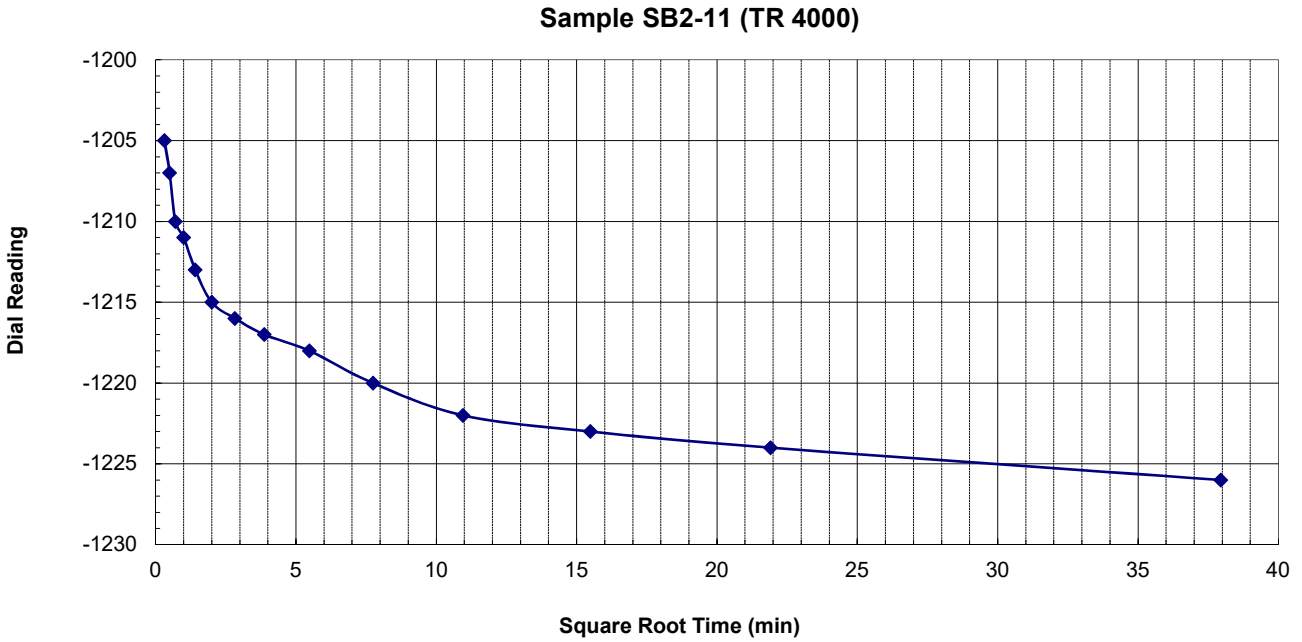
LR / SW

TIME RATE OF CONSOLIDATION RESULTS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05





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PHONE 858 558-6900 - FAX 858 558-6159

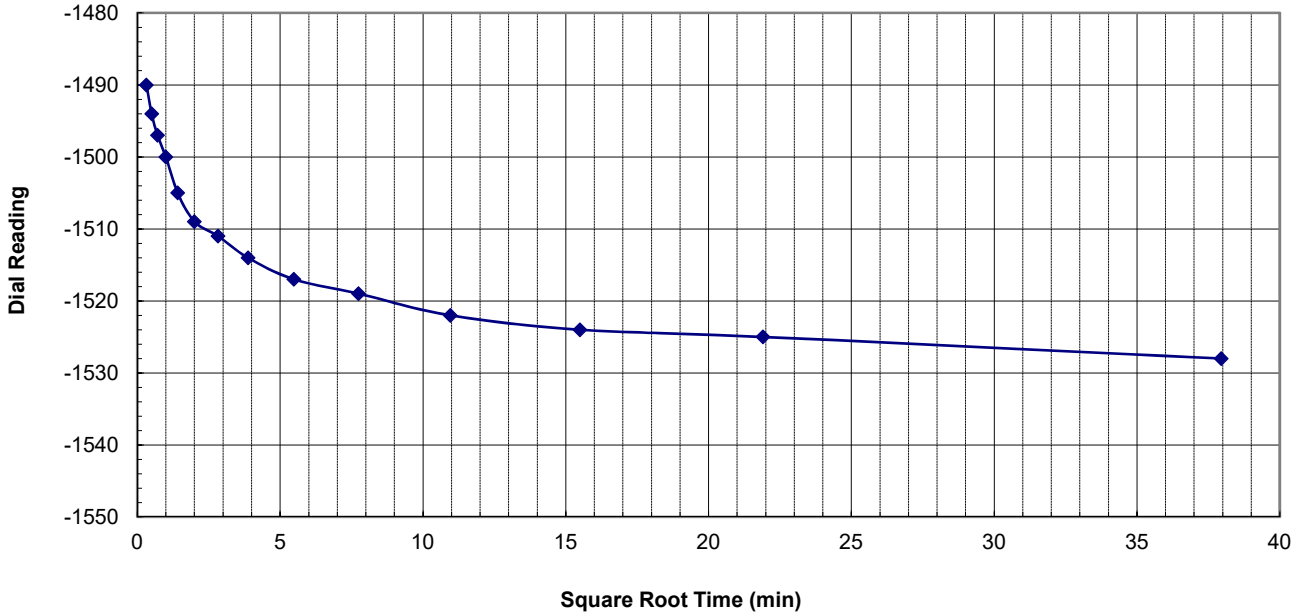
LR / SW

TIME RATE OF CONSOLIDATION RESULTS

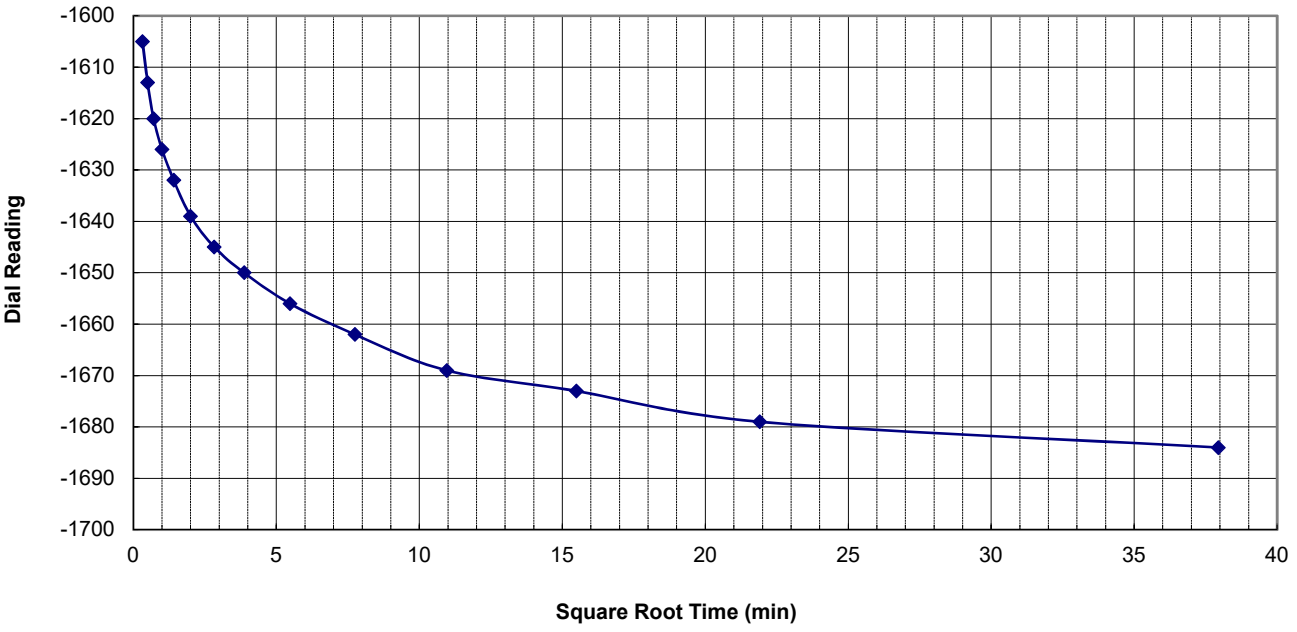
PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

Sample SB3-4 (TR 4000)



Sample SB3-4 (TR 8000)



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LR / SW

TIME RATE OF CONSOLIDATION RESULTS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

APPENDIX C

APPENDIX C

SLOPE STABILITY ANALYSES

FOR

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case1.gsz
Date: 01/20/2022 Time: 02:55:21 PM

Proposed Condition
Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

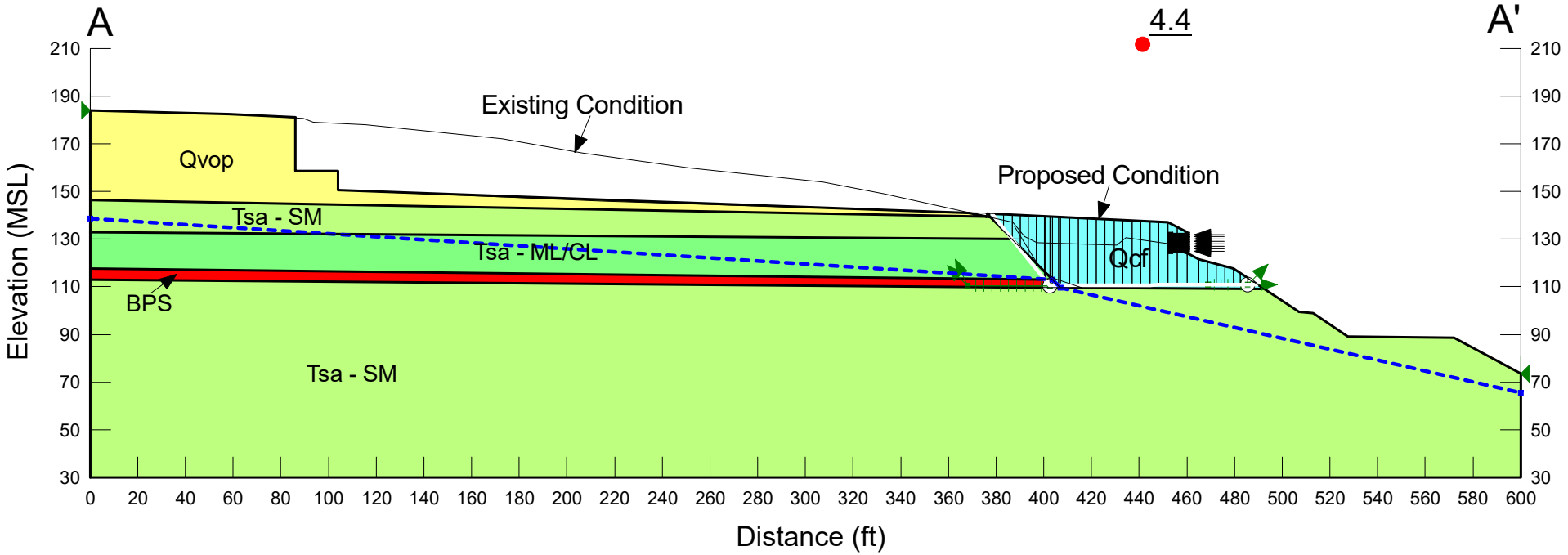


Figure C-1

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case1s.gsz
Date: 01/21/2022 Time: 09:00:42 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

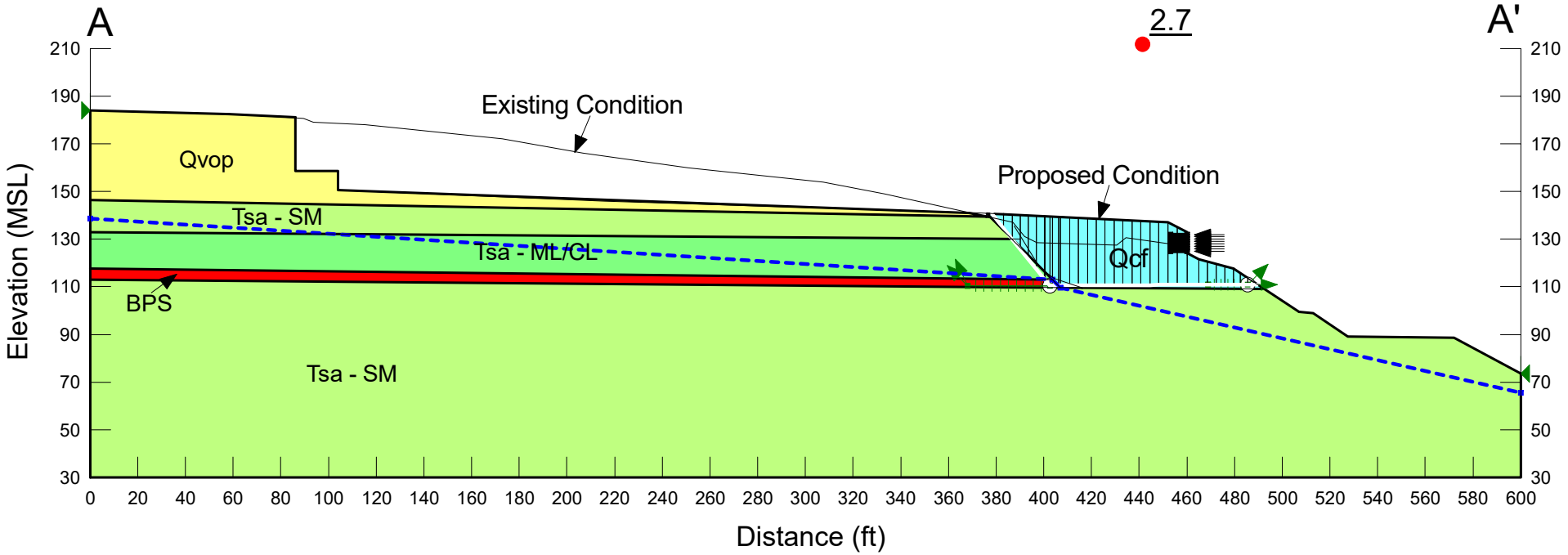


Figure C-2

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case2.gsz
Date: 01/20/2022 Time: 02:57:03 PM

Proposed Condition
Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

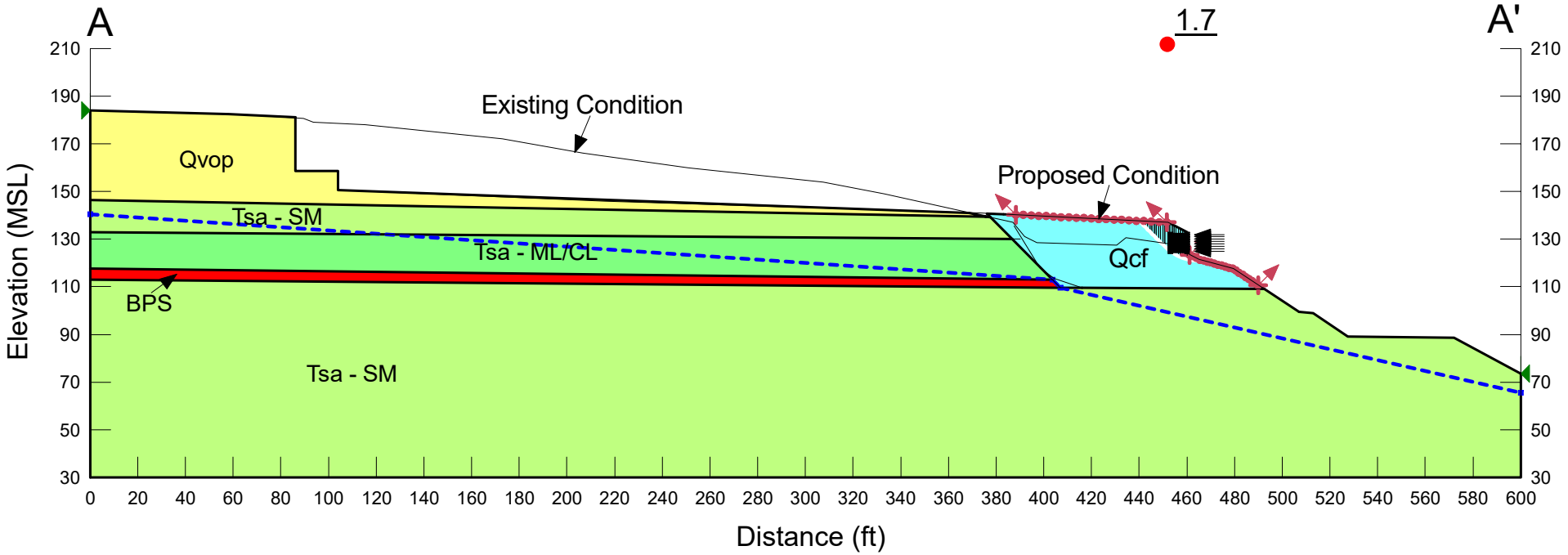


Figure C-3

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case2s.gsz
Date: 01/21/2022 Time: 09:03:00 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

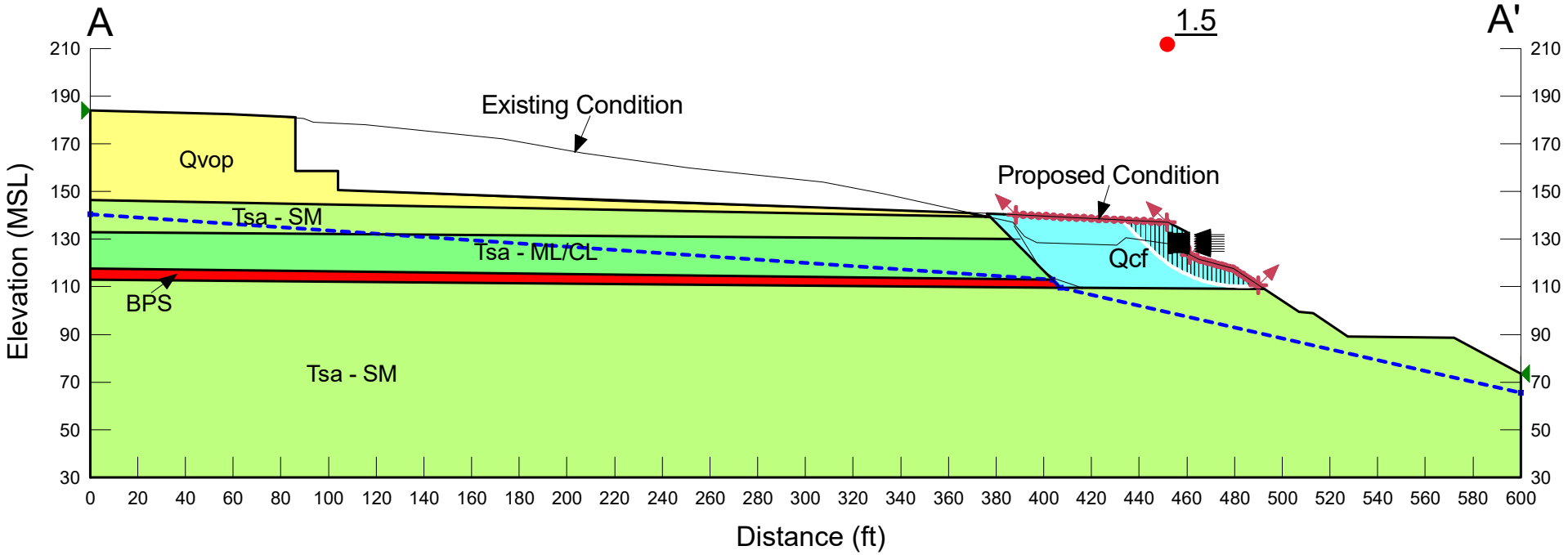


Figure C-4

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case3.gsz
Date: 01/20/2022 Time: 02:58:54 PM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

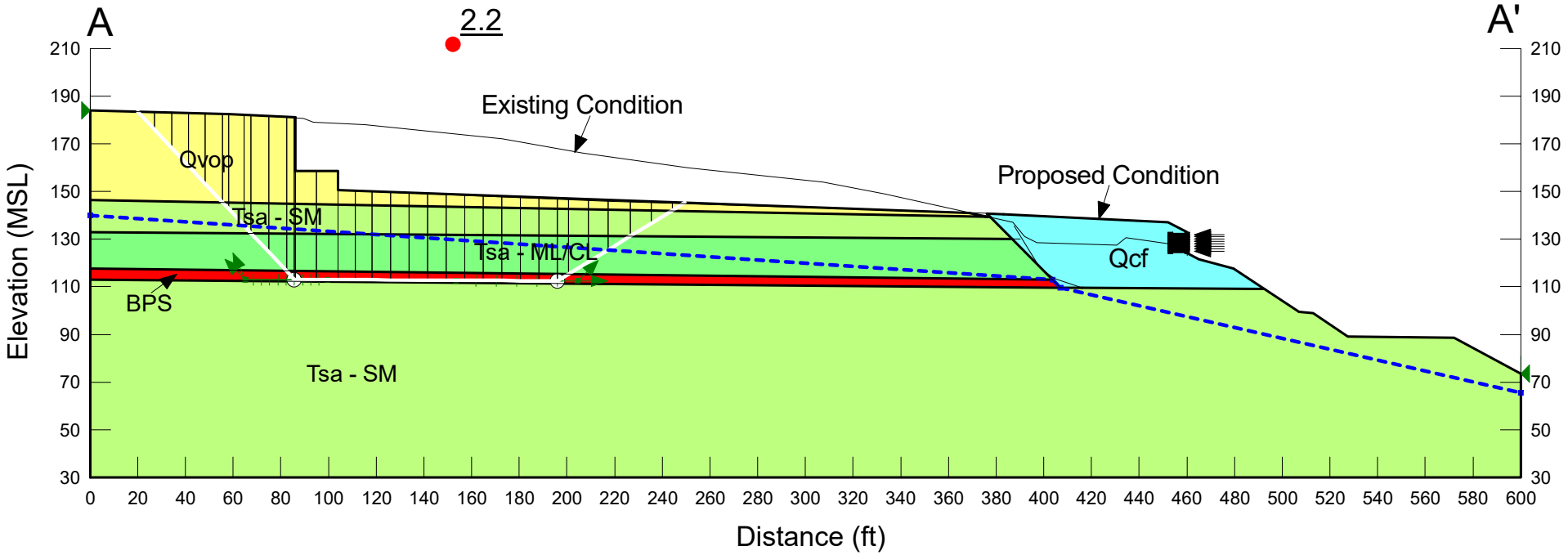


Figure C-5

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case3s.gsz
Date: 01/21/2022 Time: 09:08:25 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

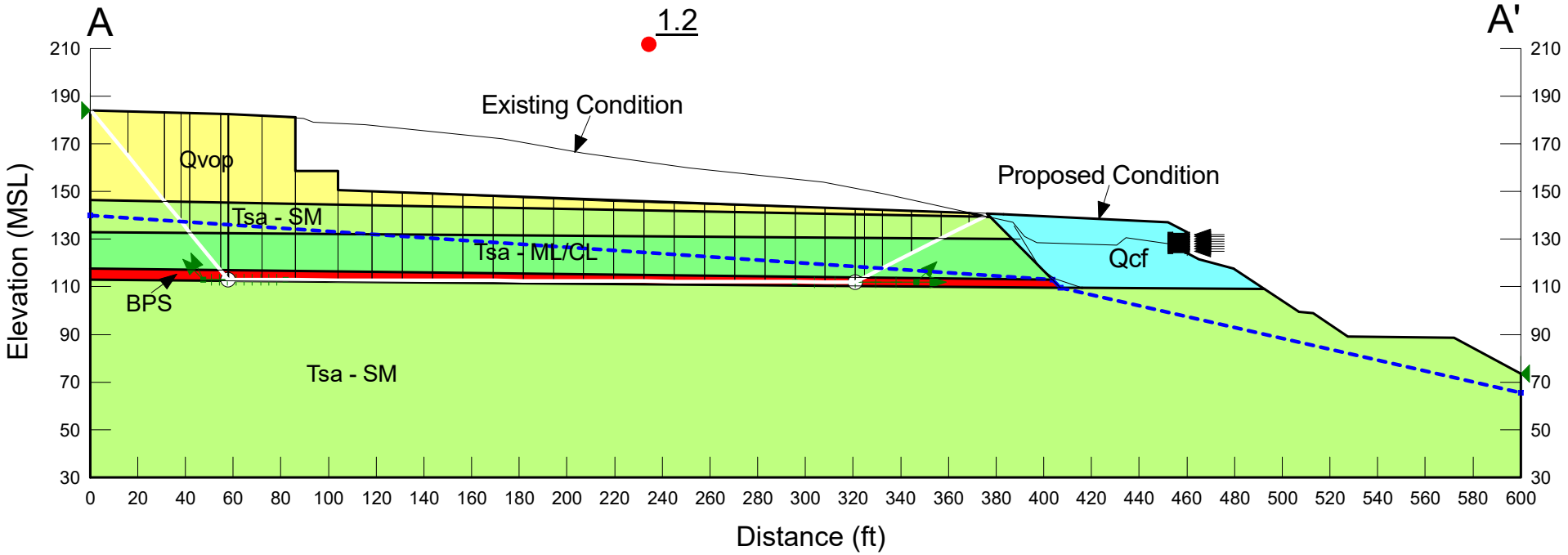


Figure C-6

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case4.gsz
Date: 01/20/2022 Time: 03:12:49 PM

Proposed Condition

Static Analysis

Micropile Wall (6,500 lbf/ft reinforcement load)

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

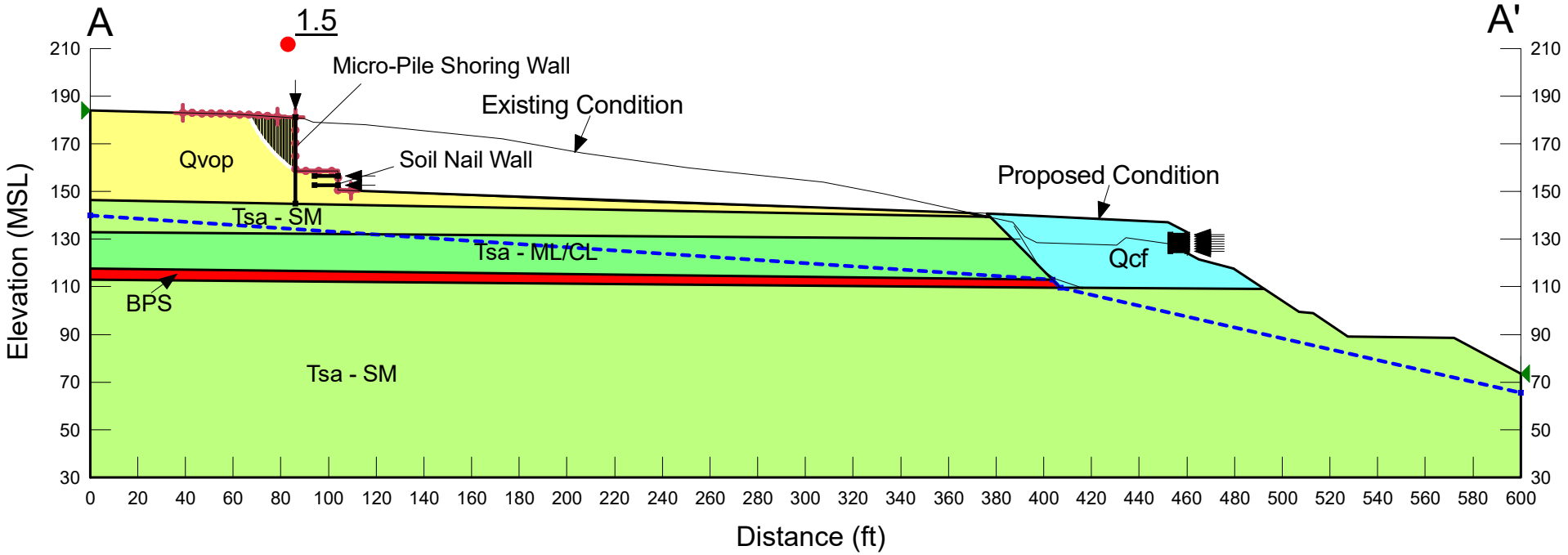


Figure C-7

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case4s.gsz
Date: 01/21/2022 Time: 09:10:50 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Micropile Wall (6,500 lbf/ft reinforcement load)

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

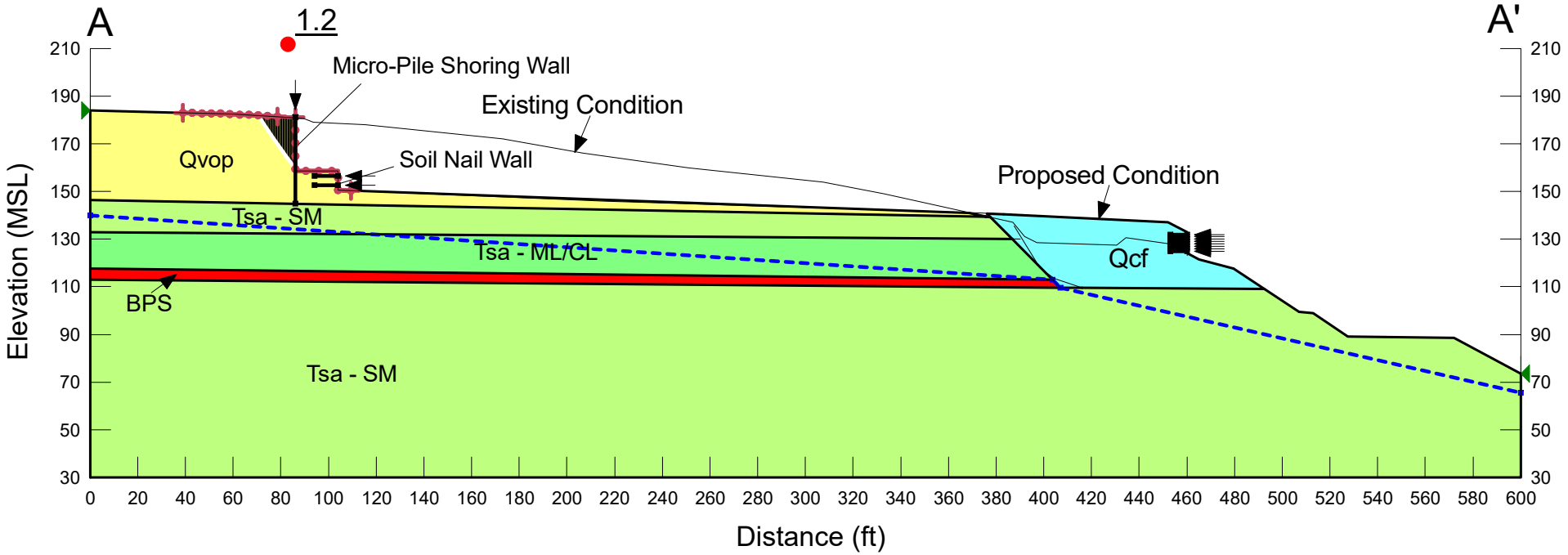


Figure C-8

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case5.gsz
Date: 01/20/2022 Time: 03:18:38 PM

Proposed Condition

Static Analysis

Micropile Wall (6,500 lbf/ft reinforcement load)

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

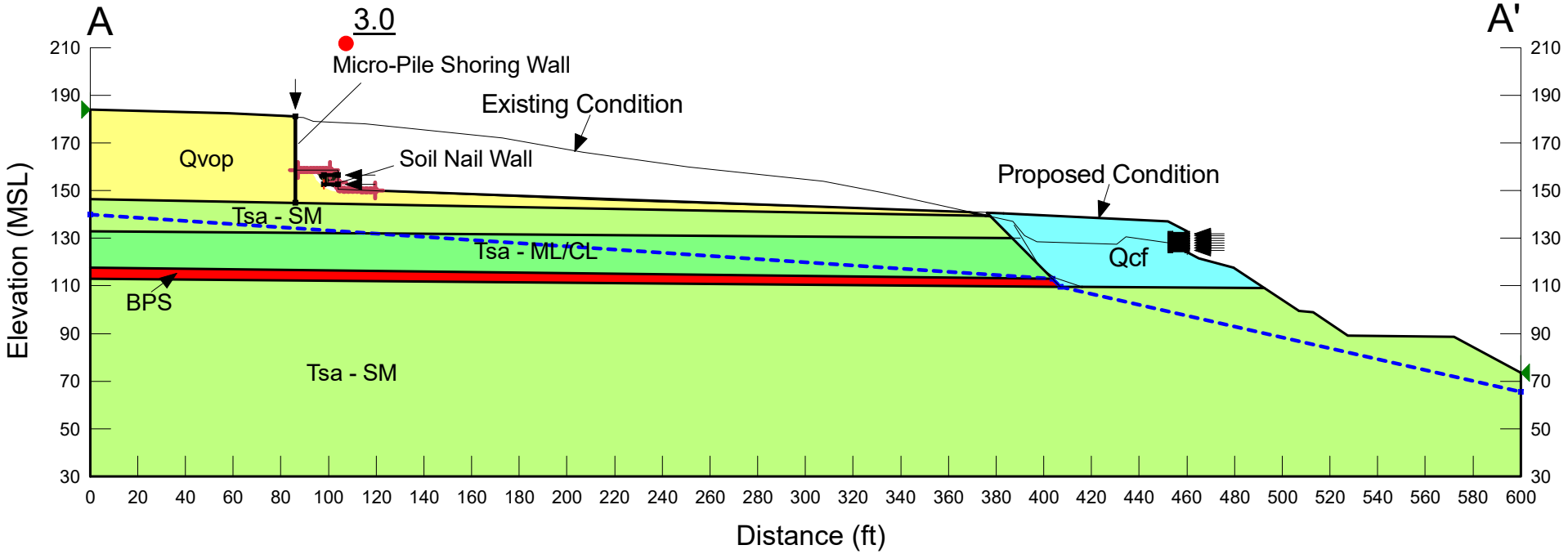


Figure C-9

Piraeus Point
Project No. G2307-32-05
Section A-A'
Name: AA-Case5s.gsz
Date: 01/21/2022 Time: 09:13:09 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Micropile Wall (6,500 lbf/ft reinforcement load)

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

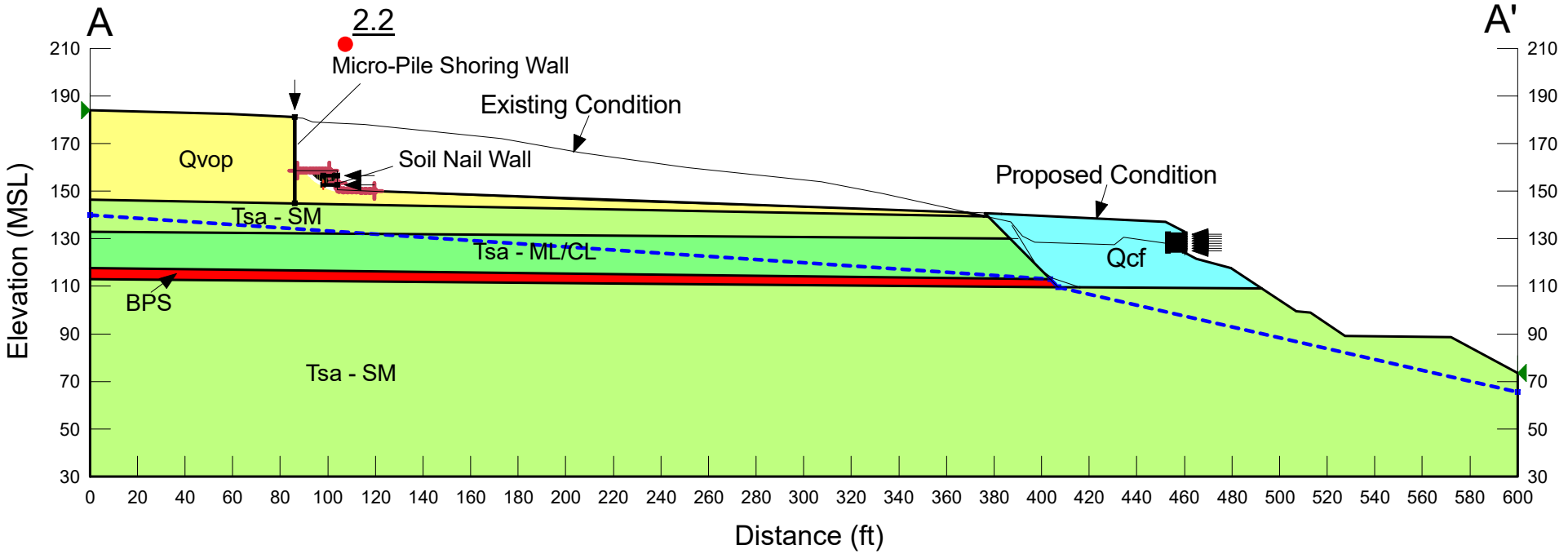


Figure C-10

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case1.gsz
Date: 01/21/2022 Time: 09:37:58 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

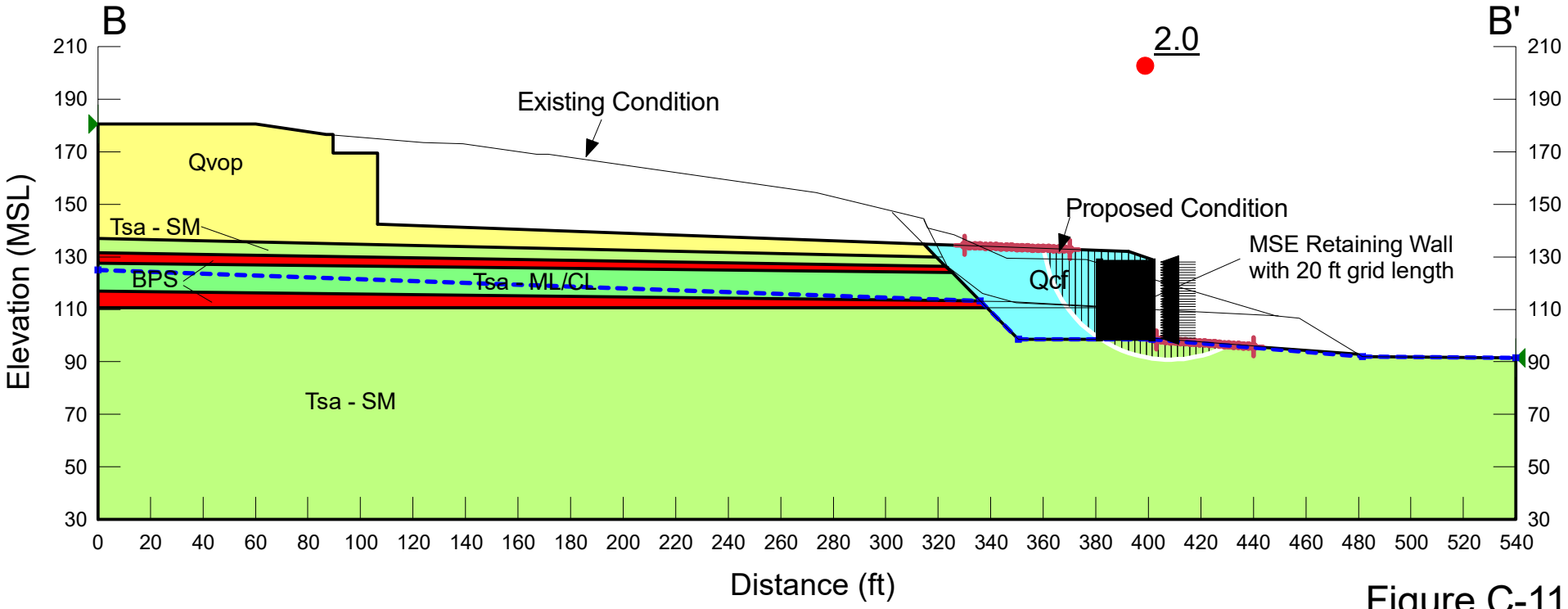


Figure C-11

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case1s.gsz
Date: 01/21/2022 Time: 09:39:10 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

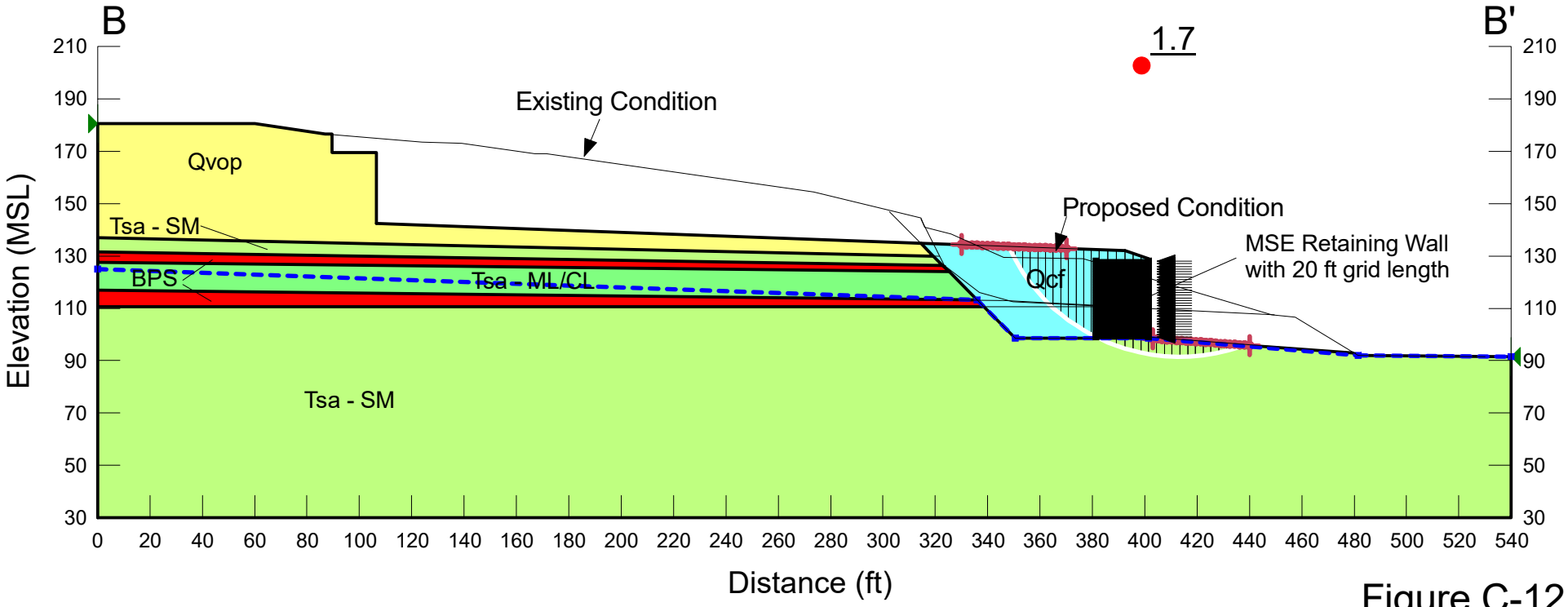


Figure C-12

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case2.gsz
Date: 01/21/2022 Time: 09:40:20 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

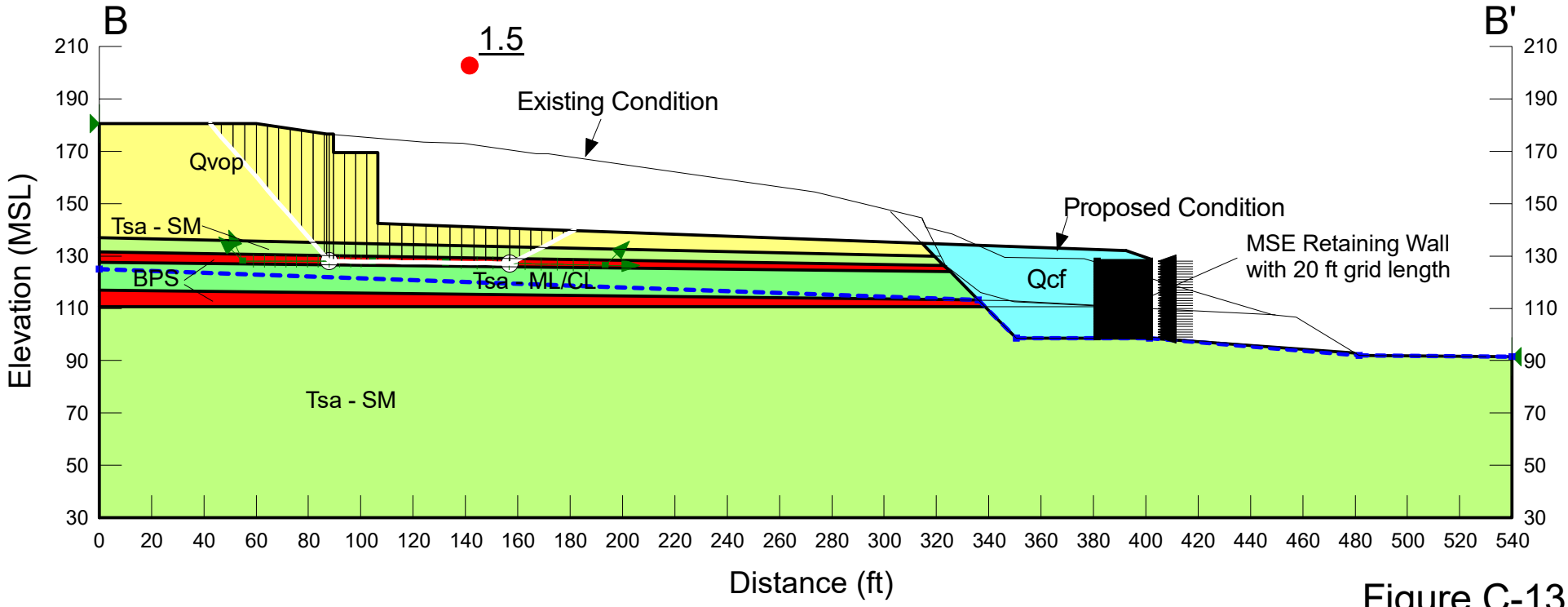


Figure C-13

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case2s.gsz
Date: 01/21/2022 Time: 09:41:31 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

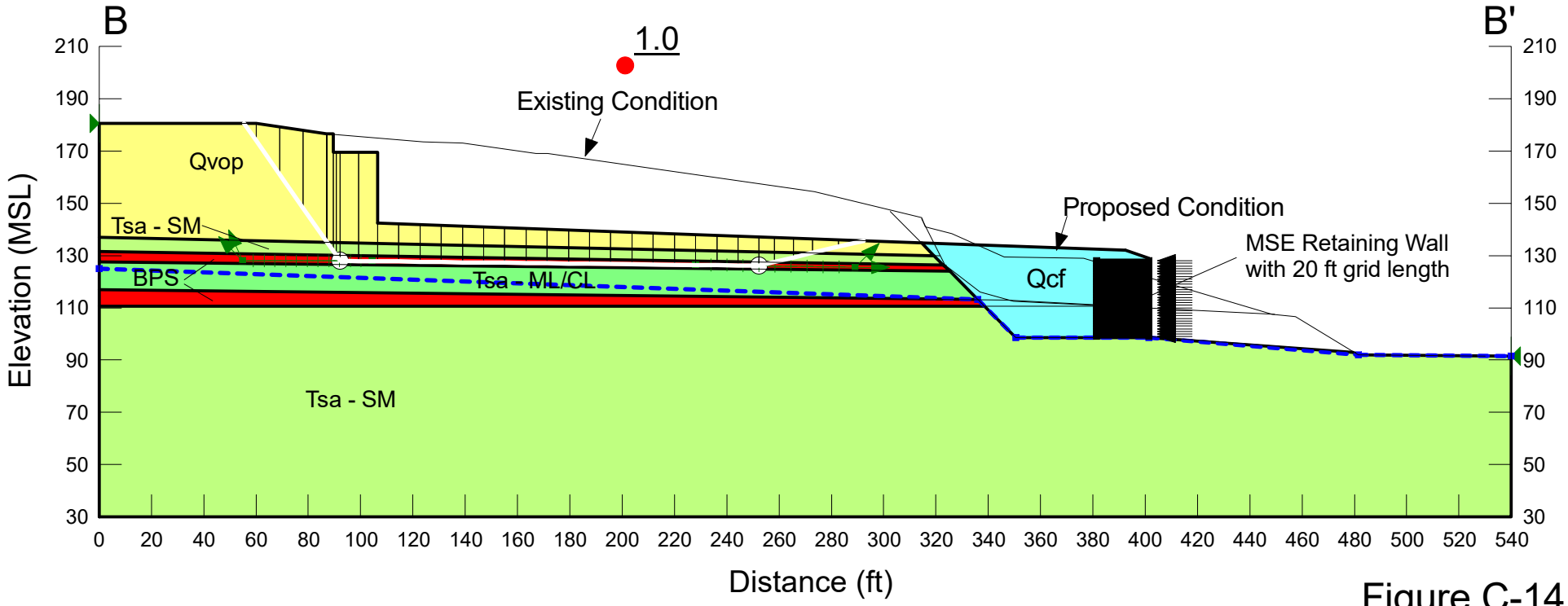


Figure C-14

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case3.gsz
Date: 01/21/2022 Time: 09:57:23 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

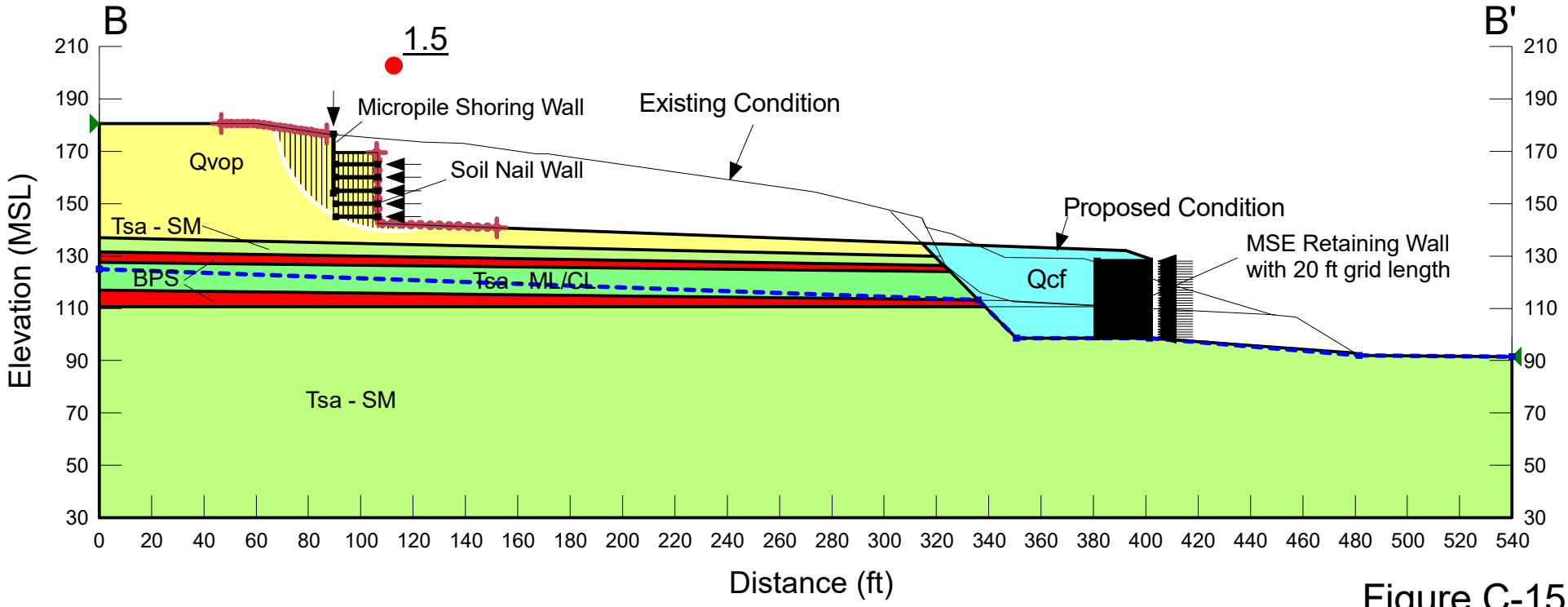


Figure C-15

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case3s.gsz
Date: 01/21/2022 Time: 10:00:04 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

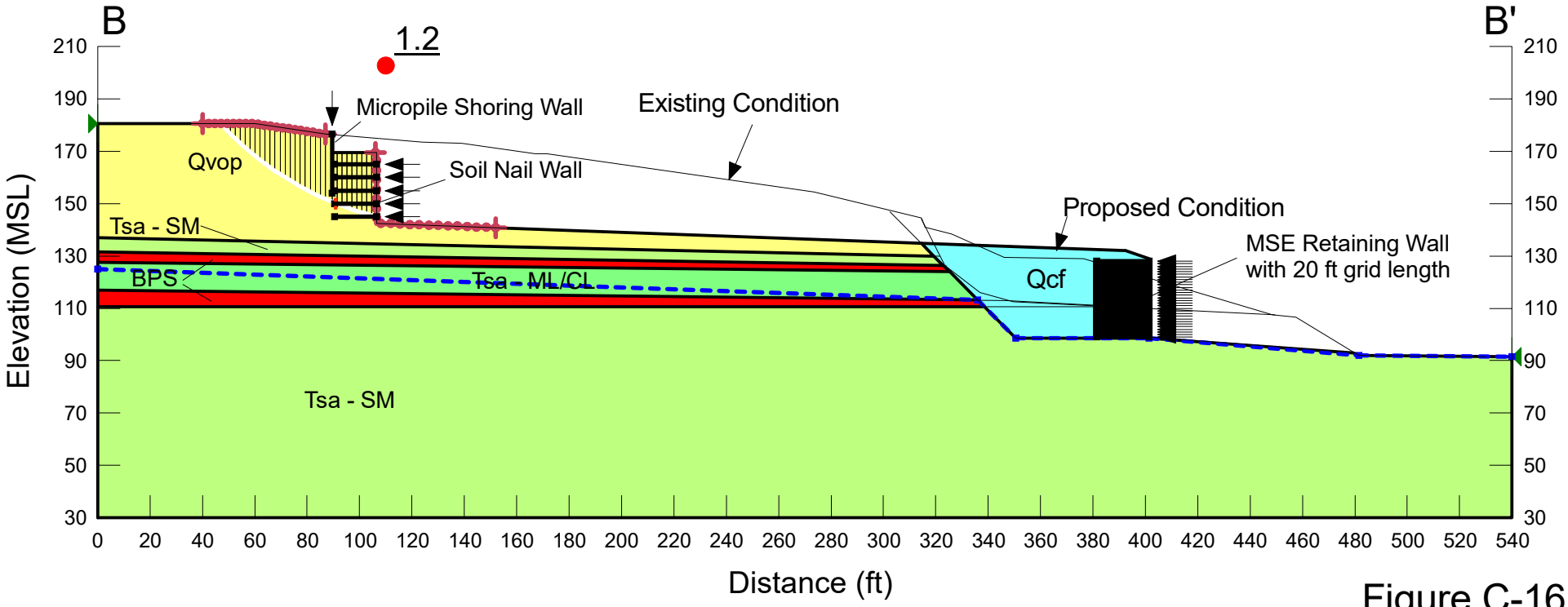


Figure C-16

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case4.gsz
Date: 01/21/2022 Time: 10:05:49 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

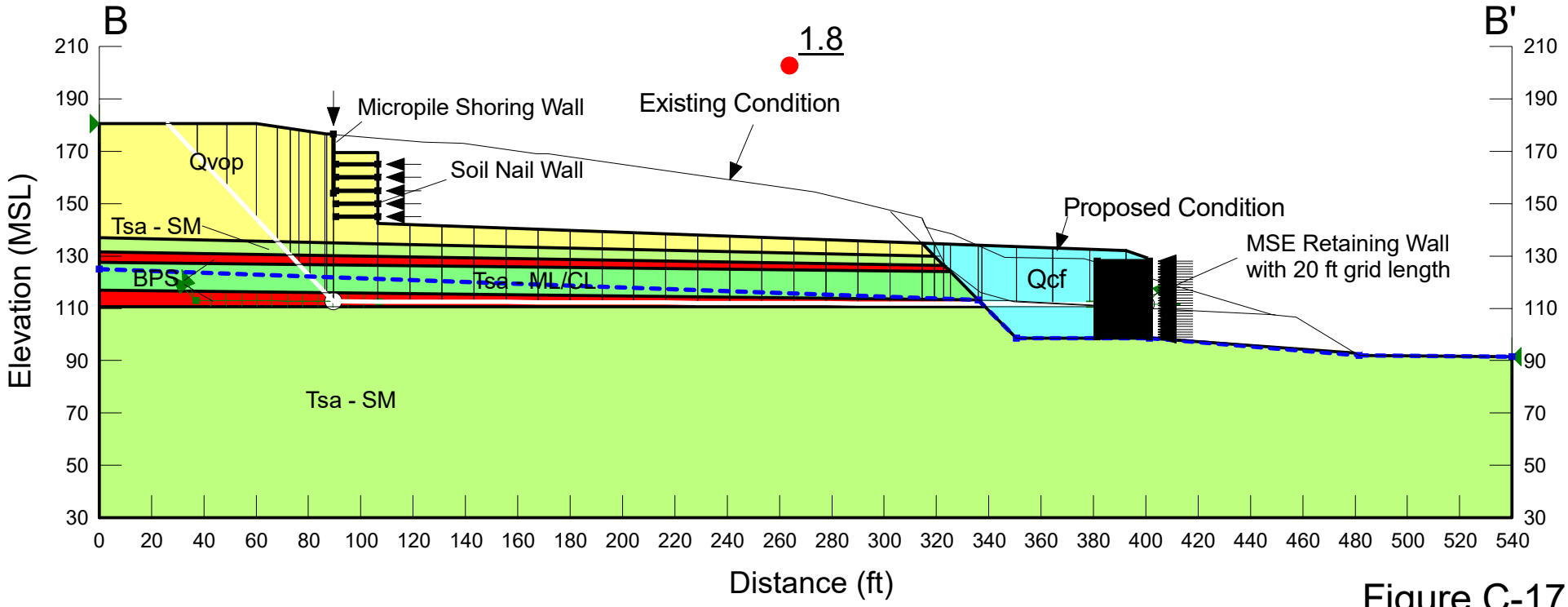


Figure C-17

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case4s.gsz
Date: 01/21/2022 Time: 10:07:34 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

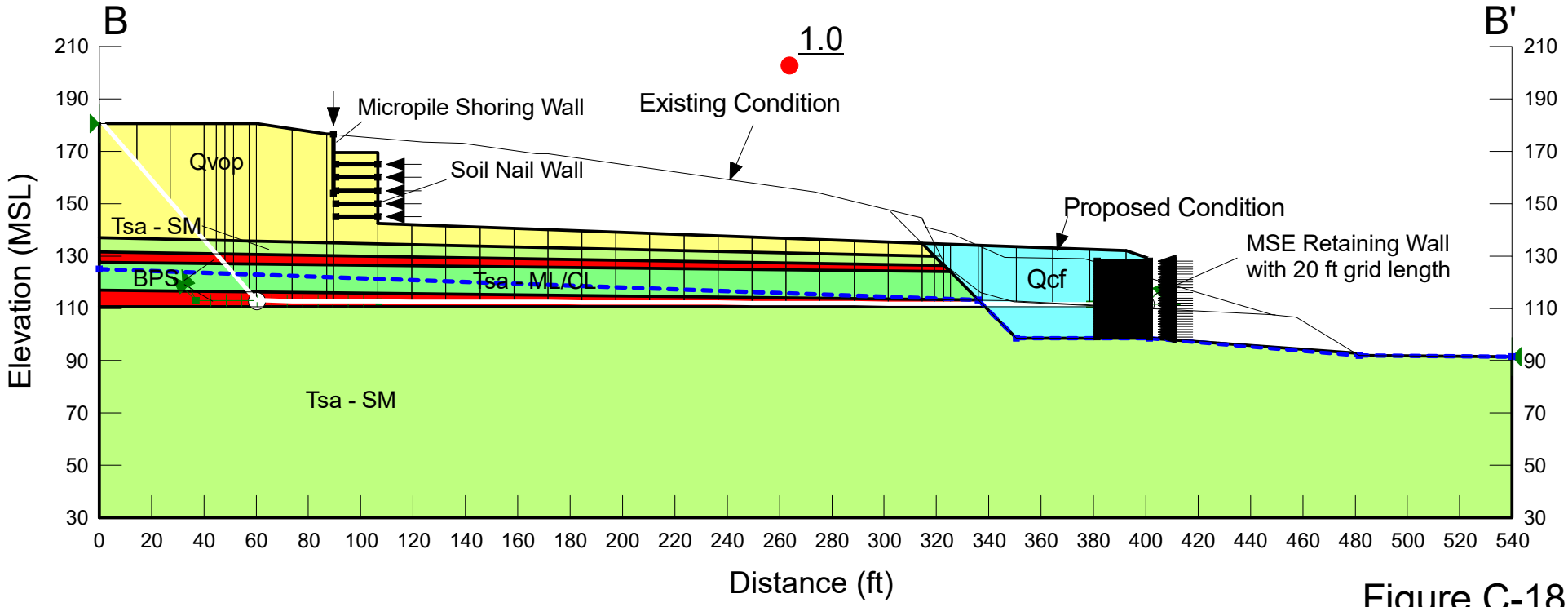


Figure C-18

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case5.gsz
Date: 01/21/2022 Time: 10:10:46 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

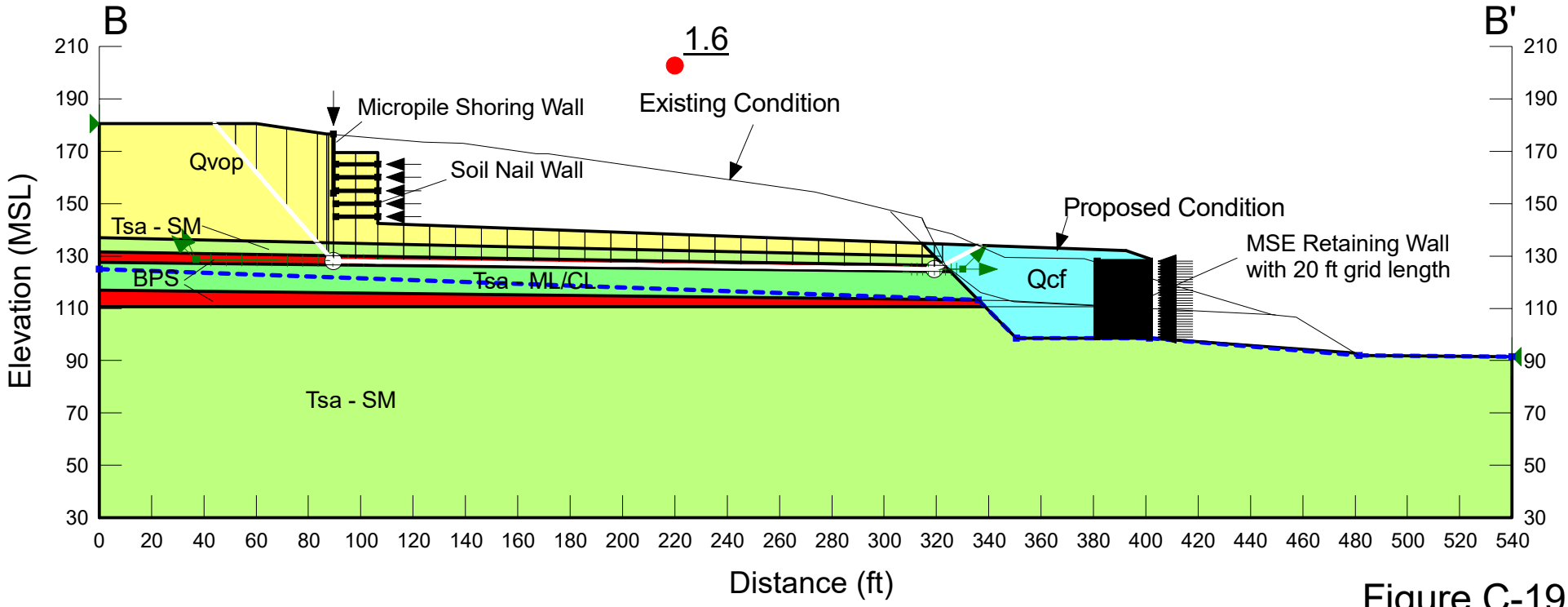


Figure C-19

Piraeus Point
Project No. G2307-32-05
Section B-B'
Name: BB-Case5s.gsz
Date: 01/21/2022 Time: 10:12:33 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

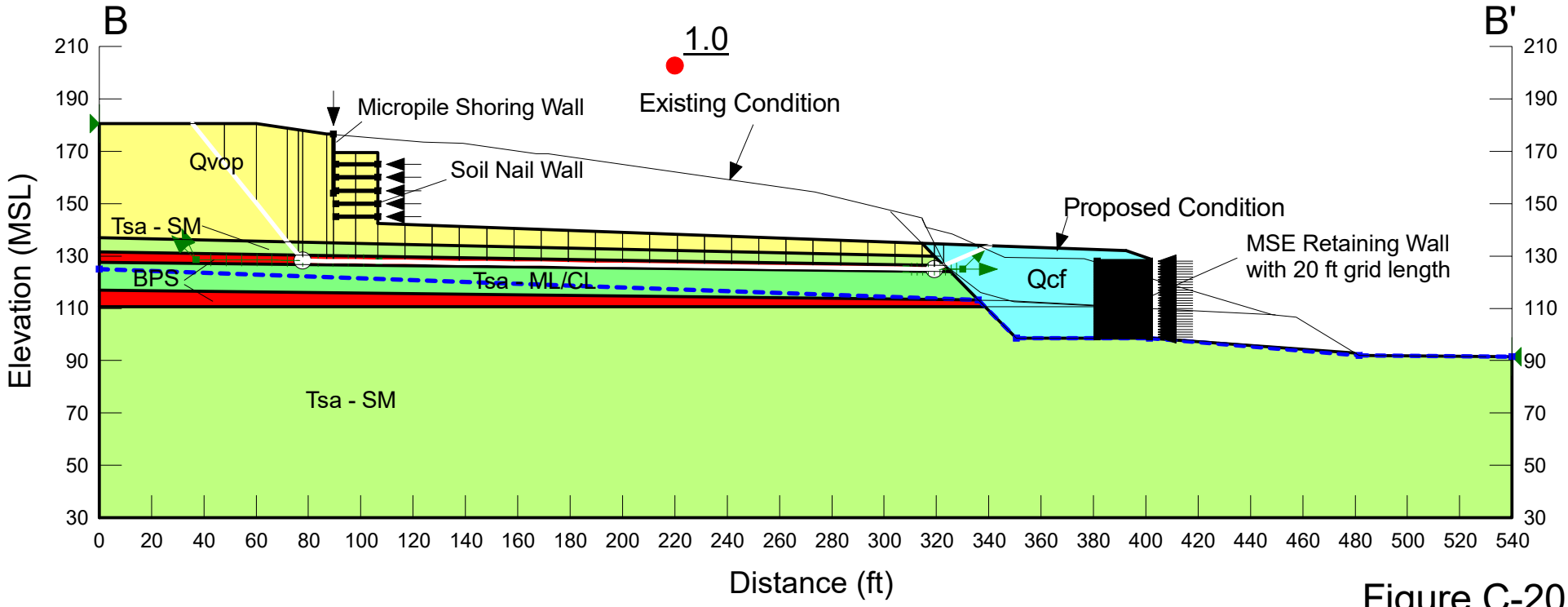


Figure C-20

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case1.gsz
Date: 01/21/2022 Time: 11:10:39 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

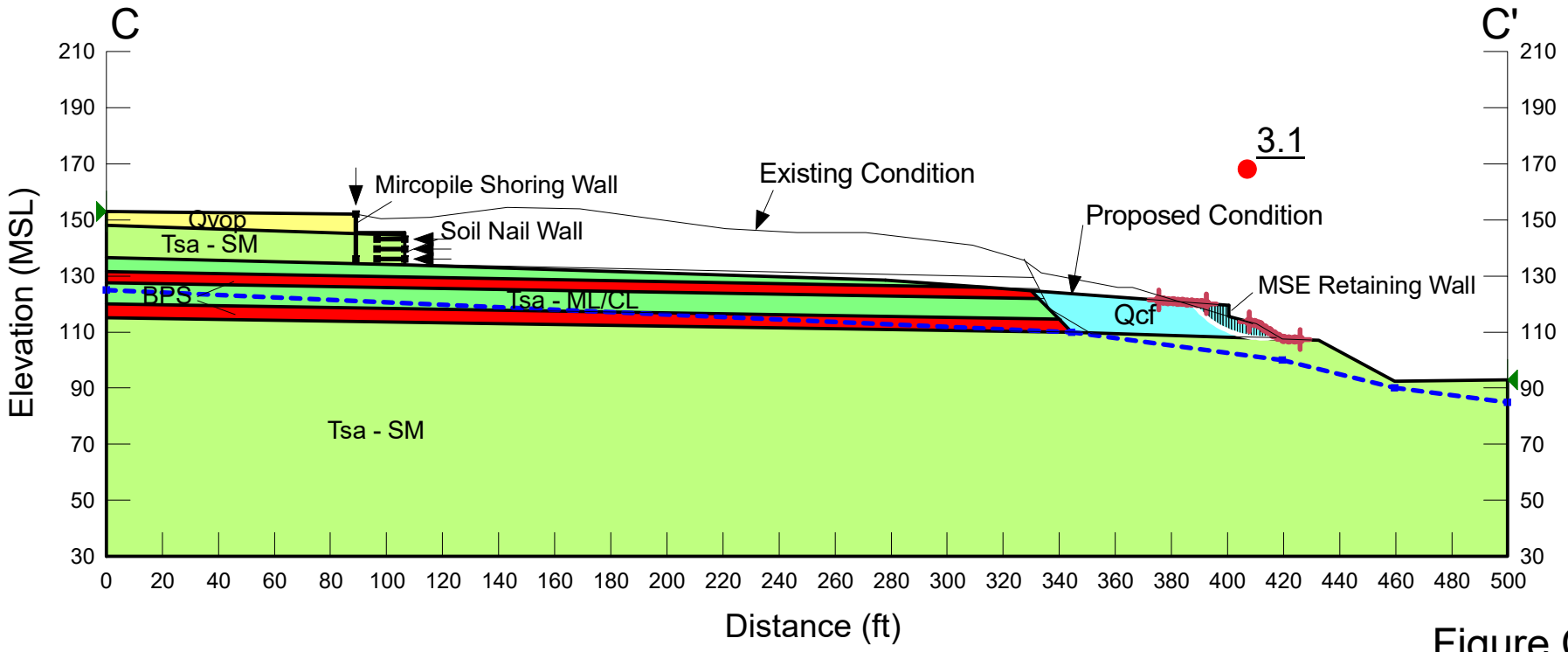


Figure C-21

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case1s.gsz
Date: 01/21/2022 Time: 11:12:31 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

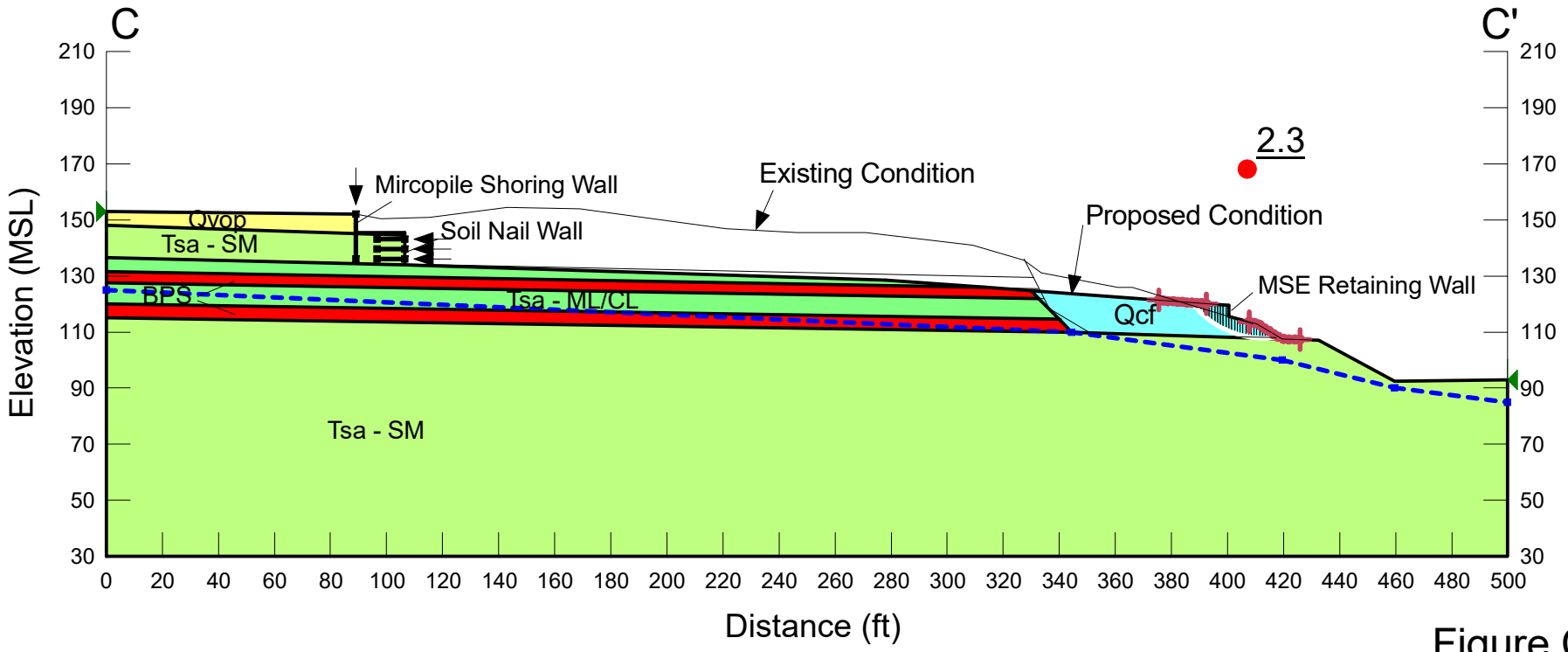


Figure C-22

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case2.gsz
Date: 01/21/2022 Time: 11:16:57 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

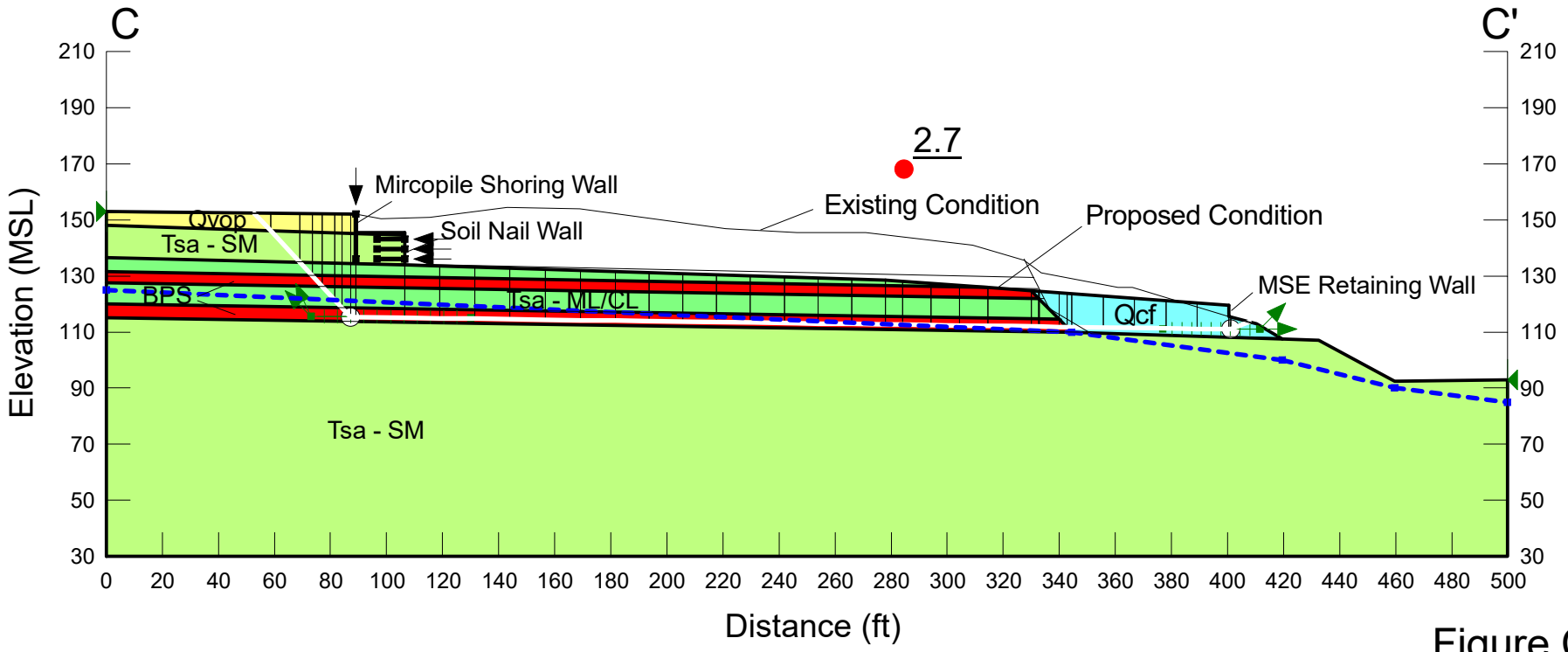


Figure C-23

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case2s.gsz
Date: 01/21/2022 Time: 11:22:11 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

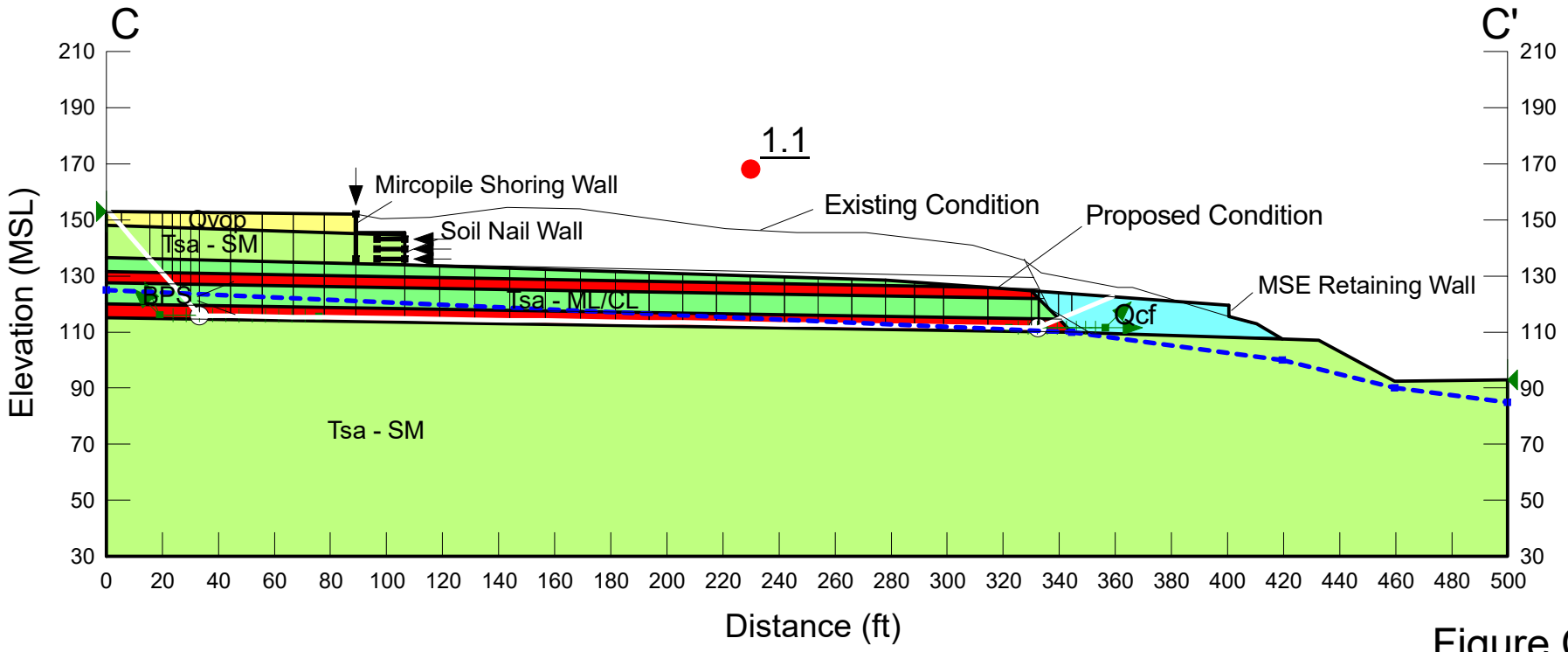


Figure C-24

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case3.gsz
Date: 01/21/2022 Time: 12:26:27 PM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

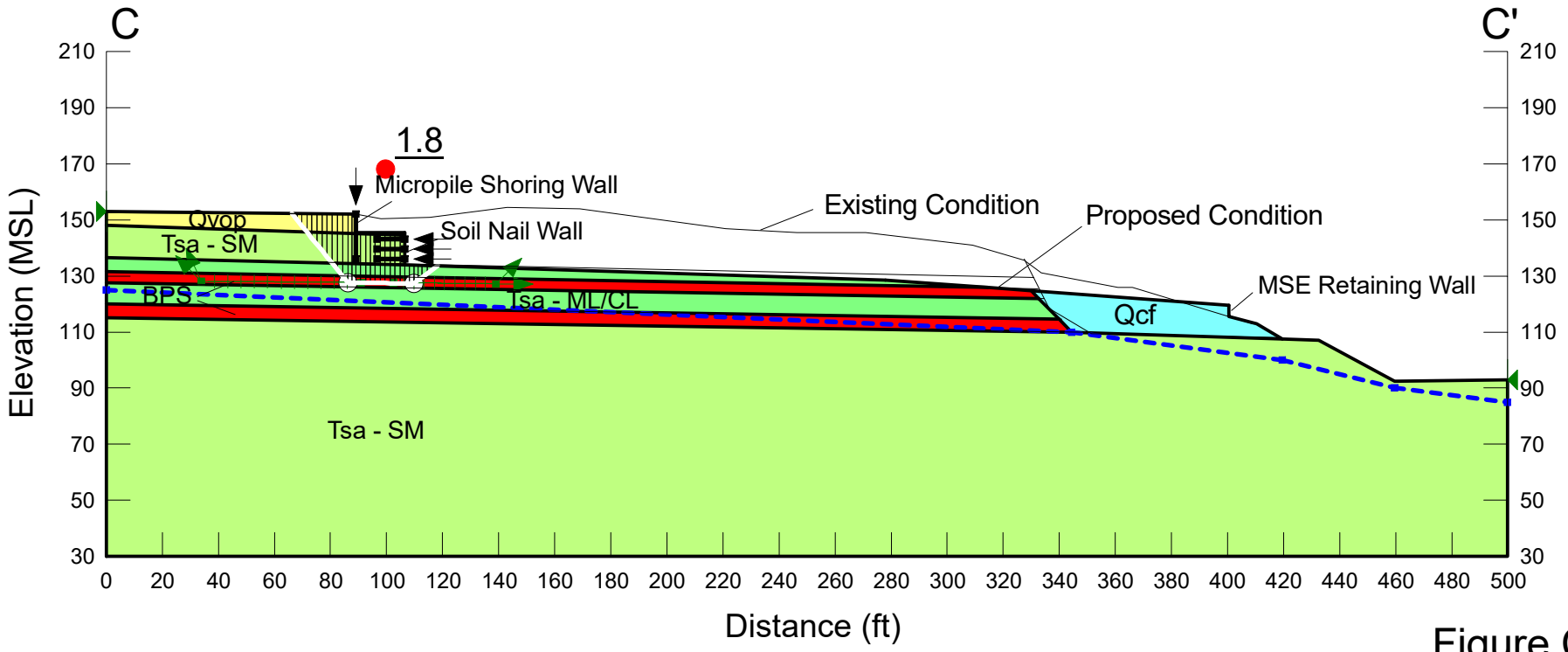


Figure C-25

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case3s.gsz
Date: 01/21/2022 Time: 12:32:57 PM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

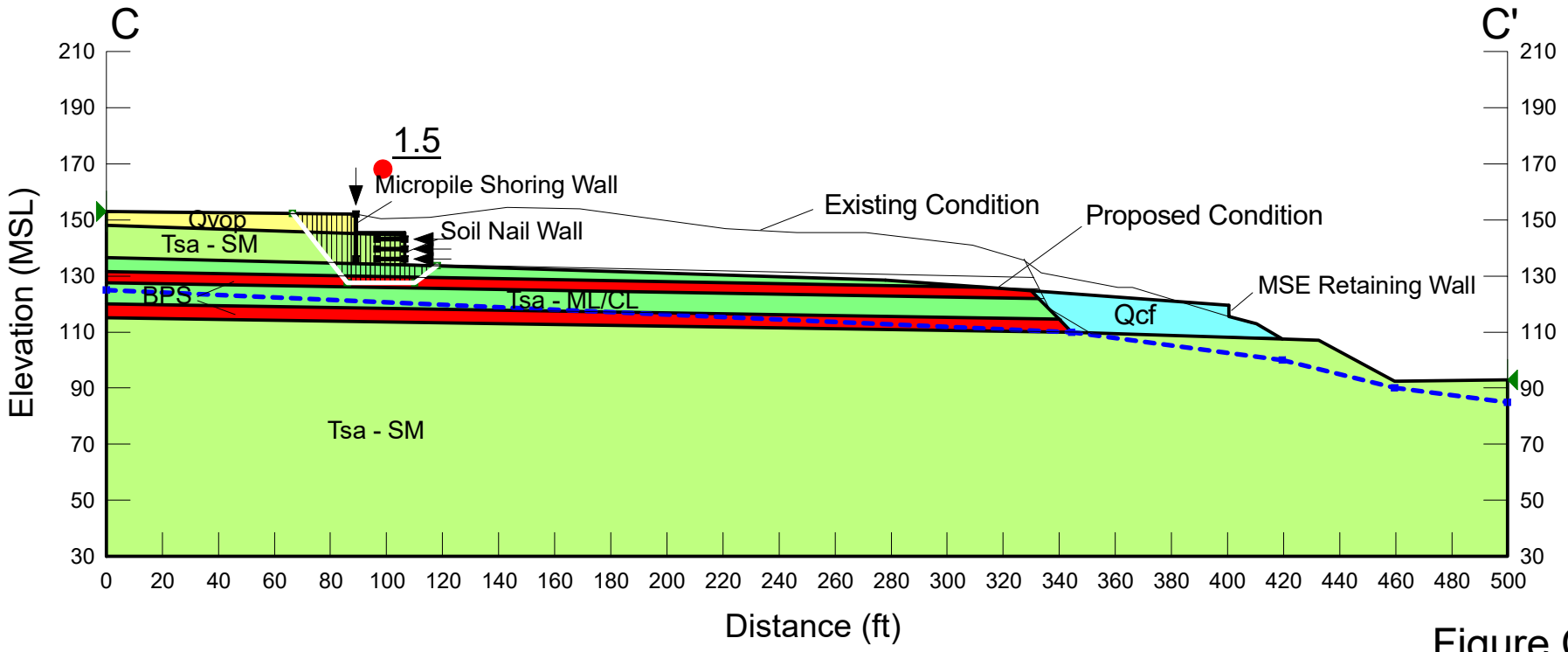


Figure C-26

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case4.gsz
Date: 01/21/2022 Time: 12:37:01 PM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

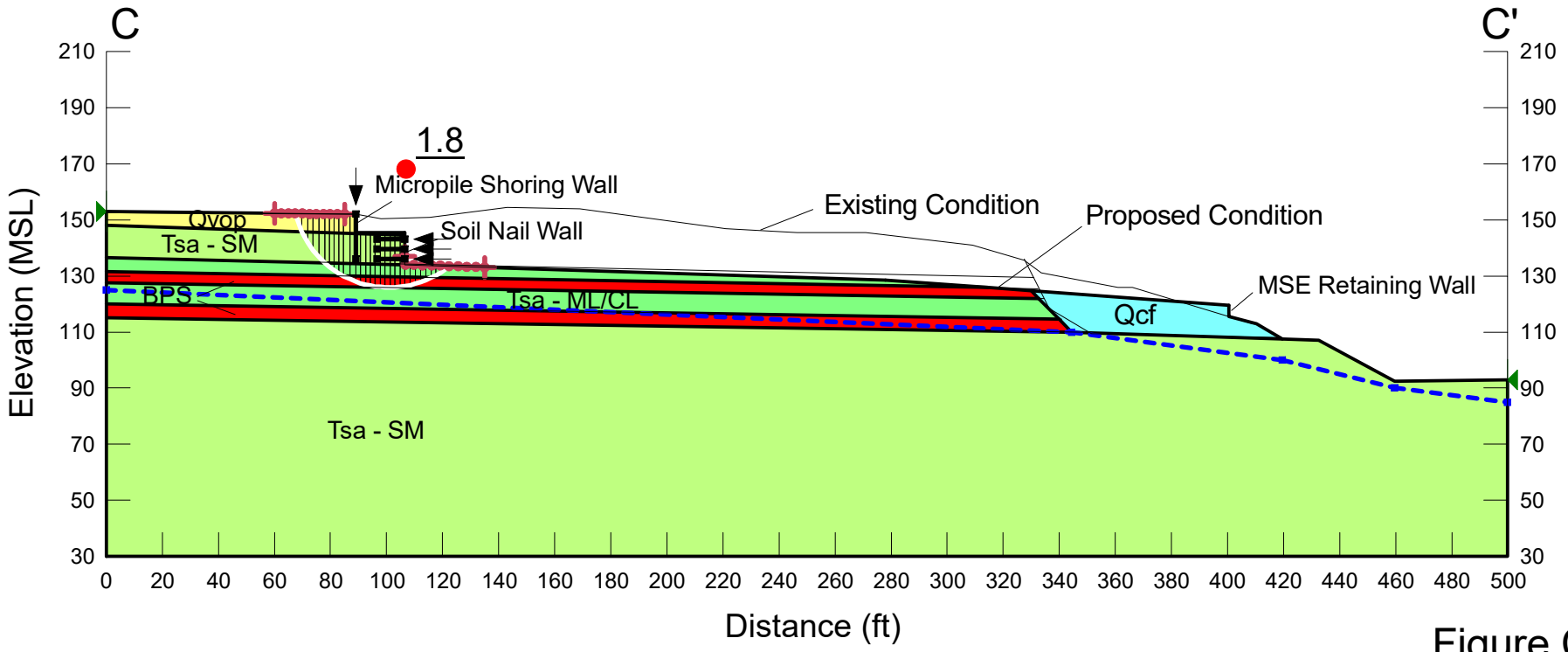


Figure C-27

Piraeus Point
Project No. G2307-32-05
Section C-C'
Name: CC-Case4s.gsz
Date: 01/21/2022 Time: 12:38:21 PM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

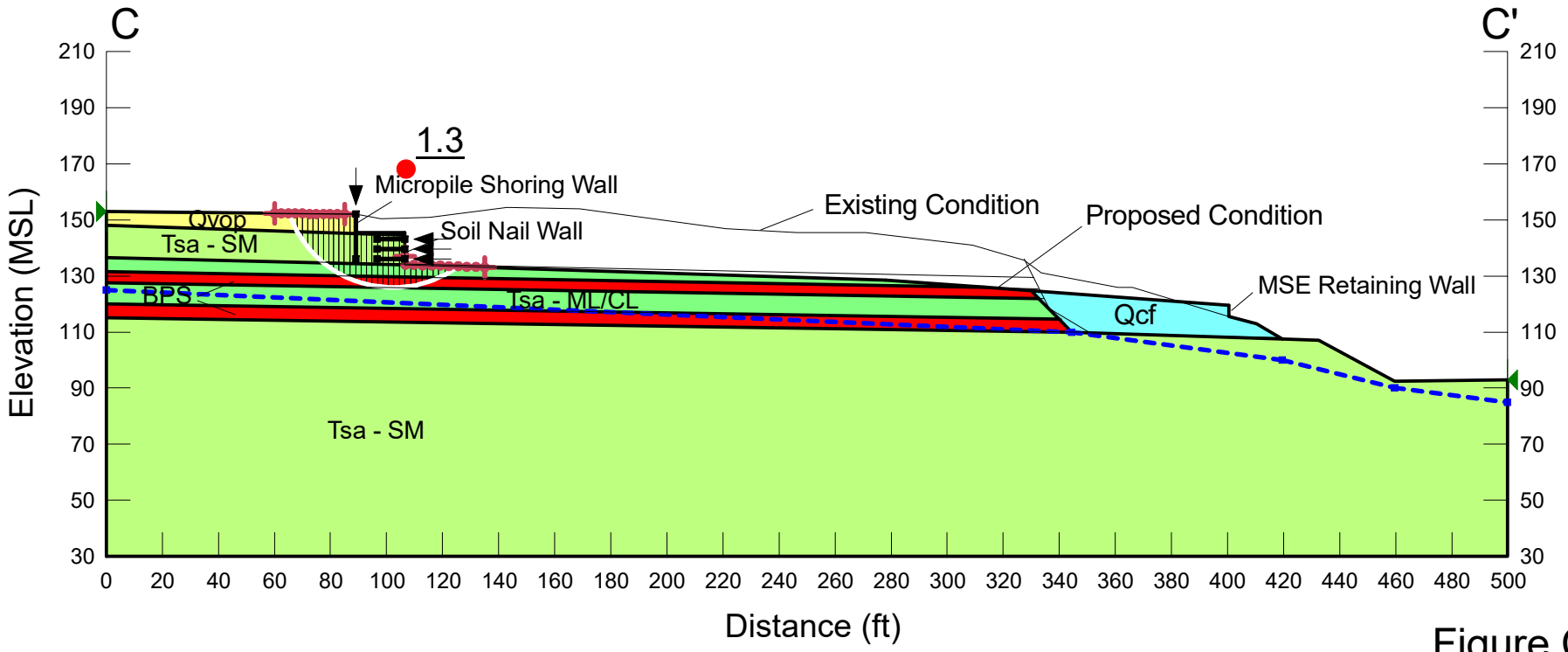


Figure C-28

Piraeus Point
Project No. G2307-32-05
Section E-E'
Name: EE-Case7.gsz
Date: 01/31/2022 Time: 10:24:42 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

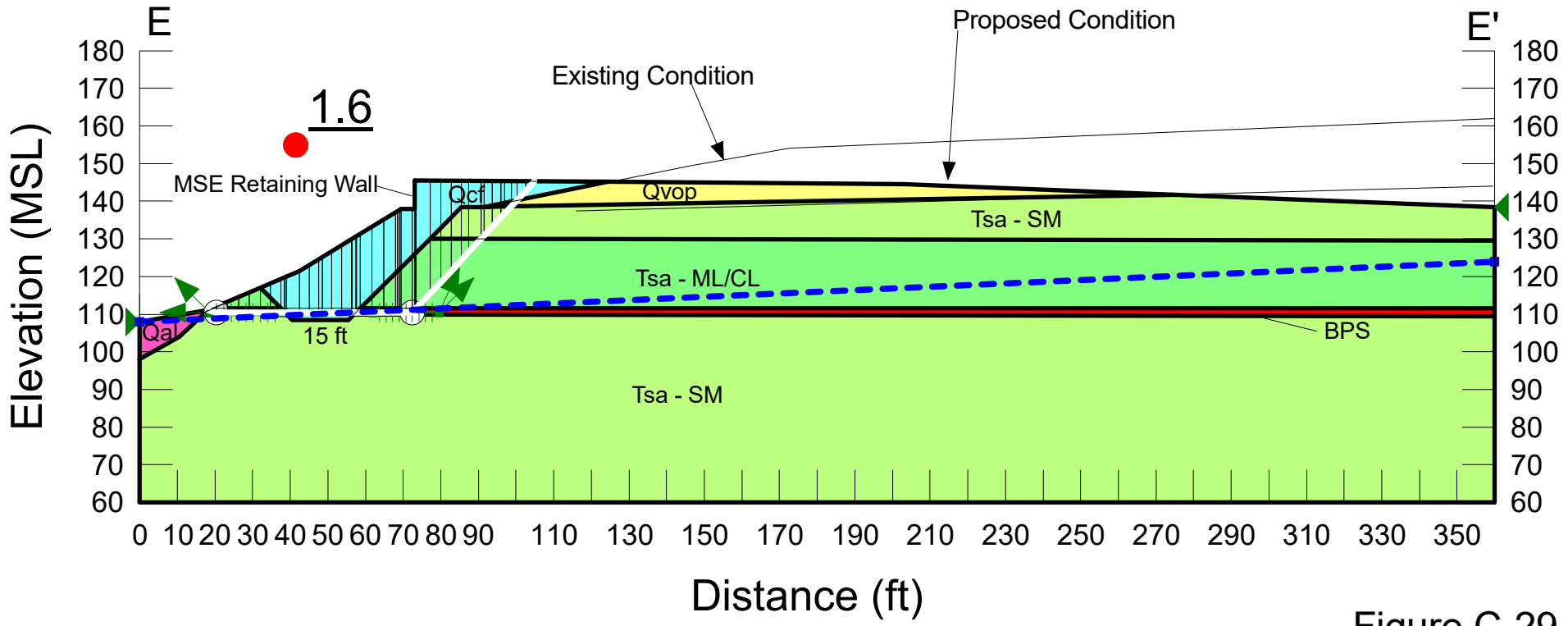


Figure C-29

Piraeus Point
Project No. G2307-32-05
Section E-E'
Name: EE-Case7s.gsz
Date: 01/31/2022 Time: 11:22:21 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

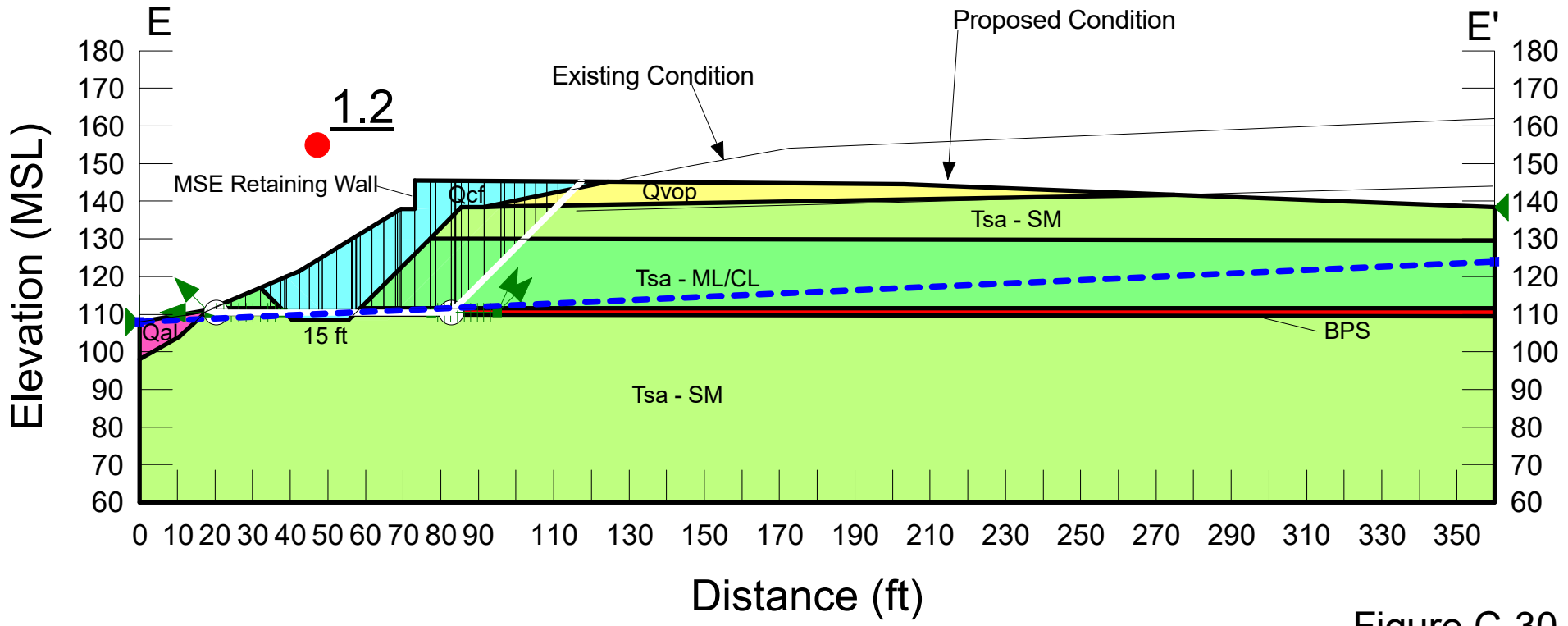


Figure C-30

Piraeus Point
Project No. G2307-32-05
Section E-E'
Name: EE-Case8.gsz
Date: 01/31/2022 Time: 10:21:42 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

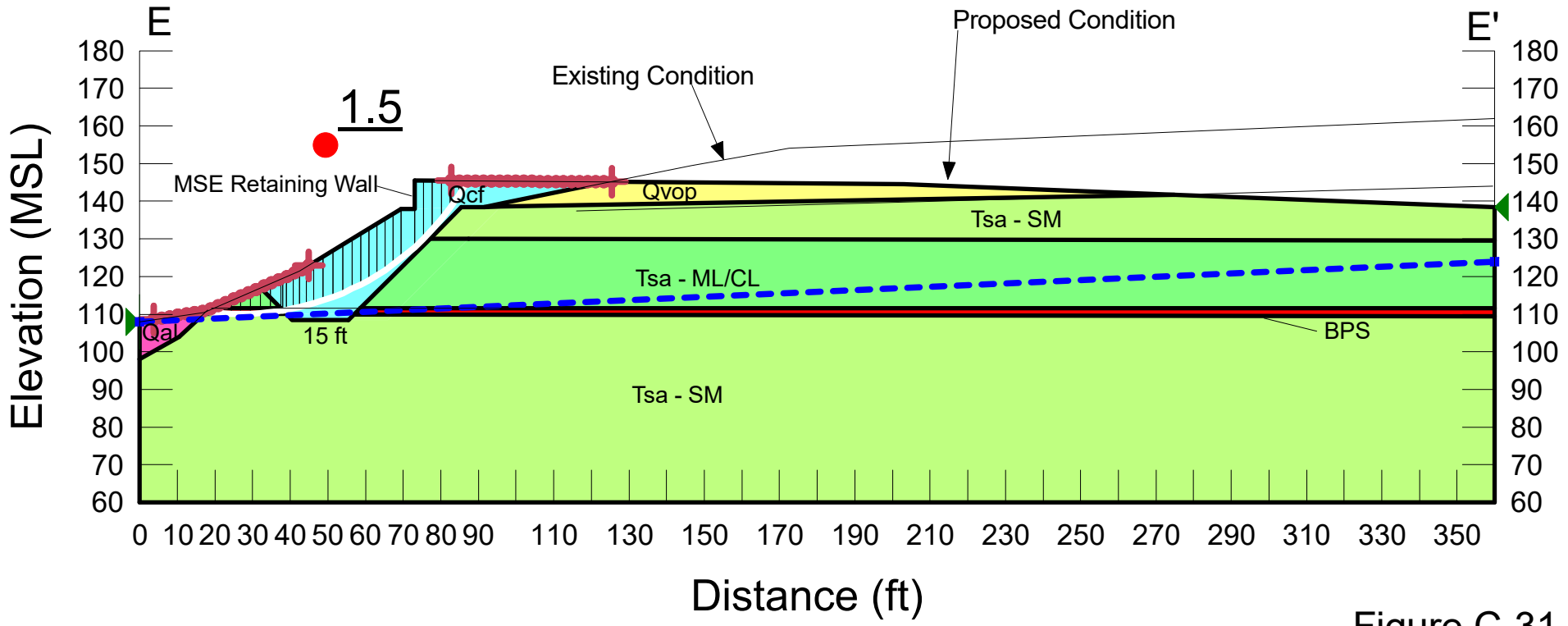


Figure C-31

Piraeus Point
Project No. G2307-32-05
Section E-E'
Name: EE-Case8s.gsz
Date: 01/31/2022 Time: 11:31:55 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

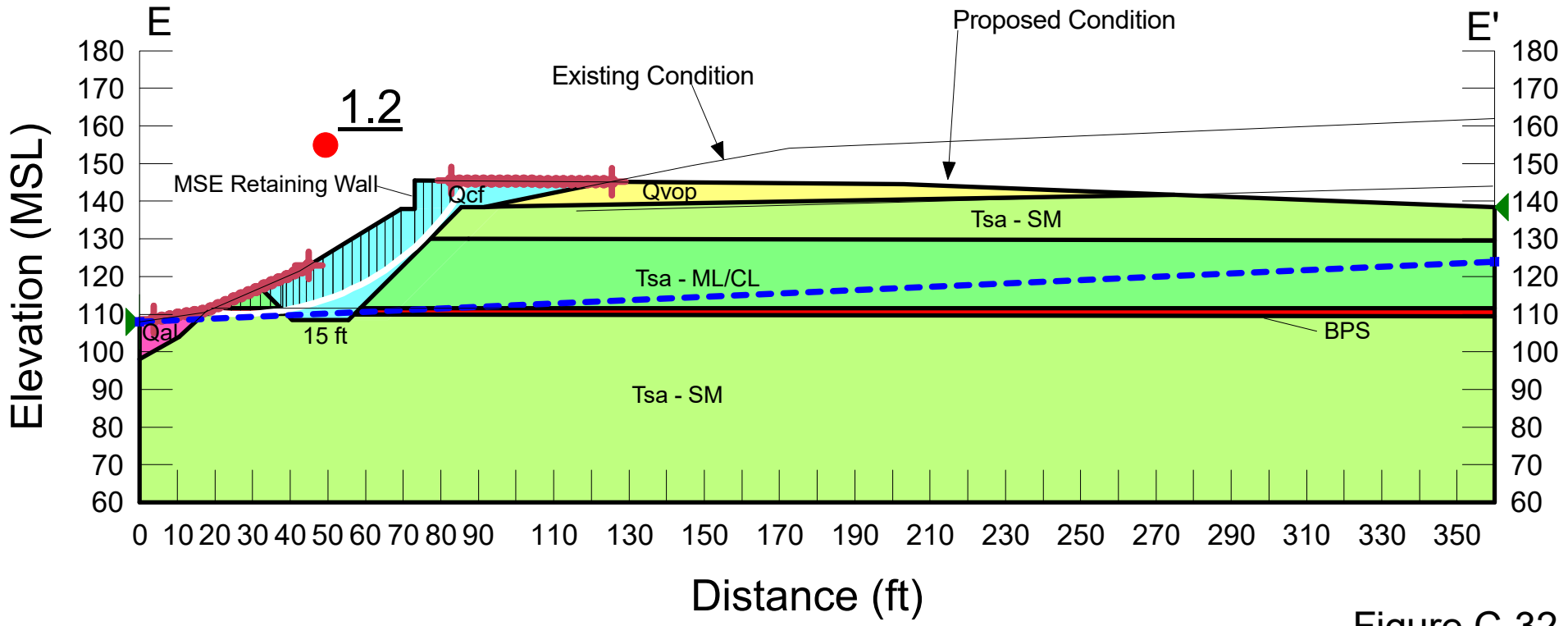


Figure C-32

Piraeus Point
Project No. G2307-32-05
Section F-F'
Name: FF-Case2.gsz
Date: 01/31/2022 Time: 09:25:50 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	350	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

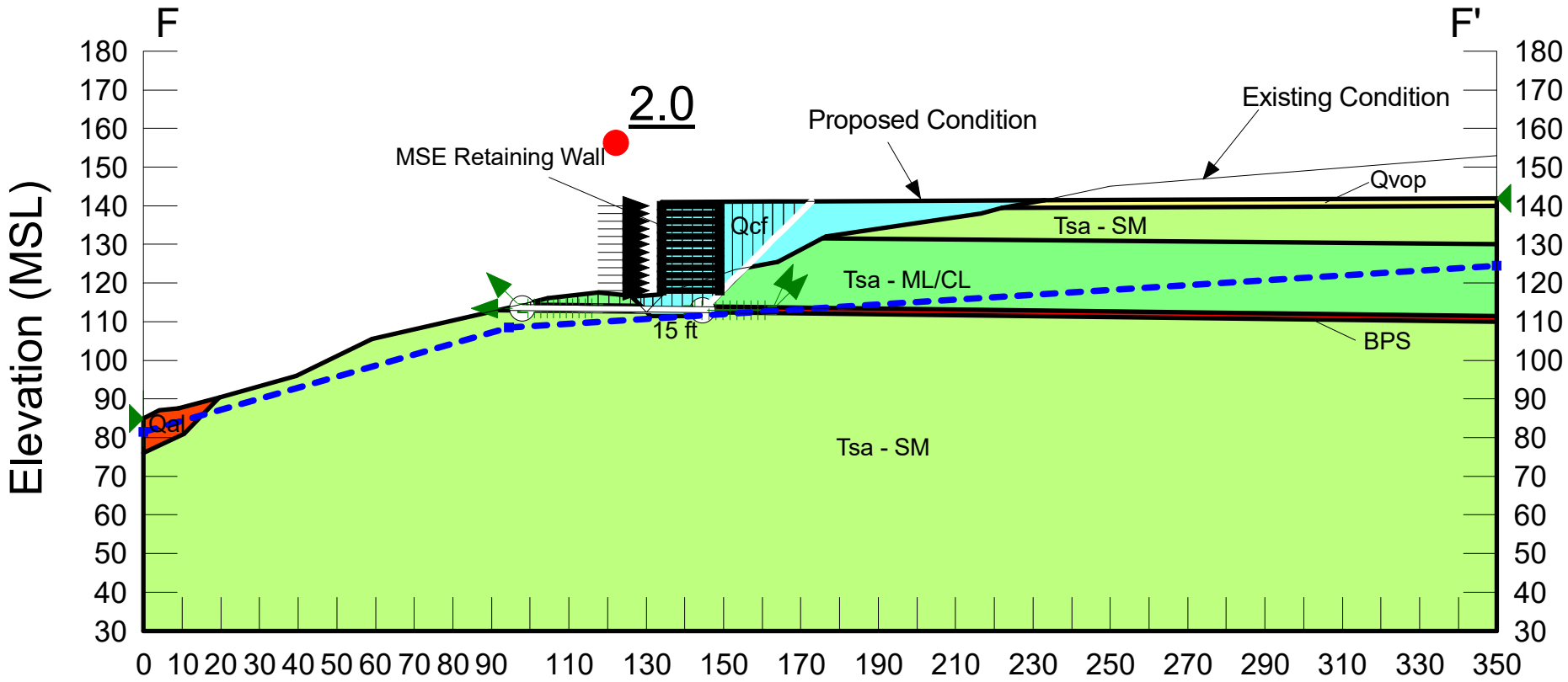


Figure C-33

Piraeus Point
Project No. G2307-32-05
Section F-F'
Name: FF-Case2s.gsz
Date: 01/31/2022 Time: 11:43:30 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	350	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

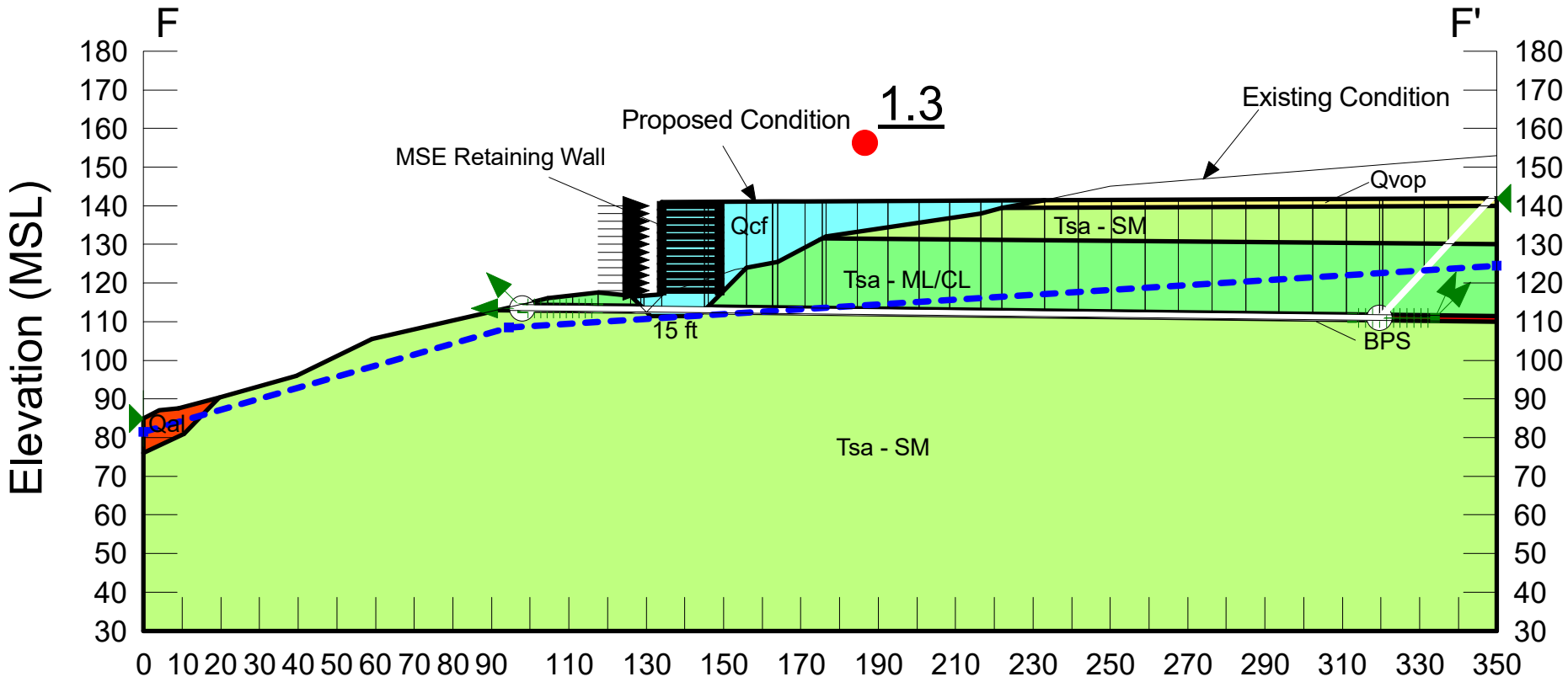


Figure C-34

Piraeus Point
Project No. G2307-32-05
Section F-F'
Name: FF-Case2a.gsz
Date: 01/31/2022 Time: 09:30:41 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	350	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

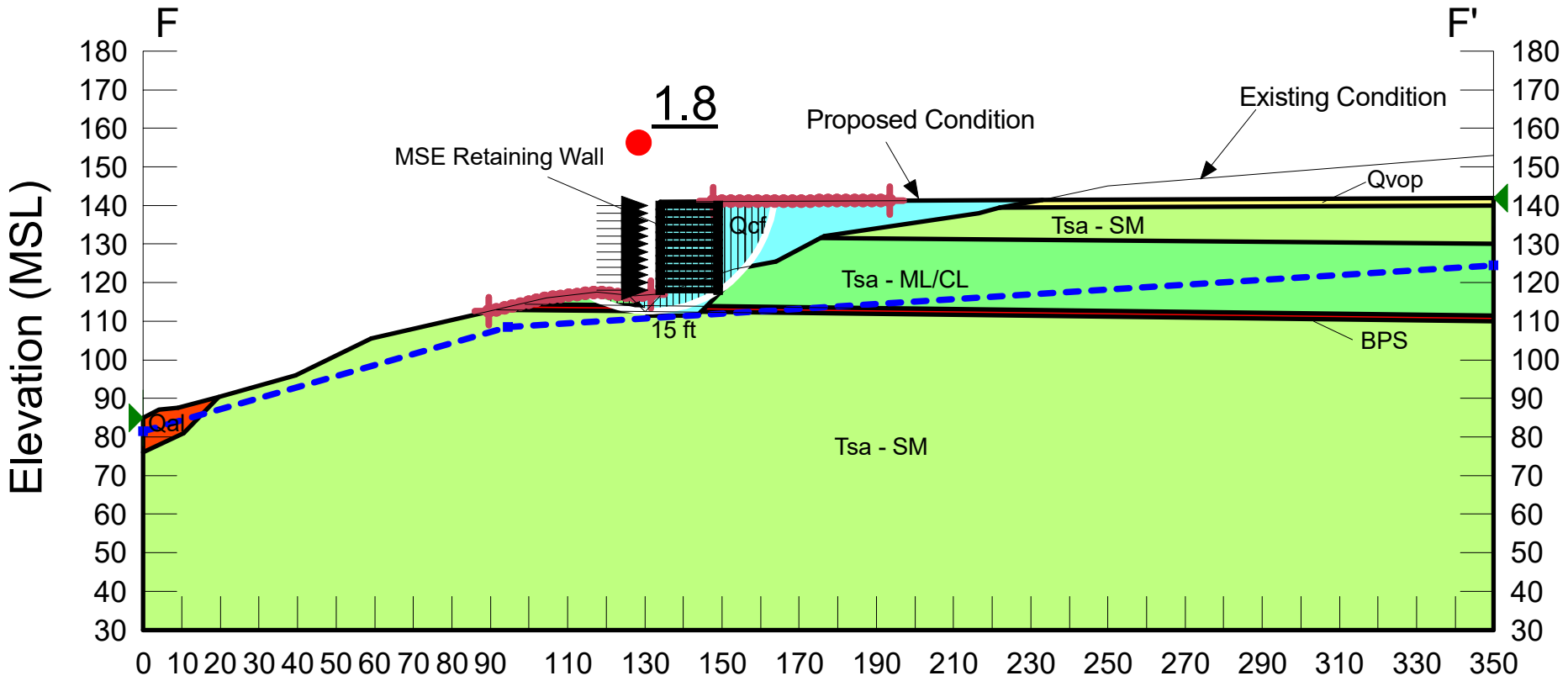


Figure C-35

Piraeus Point
Project No. G2307-32-05
Section F-F'
Name: FF-Case2as.gsz
Date: 01/31/2022 Time: 11:47:22 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	350	28
	Qcf	125	300	28
	Qvop	120	350	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

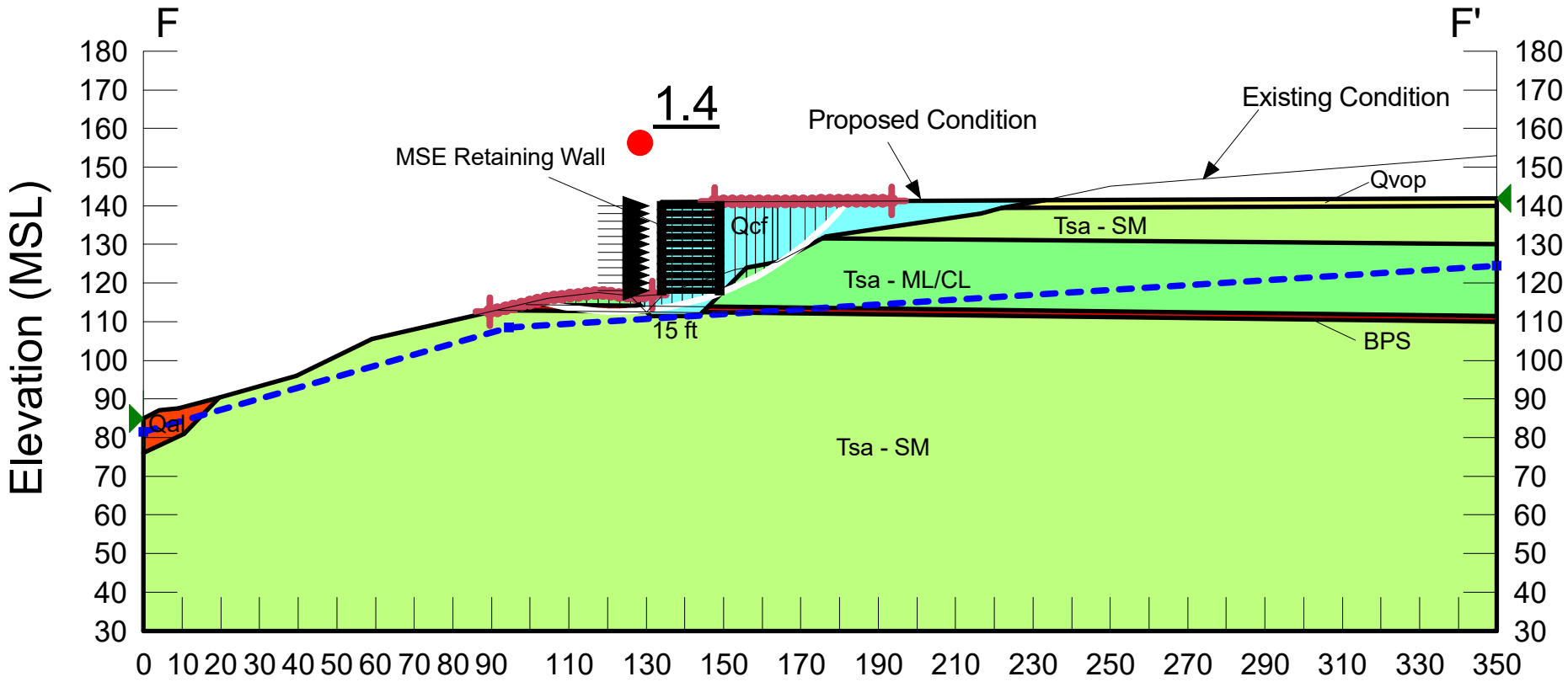


Figure C-36

Piraeus Point
Project No. G2307-32-05
Section G-G'
Name: GG-Case2.gsz
Date: 01/31/2022 Time: 09:44:12 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

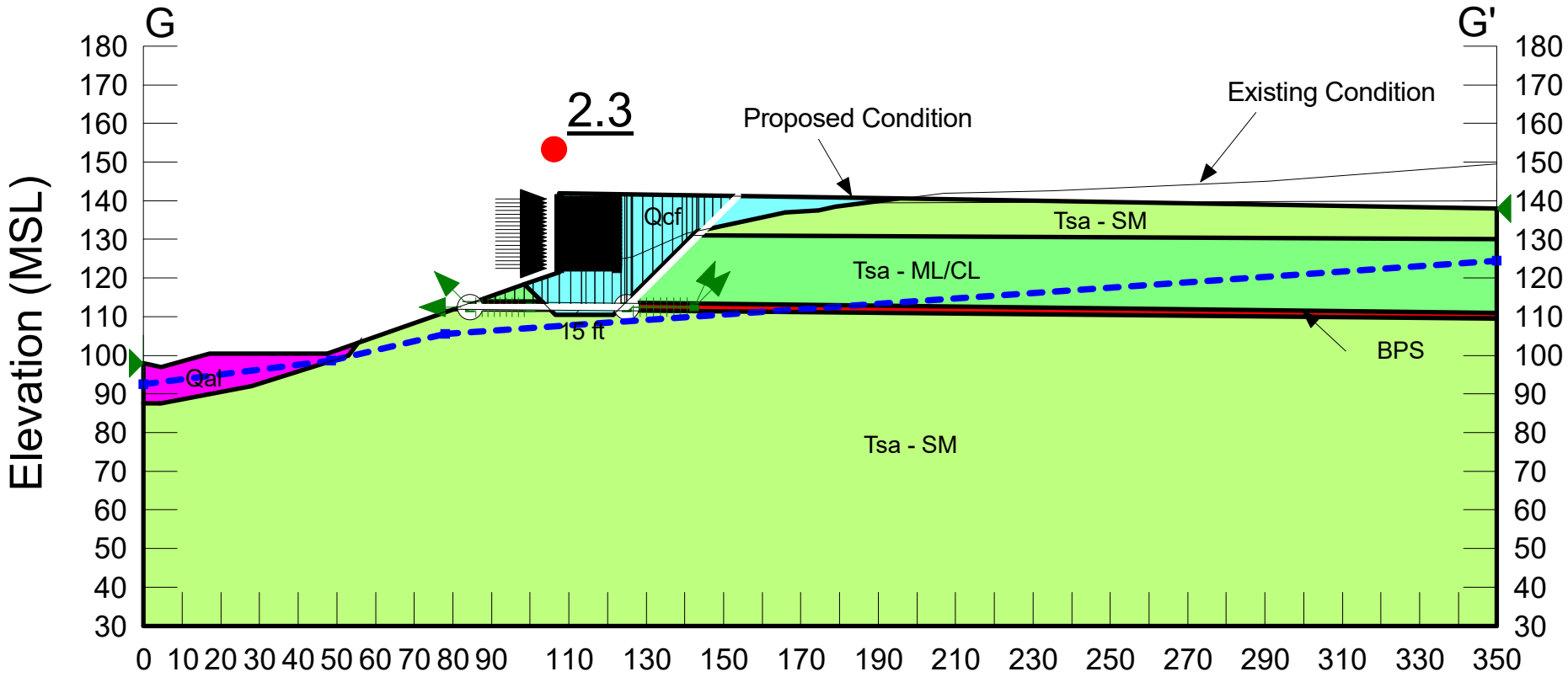


Figure C-37

Piraeus Point
Project No. G2307-32-05
Section G-G'
Name: GG-Case2s.gsz
Date: 01/31/2022 Time: 11:53:14 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

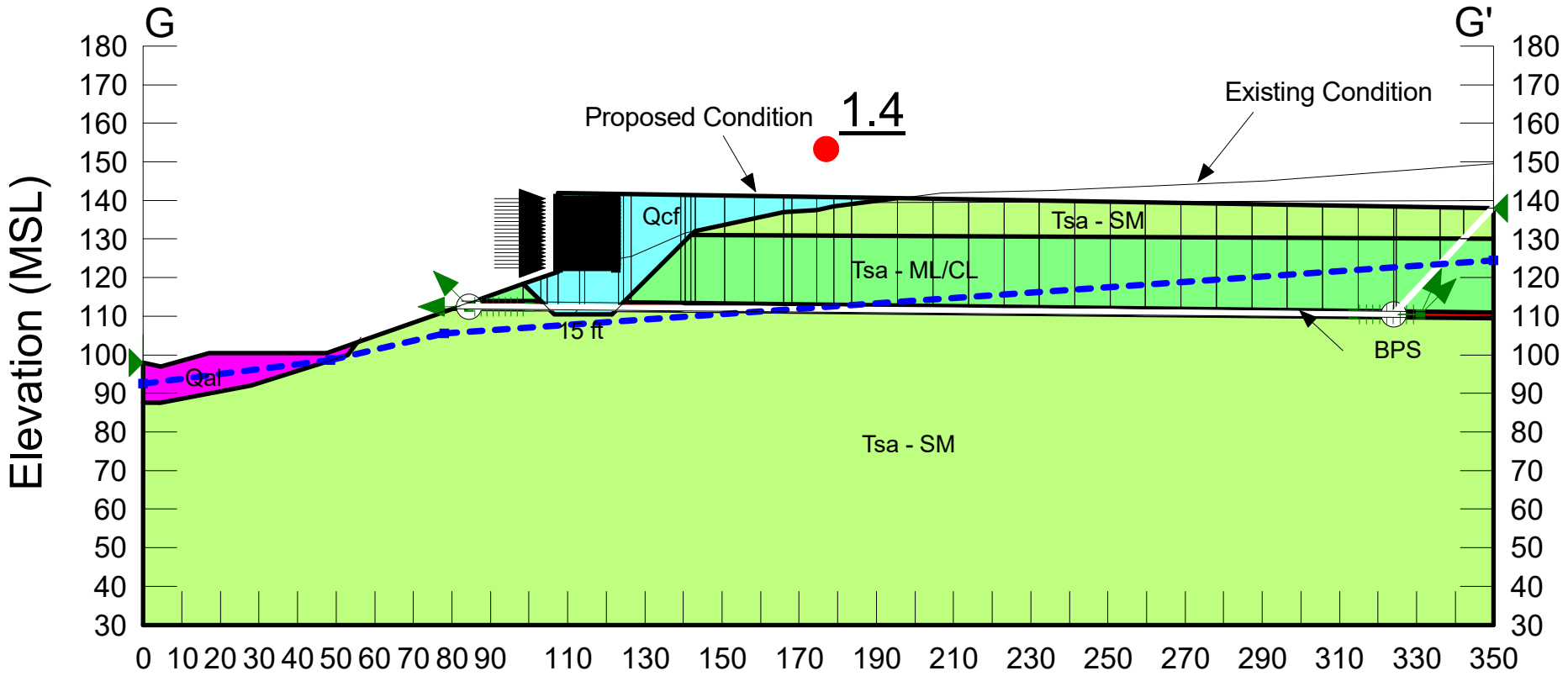


Figure C-38

Piraeus Point
Project No. G2307-32-05
Section G-G'
Name: GG-Case2a.gsz
Date: 01/31/2022 Time: 09:51:59 AM

Proposed Condition

Static Analysis

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

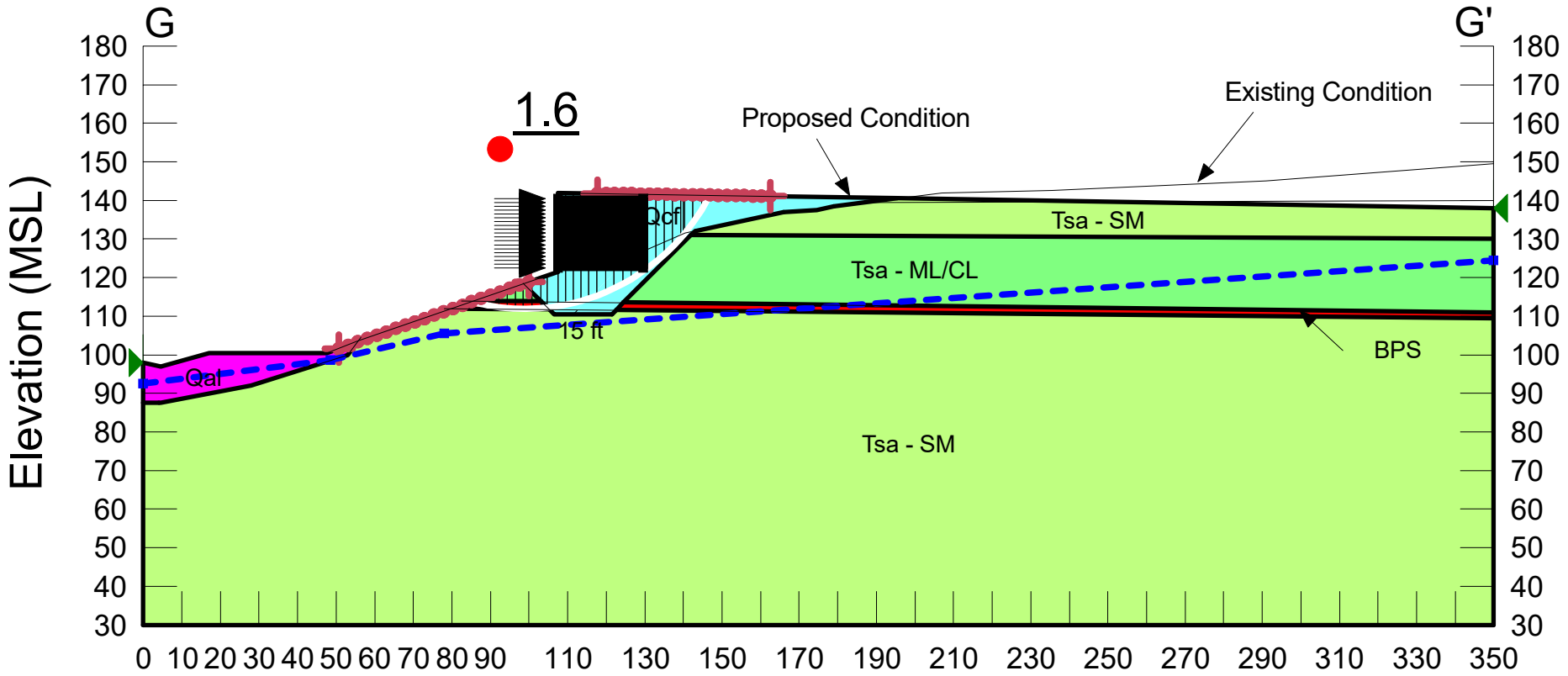


Figure C-39

Piraeus Point
Project No. G2307-32-05
Section G-G'
Name: GG-Case2as.gsz
Date: 01/31/2022 Time: 11:56:17 AM

Proposed Condition

Seismic Analysis
keq = 0.13g

Color	Name	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
	BPS	115	100	8
	Qal	120	200	28
	Qcf	125	300	28
	Tsa (ML,CL)	130	500	23
	Tsa (SM,SP)	130	750	33

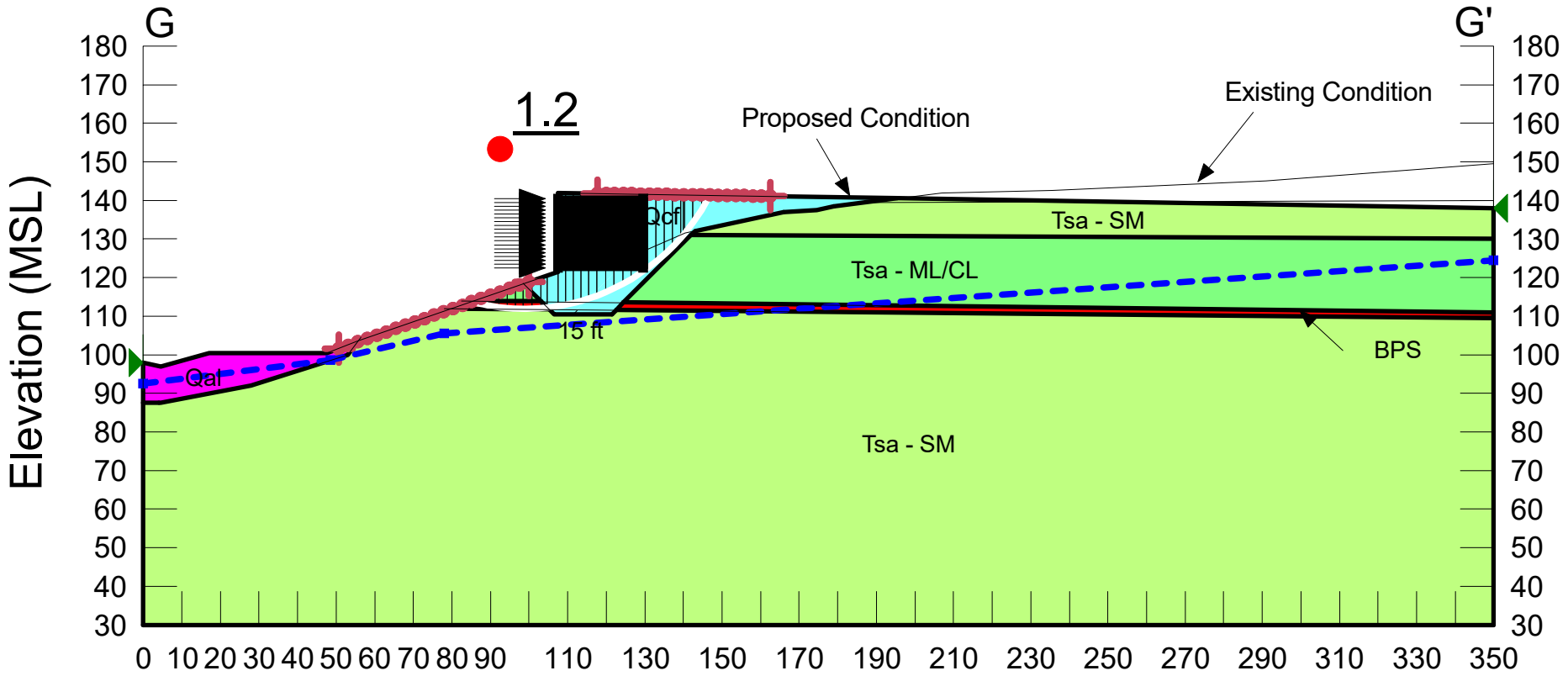


Figure C-40

Surficial Slope Stability Evaluation

Slope Height, H (feet)	∞	
Vertical Depth of Stauration, Z (feet)	3	
Slope Inclination	2.00	:1
Slope Inclination, I (degrees)	26.6	
Unit Weight of Water, γW (pcf)	62.4	
Total Unit Weight of Soil, γ_T (pcf)	125	
Friction Angle, ϕ (degrees)	28	
Cohesion, C (psf)	300	
Factor of Safety = $(C+(\gamma_T-\gamma_W)Z\cos^2 i \tan\phi)/(\gamma_T Z \sin i \cos i)$	2.53	

References: (1) Haefeli, R. *The Stability of Slopes Acted Upon by Parallel Seepage* , Proc. Second International Conference, SMFE, Rotterdam, 1948, 1, 57-62.

(2) Skempton, A. W., and F. A. Delory, *Stability of Natural Slopes in London Clay* , Proc. Fourth International Conference, SMFE, London, 1957, 2, 378-81.

Slope Stability Evaluation

Slope Height, H (feet)	25	
Slope Inclination	2.0	:1
Total Unit Weight of Soil, γ_T (pcf)	125	
Friction Angle, ϕ (degrees)	28	
Cohesion, C (psf)	300	
$\gamma_{C\phi} = (\gamma H \tan\phi)/C$	5.5	
N_{Cf} (from Chart)	20	
Factor of Safety = $(N_{Cf}C)/(\gamma H)$	1.92	

References: (1) Janbu, N. *Stability Analysis of Slopes with Dimensionless Parameters,* Harvard Soil Mechanics, Series No. 46, 1954.

(2) Janbu, N. *Discussion of J.M. Bell, DimensionlessParameters for Homogeneous Earth Slopes,* Journal of Soil Mechanics and Foundation Design, No. SM6, November 1967.

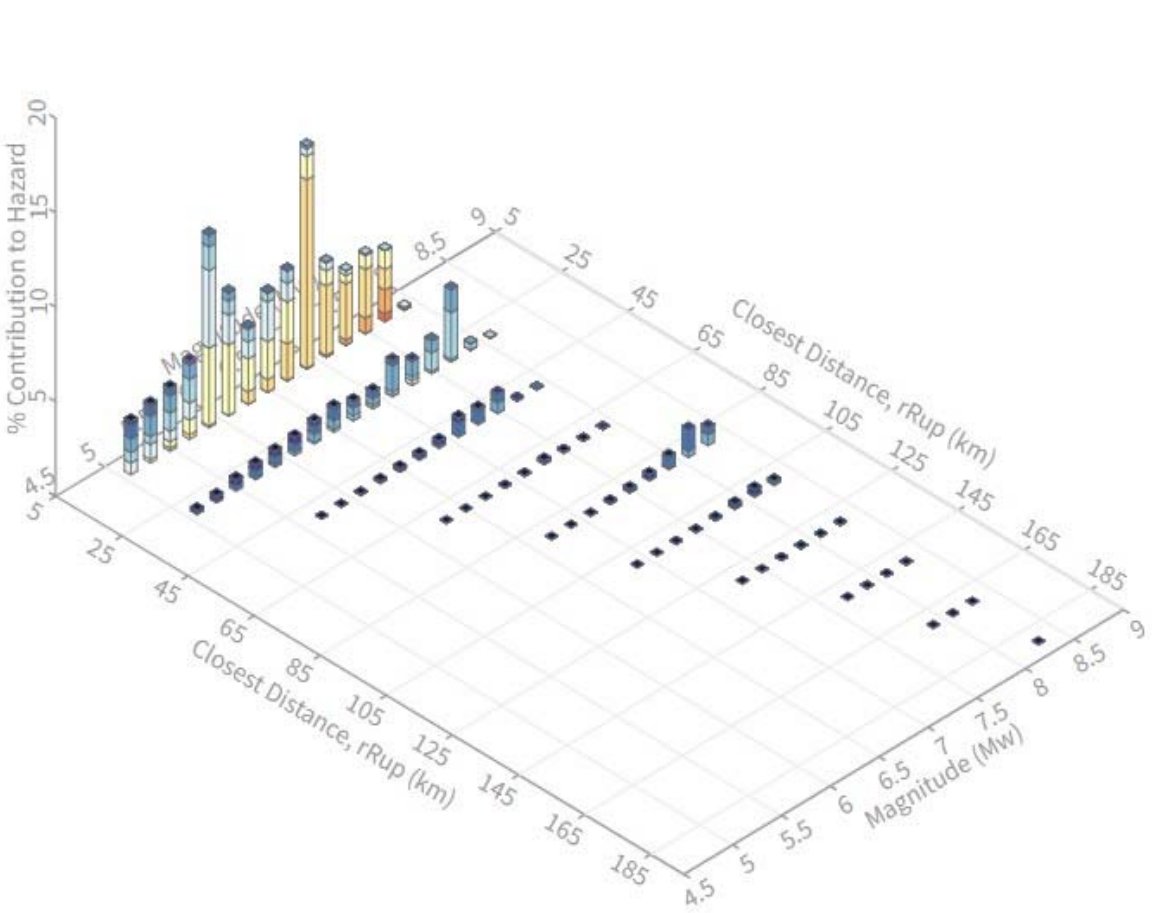
GEOCON
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GEOTECHNICAL CONSULTANTS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
PHONE 858 558-6900 - FAX 858 558-6159

TM / TM

SLOPE STABILITY ANALYSIS

PIRAEUS POINT
ENCINITAS, CALIFORNIA

DATE 1-31-2022 | PROJECT NO. G2307-32-05 | FIG. C-41



Summary statistics for, Deaggregation: Total

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SEISMIC DEAGGREGATION

PIRAEUS POINT
ENCINITAS, CALIFORNIA

DATE 1-31-2022	PROJECT NO. G2307-32-05	FIG. C-42

GEOCON

Seismic Slope Stability Evaluation

Input Data in Shaded Areas

Project	Piraeus Point	Computed By	TEM
Project Number	G2307-32-05		
Date	01/31/22		
Filename			

Peak Ground Acceleration (Firm Rock), MHA_r, g	0.23	10% in 50 years
Modal Magnitude, M	6.9	
Modal Distance, r, km	6.3	
Site Condition, S (0 for rock, 1 for soil)	1	
Yield Acceleration, k_y/g	NA	<-- Enter Value or NA for Screening Analysis
Shear Wave Velocity, V_s (ft/sec)	NA	<--
Max Vertical Distance, H (Feet)	NA	<--
Is Slide X-Area > 25,000ft^2 (Y/N)	N	<-- Use "N" for Buttress Fills
Correction for horizontal incoherence	1.0	
Duration, $D_{5-95}\|_{med}$, sec	12.801	
Coefficient, C_1	0.5190	
Coefficient, C_2	0.0837	
Coefficient, C_3	0.0019	
Standard Error, ε_T	0.437	
Mean Square Period, T_m, sec	0.606	

Initial Screening with MHEA = MHA = k_{max}g

k_y/MHA	NA
$f_{EQ}(u=5cm) = (NRF/3.477)*(1.87-\log(u/((MHA_r/g)*NRF*D_{5-95})))$	0.5752
$k_{EO} = feq(MHA_r)/g$	0.132
Factor of Safety in Slope Analysis Using k_{EQ}	1.00

Passes Initial Screening Analysis

Approximation of Seismic Demand

Period of Sliding Mass, $T_s = 4H/V_s$, sec	NA
T_s/T_m	NA
MHEA/(MHA*NRF)	NA
$NRF = 0.6225+0.9196EXP(-2.25*MHA_r/g)$	1.17
MHEA/g	NA
$k_y/MHEA = k_y/k_{max}$	NA
Normalized Displacement, Normu	NA

Estimated Displacement, u (cm) NA

FIGURE C-43

APPENDIX D

APPENDIX D

LIQUEFACTION ANALYSIS

FOR

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

GEOCON

Hammer Energy Correction Factors

Reference: Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10

Project Name: Piraeus Point Date: 1/24/2022

Project Number: G2307-32-05

Hole Diameter, Inches:	8	Hole Diameter Correction, C_B: 1.15
Average Unit Weight, γ (pcf):	125	
Adjustment Factor for 350 LB Hammer Above Groundwater	1.00	<-- Enter 1.0 if an adjustment is not required; Applied to "MC" Samples
Adjustment Factor for 350 LB Hammer Below Groundwater	1.00	<-- Enter 1.0 if an adjustment is not required; Applied to "MC" Samples
Approximate Depth to Groundwater in Boring B-1	39	
Approximate Depth to Groundwater in Boring B-2	43	*Auto, Cathead, or Downhole Hammer
Approximate Depth to Groundwater in Boring B-3	15	

					Adjust for each GWT Level		Energy Correction, C_E (1.0 Safe-T-Driver/Cathead, 1.3 Automatic)				
Sample	Depth, Feet	Field Blow Count (per Foot)	Type of Sampler (MC or SPT)	Hammer Type* (A/C/D)	Equiv. SPT Blow Count, N	σ'_v, psf	Overburden Pressure Correction, C_N	Energy Ratio Correction, C_E	Rod Length Correction, C_R	Sampling Correction, C_S	N1|60 Blowcounts (Prior to Fines)
B1-1	5.0	80	MC	C	53.3	625.0	1.70	1.0	0.75	1.00	78.20
B1-2	10.0	33	MC	A	22.0	1250.0	1.26	1.3	0.80	1.00	33.28
B1-3	15.0	52	MC	A	34.7	1875.0	1.03	1.3	0.85	1.00	45.50
B1-4	20.0	18	MC	A	12.0	2500.0	0.89	1.3	0.95	1.00	15.24
B1-5	25.0	33	MC	A	22.0	3125.0	0.80	1.3	0.95	1.00	25.00
B1-6	30.0	82	MC	A	54.7	3750.0	0.73	1.3	1.00	1.00	59.68
B1-7	31.0	30	SPT	A	30.0	3875.0	0.72	1.3	1.00	1.10	35.44
B1-8	35.0	35	MC	A	23.3	4375.0	0.68	1.3	1.00	1.00	23.59
B1-9	36.0	26	SPT	A	26.0	4500.0	0.67	1.3	1.00	1.10	28.50
B1-10	40.0	49	MC	A	32.7	4937.6	0.64	1.3	1.00	1.00	31.08
B1-11	41.0	36	SPT	A	36.0	5000.2	0.63	1.3	1.00	1.10	37.44
B1-12	45.0	50	MC	A	33.3	5250.6	0.62	1.3	1.00	1.00	30.76
B1-13	46.0	28	SPT	A	28.0	5313.2	0.61	1.3	1.00	1.10	28.25
B1-14	50.0	31	MC	A	20.7	5563.6	0.60	1.3	1.00	1.00	18.52
B1-15	51.0	28	MC	A	18.7	5626.2	0.60	1.3	1.00	1.00	16.64
B2-1	5.0	50	MC	A	33.3	625.0	1.70	1.3	0.75	1.00	63.54
B2-2	10.0	82	MC	A	54.7	1250.0	1.26	1.3	0.80	1.00	82.70
B2-3	15.0	63	MC	A	42.0	1875.0	1.03	1.3	0.85	1.00	55.12
B2-4	20.0	42	MC	A	28.0	2500.0	0.89	1.3	0.95	1.00	35.57
B2-5	25.0	44	MC	A	29.3	3125.0	0.80	1.3	0.95	1.00	33.33
B2-6	30.0	63	MC	A	42.0	3750.0	0.73	1.3	1.00	1.00	45.86
B2-7	31.0	39	SPT	A	39.0	3875.0	0.72	1.3	1.00	1.10	46.08
B2-8	35.0	71	MC	A	47.3	4375.0	0.68	1.3	1.00	1.00	47.84
B2-9	36.0	39	SPT	A	39.0	4500.0	0.67	1.3	1.00	1.10	42.76
B2-10	40.0	36	MC	A	24.0	5000.0	0.63	1.3	1.00	1.00	22.69
B2-11	41.0	29	SPT	A	29.0	5125.0	0.62	1.3	1.00	1.10	29.79
B2-12	45.0	34	MC	A	22.7	5500.2	0.60	1.3	1.00	1.00	20.43
B2-13	46.0	16	SPT	A	16.0	5562.8	0.60	1.3	1.00	1.10	15.78
B2-14	50.0	41	MC	A	27.3	5813.2	0.59	1.3	1.00	1.00	23.97
B2-15	51.0	71	SPT	A	71.0	5875.8	0.58	1.3	1.00	1.10	68.12
B3-1	5.0	50	MC	A	33.3	625.0	1.70	1.3	0.75	1.00	63.54
B3-2	10.0	63	MC	A	42.0	1250.0	1.26	1.3	0.80	1.00	63.54
B3-3	15.0	36	MC	A	24.0	1875.0	1.03	1.3	0.85	1.00	31.50
B3-4	20.0	38	MC	A	25.3	2188.0	0.96	1.3	0.95	1.00	34.40

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Hammer Energy Correction Factors

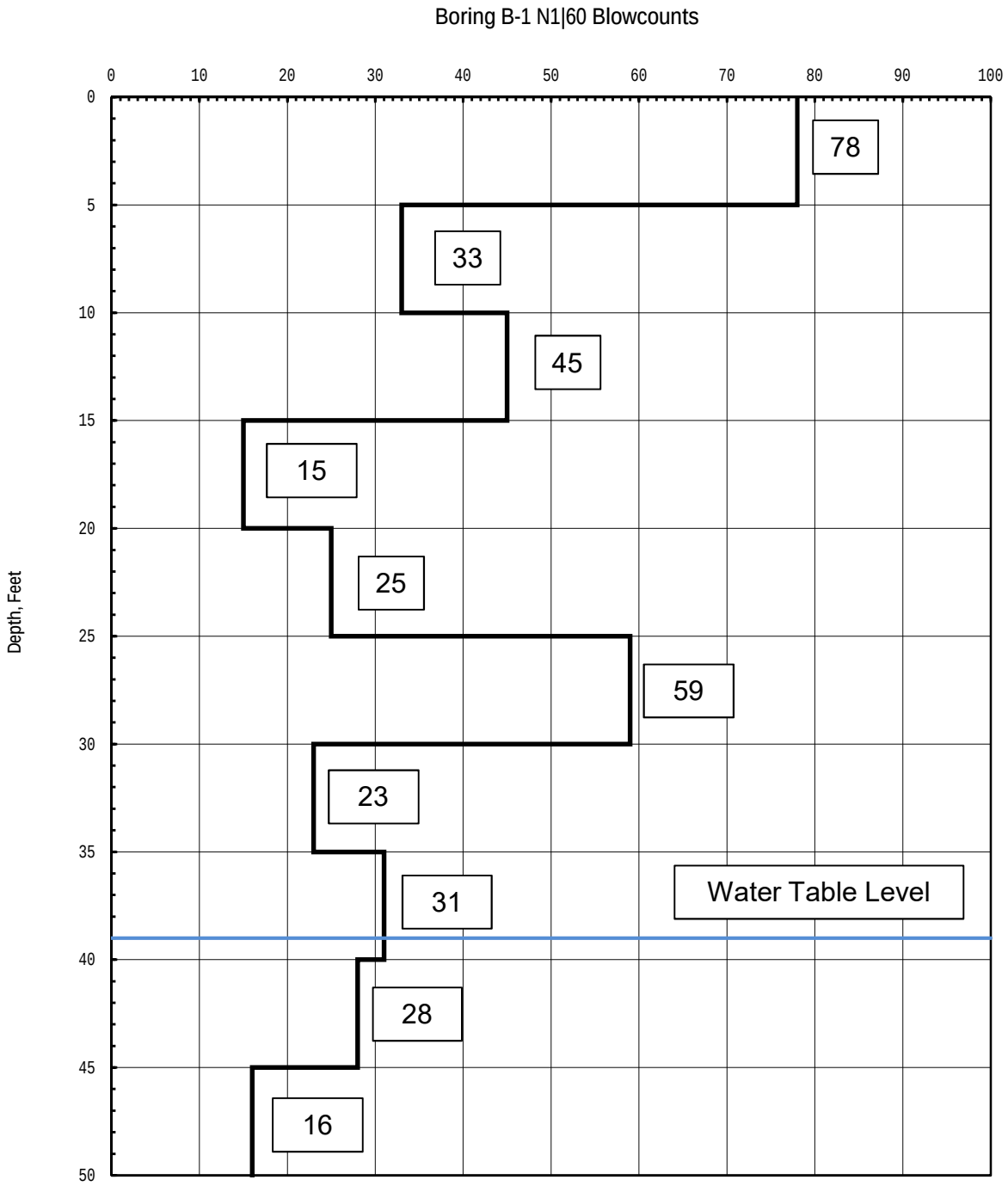
Reference: Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10

Project Name: Piraeus Point Date: 1/24/2022

Project Number: G2307-32-05

Hole Diameter, Inches:	8	Hole Diameter Correction, C_B: 1.15
Average Unit Weight, γ (pcf):	125	
Adjustment Factor for 350 LB Hammer Above Groundwater	1.00	<-- Enter 1.0 if an adjustment is not required; Applied to "MC" Samples
Adjustment Factor for 350 LB Hammer Below Groundwater	1.00	<-- Enter 1.0 if an adjustment is not required; Applied to "MC" Samples
Approximate Depth to Groundwater in Boring B-1	39	
Approximate Depth to Groundwater in Boring B-2	43	*Auto, Cathead, or Downhole Hammer
Approximate Depth to Groundwater in Boring B-3	15	

					Adjust for each GWT Level		Energy Correction, C_E (1.0 Safe-T-Driver/Cathead, 1.3 Automatic)				
Sample	Depth, Feet	Field Blow Count (per Foot)	Type of Sampler (MC or SPT)	Hammer Type* (A/C/D)	Equiv. SPT Blow Count, N	σ'_v, psf	Overburden Pressure Correction, C_N	Energy Ratio Correction, C_E	Rod Length Correction, C_R	Sampling Correction, C_S	N1|60 Blowcounts (Prior to Fines)
B3-5	25.0	35	MC	A	23.3	2501.0	0.89	1.3	0.95	1.00	29.63
B3-6	30.0	45	MC	A	30.0	2814.0	0.84	1.3	1.00	1.00	37.81
B3-7	31.0	27	SPT	A	27.0	2876.6	0.83	1.3	1.00	1.10	37.02
B3-8	35.0	35	MC	A	23.3	3127.0	0.80	1.3	1.00	1.00	27.90
B3-9	36.0	26	SPT	A	26.0	3189.6	0.79	1.3	1.00	1.10	33.86
B3-10	40.0	39	MC	A	26.0	3440.0	0.76	1.3	1.00	1.00	29.64
B3-11	41.0	53	SPT	A	53.0	3502.6	0.76	1.3	1.00	1.10	65.86
B3-12	42.0	50	MC	A	33.3	3565.2	0.75	1.3	1.00	1.00	37.32



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TM / DG

LIQUEFACTION - N 1 | 60 BLOW COUNT

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

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Liquefaction Analysis Using SPT

References
1. *Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10*
2. *Seed, et al, Recent Advances in Soil Liquefaction Engineering: A Unified and Consistant Framework, 2003.*

Project Name: Piraeus Point
Project Number: G2307-32-05
Boring: B-1

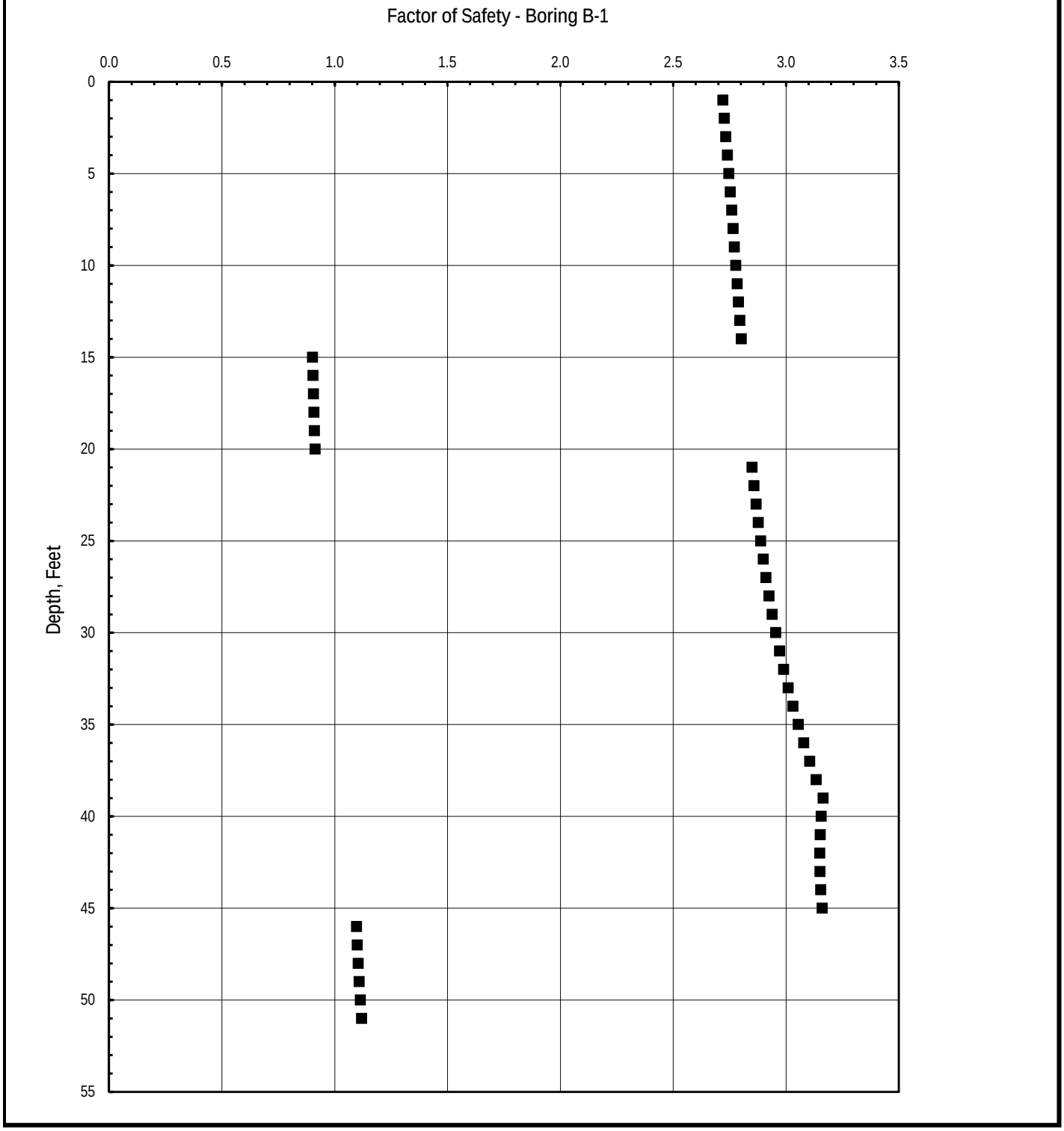
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Magnitude 6.9
Groundwater Depth, Ft 39.0
Reference Pressure, p_a 2000
Unit Weight of Water 62.4
Soil Unit Weight, pcf 125

Include Kσ (Y/N) N
Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
Minimum Factor of Safety for Liquefaction 1

Enter for Fine-Grained Materials | Old | New | MWF Idriss(1997) = $(M)^{2.56}/10^{2.24}$ | From Graph

Depth, ft	$N_1]_{60}$	Fines Content, FC (%)	Water Content, w_C (%)	Liquid Limit	Plastic Limit	Plasticity Index	$N_1]_{60}$, Adj. for Fines	$N_1]_{60}$, Adj. for Fines	σ, psf	σ', psf	r_d	K_σ	NCEER $CRR_{7.5}$	RAUCH $CRR_{7.5}$	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
1	78	35	3.8	30	15	15	98.6	84.0	125	125	1.00	1.00	0.800	0.800	0.294	N	Above GWT	2.721		
2	78	35	3.8	30	15	15	98.6	84.0	250	250	1.00	1.00	0.800	0.800	0.293	N	Above GWT	2.727		
3	78	35	3.8	30	15	15	98.6	84.0	375	375	0.99	1.00	0.800	0.800	0.293	N	Above GWT	2.734		
4	78	35	3.8	30	15	15	98.6	84.0	500	500	0.99	1.00	0.800	0.800	0.292	N	Above GWT	2.740		
5	78	35	3.8	30	15	15	98.6	84.0	625	625	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.747		
6	33	35	3.8	30	15	15	44.6	39.0	750	750	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.753		
7	33	35	3.8	30	15	15	44.6	39.0	875	875	0.99	1.00	0.800	0.800	0.290	N	Above GWT	2.759		
8	33	35	3.8	30	15	15	44.6	39.0	1000	1000	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.766		
9	33	35	3.8	30	15	15	44.6	39.0	1125	1125	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.772		
10	33	35	3.8	30	15	15	44.6	39.0	1250	1250	0.98	1.00	0.800	0.800	0.288	N	Above GWT	2.778		
11	45	35	5.4	30	15	15	59.0	51.0	1375	1375	0.98	1.00	0.800	0.800	0.287	N	Above GWT	2.784		
12	45	35	5.4	30	15	15	59.0	51.0	1500	1500	0.97	1.00	0.800	0.800	0.287	N	Above GWT	2.790		
13	45	35	5.4	30	15	15	59.0	51.0	1625	1625	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.796		
14	45	35	5.4	30	15	15	59.0	51.0	1750	1750	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.802		
15	15	35	5.4	30	15	15	23.0	21.0	1875	1875	0.97	1.00	0.255	0.257	0.285	N	Above GWT	0.902		
16	15	35	5.4	30	15	15	23.0	21.0	2000	2000	0.97	1.00	0.255	0.257	0.284	N	Above GWT	0.904		
17	15	35	5.4	30	15	15	23.0	21.0	2125	2125	0.96	1.00	0.255	0.257	0.284	N	Above GWT	0.906		
18	15	35	5.4	30	15	15	23.0	21.0	2250	2250	0.96	1.00	0.255	0.257	0.283	N	Above GWT	0.908		
19	15	35	5.4	30	15	15	23.0	21.0	2375	2375	0.96	1.00	0.255	0.257	0.282	N	Above GWT	0.911		
20	15	35	5.4	30	15	15	23.0	21.0	2500	2500	0.96	1.00	0.255	0.257	0.281	N	Above GWT	0.913		
21	25	35	14.8	30	15	15	35.0	31.0	2625	2625	0.95	1.00	0.800	0.800	0.281	N	Above GWT	2.850		
22	25	35	14.8	30	15	15	35.0	31.0	2750	2750	0.95	1.00	0.800	0.800	0.280	N	Above GWT	2.859		
23	25	35	14.8	30	15	15	35.0	31.0	2875	2875	0.95	1.00	0.800	0.800	0.279	N	Above GWT	2.868		
24	25	35	14.8	30	15	15	35.0	31.0	3000	3000	0.95	1.00	0.800	0.800	0.278	N	Above GWT	2.877		
25	25	35	14.8	30	15	15	35.0	31.0	3125	3125	0.94	1.00	0.800	0.800	0.277	N	Above GWT	2.888		
26	59	35	8.7	30	15	15	75.8	65.0	3250	3250	0.94	1.00	0.800	0.800	0.276	N	Above GWT	2.899		
27	59	35	8.7	30	15	15	75.8	65.0	3375	3375	0.93	1.00	0.800	0.800	0.275	N	Above GWT	2.911		
28	59	35	8.7	30	15	15	75.8	65.0	3500	3500	0.93	1.00	0.800	0.800	0.274	N	Above GWT	2.925		
29	59	35	8.7	30	15	15	75.8	65.0	3625	3625	0.93	1.00	0.800	0.800	0.272	N	Above GWT	2.939		
30	59	35	8.7	30	15	15	75.8	65.0	3750	3750	0.92	1.00	0.800	0.800	0.271	N	Above GWT	2.955		
31	23	35	8.7	30	15	15	32.6	29.0	3875	3875	0.92	1.00	0.800	0.800	0.269	N	Above GWT	2.972		
32	23	35	8.7	30	15	15	32.6	29.0	4000	4000	0.91	1.00	0.800	0.800	0.268	N	Above GWT	2.990		
33	23	35	8.7	30	15	15	32.6	29.0	4125	4125	0.90	1.00	0.800	0.800	0.266	N	Above GWT	3.010		
34	23	35	8.7	30	15	15	32.6	29.0	4250	4250	0.90	1.00	0.800	0.800	0.264	N	Above GWT	3.031		
35	23	35	8.7	30	15	15	32.6	29.0	4375	4375	0.89	1.00	0.800	0.800	0.262	N	Above GWT	3.054		
36	31	35	8.7	30	15	15	42.2	37.0	4500	4500	0.88	1.00	0.800	0.800	0.260	N	Above GWT	3.079		
37	31	35	15.3	30	15	15	42.2	37.0	4625	4625	0.88	1.00	0.800	0.800	0.258	N	Above GWT	3.106		
38	31	35	15.3	30	15	15	42.2	37.0	4750	4750	0.87	1.00	0.800	0.800	0.255	N	Above GWT	3.134		
39	31	35	15.3	30	15	15	42.2	37.0	4875	4875	0.86	1.00	0.800	0.800	0.253	N	NL	3.165		
40	31	35	15.3	30	15	15	42.2	37.0	5000	4938	0.85	1.00	0.800	0.800	0.253	N	NL	3.157		
41	28	35	15.3	30	15	15	38.6	34.0	5125	5000	0.84	1.00	0.800	0.800	0.254	N	NL	3.152		
42	28	35	15.3	30	15	15	38.6	34.0	5250	5063	0.83	1.00	0.800	0.800	0.254	N	NL	3.150		
43	28	35	15.3	30	15	15	38.6	34.0	5375	5125	0.82	1.00	0.800	0.800	0.254	N	NL	3.151		
44	28	35	15.3	30	15	15	38.6	34.0	5500	5188	0.81	1.00	0.800	0.800	0.254	N	NL	3.155		
45	28	35	20.0	30	15	15	38.6	34.0	5625	5251	0.80	1.00	0.800	0.800	0.253	N	NL	3.160		
46	16	35	20.0	30	15	15	24.2	22.0	5750	5313	0.79	1.00	0.273	0.277	0.253	N	NL	1.097		
47	16	35	20.0	30	15	15	24.2	22.0	5875	5376	0.78	1.00	0.273	0.277	0.252	N	NL	1.100		
48	16	35	20.0	30	15	15	24.2	22.0	6000	5438	0.77	1.00	0.273	0.277	0.251	N	NL	1.104		
49	16	35	20.0	30	15	15	24.2	22.0	6125	5501	0.76	1.00	0.273	0.277	0.250	N	NL	1.109		
50	16	35	20.0	30	15	15	24.2	22.0	6250	5564	0.75	1.00	0.273	0.277	0.249	N	NL	1.114		
51	16	35	20.0	30	15	15	24.2	22.0	6375	5626	0.74	1.00	0.273	0.277	0.247	N	NL	1.119		

Total Settlement, S_{LIQ} (in.) = 0
Total Liquifiable Layers = 0



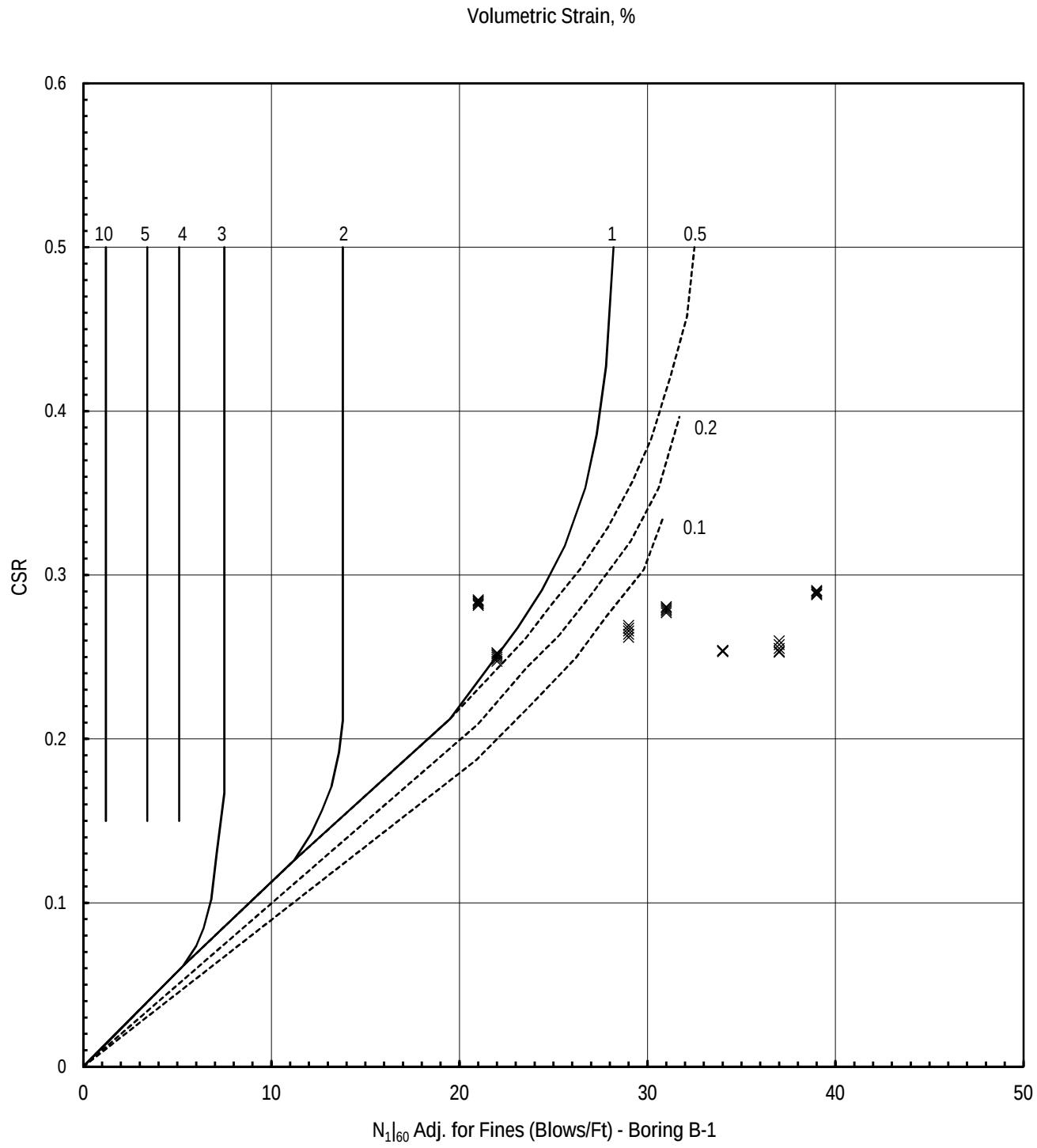
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SW / SW

LIQUEFACTION - FACTOR OF SAFETY

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05



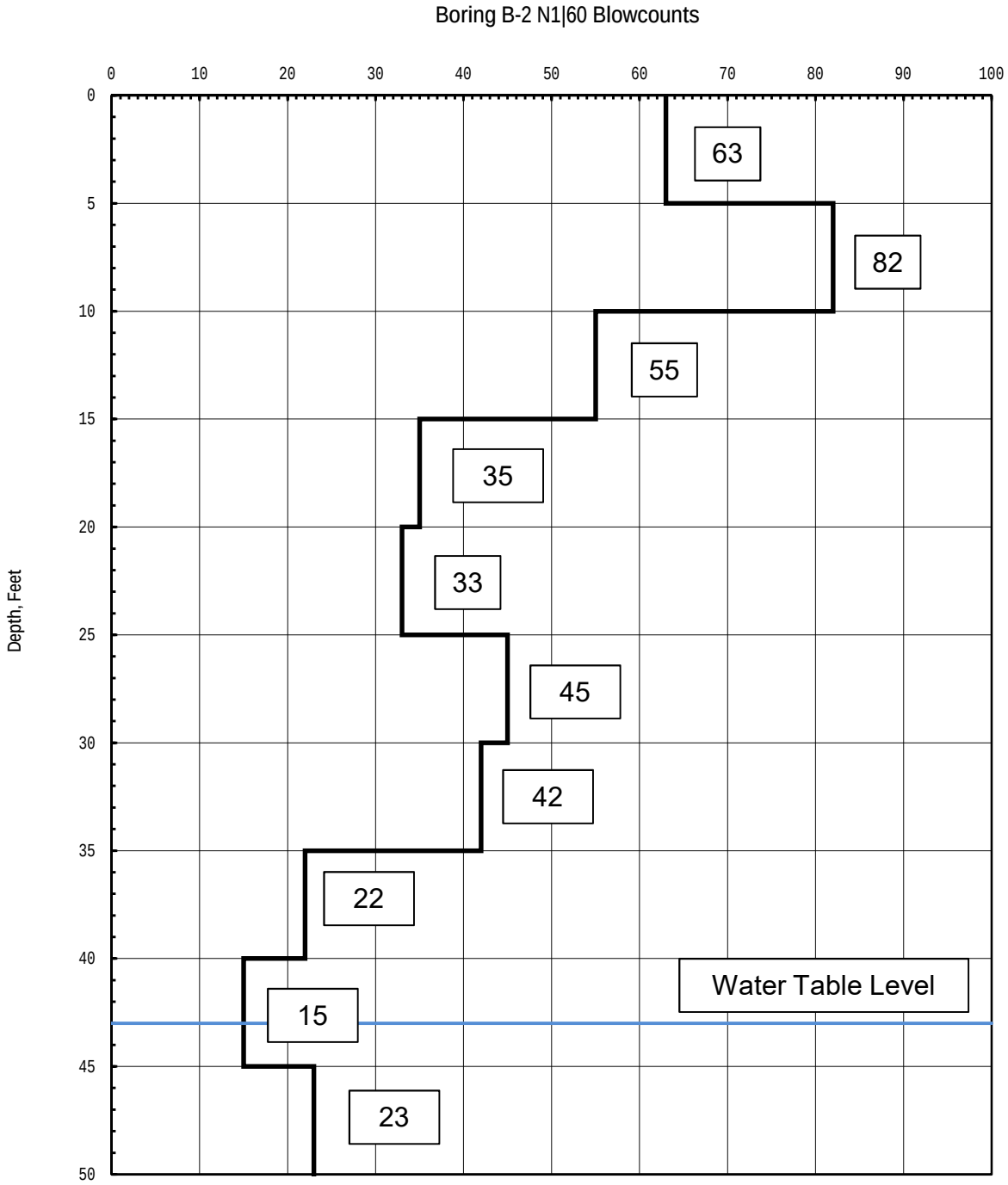
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SW / SW

LIQUEFACTION - VOLUMETRIC STRAIN

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05



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TM / DG

LIQUEFACTION - N 1 | 60 BLOW COUNT

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

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Liquefaction Analysis Using SPT

References
1. *Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10*
2. *Seed, et al, Recent Advances in Soil Liquefaction Engineering: A Unified and Consistant Framework, 2003.*

Project Name: Piraeus Point
Project Number: G2307-32-05
Boring: B-2

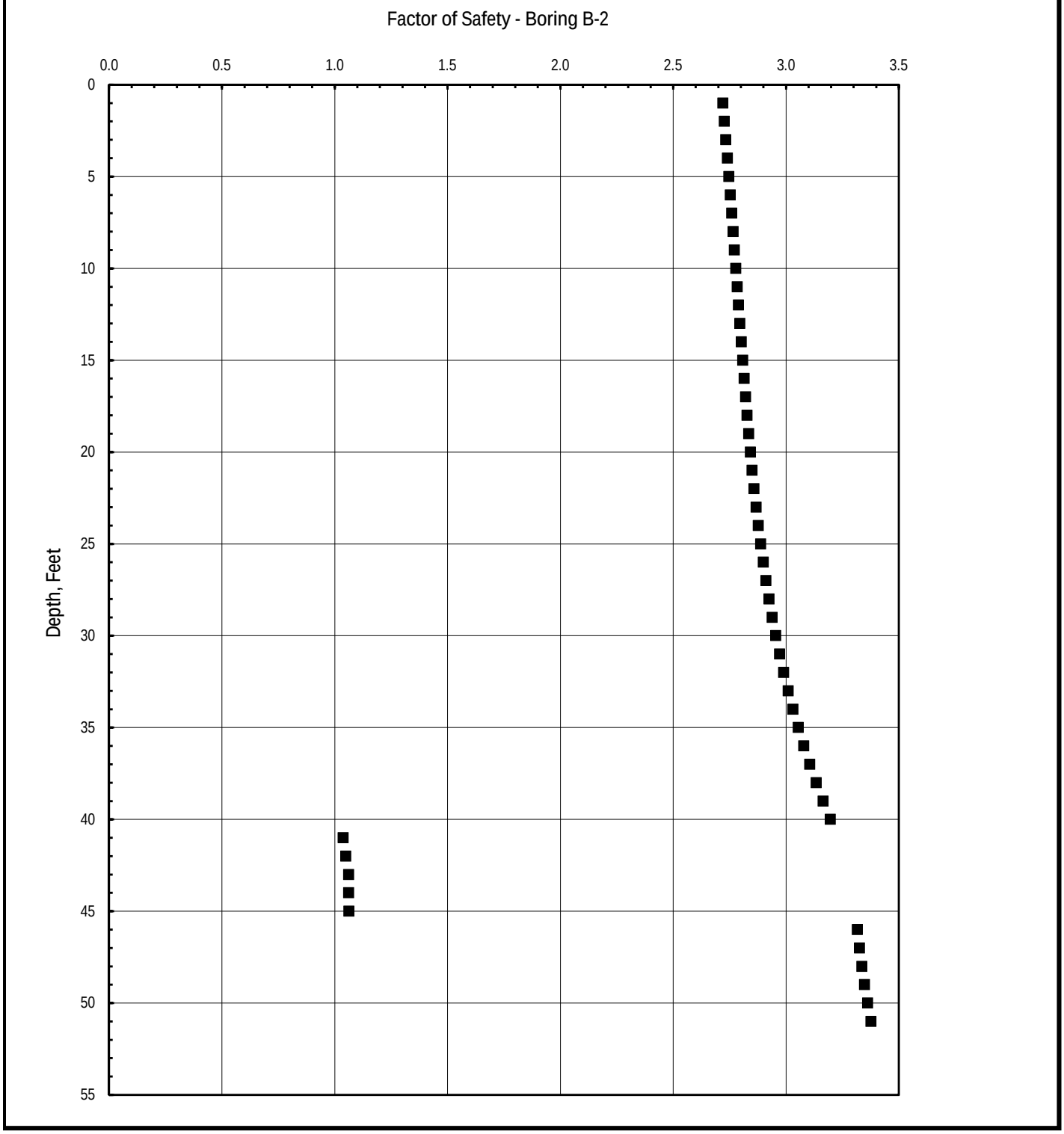
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Magnitude 6.9
Groundwater Depth, Ft 43.0
Reference Pressure, p_a 2000
Unit Weight of Water 62.4
Soil Unit Weight, pcf 125

Include Kσ (Y/N) N
Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
Minimum Factor of Safety for Liquefaction 1

Enter for Fine-Grained Materials | Old | New | MWF Idriss(1997) = $(M)^{2.56}/10^{2.24}$ | From Graph

Depth, ft	$N_1]_{60}$	Fines Content, FC (%)	Water Content, w_C (%)	Liquid Limit	Plastic Limit	Plasticity Index	$N_1]_{60}$, Adj. for Fines	$N_1]_{60}$, Adj. for Fines	σ, psf	σ', psf	r_d	K_σ	NCEER $CRR_{7.5}$	RAUCH $CRR_{7.5}$	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
1	63	35	5.3	30	15	15	80.6	69.0	125	125	1.00	1.00	0.800	0.800	0.294	N	Above GWT	2.721		
2	63	35	5.3	30	15	15	80.6	69.0	250	250	1.00	1.00	0.800	0.800	0.293	N	Above GWT	2.727		
3	63	35	5.3	30	15	15	80.6	69.0	375	375	0.99	1.00	0.800	0.800	0.293	N	Above GWT	2.734		
4	63	35	5.3	30	15	15	80.6	69.0	500	500	0.99	1.00	0.800	0.800	0.292	N	Above GWT	2.740		
5	63	35	5.3	30	15	15	80.6	69.0	625	625	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.747		
6	82	35	5.3	30	15	15	103.4	88.0	750	750	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.753		
7	82	35	5.3	30	15	15	103.4	88.0	875	875	0.99	1.00	0.800	0.800	0.290	N	Above GWT	2.759		
8	82	35	5.3	30	15	15	103.4	88.0	1000	1000	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.766		
9	82	35	5.3	30	15	15	103.4	88.0	1125	1125	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.772		
10	82	35	5.3	30	15	15	103.4	88.0	1250	1250	0.98	1.00	0.800	0.800	0.288	N	Above GWT	2.778		
11	55	35	15.2	30	15	15	71.0	61.0	1375	1375	0.98	1.00	0.800	0.800	0.287	N	Above GWT	2.784		
12	55	35	15.2	30	15	15	71.0	61.0	1500	1500	0.97	1.00	0.800	0.800	0.287	N	Above GWT	2.790		
13	55	35	15.2	30	15	15	71.0	61.0	1625	1625	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.796		
14	55	35	15.2	30	15	15	71.0	61.0	1750	1750	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.802		
15	55	35	15.2	30	15	15	71.0	61.0	1875	1875	0.97	1.00	0.800	0.800	0.285	N	Above GWT	2.808		
16	35	35	9.6	30	15	15	47.0	41.0	2000	2000	0.97	1.00	0.800	0.800	0.284	N	Above GWT	2.814		
17	35	35	9.6	30	15	15	47.0	41.0	2125	2125	0.96	1.00	0.800	0.800	0.284	N	Above GWT	2.821		
18	35	35	9.6	30	15	15	47.0	41.0	2250	2250	0.96	1.00	0.800	0.800	0.283	N	Above GWT	2.828		
19	35	35	9.6	30	15	15	47.0	41.0	2375	2375	0.96	1.00	0.800	0.800	0.282	N	Above GWT	2.835		
20	35	35	9.6	30	15	15	47.0	41.0	2500	2500	0.96	1.00	0.800	0.800	0.281	N	Above GWT	2.842		
21	33	35	12.5	30	15	15	44.6	39.0	2625	2625	0.95	1.00	0.800	0.800	0.281	N	Above GWT	2.850		
22	33	35	12.5	30	15	15	44.6	39.0	2750	2750	0.95	1.00	0.800	0.800	0.280	N	Above GWT	2.859		
23	33	35	12.5	30	15	15	44.6	39.0	2875	2875	0.95	1.00	0.800	0.800	0.279	N	Above GWT	2.868		
24	33	35	12.5	30	15	15	44.6	39.0	3000	3000	0.95	1.00	0.800	0.800	0.278	N	Above GWT	2.877		
25	33	35	12.5	30	15	15	44.6	39.0	3125	3125	0.94	1.00	0.800	0.800	0.277	N	Above GWT	2.888		
26	45	35	12.5	30	15	15	59.0	51.0	3250	3250	0.94	1.00	0.800	0.800	0.276	N	Above GWT	2.899		
27	45	35	12.5	30	15	15	59.0	51.0	3375	3375	0.93	1.00	0.800	0.800	0.275	N	Above GWT	2.911		
28	45	35	12.5	30	15	15	59.0	51.0	3500	3500	0.93	1.00	0.800	0.800	0.274	N	Above GWT	2.925		
29	45	35	12.5	30	15	15	59.0	51.0	3625	3625	0.93	1.00	0.800	0.800	0.272	N	Above GWT	2.939		
30	45	35	12.5	30	15	15	59.0	51.0	3750	3750	0.92	1.00	0.800	0.800	0.271	N	Above GWT	2.955		
31	42	35	12.5	30	15	15	55.4	48.0	3875	3875	0.92	1.00	0.800	0.800	0.269	N	Above GWT	2.972		
32	42	35	12.5	30	15	15	55.4	48.0	4000	4000	0.91	1.00	0.800	0.800	0.268	N	Above GWT	2.990		
33	42	35	12.5	30	15	15	55.4	48.0	4125	4125	0.90	1.00	0.800	0.800	0.266	N	Above GWT	3.010		
34	42	35	12.5	30	15	15	55.4	48.0	4250	4250	0.90	1.00	0.800	0.800	0.264	N	Above GWT	3.031		
35	42	35	12.5	30	15	15	55.4	48.0	4375	4375	0.89	1.00	0.800	0.800	0.262	N	Above GWT	3.054		
36	22	35	15.4	30	15	15	31.4	28.0	4500	4500	0.88	1.00	0.800	0.800	0.260	N	Above GWT	3.079		
37	22	35	15.4	30	15	15	31.4	28.0	4625	4625	0.88	1.00	0.800	0.800	0.258	N	Above GWT	3.106		
38	22	35	15.4	30	15	15	31.4	28.0	4750	4750	0.87	1.00	0.800	0.800	0.255	N	Above GWT	3.134		
39	22	35	15.4	30	15	15	31.4	28.0	4875	4875	0.86	1.00	0.800	0.800	0.253	N	Above GWT	3.165		
40	22	35	15.4	30	15	15	31.4	28.0	5000	5000	0.85	1.00	0.800	0.800	0.250	N	Above GWT	3.197		
41	15	35	15.4	30	15	15	23.0	21.0	5125	5125	0.84	1.00	0.255	0.257	0.248	N	Above GWT	1.038		
42	15	35	15.4	30	15	15	23.0	21.0	5250	5250	0.83	1.00	0.255	0.257	0.245	N	Above GWT	1.049		
43	15	35	15.4	30	15	15	23.0	21.0	5375	5375	0.82	1.00	0.255	0.257	0.242	N	NL	1.061		
44	15	35	15.4	30	15	15	23.0	21.0	5500	5438	0.81	1.00	0.255	0.257	0.242	N	NL	1.062		
45	15	35	15.4	30	15	15	23.0	21.0	5625	5500	0.80	1.00	0.255	0.257	0.242	N	NL	1.063		
46	23	35	19.5	30	15	15	32.6	29.0	5750	5563	0.79	1.00	0.800	0.800	0.241	N	NL	3.317		
47	23	35	19.5	30	15	15	32.6	29.0	5875	5625	0.78	1.00	0.800	0.800	0.241	N	NL	3.326		
48	23	35	19.5	30	15	15	32.6	29.0	6000	5688	0.77	1.00	0.800	0.800	0.240	N	NL	3.336		
49	23	35	19.5	30	15	15	32.6	29.0	6125	5751	0.76	1.00	0.800	0.800	0.239	N	NL	3.348		
50	23	35	19.5	30	15	15	32.6	29.0	6250	5813	0.75	1.00	0.800	0.800	0.238	N	NL	3.362		
51	23	35	19.5	30	15	15	32.6	29.0	6375	5876	0.74	1.00	0.800	0.800	0.237	N	NL	3.377		

Total Settlement, S_{LIQ} (in.) = 0
Total Liquifiable Layers = 0



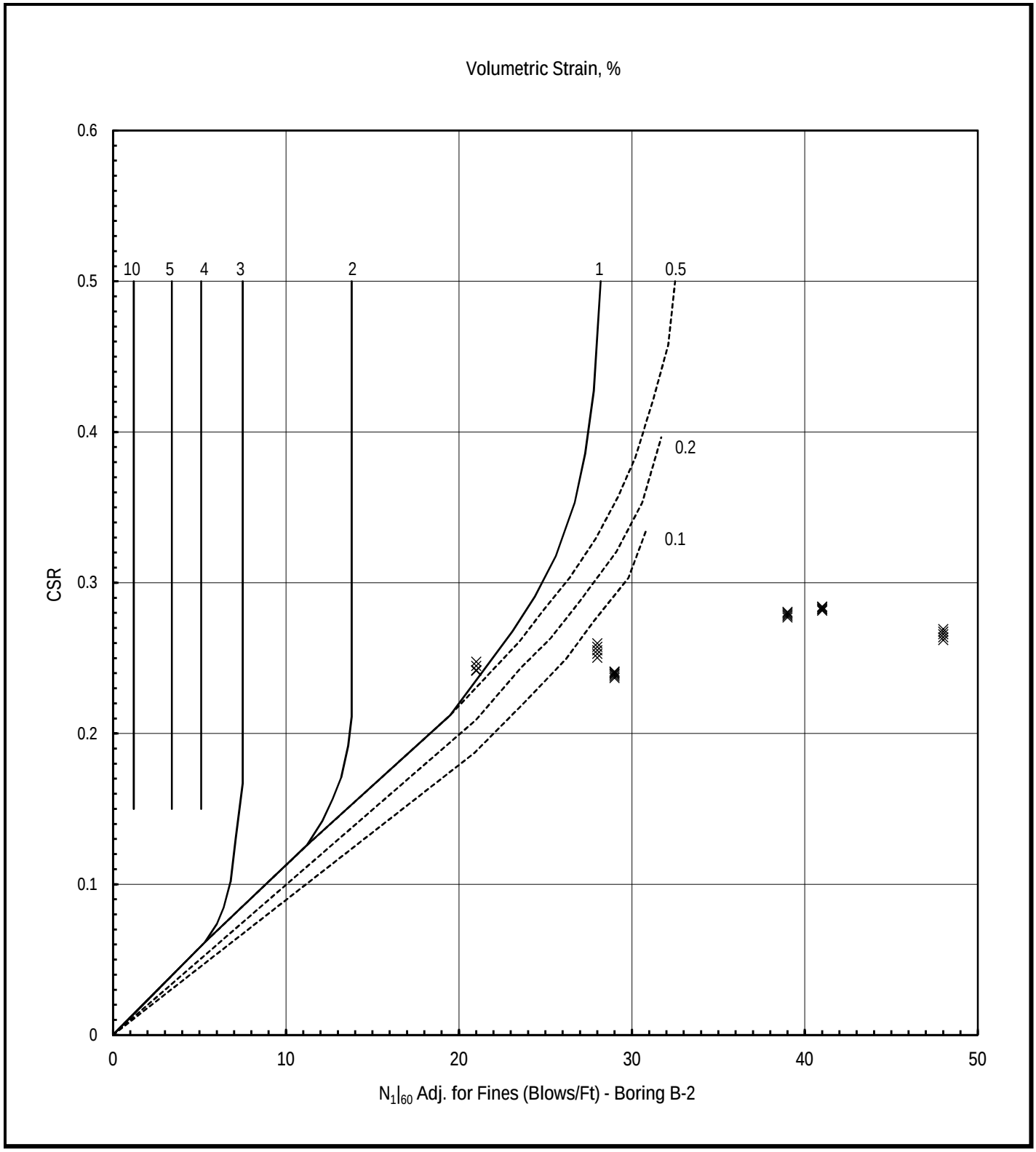
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LIQUEFACTION - FACTOR OF SAFETY

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05



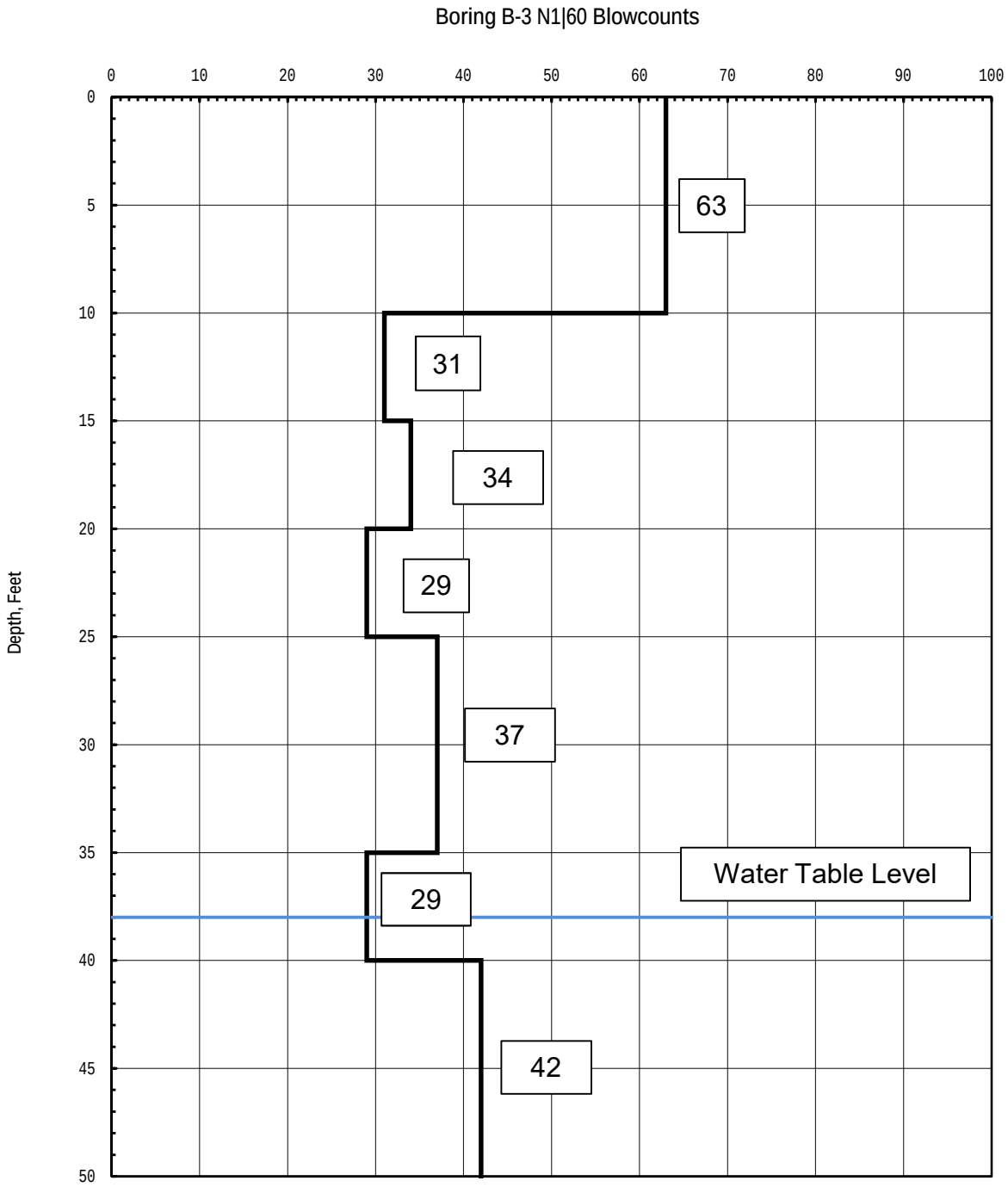
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TM / DG

LIQUEFACTION - N 1 | 60 BLOW COUNT

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Liquefaction Analysis Using SPT

References
1. *Youd, et al, Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER/NSF Workshops on Evaluation of Liquefaction Resistance of Soils, Journal of Geotechnical and Environmental Engineering, October, 2001, Vol. 127, No. 10*
2. *Seed, et al, Recent Advances in Soil Liquefaction Engineering: A Unified and Consistant Framework, 2003.*

Project Name: Piraeus Point
Project Number: G2307-32-05
Boring: B-3

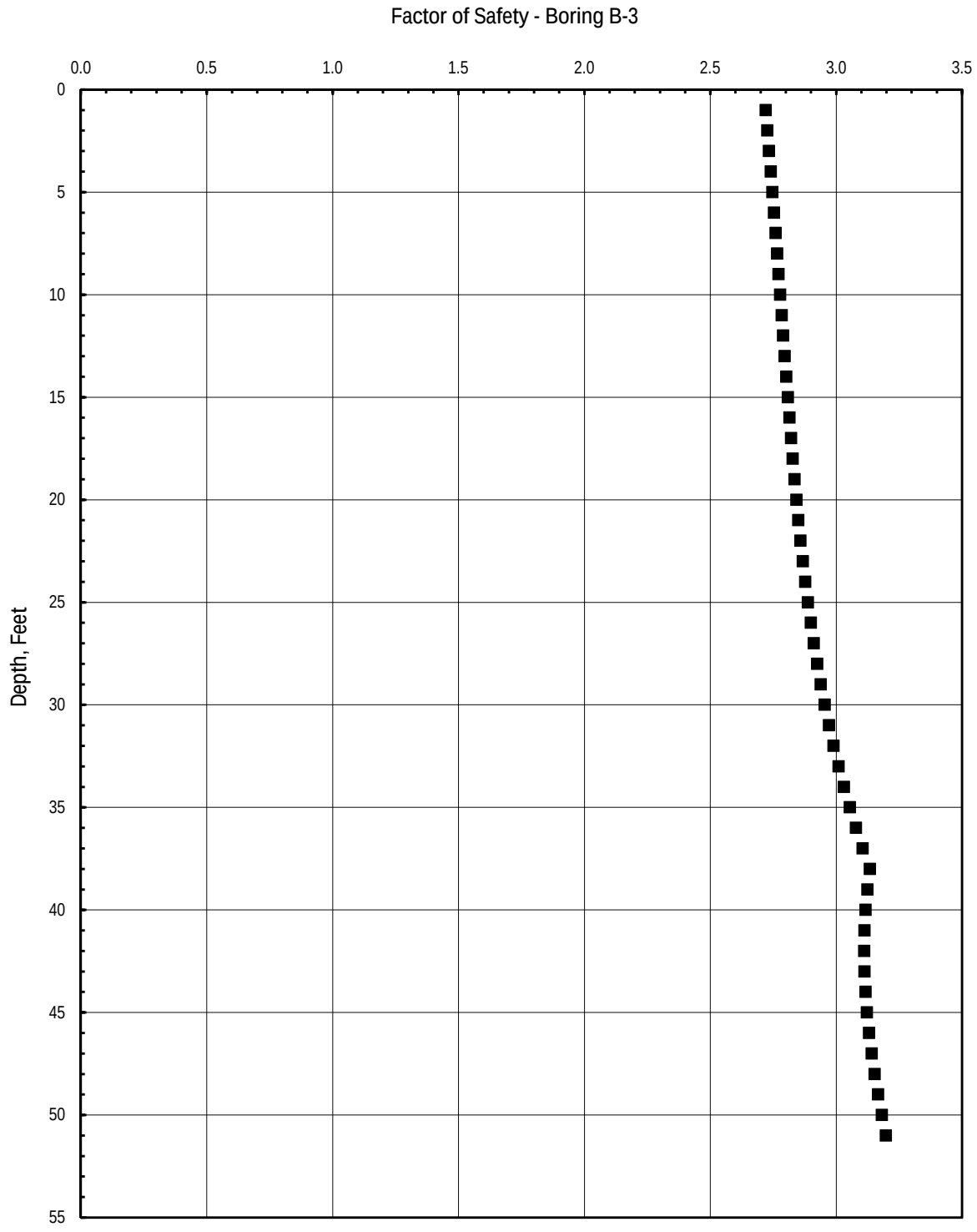
a_{max}/g 0.56
Magnitude 6.9
Groundwater Depth, Ft 38.0
Reference Pressure, p_a 2000
Unit Weight of Water 62.4
Soil Unit Weight, pcf 125

Include Kσ (Y/N) N
Use NCEER CRR7.5 (1) or Rauch CRR7.5 (2) 2
Minimum Factor of Safety for Liquefaction 1

Enter for Fine-Grained Materials | Old | New | MWF Idriss(1997) = $(M)^{2.56}/10^{2.24}$ | From Graph

Depth, ft	$N_1]_{60}$	Fines Content, FC (%)	Water Content, w_C (%)	Liquid Limit	Plastic Limit	Plasticity Index	$N_1]_{60}$, Adj. for Fines	$N_1]_{60}$, Adj. for Fines	σ, psf	σ', psf	r_d	K_σ	NCEER $CRR_{7.5}$	RAUCH $CRR_{7.5}$	CSR M=7.5	Fines Liquefiable (Y/N)	Liquefaction Potential	Factor of Safety	Volumetric Strain, %	Settlement, in.
1	63	35	11.1	30	15	15	80.6	69.0	125	125	1.00	1.00	0.800	0.800	0.294	N	Above GWT	2.721		
2	63	35	11.1	30	15	15	80.6	69.0	250	250	1.00	1.00	0.800	0.800	0.293	N	Above GWT	2.727		
3	63	35	11.1	30	15	15	80.6	69.0	375	375	0.99	1.00	0.800	0.800	0.293	N	Above GWT	2.734		
4	63	35	11.1	30	15	15	80.6	69.0	500	500	0.99	1.00	0.800	0.800	0.292	N	Above GWT	2.740		
5	63	35	11.1	30	15	15	80.6	69.0	625	625	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.747		
6	63	35	11.1	30	15	15	80.6	69.0	750	750	0.99	1.00	0.800	0.800	0.291	N	Above GWT	2.753		
7	63	35	11.1	30	15	15	80.6	69.0	875	875	0.99	1.00	0.800	0.800	0.290	N	Above GWT	2.759		
8	63	35	11.1	30	15	15	80.6	69.0	1000	1000	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.766		
9	63	35	11.1	30	15	15	80.6	69.0	1125	1125	0.98	1.00	0.800	0.800	0.289	N	Above GWT	2.772		
10	63	35	11.1	30	15	15	80.6	69.0	1250	1250	0.98	1.00	0.800	0.800	0.288	N	Above GWT	2.778		
11	31	35	10.9	30	15	15	42.2	37.0	1375	1375	0.98	1.00	0.800	0.800	0.287	N	Above GWT	2.784		
12	31	35	10.9	30	15	15	42.2	37.0	1500	1500	0.97	1.00	0.800	0.800	0.287	N	Above GWT	2.790		
13	31	35	10.9	30	15	15	42.2	37.0	1625	1625	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.796		
14	31	35	10.9	30	15	15	42.2	37.0	1750	1750	0.97	1.00	0.800	0.800	0.286	N	Above GWT	2.802		
15	31	35	10.9	30	15	15	42.2	37.0	1875	1875	0.97	1.00	0.800	0.800	0.285	N	Above GWT	2.808		
16	34	35	10.2	30	15	15	45.8	40.0	2000	2000	0.97	1.00	0.800	0.800	0.284	N	Above GWT	2.814		
17	34	35	10.2	30	15	15	45.8	40.0	2125	2125	0.96	1.00	0.800	0.800	0.284	N	Above GWT	2.821		
18	34	35	10.2	30	15	15	45.8	40.0	2250	2250	0.96	1.00	0.800	0.800	0.283	N	Above GWT	2.828		
19	34	35	10.2	30	15	15	45.8	40.0	2375	2375	0.96	1.00	0.800	0.800	0.282	N	Above GWT	2.835		
20	34	35	10.2	30	15	15	45.8	40.0	2500	2500	0.96	1.00	0.800	0.800	0.281	N	Above GWT	2.842		
21	29	35	10.2	30	15	15	39.8	35.0	2625	2625	0.95	1.00	0.800	0.800	0.281	N	Above GWT	2.850		
22	29	35	10.2	30	15	15	39.8	35.0	2750	2750	0.95	1.00	0.800	0.800	0.280	N	Above GWT	2.859		
23	29	35	10.2	30	15	15	39.8	35.0	2875	2875	0.95	1.00	0.800	0.800	0.279	N	Above GWT	2.868		
24	29	35	10.2	30	15	15	39.8	35.0	3000	3000	0.95	1.00	0.800	0.800	0.278	N	Above GWT	2.877		
25	29	35	10.2	30	15	15	39.8	35.0	3125	3125	0.94	1.00	0.800	0.800	0.277	N	Above GWT	2.888		
26	37	35	17.3	30	15	15	49.4	43.0	3250	3250	0.94	1.00	0.800	0.800	0.276	N	Above GWT	2.899		
27	37	35	17.3	30	15	15	49.4	43.0	3375	3375	0.93	1.00	0.800	0.800	0.275	N	Above GWT	2.911		
28	37	35	17.3	30	15	15	49.4	43.0	3500	3500	0.93	1.00	0.800	0.800	0.274	N	Above GWT	2.925		
29	37	35	17.3	30	15	15	49.4	43.0	3625	3625	0.93	1.00	0.800	0.800	0.272	N	Above GWT	2.939		
30	37	35	17.3	30	15	15	49.4	43.0	3750	3750	0.92	1.00	0.800	0.800	0.271	N	Above GWT	2.955		
31	37	35	17.3	30	15	15	49.4	43.0	3875	3875	0.92	1.00	0.800	0.800	0.269	N	Above GWT	2.972		
32	37	35	17.3	30	15	15	49.4	43.0	4000	4000	0.91	1.00	0.800	0.800	0.268	N	Above GWT	2.990		
33	37	35	17.3	30	15	15	49.4	43.0	4125	4125	0.90	1.00	0.800	0.800	0.266	N	Above GWT	3.010		
34	37	35	17.3	30	15	15	49.4	43.0	4250	4250	0.90	1.00	0.800	0.800	0.264	N	Above GWT	3.031		
35	37	35	17.3	30	15	15	49.4	43.0	4375	4375	0.89	1.00	0.800	0.800	0.262	N	Above GWT	3.054		
36	29	35	51.7	30	15	15	39.8	35.0	4500	4500	0.88	1.00	0.800	0.800	0.260	Y	Above GWT	3.079		
37	29	35	17.3	30	15	15	39.8	35.0	4625	4625	0.88	1.00	0.800	0.800	0.258	N	Above GWT	3.106		
38	29	35	17.3	30	15	15	39.8	35.0	4750	4750	0.87	1.00	0.800	0.800	0.255	N	NL	3.134		
39	29	35	17.3	30	15	15	39.8	35.0	4875	4813	0.86	1.00	0.800	0.800	0.256	N	NL	3.124		
40	29	35	17.3	30	15	15	39.8	35.0	5000	4875	0.85	1.00	0.800	0.800	0.257	N	NL	3.117		
41	42	35	20.1	30	15	15	55.4	48.0	5125	4938	0.84	1.00	0.800	0.800	0.257	N	NL	3.113		
42	42	35	20.1	30	15	15	55.4	48.0	5250	5000	0.83	1.00	0.800	0.800	0.257	N	NL	3.111		
43	42	35	20.1	30	15	15	55.4	48.0	5375	5063	0.82	1.00	0.800	0.800	0.257	N	NL	3.113		
44	42	35	20.1	30	15	15	55.4	48.0	5500	5126	0.81	1.00	0.800	0.800	0.257	N	NL	3.117		
45	42	35	20.1	30	15	15	55.4	48.0	5625	5188	0.80	1.00	0.800	0.800	0.256	N	NL	3.123		
46	42	35	15.7	30	15	15	55.4	48.0	5750	5251	0.79	1.00	0.800	0.800	0.256	N	NL	3.131		
47	42	35	15.7	30	15	15	55.4	48.0	5875	5313	0.78	1.00	0.800	0.800	0.255	N	NL	3.141		
48	42	35	15.7	30	15	15	55.4	48.0	6000	5376	0.77	1.00	0.800	0.800	0.254	N	NL	3.153		
49	42	35	15.7	30	15	15	55.4	48.0	6125	5439	0.76	1.00	0.800	0.800	0.253	N	NL	3.167		
50	42	35	15.7	30	15	15	55.4	48.0	6250	5501	0.75	1.00	0.800	0.800	0.251	N	NL	3.182		
51	42	35	15.7	30	15	15	55.4	48.0	6375	5564	0.74	1.00	0.800	0.800	0.250	N	NL	3.198		

Total Settlement, S_{LIQ} (in.) = 0
Total Liquifiable Layers = 0



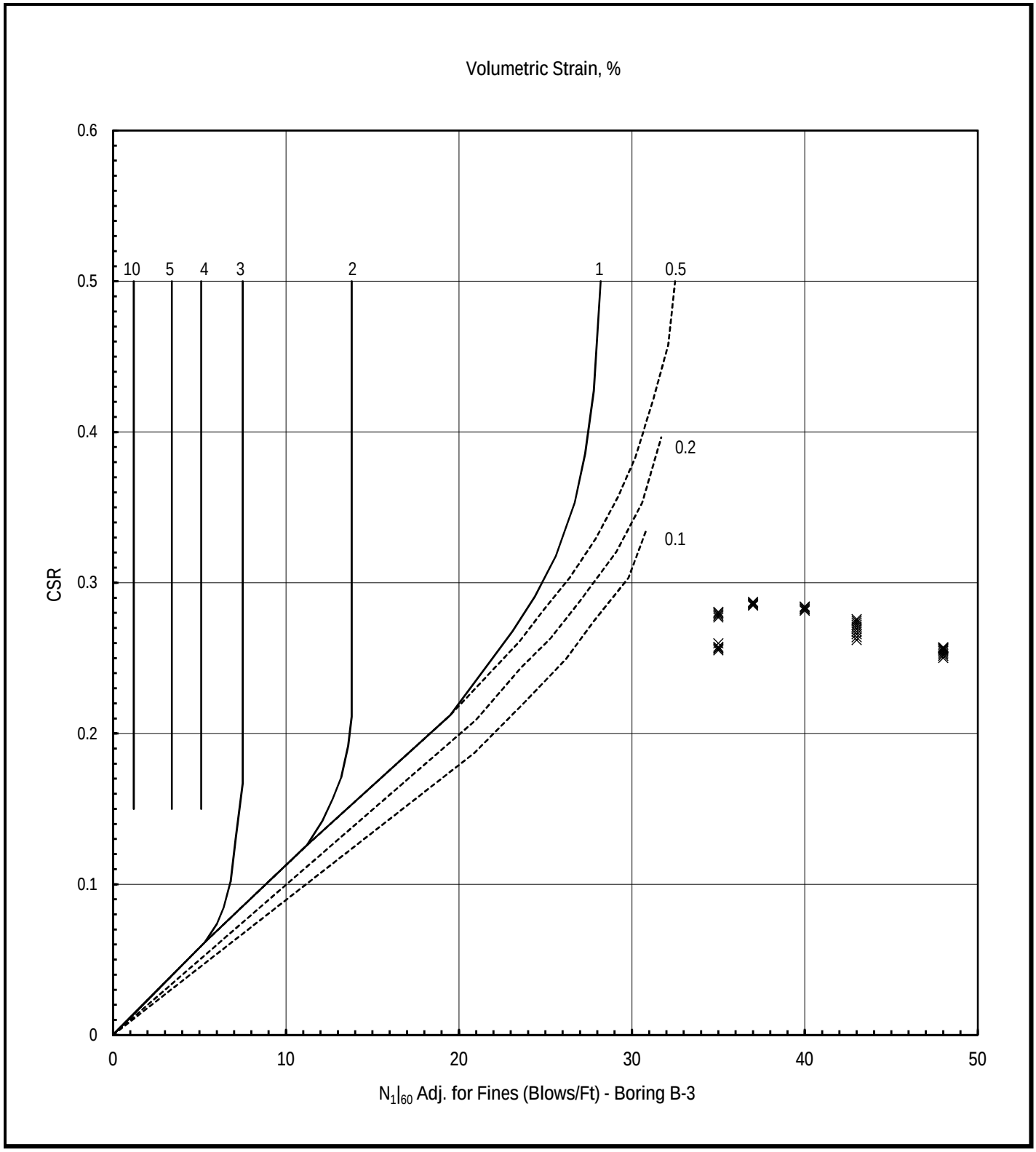
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PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05



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PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

APPENDIX E

APPENDIX E

RECOMMENDED GRADING SPECIFICATIONS

FOR

PIRAEUS POINT
ENCINITAS, CALIFORNIA

PROJECT NO. G2307-32-05

RECOMMENDED GRADING SPECIFICATIONS

1. GENERAL

1.1 These Recommended Grading Specifications shall be used in conjunction with the Geotechnical Report for the project prepared by Geocon. The recommendations contained in the text of the Geotechnical Report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereinafter in the case of conflict.

1.2 Prior to the commencement of grading, a geotechnical consultant (Consultant) shall be employed for the purpose of observing earthwork procedures and testing the fills for substantial conformance with the recommendations of the Geotechnical Report and these specifications. The Consultant should provide adequate testing and observation services so that they may assess whether, in their opinion, the work was performed in substantial conformance with these specifications. It shall be the responsibility of the Contractor to assist the Consultant and keep them apprised of work schedules and changes so that personnel may be scheduled accordingly.

1.3 It shall be the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and the approved grading plans. If, in the opinion of the Consultant, unsatisfactory conditions such as questionable soil materials, poor moisture condition, inadequate compaction, and/or adverse weather result in a quality of work not in conformance with these specifications, the Consultant will be empowered to reject the work and recommend to the Owner that grading be stopped until the unacceptable conditions are corrected.

2. DEFINITIONS

2.1 **Owner** shall refer to the owner of the property or the entity on whose behalf the grading work is being performed and who has contracted with the Contractor to have grading performed.

2.2 **Contractor** shall refer to the Contractor performing the site grading work.

2.3 **Civil Engineer** or **Engineer of Work** shall refer to the California licensed Civil Engineer or consulting firm responsible for preparation of the grading plans, surveying and verifying as-graded topography.

2.4 **Consultant** shall refer to the soil engineering and engineering geology consulting firm retained to provide geotechnical services for the project.

2.5 **Soil Engineer** shall refer to a California licensed Civil Engineer retained by the Owner, who is experienced in the practice of geotechnical engineering. The Soil Engineer shall be responsible for having qualified representatives on-site to observe and test the Contractor's work for conformance with these specifications.

2.6 **Engineering Geologist** shall refer to a California licensed Engineering Geologist retained by the Owner to provide geologic observations and recommendations during the site grading.

2.7 **Geotechnical Report** shall refer to a soil report (including all addenda) which may include a geologic reconnaissance or geologic investigation that was prepared specifically for the development of the project for which these Recommended Grading Specifications are intended to apply.

3. MATERIALS

3.1 Materials for compacted fill shall consist of any soil excavated from the cut areas or imported to the site that, in the opinion of the Consultant, is suitable for use in construction of fills. In general, fill materials can be classified as *soil* fills, *soil-rock* fills or *rock* fills, as defined below.

3.1.1 **Soil fills** are defined as fills containing no rocks or hard lumps greater than 12 inches in maximum dimension and containing at least 40 percent by weight of material smaller than ¾ inch in size.

3.1.2 **Soil-rock fills** are defined as fills containing no rocks or hard lumps larger than 4 feet in maximum dimension and containing a sufficient matrix of soil fill to allow for proper compaction of soil fill around the rock fragments or hard lumps as specified in Paragraph 6.2. **Oversize rock** is defined as material greater than 12 inches.

3.1.3 **Rock fills** are defined as fills containing no rocks or hard lumps larger than 3 feet in maximum dimension and containing little or no fines. Fines are defined as material smaller than ¾ inch in maximum dimension. The quantity of fines shall be less than approximately 20 percent of the rock fill quantity.

3.2 Material of a perishable, spongy, or otherwise unsuitable nature as determined by the Consultant shall not be used in fills.

3.3 Materials used for fill, either imported or on-site, shall not contain hazardous materials as defined by the California Code of Regulations, Title 22, Division 4, Chapter 30, Articles 9

and 10; 40CFR; and any other applicable local, state or federal laws. The Consultant shall not be responsible for the identification or analysis of the potential presence of hazardous materials. However, if observations, odors or soil discoloration cause Consultant to suspect the presence of hazardous materials, the Consultant may request from the Owner the termination of grading operations within the affected area. Prior to resuming grading operations, the Owner shall provide a written report to the Consultant indicating that the suspected materials are not hazardous as defined by applicable laws and regulations.

3.4 The outer 15 feet of *soil-rock* fill slopes, measured horizontally, should be composed of properly compacted *soil* fill materials approved by the Consultant. *Rock* fill may extend to the slope face, provided that the slope is not steeper than 2:1 (horizontal:vertical) and a soil layer no thicker than 12 inches is track-walked onto the face for landscaping purposes. This procedure may be utilized provided it is acceptable to the governing agency, Owner and Consultant.

3.5 Samples of soil materials to be used for fill should be tested in the laboratory by the Consultant to determine the maximum density, optimum moisture content, and, where appropriate, shear strength, expansion, and gradation characteristics of the soil.

3.6 During grading, soil or groundwater conditions other than those identified in the Geotechnical Report may be encountered by the Contractor. The Consultant shall be notified immediately to evaluate the significance of the unanticipated condition.

4. CLEARING AND PREPARING AREAS TO BE FILLED

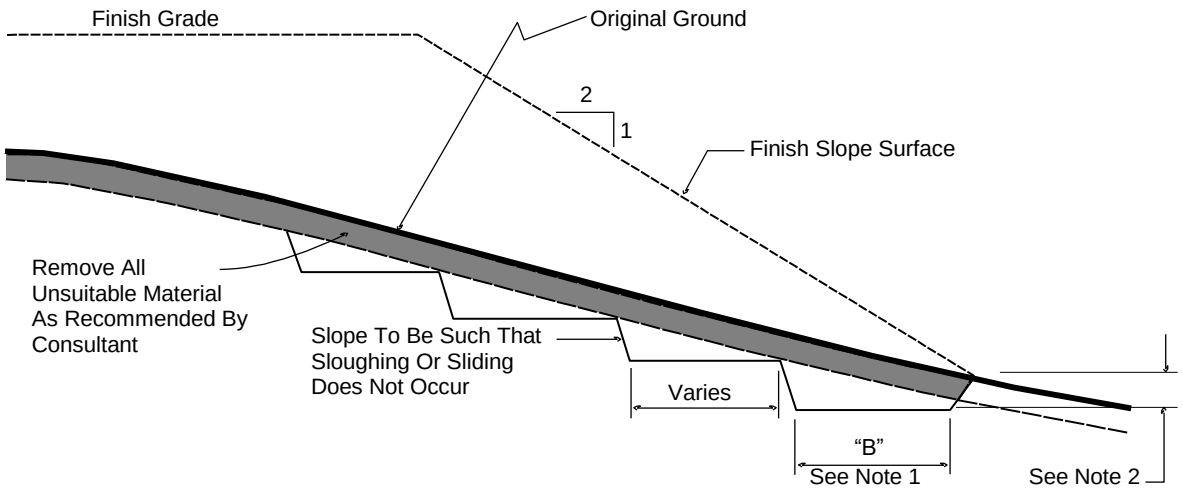
4.1 Areas to be excavated and filled shall be cleared and grubbed. Clearing shall consist of complete removal above the ground surface of trees, stumps, brush, vegetation, man-made structures, and similar debris. Grubbing shall consist of removal of stumps, roots, buried logs and other unsuitable material and shall be performed in areas to be graded. Roots and other projections exceeding 1½ inches in diameter shall be removed to a depth of 3 feet below the surface of the ground. Borrow areas shall be grubbed to the extent necessary to provide suitable fill materials.

4.2 Asphalt pavement material removed during clearing operations should be properly disposed at an approved off-site facility or in an acceptable area of the project evaluated by Geocon and the property owner. Concrete fragments that are free of reinforcing steel may be placed in fills, provided they are placed in accordance with Section 6.2 or 6.3 of this document.

4.3 After clearing and grubbing of organic matter and other unsuitable material, loose or porous soils shall be removed to the depth recommended in the Geotechnical Report. The depth of removal and compaction should be observed and approved by a representative of the Consultant. The exposed surface shall then be plowed or scarified to a minimum depth of 6 inches and until the surface is free from uneven features that would tend to prevent uniform compaction by the equipment to be used.

4.4 Where the slope ratio of the original ground is steeper than 5:1 (horizontal:vertical), or where recommended by the Consultant, the original ground should be benched in accordance with the following illustration.

TYPICAL BENCHING DETAIL



No Scale

DETAIL NOTES:

(1) Key width "B" should be a minimum of 10 feet, or sufficiently wide to permit complete coverage with the compaction equipment used. The base of the key should be graded horizontal, or inclined slightly into the natural slope.

(2) The outside of the key should be below the topsoil or unsuitable surficial material and at least 2 feet into dense formational material. Where hard rock is exposed in the bottom of the key, the depth and configuration of the key may be modified as approved by the Consultant.

4.5 After areas to receive fill have been cleared and scarified, the surface should be moisture conditioned to achieve the proper moisture content, and compacted as recommended in Section 6 of these specifications.

5. COMPACTION EQUIPMENT

5.1 Compaction of *soil* or *soil-rock* fill shall be accomplished by sheepsfoot or segmented-steel wheeled rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers, or other types of acceptable compaction equipment. Equipment shall be of such a design that it will be capable of compacting the *soil* or *soil-rock* fill to the specified relative compaction at the specified moisture content.

5.2 Compaction of *rock* fills shall be performed in accordance with Section 6.3.

6. PLACING, SPREADING AND COMPACTION OF FILL MATERIAL

6.1 *Soil* fill, as defined in Paragraph 3.1.1, shall be placed by the Contractor in accordance with the following recommendations:

6.1.1 *Soil* fill shall be placed by the Contractor in layers that, when compacted, should generally not exceed 8 inches. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to obtain uniformity of material and moisture in each layer. The entire fill shall be constructed as a unit in nearly level lifts. Rock materials greater than 12 inches in maximum dimension shall be placed in accordance with Section 6.2 or 6.3 of these specifications.

6.1.2 In general, the *soil* fill shall be compacted at a moisture content at or above the optimum moisture content as determined by ASTM D 1557.

6.1.3 When the moisture content of *soil* fill is below that specified by the Consultant, water shall be added by the Contractor until the moisture content is in the range specified.

6.1.4 When the moisture content of the *soil* fill is above the range specified by the Consultant or too wet to achieve proper compaction, the *soil* fill shall be aerated by the Contractor by blading/mixing, or other satisfactory methods until the moisture content is within the range specified.

6.1.5 After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted by the Contractor to a relative compaction of at least 90 percent. Relative compaction is defined as the ratio (expressed in percent) of the in-place dry density of the compacted fill to the maximum laboratory dry density as determined in accordance with ASTM D 1557. Compaction shall be continuous over the entire area, and compaction equipment shall make sufficient passes so that the specified minimum relative compaction has been achieved throughout the entire fill.

6.1.6 Where practical, soils having an Expansion Index greater than 50 should be placed at least 3 feet below finish pad grade and should be compacted at a moisture content generally 2 to 4 percent greater than the optimum moisture content for the material.

6.1.7 Properly compacted *soil* fill shall extend to the design surface of fill slopes. To achieve proper compaction, it is recommended that fill slopes be over-built by at least 3 feet and then cut to the design grade. This procedure is considered preferable to track-walking of slopes, as described in the following paragraph.

6.1.8 As an alternative to over-building of slopes, slope faces may be back-rolled with a heavy-duty loaded sheepsfoot or vibratory roller at maximum 4-foot fill height intervals. Upon completion, slopes should then be track-walked with a D-8 dozer or similar equipment, such that a dozer track covers all slope surfaces at least twice.

6.2 *Soil-rock* fill, as defined in Paragraph 3.1.2, shall be placed by the Contractor in accordance with the following recommendations:

6.2.1 Rocks larger than 12 inches but less than 4 feet in maximum dimension may be incorporated into the compacted *soil* fill, but shall be limited to the area measured 15 feet minimum horizontally from the slope face and 5 feet below finish grade or 3 feet below the deepest utility, whichever is deeper.

6.2.2 Rocks or rock fragments up to 4 feet in maximum dimension may either be individually placed or placed in windrows. Under certain conditions, rocks or rock fragments up to 10 feet in maximum dimension may be placed using similar methods. The acceptability of placing rock materials greater than 4 feet in maximum dimension shall be evaluated during grading as specific cases arise and shall be approved by the Consultant prior to placement.

6.2.3 For individual placement, sufficient space shall be provided between rocks to allow for passage of compaction equipment.

6.2.4 For windrow placement, the rocks should be placed in trenches excavated in properly compacted *soil* fill. Trenches should be approximately 5 feet wide and 4 feet deep in maximum dimension. The voids around and beneath rocks should be filled with approved granular soil having a Sand Equivalent of 30 or greater and should be compacted by flooding. Windrows may also be placed utilizing an "open-face" method in lieu of the trench procedure, however, this method should first be approved by the Consultant.

6.2.5 Windrows should generally be parallel to each other and may be placed either parallel to or perpendicular to the face of the slope depending on the site geometry. The minimum horizontal spacing for windrows shall be 12 feet center-to-center with a 5-foot stagger or offset from lower courses to next overlying course. The minimum vertical spacing between windrow courses shall be 2 feet from the top of a lower windrow to the bottom of the next higher windrow.

6.2.6 Rock placement, fill placement and flooding of approved granular soil in the windrows should be continuously observed by the Consultant.

6.3 *Rock* fills, as defined in Section 3.1.3, shall be placed by the Contractor in accordance with the following recommendations:

6.3.1 The base of the *rock* fill shall be placed on a sloping surface (minimum slope of 2 percent). The surface shall slope toward suitable subdrainage outlet facilities. The *rock* fills shall be provided with subdrains during construction so that a hydrostatic pressure buildup does not develop. The subdrains shall be permanently connected to controlled drainage facilities to control post-construction infiltration of water.

6.3.2 *Rock* fills shall be placed in lifts not exceeding 3 feet. Placement shall be by rock trucks traversing previously placed lifts and dumping at the edge of the currently placed lift. Spreading of the *rock* fill shall be by dozer to facilitate *seating* of the rock. The *rock* fill shall be watered heavily during placement. Watering shall consist of water trucks traversing in front of the current rock lift face and spraying water continuously during rock placement. Compaction equipment with compactive energy comparable to or greater than that of a 20-ton steel vibratory roller or other compaction equipment providing suitable energy to achieve the required compaction or deflection as recommended in Paragraph 6.3.3 shall be utilized. The number of passes to be made should be determined as described in Paragraph 6.3.3. Once a *rock* fill lift has been covered with *soil* fill, no additional *rock* fill lifts will be permitted over the *soil* fill.

6.3.3 Plate bearing tests, in accordance with ASTM D 1196, may be performed in both the compacted *soil* fill and in the *rock* fill to aid in determining the required minimum number of passes of the compaction equipment. If performed, a minimum of three plate bearing tests should be performed in the properly compacted *soil* fill (minimum relative compaction of 90 percent). Plate bearing tests shall then be performed on areas of *rock* fill having two passes, four passes and six passes of the compaction equipment, respectively. The number of passes required for the *rock* fill shall be determined by comparing the results of the plate bearing tests for the *soil* fill and the *rock* fill and by evaluating the deflection

variation with number of passes. The required number of passes of the compaction equipment will be performed as necessary until the plate bearing deflections are equal to or less than that determined for the properly compacted *soil* fill. In no case will the required number of passes be less than two.

6.3.4 A representative of the Consultant should be present during *rock* fill operations to observe that the minimum number of "passes" have been obtained, that water is being properly applied and that specified procedures are being followed. The actual number of plate bearing tests will be determined by the Consultant during grading.

6.3.5 Test pits shall be excavated by the Contractor so that the Consultant can state that, in their opinion, sufficient water is present and that voids between large rocks are properly filled with smaller rock material. In-place density testing will not be required in the *rock* fills.

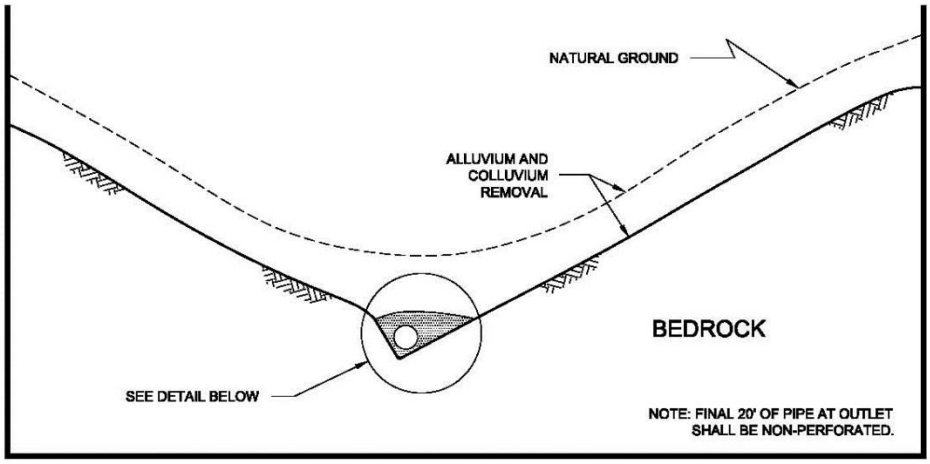
6.3.6 To reduce the potential for "piping" of fines into the *rock* fill from overlying *soil* fill material, a 2-foot layer of graded filter material shall be placed above the uppermost lift of *rock* fill. The need to place graded filter material below the *rock* should be determined by the Consultant prior to commencing grading. The gradation of the graded filter material will be determined at the time the *rock* fill is being excavated. Materials typical of the *rock* fill should be submitted to the Consultant in a timely manner, to allow design of the graded filter prior to the commencement of *rock* fill placement.

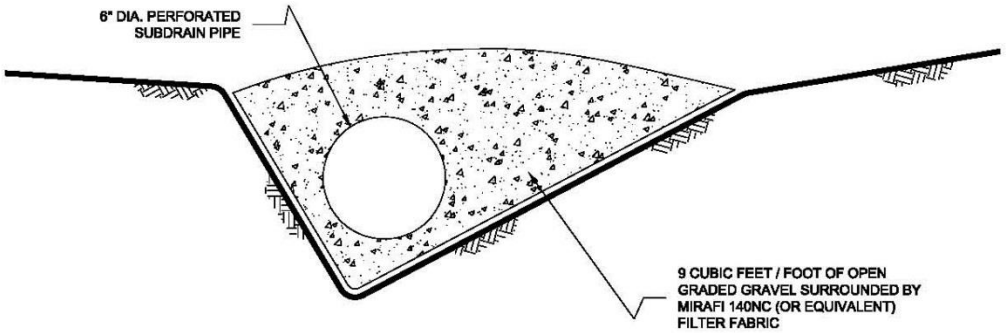
6.3.7 *Rock* fill placement should be continuously observed during placement by the Consultant.

7. SUBDRAINS

7.1 The geologic units on the site may have permeability characteristics and/or fracture systems that could be susceptible under certain conditions to seepage. The use of canyon subdrains may be necessary to mitigate the potential for adverse impacts associated with seepage conditions. Canyon subdrains with lengths in excess of 500 feet or extensions of existing offsite subdrains should use 8-inch-diameter pipes. Canyon subdrains less than 500 feet in length should use 6-inch-diameter pipes.

TYPICAL CANYON DRAIN DETAIL





NOTES:

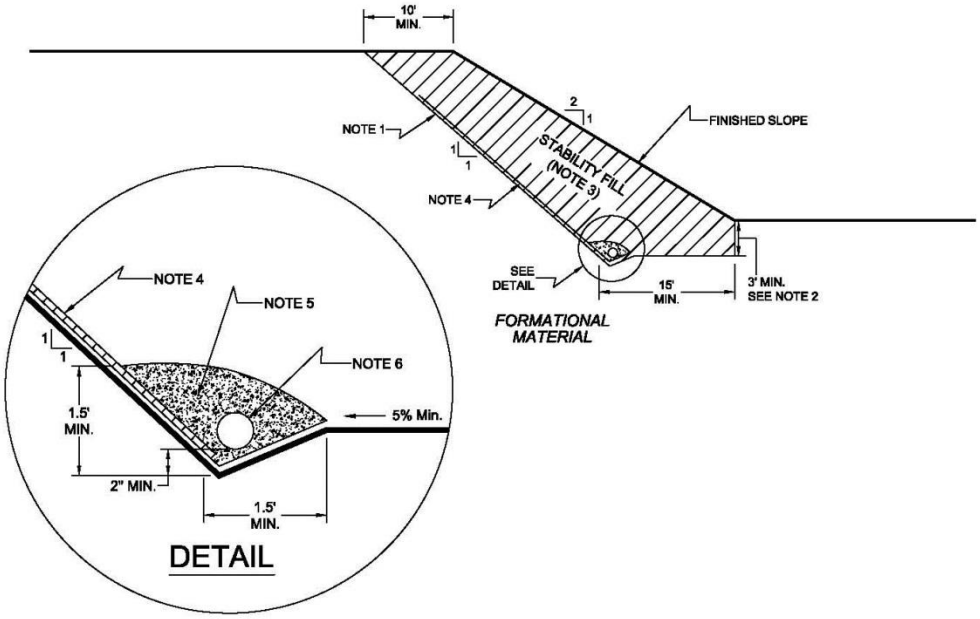
1.....6-INCH DIAMETER, SCHEDULE 80 PVC PERFORATED PIPE FOR FILLS
IN EXCESS OF 100-FEET IN DEPTH OR A PIPE LENGTH OF LONGER THAN 500 FEET.

2.....6-INCH DIAMETER, SCHEDULE 40 PVC PERFORATED PIPE FOR FILLS
LESS THAN 100-FEET IN DEPTH OR A PIPE LENGTH SHORTER THAN 500 FEET.

NO SCALE

7.2 Slope drains within stability fill keyways should use 4-inch-diameter (or lager) pipes.

TYPICAL STABILITY FILL DETAIL



NOTES:

1.....EXCAVATE BACKCUT AT 1:1 INCLINATION (UNLESS OTHERWISE NOTED).

2.....BASE OF STABILITY FILL TO BE 3 FEET INTO FORMATIONAL MATERIAL, SLOPING A MINIMUM 5% INTO SLOPE.

3.....STABILITY FILL TO BE COMPOSED OF PROPERLY COMPACTED GRANULAR SOIL.

4.....CHIMNEY DRAINS TO BE APPROVED PREFABRICATED CHIMNEY DRAIN PANELS (MIRADRAIN G200N OR EQUIVALENT) SPACED APPROXIMATELY 20 FEET CENTER TO CENTER AND 4 FEET WIDE. CLOSER SPACING MAY BE REQUIRED IF SEEPAGE IS ENCOUNTERED.

5.....FILTER MATERIAL TO BE 3/4-INCH, OPEN-GRADED CRUSHED ROCK ENCLOSED IN APPROVED FILTER FABRIC (MIRAFI 140NC).

6.....COLLECTOR PIPE TO BE 4-INCH MINIMUM DIAMETER, PERFORATED, THICK-WALLED PVC SCHEDULE 40 OR EQUIVALENT, AND SLOPED TO DRAIN AT 1 PERCENT MINIMUM TO APPROVED OUTLET.

NO SCALE

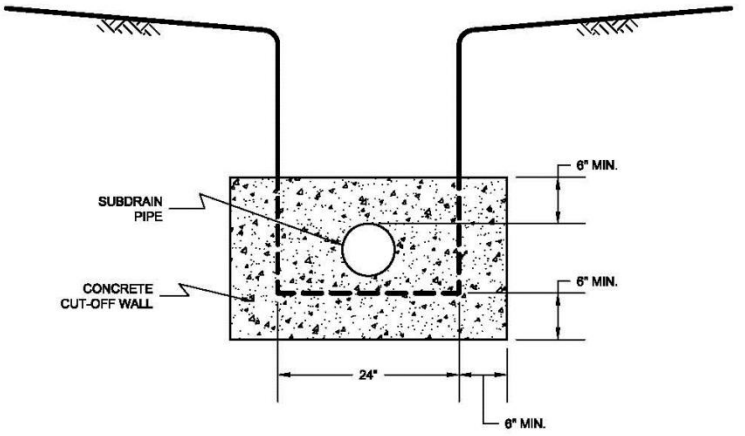
7.3 The actual subdrain locations will be evaluated in the field during the remedial grading operations. Additional drains may be necessary depending on the conditions observed and the requirements of the local regulatory agencies. Appropriate subdrain outlets should be evaluated prior to finalizing 40-scale grading plans.

7.4 *Rock* fill or *soil-rock* fill areas may require subdrains along their down-slope perimeters to mitigate the potential for buildup of water from construction or landscape irrigation. The subdrains should be at least 6-inch-diameter pipes encapsulated in gravel and filter fabric. *Rock* fill drains should be constructed using the same requirements as canyon subdrains.

7.5 Prior to outletting, the final 20-foot segment of a subdrain that will not be extended during future development should consist of non-perforated drainpipe. At the non-perforated/ perforated interface, a seepage cutoff wall should be constructed on the downslope side of the pipe.

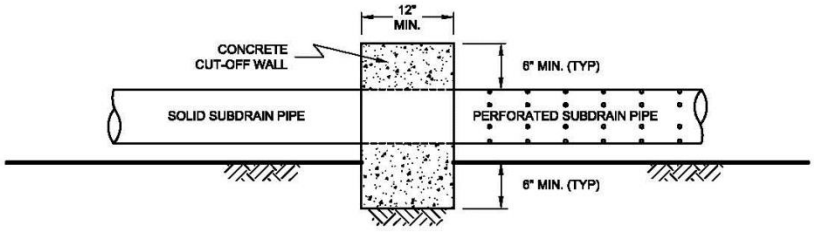
TYPICAL CUT OFF WALL DETAIL

FRONT VIEW



NO SCALE

SIDE VIEW

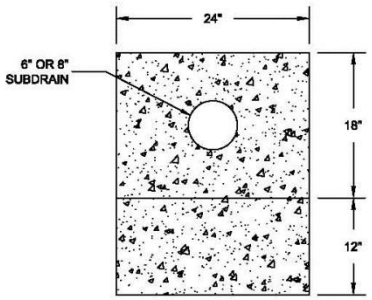


NO SCALE

7.6 Subdrains that discharge into a natural drainage course or open space area should be provided with a permanent headwall structure.

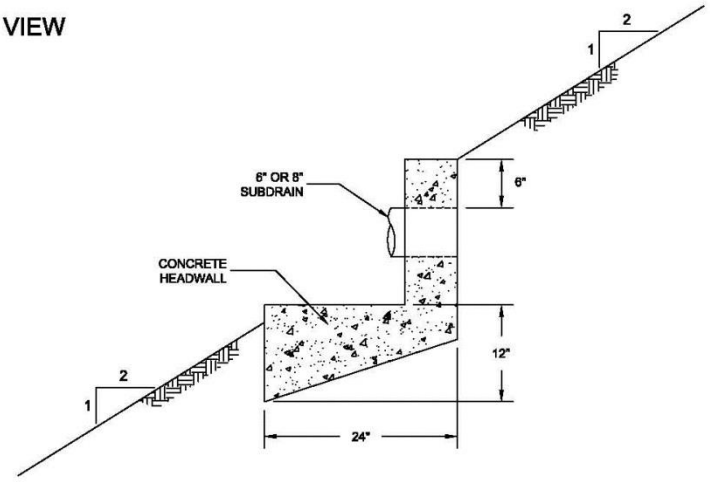
TYPICAL HEADWALL DETAIL

FRONT VIEW



NO SCALE

SIDE VIEW



NOTE: HEADWALL SHOULD OUTLET AT TOE OF FILL SLOPE OR INTO CONTROLLED SURFACE DRAINAGE

NO SCALE

7.7 The final grading plans should show the location of the proposed subdrains. After completion of remedial excavations and subdrain installation, the project civil engineer should survey the drain locations and prepare an "as-built" map showing the drain locations. The final outlet and connection locations should be determined during grading operations. Subdrains that will be extended on adjacent projects after grading can be placed on formational material and a vertical riser should be placed at the end of the subdrain. The grading contractor should consider videoing the subdrains shortly after burial to check proper installation and functionality. The contractor is responsible for the performance of the drains.

8. OBSERVATION AND TESTING

8.1 The Consultant shall be the Owner's representative to observe and perform tests during clearing, grubbing, filling, and compaction operations. In general, no more than 2 feet in vertical elevation of *soil* or *soil-rock* fill should be placed without at least one field density test being performed within that interval. In addition, a minimum of one field density test should be performed for every 2,000 cubic yards of *soil* or *soil-rock* fill placed and compacted.

8.2 The Consultant should perform a sufficient distribution of field density tests of the compacted *soil* or *soil-rock* fill to provide a basis for expressing an opinion whether the fill material is compacted as specified. Density tests shall be performed in the compacted materials below any disturbed surface. When these tests indicate that the density of any layer of fill or portion thereof is below that specified, the particular layer or areas represented by the test shall be reworked until the specified density has been achieved.

8.3 During placement of *rock* fill, the Consultant should observe that the minimum number of passes have been obtained per the criteria discussed in Section 6.3.3. The Consultant should request the excavation of observation pits and may perform plate bearing tests on the placed *rock* fills. The observation pits will be excavated to provide a basis for expressing an opinion as to whether the *rock* fill is properly seated and sufficient moisture has been applied to the material. When observations indicate that a layer of *rock* fill or any portion thereof is below that specified, the affected layer or area shall be reworked until the *rock* fill has been adequately seated and sufficient moisture applied.

8.4 A settlement monitoring program designed by the Consultant may be conducted in areas of *rock* fill placement. The specific design of the monitoring program shall be as recommended in the Conclusions and Recommendations section of the project Geotechnical Report or in the final report of testing and observation services performed during grading.

8.5 We should observe the placement of subdrains, to check that the drainage devices have been placed and constructed in substantial conformance with project specifications.

8.6 Testing procedures shall conform to the following Standards as appropriate:

8.6.1 Soil and Soil-Rock Fills:

8.6.1.1 Field Density Test, ASTM D 1556, *Density of Soil In-Place By the Sand-Cone Method.*

8.6.1.2 Field Density Test, Nuclear Method, ASTM D 6938, *Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth).*

8.6.1.3 Laboratory Compaction Test, ASTM D 1557, *Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-Pound Hammer and 18-Inch Drop*.

8.6.1.4. Expansion Index Test, ASTM D 4829, *Expansion Index Test*.

9. PROTECTION OF WORK

9.1 During construction, the Contractor shall properly grade all excavated surfaces to provide positive drainage and prevent ponding of water. Drainage of surface water shall be controlled to avoid damage to adjoining properties or to finished work on the site. The Contractor shall take remedial measures to prevent erosion of freshly graded areas until such time as permanent drainage and erosion control features have been installed. Areas subjected to erosion or sedimentation shall be properly prepared in accordance with the Specifications prior to placing additional fill or structures.

9.2 After completion of grading as observed and tested by the Consultant, no further excavation or filling shall be conducted except in conjunction with the services of the Consultant.

10. CERTIFICATIONS AND FINAL REPORTS

10.1 Upon completion of the work, Contractor shall furnish Owner a certification by the Civil Engineer stating that the lots and/or building pads are graded to within 0.1 foot vertically of elevations shown on the grading plan and that all tops and toes of slopes are within 0.5 foot horizontally of the positions shown on the grading plans. After installation of a section of subdrain, the project Civil Engineer should survey its location and prepare an *as-built* plan of the subdrain location. The project Civil Engineer should verify the proper outlet for the subdrains and the Contractor should ensure that the drain system is free of obstructions.

10.2 The Owner is responsible for furnishing a final as-graded soil and geologic report satisfactory to the appropriate governing or accepting agencies. The as-graded report should be prepared and signed by a California licensed Civil Engineer experienced in geotechnical engineering and by a California Certified Engineering Geologist, indicating that the geotechnical aspects of the grading were performed in substantial conformance with the Specifications or approved changes to the Specifications.

LIST OF REFERENCES

1. *2019 California Building Code, California Code of Regulations, Title 24, Part 2, based on the 2018 International Building Code*, prepared by California Building Standards Commission, dated July 2016.

2. *ACI 318-14, Building Code Requirements for Structural Concrete* and *Commentary on Building Code Requirements for Structural Concrete*, prepared by the American Concrete Institute, dated September, 2014.

3. *ACI 330-08, Guide for the Design and Construction of Concrete Parking Lots*, prepared by the American Concrete Institute, dated June, 2008.

4. *ASCE 7-16, Minimum Design Loads and Associated Criteria for Buildings and Other Structures, dated 2017.*

5. California Department of Conservation, Division of Mines and Geology, Probabilistic Seismic Hazard Assessment for the State of California, Open File Report 96-08, 1996.

6. County of San Diego, *San Diego County Multi Jurisdiction Hazard Mitigation Plan, San Diego, California, dated October 2017.*

7. Risk Engineering, *EZ-FRISK*, 2016.

8. Structural Engineers Association of California (SEAOC) and Office of Statewide Health Planning and Development (OSHPD), *Seismic Design Maps*, https://seismicmaps.org/, accessed January 11, 2019.

9. United States Geological Survey, *2002 Interactive Deaggregations*, http://eqint.cr.usgs.gov/deaggint/2002/index.php.

10. United States Department of Agriculture, *1953 Stereoscopic Aerial Photographs, Flight AXN-8M,* Photos Nos. 74 and 75 (scale 1:20,000).

APPENDIX J.
NOISE STUDY

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NOISE STUDY

Piraeus Point
City of Encinitas, CA

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November 15, 2022

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GLOSSARY OF COMMON TERMS

Sound Pressure Level (SPL): a ratio of one sound pressure to a reference pressure (L_{ref}) of 20 µPa. Because of the dynamic range of the human ear, the ratio is calculated logarithmically by 20 log (L/L_{ref}).

A-weighted Sound Pressure Level (dBA): Some frequencies of noise are more noticeable than others. To compensate for this fact, different sound frequencies are weighted more.

Minimum Sound Level (L_{min}): Minimum SPL or the lowest SPL measured over the time interval using the A-weighted network and slow time weighting.

Maximum Sound Level (L_{max}): Maximum SPL or the highest SPL measured over the time interval the A-weighted network and slow time weighting.

Equivalent sound level (L_{eq}): the true equivalent sound level measured over the run time. Leq is the A-weighted steady sound level that contains the same total acoustical energy as the actual fluctuating sound level.

Day Night Sound Level (Ldn): Representing the Day/Night sound level, this measurement is a 24 –hour average sound level where 10 dB is added to all the readings that occur between 10 pm and 7 am. This is primarily used in community noise regulations where there is a 10 dB "Penalty" for nighttime noise. Typically, Ldn's are measured using A weighting.

Community Noise Exposure Level (CNEL): The accumulated exposure to sound measured in a 24-hour sampling interval and artificially boosted during certain hours. For CNEL, samples taken between 7 pm and 10 pm are boosted by 5 dB; samples taken between 10 pm and 7 am are boosted by 10 dB.

Octave Band: An octave band is defined as a frequency band whose upper band-edge frequency is twice the lower band frequency.

Third-Octave Band: A third-octave band is defined as a frequency band whose upper band-edge frequency is 1.26 times the lower band frequency.

Response Time (F, S,I): The response time is a standardized exponential time weighting of the input signal according to fast (F), slow (S) or impulse (I) time response relationships. Time response can be described with a time constant. The time constants for fast, slow and impulse responses are 1.0 seconds, 0.125 seconds and 0.35 milliseconds, respectively.

EXECUTIVE SUMMARY

This noise study has been completed to determine the noise impacts to and from the proposed Piraeus Point project. The proposed project is located at the northeast corner of Piraeus Street and Plato Place in the Leucadia community of the City of Encinitas, California. The project is located east of Interstate 5 (I-5) between La Costa Avenue and Leucadia Boulevard. The community would be situated on a 6.88-acre site and would consist of 149 residential homes including 134 market-rate homes and 15 "very low" income affordable residential homes. The project would also include a pool, spa, pool house, fire pit with seating, and lounge seating.

Construction Noise Levels

The City of Encinitas requires that noise levels from construction activities do not exceed 75 dBA for more than eight hours, and that construction activity is limited to the hours of 7:00 a.m. to 7:00 p.m. on Mondays through Saturdays. Construction activity noise levels associated with the proposed project are only expected to be 75 dBA or greater at residential property lines when activity is taking place in close proximity to the property line, and at all other times will be less than 75 dBA. Due to the large area of the site, this scenario is only expected to take place for very brief periods of time throughout the day, and for this reason, construction limited to the twelve allowable hours of operation established within the code will comply with City of Encinitas noise regulations. Therefore, the 8 hour noise level is anticipated to be well below the 75 dBA threshold and would be considered less than significant.

Construction Vibration

The nearest vibration-sensitive uses are the residences located to the east of the project site, 60 feet or more from the proposed construction. The average vibration levels that would be experienced at the nearest vibration sensitive land uses to the east from temporary construction activities were found to be below the City thresholds for vibration.

Onsite Transportation Related Noise Levels

The results of this analysis indicate that future vehicle noise from Interstate 5 to the west is the principal source of community noise that could impact the site. Based upon the findings, the outdoor use areas were determined to be above the City's Noise compatibility threshold of 70 dBA Ldn without attenuation measures. It was determined that a minimum 5-foot barrier be located along the rooftop decks and a minimum 8-foot barrier be located around the pool area. The barriers must be constructed of a non-gapping material consisting of masonry, wood, plastic, fiberglass, glass, vinyl, steel, or a combination of those materials, with no cracks or gaps through or below the enclosure walls.

The City of Encinitas as part of its noise guidelines also states, consistent with Title 24 of the California Code of Regulations (CCR), a project is required to perform an interior assessment on the portions of a project site where building façade noise levels are above the normally compatible noise level in order to ensure that acceptable interior noise levels can be achieved. The City of Encinitas' Noise Compatibility Guidelines require interior noise levels in residential structures to be reduced to 45 dBA Ldn.

Additionally, a preliminary interior noise assessment was conducted for all units since the building facades noise levels are above 60 dBA CNEL. It was determined that an STC rating of 33-40 will be needed for all glass assemblies to reduce the interior noise levels below 45 dBA CNEL. It should be noted: with a closed window condition, the units require a means of mechanical ventilation (e.g., air conditioning). Once the final architectural plans are available, a final interior noise study should be conducted to ensure interior noise reductions.

Offsite Project Related Transportation Noise Levels

The project will not create a direct impact of more than 3 dBA Ldn on any roadway segment and no cumulative noise increase of 3 dBA Ldn or more was found. Therefore, the proposed project's direct and cumulative contributions to off-site roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses.

Operational Noise Levels

The proposed operational noise levels are in compliance with the City's daytime 50 dBA property line standard and would also meet the most restrictive nighttime standard of 45 dBA. No impacts are anticipated and no further mitigation is required.

1.0 PROJECT INTRODUCTION

1.1 Purpose of this Study

The purpose of this noise study is to determine noise impacts, if any, to and from the proposed project (i.e., traffic, operations and construction). Should impacts be determined, the intent of this study would be to recommend suitable mitigation measures to reduce impacts to below a level of significance.

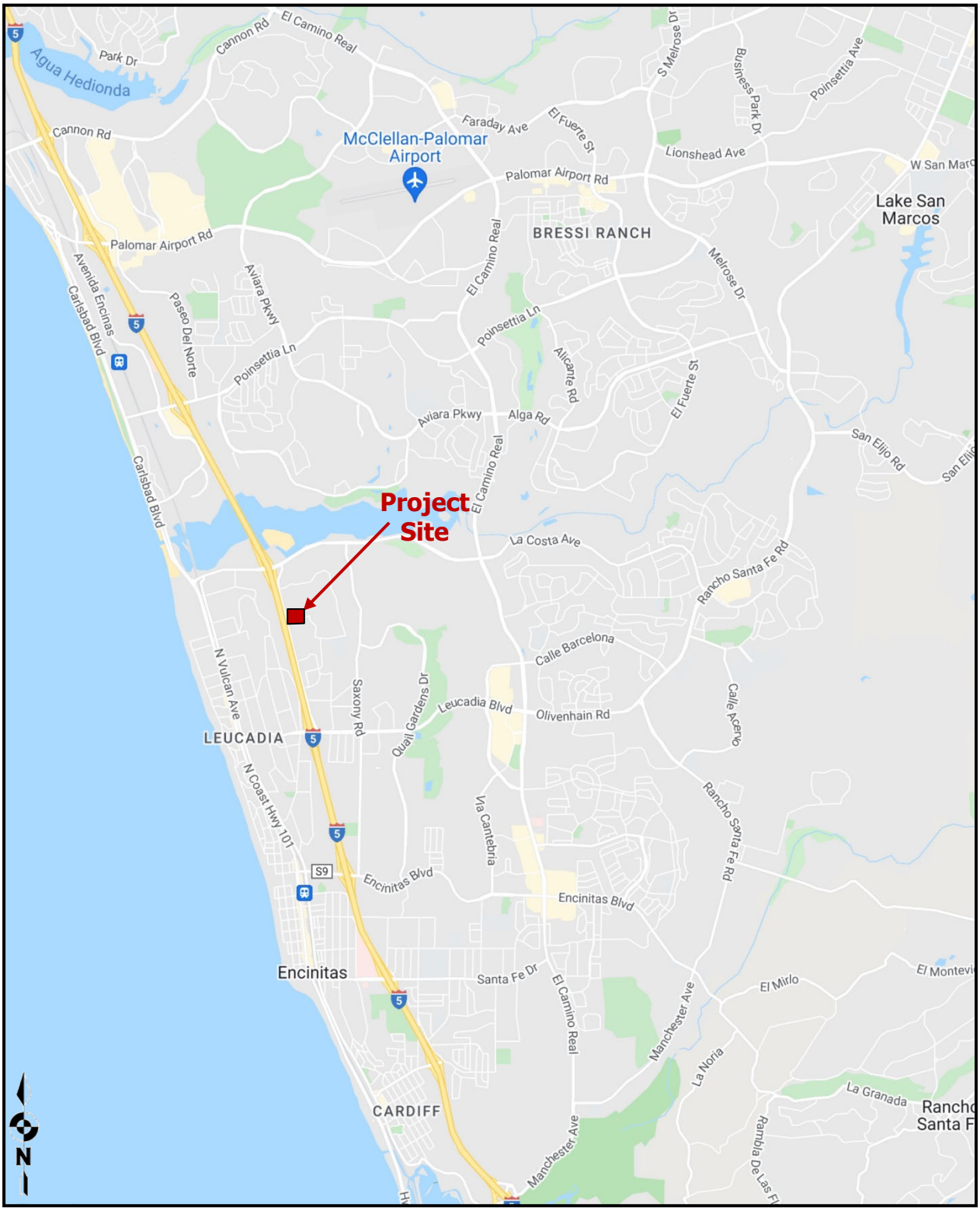
1.2 Project Location

The proposed Piraeus Townhomes project is located on a 6.88-acre project site on the northeast corner of Piraeus Street and Plato Place in the Leucadia community of the City of Encinitas, California. The project is located east of Interstate 5 (I-5) between La Costa Avenue and Leucadia Boulevard. The project site is bordered by Piraeus Street to the west, Plato Place to the south, and existing single-family homes to the north and east. A general project vicinity map is shown in Figure 1-1.

1.3 Project Description

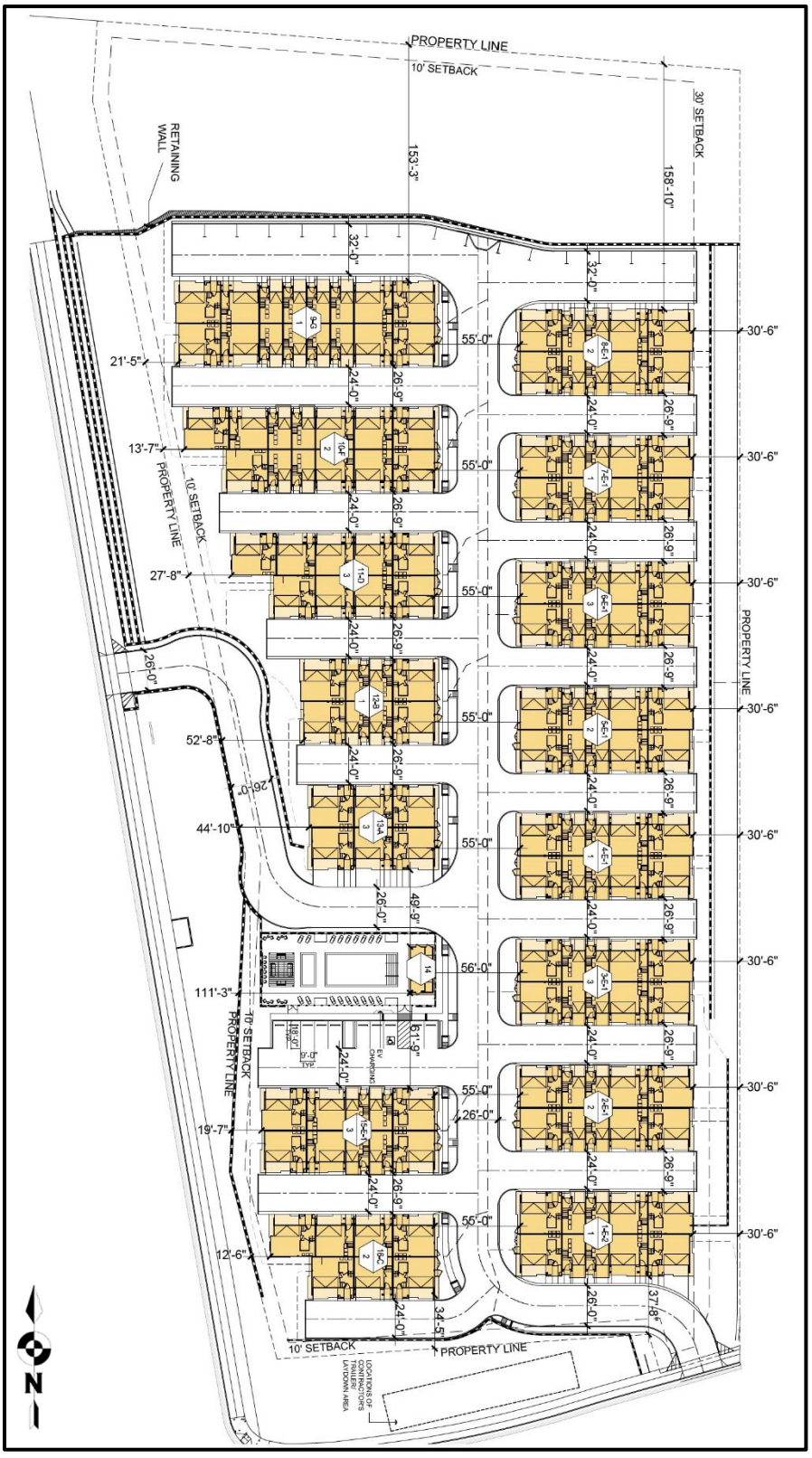
The community would be situated on a 6.88-acre site and would consist of 149 residential homes including 134 would be market-rate homes and 15 would be "very low" income affordable residential homes. The project would also include a pool, spa, pool house, fire pit with seating, and lounge seating. Proposed biological open space is to the north of the development area. The proposed project site configuration is shown in Figure 1-2.

Figure 1-1: Project Vicinity Map



Source: (Google, 2022)

Figure 1-2: Proposed Project Site Plan



Source: (KTGY, 2022)

2.0 FUNDAMENTALS

Noise is defined as unwanted or annoying sound which interferes with or disrupts normal activities. Exposure to high noise levels has been demonstrated to cause hearing loss. The individual human response to environmental noise is based on the sensitivity of that individual, the type of noise that occurs, and when the noise occurs.

Sound is measured on a logarithmic scale consisting of sound pressure levels known as a decibel (dB). The sounds heard by humans typically do not consist of a single frequency but of a broadband of frequencies having different sound pressure levels. The method for evaluating all the frequencies of the sound is to apply an A-weighting to reflect how the human ear responds to the different sound levels at different frequencies. The A-weighted sound level adequately describes the instantaneous noise whereas the equivalent sound level depicted as Leq represents a steady sound level containing the same total acoustical energy as the actual fluctuating sound level over a given time interval.

The Day-Night Average Sound Level (Ldn) is the 24 hour A-weighted average for sound, with corrections for nighttime hours. The corrections require an addition of 10 decibels to sound levels at nighttime hours between 10 p.m. and 7 a.m. These additions are made to account for the increased sensitivity during the nighttime hours when sound appears louder. Ldn values do not represent the actual sound level heard at any particular time, but rather represents the total sound exposure.

A vehicles noise level is a combination of the noise produced by a vehicle's engine, exhaust, and tires. The cumulative traffic noise levels along a roadway segment are based on three primary factors: the amount of traffic, the travel speed of the traffic, and the vehicle mix ratio or number of medium and heavy trucks. The intensity of traffic noise is increased by higher traffic volumes, greater speeds, and increased number of trucks.

Because mobile/traffic noise levels are calculated on a logarithmic scale, a doubling of the traffic noise or acoustical energy results in a noise level increase of 3 dBA. Therefore, the doubling of the traffic volume, without changing the vehicle speeds or mix ratio, results in a noise increase of 3 dBA. Mobile noise levels radiate in an almost oblique fashion from the source and drop off at a rate of 3 dBA for each doubling of distance under hard site conditions and at a rate of 4.5 dBA for soft site conditions. Hard site conditions consist of concrete, asphalt, and hard pack dirt while soft site conditions exist in areas having slight grade changes, landscaped areas, and vegetation. Alternately, fixed/point sources radiate outward uniformly as it travels away from the source. Their sound levels attenuate or drop off at a rate of 6 dBA for each doubling of distance.

The most effective noise reduction methods consist of controlling the noise at the source and

blocking the noise transmission with barriers. Any or all of these methods may be required to reduce noise levels to an acceptable level. To be effective, a noise barrier must have enough mass to prevent significant noise transmission through it and high enough and long enough to shield the receiver from the noise source. A safe minimum surface weight for a noise barrier is 3.5 pounds/square foot (equivalent to 3/4-inch plywood), and the barrier must be carefully constructed so that there are no cracks or openings.

Barriers constructed of wood or as a wooden fence must have minimum design considerations as follows: the boards must be ¾ inch thick and free of any gaps or knot holes. The design must also incorporate either overlapping the boards at least 1 inch or utilizing a tongue-and-grove design for this to be achieved.

3.0 REGULATORY FRAMEWORK

3.1 State of California

Established in 1973, the California Department of Health Services Office of Noise Control (ONC) was instrumental in developing regularity tools to control and abate noise for use by local agencies. One significant model is the "Land Use Compatibility for Community Noise Environments Matrix." The matrix allows the local jurisdiction to clearly delineate compatibility of sensitive uses with various incremental levels of noise.

The State of California has established noise insulation standards as outlined in Title 24 and the Uniform Building Code (UBC) which in some cases requires acoustical analyses to outline exterior noise levels and to ensure interior noise levels do not exceed the interior threshold. The State mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services.

3.2 Municipal Code

Construction Noise

Section 9.32.410 of the City of Encinitas Municipal Code restricts the operation of construction equipment to the hours of 7 a.m. to 7 p.m., Mondays through Saturdays. The Municipal Code also states that it is unlawful to operate construction equipment that exceeds a noise level of 75 dBA for more than eight hours during any 24-hour period when measured at residential property lines (City of Encinitas Municipal Code).

Operational Noise

Section 30.40 of the City of Encinitas Municipal Code contains noise limits that would apply to noise sources located on the project site, including air conditioning units. The Municipal Code specifies noise limits based on the zoning of the properties in question. Properties zoned RR to R-8 have noise limits of 50 dBA between the hours of 7 a.m. and 10 p.m., and 45 dBA between the hours of 10 p.m. and 7 a.m. Properties zoned R-11 to R-30 have noise limits of 55 dBA between the hours of 7 a.m. and 10 p.m., and 50 dBA between the hours of 10 p.m. and 7 a.m. Commercial zones have noise limits of 60 dBA between the hours of 7 a.m. and 10 p.m., and 55 dBA between the hours of 10 p.m. and 7 a.m. As air conditioning equipment may be operational during nighttime hours, the more stringent nighttime noise limits would also apply at surrounding properties. The exterior property line noise limits are shown in Table 3-1 below.

Table 3-1: City of Encinitas Exterior Noise Limits

Adjacent Zone	Noise Level [dB(A)]	
	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
Rural Residential (RR), Rural Residential-1 RR-1), Rural Residential-2 (RR-2), Residential-3 (R-3), Residential-5 (R-5), Residential-8 (R-8)	50	45
Residential-11 (R-11), Residential Single Family-11 (RS-11), Residential-15 (R-15), Residential-20 (R-20), Residential-25 (R-25), Mobile Home Park (MHP)	55	50
Office Professional (OP), Limited Local Commercial (LLC), Local Commercial (LC), General Commercial (GC), Limited Visitor Serving Commercial (L-VSC), Visitor Serving Commercial (VSC)	60	55
Light Industrial (L-I), Business Park (BP)	60	55
Source: City of Encinitas Municipal Code 30.40.010(A)		

As stated in Section 30.40.10 (B), every use shall be operated so that the ground vibration generated at any time and measured at any point along the lot line of the lot on which the use is located shall not be perceptible and shall not exceed the limits of any adjacent zone. The property line ground vibration limits are summarized in Table 3-2.

Table 3-2: City of Encinitas Ground Vibration Limits

Adjacent Zone	Vibration in Inches per Second	
	Impact	Steady-State
Residential	0.006	0.03
Commercial	0.010	0.05
Light Industrial	0.040	0.020
Public/Semi-Public	0.010	0.05
Source: City of Encinitas Municipal Code 30.40.010(B)		

3.3 Noise Element

Onsite Transportation Noise (Land Use Compatibility)

The City of Encinitas General Plan Noise Element states that the Noise and Land Use Compatibility Guidelines, (shown in Figure 2 of the Noise Element and provided below in Figure 3-1 in this report) and the accompanying discussion should set forth the criteria for siting new development in the City of Encinitas (City of Encinitas General Plan, 1994). These guidelines state that any project which would be located in a normally unacceptable noise exposure area, based on the Land Use Compatibility Guidelines, shall require an acoustical analysis. Noise mitigation in the

future shall be incorporated in the project as needed. As a condition of approval of a project, the City may require post-construction noise monitoring and sign off by an acoustician to ensure that City requirements have been met.

Pursuant to the Noise and Land Use Compatibility Guidelines (Figure 3-1 below), exterior noise levels ranging up to 60 dBA Ldn are classified as "normally acceptable" for multi-family residential development based upon the assumption that the homes are built with normal conventional construction. Noise levels ranging from 60 to 70 dBA Ldn are "conditionally acceptable". "Conditionally acceptable" means that noise levels are acceptable only when a detailed noise analysis is conducted and needed noise insulation features are included in the design.

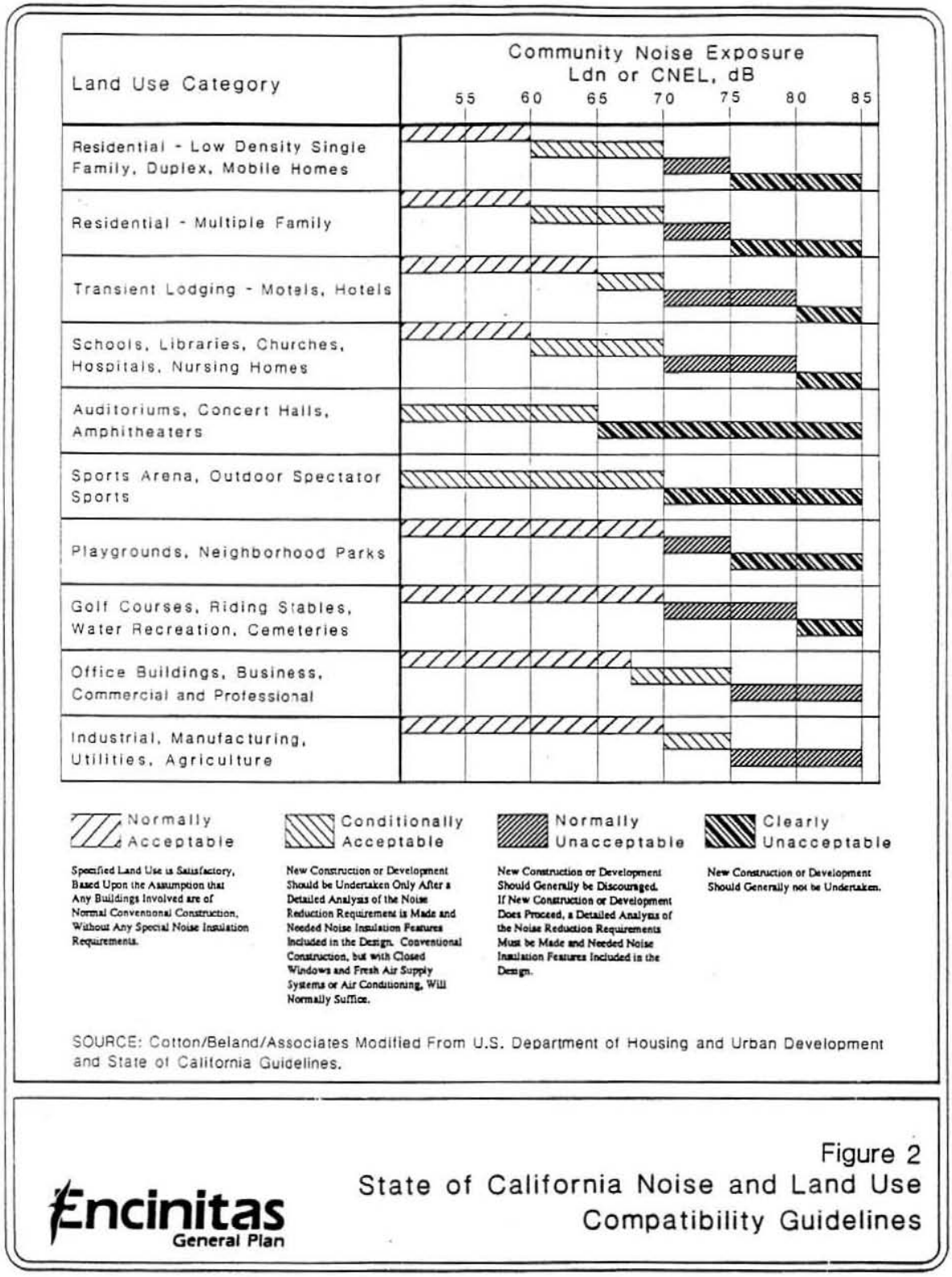
Conventional construction with closed windows and a fresh air supply system or air conditioning will normally suffice as "acceptable noise insulation" features. Noise levels in the 70 to 75 dBA Ldn range are classified as "generally unacceptable" and new construction or development is discouraged, but may proceed if a detailed noise analysis is conducted and needed noise insulation features included in the design. For commercial and industrial uses noise levels up to 70 dBA Ldn are normally acceptable; noise levels between 70-80 dBA Ldn are generally unacceptable and development of these land uses in noise environments that exceed 75 dBA Ldn are discouraged.

Interior noise levels should be mitigated to a maximum of 45 dBA Ldn in all habitual rooms when the exterior of the residence are exposed to levels of 60 dBA Ldn or more. If windows and doors are required to be closed to meet the interior noise standard, then mechanical ventilation shall be provided per City requirements.

Offsite Transportation Noise

In accordance with CEQA, a project should not have a noticeable adverse impact on the surrounding environment. Noise level changes greater than 3 dBA, or a doubling of the acoustic energy, are often identified as audible and considered potentially significant, while changes less than 3 dBA are typically not discernible. For the purposes for this analysis, a direct and cumulative roadway noise impact would be considered significant if the project increases noise levels at a noise sensitive land use 3 dBA Ldn and if the noise level increases above an unacceptable noise level per the City's General Plan.

Figure 3-1: Land Use - Noise Compatibility Guidelines



4.0 EXISTING NOISE ENVIRONMENT

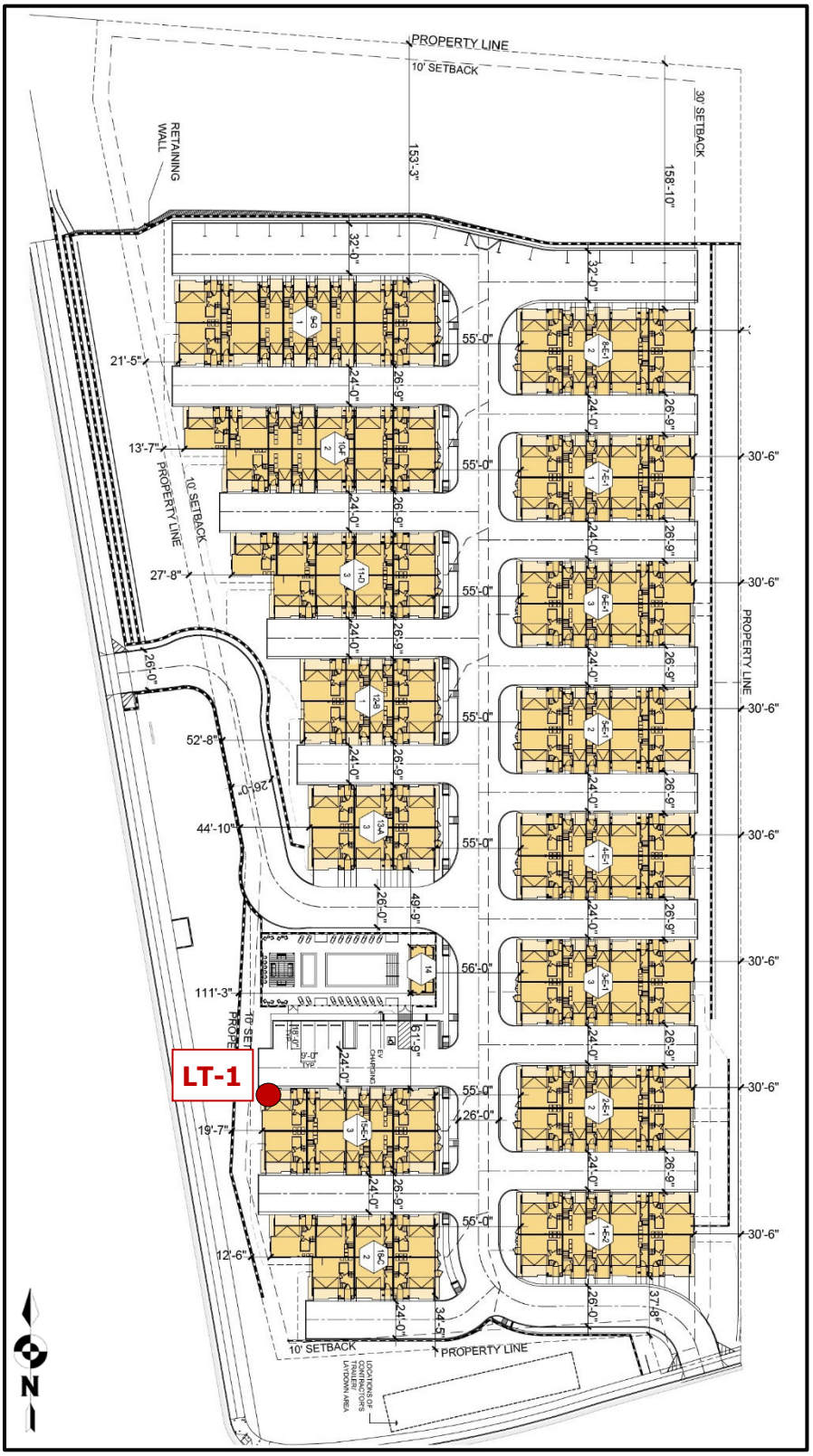
Long-term 24-hour measurements were taken at the project site having a relatively flat terrain and no obstruction from trees or structures. The noise measurements were recorded on Wednesday February 9th to Thursday February 10th, 2022 by Ldn Consulting between approximately 11:00 a.m. and 11:00 a.m. the following day. Noise measurements were taken using a Larson-Davis Spark Model 706 Type 2 precision sound level meter, programmed, in "slow" mode, to record noise levels in "A" weighted form. The sound level meter and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200.

Table 4-1 provides the hourly noise levels along with the average and Ldn values. The noise measurement locations were determined based on site access and noise impact potential to the proposed sensitive uses. Long-term monitoring location 1 (LT-1) was located at the southern portion of the project site. The noise monitoring locations are provided graphically in Figure 4-1.

Table 4-1: Long-Term Noise Level Summary

Time	LT-1 (Leq)	LT-1 (Ldn)
12:00 PM	64.8	64.8
1:00 PM	65.6	65.6
2:00 PM	65.6	65.6
3:00 PM	63.5	63.5
4:00 PM	65.5	65.5
5:00 PM	65.3	65.3
6:00 PM	65.0	65.0
7:00 PM	67.7	67.7
8:00 PM	68.1	73.1
9:00 PM	67.8	72.8
10:00 PM	66.7	71.7
11:00 PM	65.8	75.8
12:00 AM	64.3	74.3
1:00 AM	61.9	71.9
2:00 AM	61.3	71.3
3:00 AM	60.9	70.9
4:00 AM	63.0	73.0
5:00 AM	62.0	72.0
6:00 AM	63.9	73.9
7:00 AM	67.7	77.7
8:00 AM	66.3	66.3
9:00 AM	63.6	63.6
10:00 AM	64.8	64.8
11:00 AM	62.3	62.3
Overall	**65.2**	**71.2**

Figure 4-1: Noise Measurement Locations



5.0 POTENTIAL IMPACTS

5.1 Construction Noise Levels

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment includes haul trucks, water trucks, graders, dozers, loaders, and scrapers and can reach relatively high levels. Grading activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours.

The U.S. Environmental Protection Agency (U.S. EPA) has compiled data regarding the noise generating characteristics of specific types of construction equipment. Noise levels generated by heavy construction equipment can range from 60 dBA to in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 75 dBA measured at 50 feet from the noise source to the receptor would be reduced to 69 dBA at 100 feet from the source to the receptor and reduced to 63 dBA at 200 feet from the source.

The City of Encinitas requires that noise levels from construction activity do not exceed 75 dBA for more than eight hours, and that construction activity is limited to the hours of 7:00 a.m. to 7:00 p.m. on Mondays through Saturdays. As detailed in Table 5-1, instantaneous noise levels from construction equipment during grading activities are expected to range from 73 to 79 dBA at 50 feet from the equipment.

Potential Noise Impact Identification

Based on the EPA noise emissions, empirical data and the amount of equipment needed, worst-case noise levels from the construction equipment operations would occur during the base operations (grading/site preparation). The construction schedule identifies that grading activities will occur in a single phase all at the same time, with anticipated equipment including an excavator, a grader, a rubber tire dozer, and three tractors/backhoes. Due to physical constraints and normal site preparation operations, most of the equipment will be spread out over the site. A list of equipment used during grading is summarized in Table 5-1.

Table 5-1: Construction Noise Levels

Construction Equipment	Quantity	Source Level @ 50-Feet (dBA)*	Cumulative Noise Level @ 50-Feet (dBA)
Tractor/Backhoe	3	72	76.8
Dozer	1	74	74.0
Loader/Grader	1	73	73.0
Excavator	1	79	79.0
*Source: U.S. Environmental Protection Agency (U.S. EPA), 1971 and Empirical Data			

At any given time, a piece of construction equipment would only be within 50 feet of a sensitive receptor for a very short duration, after which it would move to another part of the project site, further from existing sensitive receptors.

Construction activity noise levels are only expected to be 75 dBA or greater at residential property lines when activity is taking place in close proximity to the property line, and at all other times will be less than 75 dBA. Due to the large area of the site, this scenario is only expected to take place for very brief periods of time throughout the day, and for this reason, construction limited to the twelve allowable hours of operation established within the code will comply with City of Encinitas noise regulations. Therefore, the 8 hour noise level is anticipated to be below the 75 dBA threshold and would be considered less than significant.

Potential Vibration Impact Identification

Increases in groundborne vibration and noise levels attributable to the proposed project would be primarily associated with short-term construction-related activities. Construction on the project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

The nearest vibration-sensitive uses are the residential uses located to the east of the project site, 60 feet or more from the proposed construction. Table 5-2 lists the average vibration levels that would be experienced at the nearest vibration sensitive land uses to the east from temporary construction activities based on vibrations. Loaded trucks will be traveling on site and were assessed at a minimum distance of 60 feet from the proposed construction activities to be conservative. No impactive vibration sources (i.e., pile drivers) are anticipated and therefore the project would not exceed the impact thresholds.

Table 5-2: Vibration Levels from Construction Activities (Nearest Receptors)

Equipment	Approximate Velocity Level at 25 Feet (VdB)	Approximate RMS Velocity at 25 Feet (in/sec)[1]	Approximate RMS Velocity at 60 Feet (in/sec)[2]
Small bulldozer	58	0.003	0.0008
Jackhammer	79	0.035	0.0094
Loaded trucks	86	0.076	0.0204
Large bulldozer	87	0.089	0.0239
		City Criteria	0.03
		Significant Impact?	**No**

[1] Root Mean Square (RMS) Velocity provided by the (FTA, 2006)
[2] Peak Particle Velocity (PPV) at Distance D = PPVref x $(25/D)^{1.5}$ provided by the (FTA, 2006)

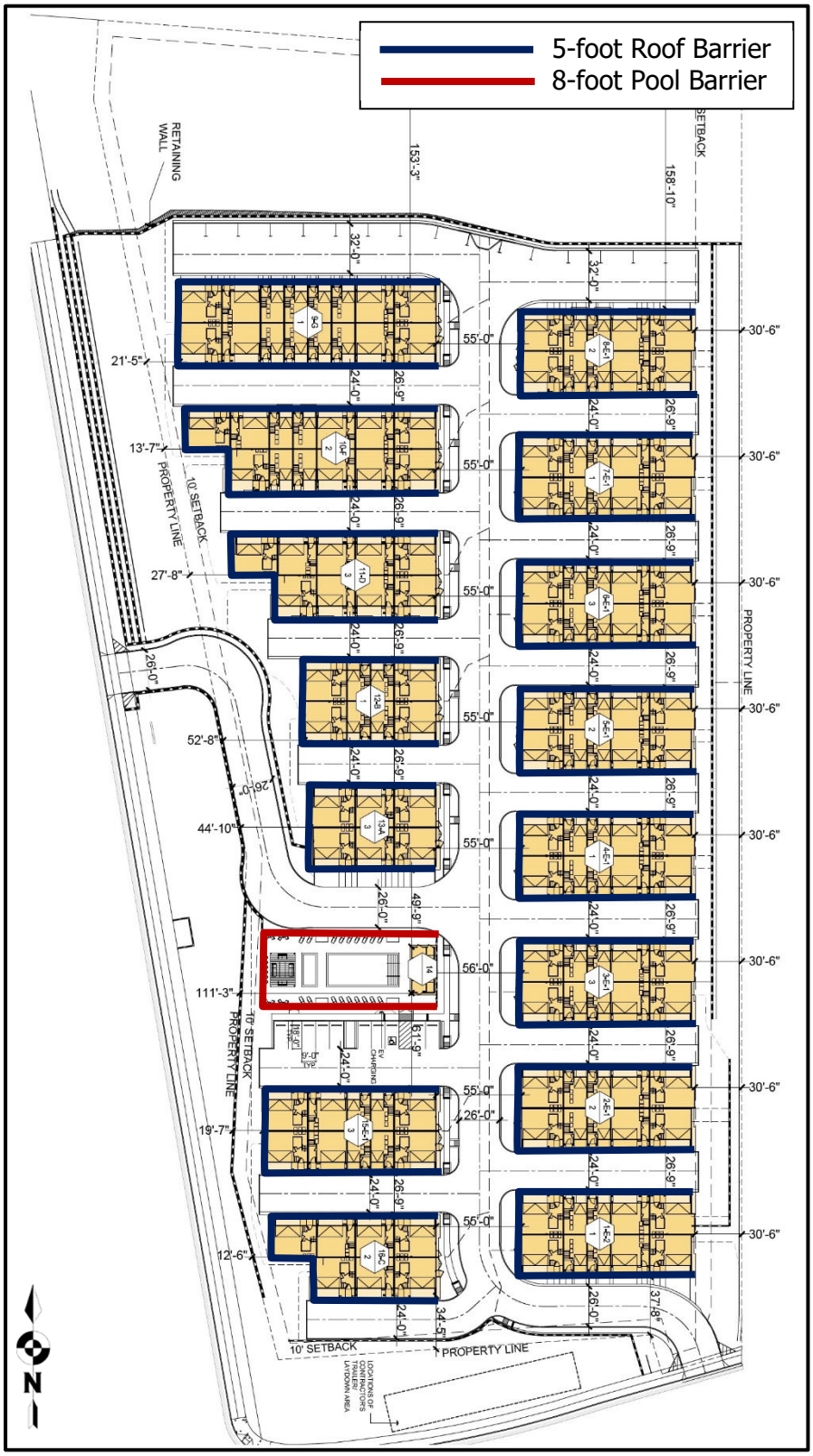
5.2 Transportation Noise Levels

Onsite Transportation Related Noise Levels

The primary source of noise impacts to the project site is from vehicular noise from Interstate 5 (I-5) to the west. According to the Caltrans Preliminary Noise Abatement Decision Report (NADR) for the Interstate 5 North Coast Corridor Project prepared by Dokken Engineering, future peak hour noise levels at the project site are expected to be as high as 73 dBA Leq with no shielding at approximately 340 feet from the centerline of Interstate 5 (Dokken Engineering, 2007). The nearest proposed building façade is located 220 feet from the centerline of Interstate 5. Therefore, noise levels at the project site could potentially reach 75 dBA Leq at the building facades with no shielding. According to the Caltrans Technical Noise Supplement (2009), the general rule is that Ldn is within about 2 dBA of Leq under normal traffic conditions. Therefore, to convert the noise levels from Leq to Ldn, 2 dBA must be added. The resultant noise levels at the project site are calculated to be 77 dBA Ldn.

Outdoor usable space is provided by private rooftop decks and the common pool area. To meet the City's 70 dBA Ldn noise threshold to be considered "conditionally acceptable", the outdoor use areas will need a minimum 7 dBA reduction. To determine the required mitigation for the outdoor use areas, the Fresnel Barrier Reduction Calculations based on distance, source height, receiver elevation and the top of barrier were modeled. It was determined that a minimum 5-foot barrier be located along the rooftop decks and a minimum 8-foot barrier be located around the pool area as shown in Figure 5-1. The Fresnel calculations are provided as an ***Attachment A.***

Figure 5-1: Noise Barrier Locations



The barriers must be constructed of a non-gapping material consisting of masonry, wood, plastic, fiberglass, glass, vinyl, steel, or a combination of those materials, with no cracks or gaps through or below the enclosure walls.

The City of Encinitas noise guidelines also state, consistent with Title 24 of the California Code of Regulations (CCR), that a project is required to perform an interior assessment on the portions of a project site where building façade noise levels are above the normally compatible noise level in order to ensure that acceptable interior noise levels can be achieved. The first row of buildings would be exposed to noise levels of 77 dBA Ldn. Based on the additional distance to the second row of buildings, noise levels would be reduced an additional 2 dBA. Typically, three decibels of attenuation is allowed for the first row of buildings when they block 40 to 65% of the line of sight to the noise source, and three to five decibels of attenuation is allowed when the buildings obstruct more than 65% of the line of sight (Source: CALTRANS Technical Noise Supplement Section N-5515). The line of sight to the roadway at the second row of buildings is blocked by the proposed structures by more than 40%, therefore a factor of 3 dBA was taken into account. Therefore, the second row of buildings would be exposed to noise levels of 72 dBA Ldn.

The methodology used to determine the resultant interior noise levels is based upon the exterior noise level minus the sound transmission loss as identified in the American Society of Testing and Materials (ASTM) guidelines: E413 &E90. Standard building construction will provide a noise reduction of approximately 12-15 dBA with a windows open condition and a minimum 20 dBA noise reduction with the windows closed. The exterior noise levels at the proposed structures calculated in terms of dBA are converted to the six octave band sound pressure levels between: 125 - 4000 Hertz.

Acoustical modeling of the proposed project dwelling units was performed in accordance with the above guidelines and included combining the transmission loss for each of the building components that will reduce the interior noise levels. Building components typically include the windows, exterior doors, and exterior walls. The total noise reduction is dependent upon the transmission loss of each building component, their subsequent surface area, quality of the building/construction materials, a building façade and angle correction.

The interior noise level is also dependent on the acoustical energy absorbed within the room based upon the Noise Reduction Coefficients (NRC). NRC is a scalar representation of the amount of sound energy absorbed upon striking a particular surface and the arithmetic value average of sound absorption coefficients indicating a material's ability to absorb sound. The absorption coefficients for individual surface areas such as carpet, drywall and furnishings are used to calculate the interior room effects. The calculated building noise reduction includes both the room absorption characteristics and the transmission loss from the exterior wall assembly.

The interior noise reduction calculations were performed using Ldn's interior noise model. The model converts the exterior sound level to octave band frequencies and accounts for the transmission loss, correction factors and room absorption. The preliminary floor plans used for this analysis were provided by the project applicant's architects (KTGY, 2022).

Exterior walls typically have a Sound Transmission Class (STC) rating of 46 dB or better and consist of 2-inch x 4- inch studs or larger, spaced 16-1nch o.c. with R13 insulation minimum and an exterior surface of cement plaster (stucco). Exterior walls with lap siding and fiberglass insulation typically have a Sound Transmission Class (STC) rating of 40. Exterior walls with this rating consist of 2"x4" studs or larger, spaced 16" o.c. with R-13 insulation minimum and an exterior surface of lap siding with fiberglass insulation (Hardi Plank/Panel). Interior wall and ceiling surfaces shall be at least 1/2" thick gypsum or plaster. Roof assemblies should have a minimum of 1/2" sheathing, R-19 insulation and sealed to prevent noise leaks. Exterior entry doors should be of solid core construction and glass assemblies should be dual-glazed and sealant applied around the exterior edges. The window and door assemblies are generally the weakest noise reducing component but are the most convenient and cost effective elements to change if additional attenuation is needed. Bedrooms should be installed with carpet flooring to provide additional sound absorption. The STC ratings for the glass assemblies and exterior entry doors were calculated in the interior noise model and provided in the findings below.

Bathrooms, kitchens, closets and corridors are not required to meet the 45 dBA Ldn standard and therefore were not modeled. All living areas where lower noise levels are essential for conversation and sleep, this includes bedrooms, living rooms and dining rooms, were modeled to determine the interior noise reductions. If the modeled interior noise levels were found to be higher than 45 dBA Ldn in the living areas with the minimum assembly requirements described above additional modeling was performed to determine the minimum STC rating for the glass assemblies to further reduce interior noise levels below the acceptable interior threshold of 45 dBA Ldn.

The building façade noise levels were determined to be as high as 77 dBA Ldn for the first row of buildings facing Interstate 5 and 72 dBA Ldn for the second row. Basic calculations show that a windows open condition will typically reduce the interior noise levels 12-15 dBA Ldn and not provide adequate interior noise mitigation. To meet the 45 dBA Ldn interior noise standard, an overall minimum interior noise level reduction of roughly 27 to 32 dBA Ldn is needed for the proposed project. Therefore, a closed window condition is required to reduce interior noise levels to comply with CCR Title 24 and City of Encinitas requirements. The windows/doors closed condition does not require the windows or doors to be non-operable but does requires that mechanical ventilation is installed to move air within the structure and control temperatures when the windows are closed. The mechanical ventilation must meet the jurisdictional requirements for these dwelling units.

The sound transmission class (STC) is a method of rating how well wall partitions, such as doors

and windows, reduce sound transmission. A higher number indicates better sound than a lower number. Based on numerous studies and efficiency standards in current residential Title 24 standards, standard assembly windows have a STC of 28. The STC and transmission losses for all glass assemblies are provided in Table 5-3. The modeled results with an anticipated interior noise level of 45 dBA Ldn or less are provided as an ***Attachment B*** to this report.

No interior noise impacts are anticipated with the incorporation of the preliminary STC ratings provided in Table 5-3, which are consistent with the construction type proposed based on the architectural plans. Since the final architectural plans are not available at this time, a site specific interior noise assessment will be required prior to the issuance of the first building permit once the plans are available.

Table 5-3: Sound Transmission Class Ratings

Location	Assembly	STC Rating[1]	Octave Band Transmission Loss (Hz)[1]					
			125	250	500	1000	2000	4000
First Row Facing I-5	Operable Windows	**40**	20	26	40	50	52	42
	Fixed Window	**40**	27	26	36	45	49	50
	Glass Doors	**40**	27	29	40	41	43	44
Second Row	Operable Windows	**33**	23	24	29	34	37	37
	Fixed Window	**33**	23	20	28	38	41	38
	Glass Doors	**33**	26	20	32	34	34	36

[1] *STC and Octave ratings used in Model*

Offsite Project Related Transportation Noise Levels

To determine if direct or cumulative off-site noise level increases associated with the development of the proposed project would create noise impacts, the traffic volumes for the existing conditions were compared with the traffic volume increase of existing plus the proposed project. The project is estimated to only generate 894 daily trips with a peak hour volume of 81 trips according to the project traffic study (Intersecting Metrics, 2022). According to the project traffic study, existing year traffic along Piraeus Street is 1,786 ADT. Typically, it requires a project to double (or add 100%) the traffic volumes to have a direct impact of 3 dBA Ldn or be a major contributor to the cumulative traffic volumes. Additionally, existing homes are located past the project site to the east and would not cause an increase in traffic along those segments of Plato Place. Therefore, no direct or cumulative impacts are anticipated.

Transportation Noise Conclusions

Onsite Transportation Related Noise Levels

The results of this analysis indicate that future vehicle noise from Interstate 5 to the west is the principal source of community noise that could impact the site. Based upon the findings, the outdoor use areas were determined to be above the City's Noise compatibility threshold of 70 dBA Ldn without attenuation measures. It was determined that a minimum 5-foot barrier be located along the rooftop decks and a minimum 8-foot barrier be located around the pool area. The barriers must be constructed of a non-gapping material consisting of masonry, wood, plastic, fiberglass, glass, vinyl, steel, or a combination of those materials, with no cracks or gaps through or below the enclosure walls.

The City of Encinitas as part of its noise guidelines also states, consistent with Title 24 of the California Code of Regulations (CCR), a project is required to perform an interior assessment on the portions of a project site where building façade noise levels are above the normally compatible noise level in order to ensure that acceptable interior noise levels can be achieved. The City of Encinitas' Noise Compatibility Guidelines require interior noise levels in residential structures to be reduced to 45 dBA Ldn.

As shown, interior noise levels of 45 dBA Ldn can easily be obtained with conventional building construction methods and providing a closed window condition requiring a means of mechanical ventilation (e.g., air conditioning) for each building and upgraded windows for all sensitive rooms (e.g., bedrooms and living spaces).

Offsite Project Related Transportation Noise Levels

The project does will not create a direct impact of more than 3 dBA Ldn on any roadway segment and no cumulative noise increase of 3 dBA Ldn or more were found. Therefore, the proposed project's direct and cumulative contributions to off-site roadway noise increases will not cause any significant impacts to any existing or future noise sensitive land uses.

5.3 Operational Noise

Section 30.40 of the City of Encinitas Municipal Code contains noise limits that would apply to noise sources located on the project site, including air conditioning units. The Municipal Code specifies noise limits based on the zoning of the properties in question. Properties zoned RR to R-8 have noise limits of 50 dBA between the hours of 7 a.m. and 10 p.m., and 45 dBA between the hours of 10 p.m. and 7 a.m. Properties zoned R-11 to R-30 have noise limits of 55 dBA between the hours of 7 a.m. and 10 p.m., and 50 dBA between the hours of 10 p.m. and 7 a.m. Commercial zones have noise limits of 60 dBA between the hours of 7 a.m. and 10 p.m., and 55

dBA between the hours of 10 p.m. and 7 a.m. As air conditioning equipment may be operational during nighttime hours, the more stringent nighttime noise limits would also apply at surrounding properties.

This section examines the potential stationary noise source levels associated with the development and operation of the proposed project. Noise from a fixed or point source drops off at a rate of 6 dBA for each doubling of distance, which means that a noise level of 70 dBA at 5-feet would be 64 dBA at 10-feet and 58 dBA at 20-feet.

HVAC

A review of the proposed project indicates that noise sources from the mechanical ventilation system (HVAC) are a potential source of stationary noise. Each residential unit would have a HVAC unit for temperature control, as discussed in more detail below. The most sensitive off-site property lines to the operational noise sources, by distance and orientation, are the property lines at the existing single-family homes adjacent to the project to the east. This section analyzes the property line to determine the worst-case noise levels. All other off-site property lines are located further from the noise sources or have less restrictive property line limits. The proposed project must meet the most restrictive daytime and evening standards of 50.0 dBA and 45.0 dBA at the residential property lines per the City of Encinitas Municipal Code for R-2 zoning.

Roof-top mechanical ventilation units (HVAC) will be installed at the proposed residential units. The project anticipates installing Carrier CA15NA (Series, 24-A) or equivalent HVAC units with a reference noise level of 71 dBA at 3-feet (Source: Carrier). The manufacturer's specifications and noise levels are provided in Attachment A. The HVAC units will cycle on and off throughout the day. Typically, HVAC units run for approximately 20 minutes each operating cycle to provide the necessary heating or cooling. It is anticipated that the HVAC units will operate twice in any given hour or run for 40 minutes in any given hour. Noise levels drop 3 decibels each time the duration of the source is reduced in half.

Therefore, hourly HVAC noise level over a 40 minute period would be reduced approximately 2 decibels to 69 dBA based on operational time. To predict the property line noise level, a reference noise level of 69 dBA at 3-feet was used to represent the HVAC units.

The HVAC units are located a minimum of 38 feet from the property lines and will be shielded by a proposed screen wall that will break the line of sight to the HVAC units and will provide a minimum 5 dBA reduction. The typical locations of the proposed HVAC units are shown in Figure 5-2. Two HVAC units maybe located near each other with the proposed buildings separating them and would create the worst case cumulative noise level. The remainder of the units are separated by at least 80 feet and the proposed screen walls shielding them. This separation of 80 feet would

result in a 20 dBA difference between two separate HVAC units and would not cumulatively increase the noise levels. Therefore, the worst case combined noise from the HVAC would occur from four units.

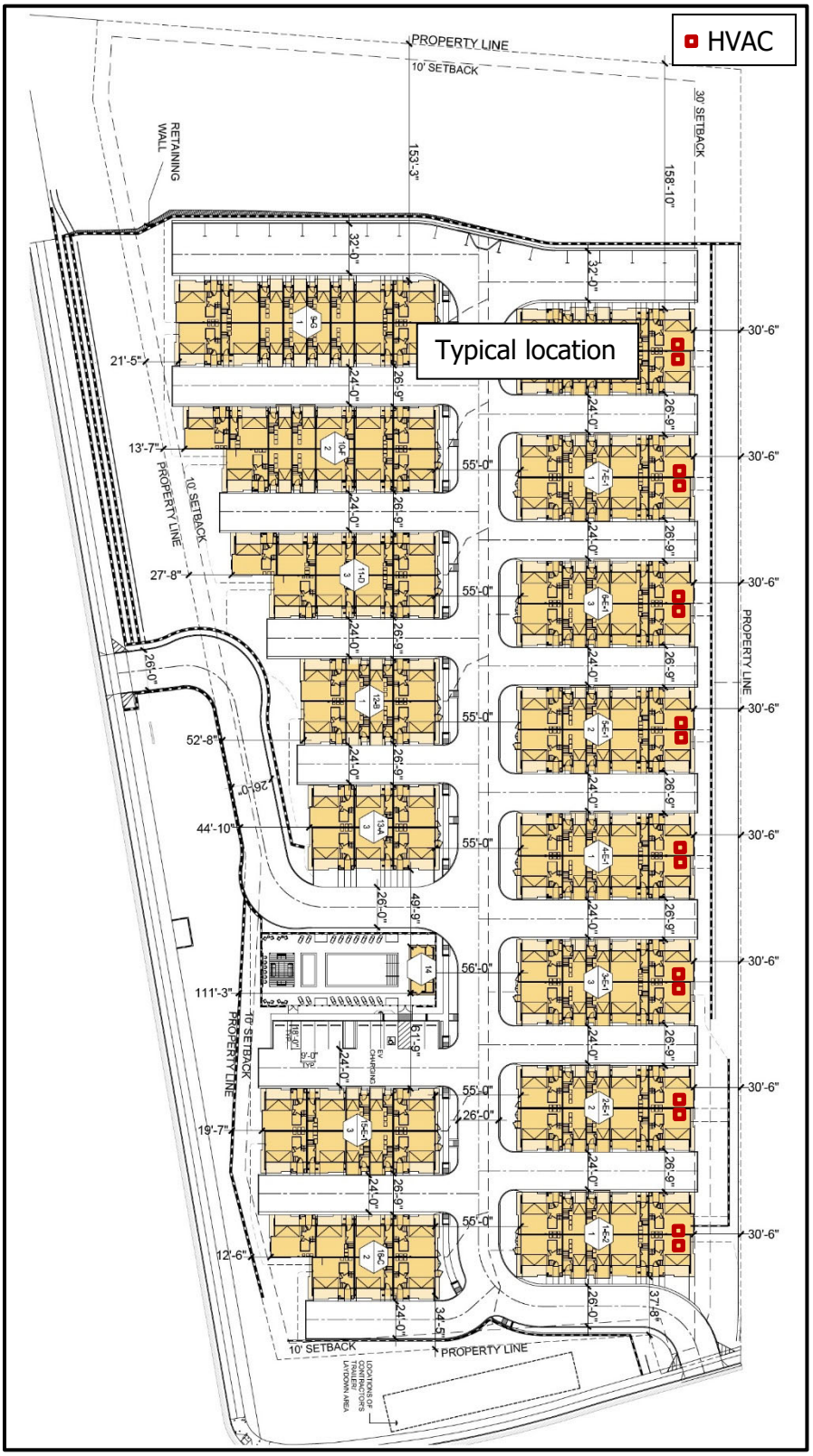
Utilizing a 6 dBA decrease per doubling of distance, noise levels at the nearest property line as described above were calculated for the HVAC. The noise levels associated with the HVAC will be limited by the buildings that will shield them both visually and acoustically. The HVAC units are located a minimum of 38 feet from the nearest property lines. The noise level reductions due to distance and the building for the nearest property line is provided in Table 5-4 below.

Table 5-4: Project HVAC Noise Levels (Eastern Property Line)

Distance to Nearest Observer Location (Feet)	Hourly Reference Noise Level (dBA)	Noise Source Reference Distance (Feet)	Noise Reduction Due to Distance (dBA)	Reduction Due to Buildings (dBA)	Noise Level at Property Line (dBA)	Quantity	Property Line Cumulative Noise Level (dBA)*
38	69.0	3.0	-22.1	-5.0	41.9	2	**45.0**
*Complies with the nighttime Noise Standard of 45 dBA.							

No impacts are anticipated at the residential property line to the east with the proposed screen walls and are in compliance with the City of Encinitas Municipal Code Sections 9.32 and 30.40. All other property lines are located further from the proposed HVAC units and the resulting noise levels would also be below the 45 dBA threshold.

Figure 5-2: Locations of Proposed HVAC Units



6.0 REFERENCES

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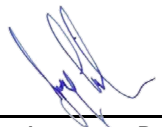
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7.0 CERTIFICATIONS

The contents of this report represent an accurate depiction of the noise environment and potential impacts within and surrounding the proposed development. This report was prepared utilizing the latest guidelines and reduction methodologies.



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Date November 15, 2022

ATTACHMENT A

Fresnel Barrier Calculations

Roof Deck - 5' Barrier
Source to Receiver Horizontal Distance (ft) = 230.00
Source to Barrier Horizontal Distance (ft) = 220.00
Barrier to Receiver Horizontal Distance (ft) = 10.00
Source Height (ft) = 72.00
Receiver Height (ft) = 164.00
Barrier Height (ft) = 165.00
Distance Source to Receptor (ft) d = 247.72
Distance Source to Barrier top (ft) d1 = 238.85
Distance Barrier top to Receiver (ft) d2 = 10.05

Frequency (Hz) = 8000 Attenuation (db) = 17.7 Fresnel N = 16.775
Frequency (Hz) = 4000 Attenuation (db) = 15.9 Fresnel N = 8.388
Frequency (Hz) = 2000 Attenuation (db) = 14.2 Fresnel N = 4.194
Frequency (Hz) = 1000 Attenuation (db) = 12.5 Fresnel N = 2.097
Frequency (Hz) = 500 Attenuation (db) = 10.9 Fresnel N = 1.048
Frequency (Hz) = 250 Attenuation (db) = 9.2 Fresnel N = 0.524
Frequency (Hz) = 125 Attenuation (db) = 7.8 Fresnel N = 0.262
Frequency (Hz) = 63 Attenuation (db) = 6.5 Fresnel N = 0.131

Pool Area - 8' Barrier
Source to Receiver Horizontal Distance (ft) = 260.00
Source to Barrier Horizontal Distance (ft) = 240.00
Barrier to Receiver Horizontal Distance (ft) = 20.00
Source Height (ft) = 72.00
Receiver Height (ft) = 135.00
Barrier Height (ft) = 138.00
Distance Source to Receptor (ft) d = 267.52
Distance Source to Barrier top (ft) d1 = 248.91
Distance Barrier top to Receiver (ft) d2 = 20.22

Frequency (Hz) = 8000 Attenuation (db) = 18.3 Fresnel N = 22.851
Frequency (Hz) = 4000 Attenuation (db) = 16.8 Fresnel N = 11.425
Frequency (Hz) = 2000 Attenuation (db) = 14.9 Fresnel N = 5.713
Frequency (Hz) = 1000 Attenuation (db) = 13.3 Fresnel N = 2.856
Frequency (Hz) = 500 Attenuation (db) = 11.6 Fresnel N = 1.428
Frequency (Hz) = 250 Attenuation (db) = 10.0 Fresnel N = 0.714
Frequency (Hz) = 125 Attenuation (db) = 8.4 Fresnel N = 0.357
Frequency (Hz) = 63 Attenuation (db) = 7.1 Fresnel N = 0.179

ATTACHMENT B

Preliminary Interior Noise Levels

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 1		
Floor Level	2	Date:	3/25/22
Arch Plan:	1		
Room Type:	Great Room	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	77.0	63.0	67.7	70.5	72.8	69.7	64.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	144	46	27	42	44	46	49	54
Windows	Greenworld	10	40	20	26	40	50	52	42
Fixed Window	Greenworld	0	40	27	26	36	45	49	50
Glass Doors	Greenworld	48	40	27	29	40	41	43	44
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-23.3	-23.3	-23.3	-23.3	-23.3	-23.3
Noise Level Increase for Defects and Exposed Surface Area	16.8	16.8	16.8	16.8	16.8	16.8
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						34.4
Building Façade Noise Level (dBA CNEL)						77.0
Resultant Interior Noise Level (dBA CNEL)						**43**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 1		
Floor Level	3	Date:	3/25/22
Arch Plan:	1		
Room Type:	Bedroom	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	77.0	63.0	67.7	70.5	72.8	69.7	64.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	144	40	17	33	40	50	55	50
Windows	Greenworld	10	40	20	26	40	50	52	42
Fixed Window	Greenworld	0	40	27	26	36	45	49	50
Glass Doors	Greenworld	48	40	27	29	40	41	43	44
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-22.2	-22.2	-22.2	-22.2	-22.2	-22.2
Noise Level Increase for Defects and Exposed Surface Area	16.8	16.8	16.8	16.8	16.8	16.8
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						34.5
Building Façade Noise Level (dBA CNEL)						77.0
Resultant Interior Noise Level (dBA CNEL)						**42**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 1		
Floor Level	2	Date:	3/25/22
Arch Plan:	3		
Room Type:	Great Room	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	77.0	63.0	67.7	70.5	72.8	69.7	64.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	279	46	27	42	44	46	49	54
Windows	Greenworld	30	40	20	26	40	50	52	42
Fixed Window	Greenworld	0	40	27	26	36	45	49	50
Glass Doors	Greenworld	48	40	27	29	40	41	43	44
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-24.6	-24.6	-24.6	-24.6	-24.6	-24.6
Noise Level Increase for Defects and Exposed Surface Area	17.5	17.5	17.5	17.5	17.5	17.5
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						33.6
Building Façade Noise Level (dBA CNEL)						77.0
Resultant Interior Noise Level (dBA CNEL)						**43**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point	Ldn Consulting, Inc.
Building (s)	Row 1	
Floor Level	3	Date: 3/25/22
Arch Plan:	3	
Room Type:	Master Bedroom	Project # 22-08

Exterior Noise Levels

	dBA CNEL*	Frequency (Hz.)					
		125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)	77.0	63.0	67.7	70.5	72.8	69.7	64.0

Transmission Loss (TL)

Exterior Assembly	Source	Area	STC	Transmission Loss (dB) Frequency (Hz.) 125	250	500	1000	2000	4000
Stucco	NBS W-50-71	99	40	17	33	40	50	55	50
Windows	Greenworld	30	40	20	26	40	50	52	42
Fixed Window	Greenworld	0	40	27	26	36	45	49	50
Glass Doors	Greenworld	0	40	27	29	40	41	43	44
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

Interior Characteristics	Source		NRC	Absorption Coefficients Frequency (Hz.) 125	250	500	1000	2000	4000
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	250	500	1000	2000	4000
Noise Reduction from Absorption based upon Floor Area	-20.2	-20.2	-20.2	-20.2	-20.2	-20.2
Noise Level Increase for Defects and Exposed Surface Area	15.4	15.4	15.4	15.4	15.4	15.4
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						35.8
Building Façade Noise Level (dBA CNEL)						77.0
Resultant Interior Noise Level (dBA CNEL)						**41**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 1		
Floor Level	3	Date:	3/25/22
Arch Plan:	3		
Room Type:	Bedroom 2	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	77.0	63.0	67.7	70.5	72.8	69.7	64.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	108	40	17	33	40	50	55	50
Windows	Greenworld	30	40	20	26	40	50	52	42
Fixed Window	Greenworld	0	40	27	26	36	45	49	50
Glass Doors	Greenworld	0	40	27	29	40	41	43	44
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-19.7	-19.7	-19.7	-19.7	-19.7	-19.7
Noise Level Increase for Defects and Exposed Surface Area	15.5	15.5	15.5	15.5	15.5	15.5
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						35.0
Building Façade Noise Level (dBA CNEL)						77.0
Resultant Interior Noise Level (dBA CNEL)						**42**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 1		
Floor Level	2	Date:	3/25/22
Arch Plan:	4		
Room Type:	Great Room	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	77.0	63.0	67.7	70.5	72.8	69.7	64.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	339	46	27	42	44	46	49	54
Windows	Greenworld	120	40	20	26	40	50	52	42
Fixed Window	Greenworld	0	40	27	26	36	45	49	50
Glass Doors	Greenworld	64	40	27	29	40	41	43	44
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-25.5	-25.5	-25.5	-25.5	-25.5	-25.5
Noise Level Increase for Defects and Exposed Surface Area	18.1	18.1	18.1	18.1	18.1	18.1
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						31.9
Building Façade Noise Level (dBA CNEL)						77.0
Resultant Interior Noise Level (dBA CNEL)						**45**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 1		
Floor Level	2	Date:	3/25/22
Arch Plan:	4		
Room Type:	Master Bedroom	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	77.0	63.0	67.7	70.5	72.8	69.7	64.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	117	40	17	33	40	50	55	50
Windows	Greenworld	30	40	20	26	40	50	52	42
Fixed Window	Greenworld	0	40	27	26	36	45	49	50
Glass Doors	Greenworld	0	40	27	29	40	41	43	44
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-20.3	-20.3	-20.3	-20.3	-20.3	-20.3
Noise Level Increase for Defects and Exposed Surface Area	15.5	15.5	15.5	15.5	15.5	15.5
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						35.4
Building Façade Noise Level (dBA CNEL)						77.0
Resultant Interior Noise Level (dBA CNEL)						**42**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 1		
Floor Level	3	Date:	3/25/22
Arch Plan:	4		
Room Type:	Bedroom 3	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	77.0	63.0	67.7	70.5	72.8	69.7	64.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	180	40	17	33	40	50	55	50
Windows	Greenworld	50	40	20	26	40	50	52	42
Fixed Window	Greenworld	0	40	27	26	36	45	49	50
Glass Doors	Greenworld	0	40	27	29	40	41	43	44
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-19.3	-19.3	-19.3	-19.3	-19.3	-19.3
Noise Level Increase for Defects and Exposed Surface Area	16.0	16.0	16.0	16.0	16.0	16.0
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						32.4
Building Façade Noise Level (dBA CNEL)						77.0
Resultant Interior Noise Level (dBA CNEL)						**45**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 2		
Floor Level	2	Date:	3/25/22
Arch Plan:	1		
Room Type:	Great Room	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	72.0	58.0	62.7	65.5	67.8	64.7	59.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	144	46	27	42	44	46	49	54
Windows	Greenworld	10	33	23	24	29	34	37	37
Fixed Window	Greenworld	0	33	23	20	28	38	41	38
Glass Doors	Greenworld	48	33	26	20	32	34	34	36
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-23.3	-23.3	-23.3	-23.3	-23.3	-23.3
Noise Level Increase for Defects and Exposed Surface Area	16.8	16.8	16.8	16.8	16.8	16.8
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						28.9
Building Façade Noise Level (dBA CNEL)						72.0
Resultant Interior Noise Level (dBA CNEL)						**43**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 2		
Floor Level	3	Date:	3/25/22
Arch Plan:	1		
Room Type:	Bedroom	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	72.0	58.0	62.7	65.5	67.8	64.7	59.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	144	40	17	33	40	50	55	50
Windows	Greenworld	10	33	23	24	29	34	37	37
Fixed Window	Greenworld	0	33	23	20	28	38	41	38
Glass Doors	Greenworld	48	33	26	20	32	34	34	36
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-22.2	-22.2	-22.2	-22.2	-22.2	-22.2
Noise Level Increase for Defects and Exposed Surface Area	16.8	16.8	16.8	16.8	16.8	16.8
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						29.3
Building Façade Noise Level (dBA CNEL)						72.0
Resultant Interior Noise Level (dBA CNEL)						**43**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point	Ldn Consulting, Inc.
Building (s)	Row 2	
Floor Level	2	Date: 3/25/22
Arch Plan:	3	
Room Type:	Great Room	Project # 22-08

Exterior Noise Levels

	dBA CNEL*	Frequency (Hz.) 125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)	72.0	58.0	62.7	65.5	67.8	64.7	59.0

Transmission Loss (TL)

Exterior Assembly	Source	Area	STC	Transmission Loss (dB) Frequency (Hz.) 125	250	500	1000	2000	4000
Stucco	NBS W-50-71	279	46	27	42	44	46	49	54
Windows	Greenworld	30	33	23	24	29	34	37	37
Fixed Window	Greenworld	0	33	23	20	28	38	41	38
Glass Doors	Greenworld	48	33	26	20	32	34	34	36
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

Interior Characteristics	Source		NRC	Absorption Coefficients Frequency (Hz.) 125	250	500	1000	2000	4000
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	250	500	1000	2000	4000
Noise Reduction from Absorption based upon Floor Area	-24.6	-24.6	-24.6	-24.6	-24.6	-24.6
Noise Level Increase for Defects and Exposed Surface Area	17.5	17.5	17.5	17.5	17.5	17.5
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						28.7
Building Façade Noise Level (dBA CNEL)						72.0
Resultant Interior Noise Level (dBA CNEL)						**43**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point	Ldn Consulting, Inc.
Building (s)	Row 2	
Floor Level	3	Date: 3/25/22
Arch Plan:	3	
Room Type:	Master Bedroom	Project # 22-08

Exterior Noise Levels

	dBA CNEL*	Frequency (Hz.) 125	250	500	1000	2000	4000
Exterior Noise Level (Traffic Spectrum)	72.0	58.0	62.7	65.5	67.8	64.7	59.0

Transmission Loss (TL)

Exterior Assembly	Source	Area	STC	Transmission Loss (dB) Frequency (Hz.) 125	250	500	1000	2000	4000
Stucco	NBS W-50-71	99	40	17	33	40	50	55	50
Windows	Greenworld	30	33	23	24	29	34	37	37
Fixed Window	Greenworld	0	33	23	20	28	38	41	38
Glass Doors	Greenworld	0	33	26	20	32	34	34	36
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

Interior Characteristics	Source		NRC	Absorption Coefficients Frequency (Hz.) 125	250	500	1000	2000	4000
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	250	500	1000	2000	4000
Noise Reduction from Absorption based upon Floor Area	-20.2	-20.2	-20.2	-20.2	-20.2	-20.2
Noise Level Increase for Defects and Exposed Surface Area	15.4	15.4	15.4	15.4	15.4	15.4
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						30.6
Building Façade Noise Level (dBA CNEL)						72.0
Resultant Interior Noise Level (dBA CNEL)						**41**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point	Ldn Consulting, Inc.
Building (s)	Row 2	
Floor Level	3	Date: 3/25/22
Arch Plan:	3	
Room Type:	Bedroom 2	Project # 22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	72.0	58.0	62.7	65.5	67.8	64.7	59.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	108	40	17	33	40	50	55	50
Windows	Greenworld	30	33	23	24	29	34	37	37
Fixed Window	Greenworld	0	33	23	20	28	38	41	38
Glass Doors	Greenworld	0	33	26	20	32	34	34	36
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-19.7	-19.7	-19.7	-19.7	-19.7	-19.7
Noise Level Increase for Defects and Exposed Surface Area	15.5	15.5	15.5	15.5	15.5	15.5
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						29.9
Building Façade Noise Level (dBA CNEL)						72.0
Resultant Interior Noise Level (dBA CNEL)						**42**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 2		
Floor Level	2	Date:	3/25/22
Arch Plan:	4		
Room Type:	Great Room	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	72.0	58.0	62.7	65.5	67.8	64.7	59.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	339	46	27	42	44	46	49	54
Windows	Greenworld	120	33	23	24	29	34	37	37
Fixed Window	Greenworld	0	33	23	20	28	38	41	38
Glass Doors	Greenworld	64	33	26	20	32	34	34	36
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-25.5	-25.5	-25.5	-25.5	-25.5	-25.5
Noise Level Increase for Defects and Exposed Surface Area	18.1	18.1	18.1	18.1	18.1	18.1
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						26.6
Building Façade Noise Level (dBA CNEL)						72.0
Resultant Interior Noise Level (dBA CNEL)						**45**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point		Ldn Consulting, Inc.
Building (s)	Row 2		
Floor Level	2	Date:	3/25/22
Arch Plan:	4		
Room Type:	Master Bedroom	Project #	22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	72.0	58.0	62.7	65.5	67.8	64.7	59.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	117	40	17	33	40	50	55	50
Windows	Greenworld	30	33	23	24	29	34	37	37
Fixed Window	Greenworld	0	33	23	20	28	38	41	38
Glass Doors	Greenworld	0	33	26	20	32	34	34	36
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-20.3	-20.3	-20.3	-20.3	-20.3	-20.3
Noise Level Increase for Defects and Exposed Surface Area	15.5	15.5	15.5	15.5	15.5	15.5
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						30.4
Building Façade Noise Level (dBA CNEL)						72.0
Resultant Interior Noise Level (dBA CNEL)						**42**

* Corrections for Façade Level was accounted for in the modeling.

INTERIOR NOISE CALCULATIONS

Project Name:	Piraeus Point	Ldn Consulting, Inc.
Building (s)	Row 2	
Floor Level	3	Date: 3/25/22
Arch Plan:	4	
Room Type:	Bedroom 3	Project # 22-08

Exterior Noise Levels

		Frequency (Hz.)					
	dBA CNEL*	***125***	***250***	***500***	***1000***	***2000***	***4000***
Exterior Noise Level (Traffic Spectrum)	72.0	58.0	62.7	65.5	67.8	64.7	59.0

Transmission Loss (TL)

				Transmission Loss (dB)					
				Frequency (Hz.)					
Exterior Assembly	***Source***	***Area***	***STC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Stucco	NBS W-50-71	180	40	17	33	40	50	55	50
Windows	Greenworld	50	33	23	24	29	34	37	37
Fixed Window	Greenworld	0	33	23	20	28	38	41	38
Glass Doors	Greenworld	0	33	26	20	32	34	34	36
Exterior Door	NBS Monograph 77	0	28	18	16	25	32	38	28

Room Absorption (RA)

				Absorption Coefficients					
				Frequency (Hz.)					
Interior Characteristics	***Source***		***NRC***	***125***	***250***	***500***	***1000***	***2000***	***4000***
Carpet	Army TM 5-805-4		0.28	0.15	0.17	0.12	0.32	0.52	0.30
Furnishings	Army TM 5-805-4		0.45	0.32	0.29	0.42	0.58	0.60	0.48
Drywall	Netwell		0.07	0.09	0.08	0.05	0.03	0.06	0.09
Overall Absorption Factor (Furnished Room)			0.8	0.56	0.54	0.59	0.93	1.18	0.87

Noise Reduction

	125	***250***	***500***	***1000***	***2000***	***4000***
Noise Reduction from Absorption based upon Floor Area	-19.3	-19.3	-19.3	-19.3	-19.3	-19.3
Noise Level Increase for Defects and Exposed Surface Area	16.0	16.0	16.0	16.0	16.0	16.0
Overall Reduction from Tranmission Loss + Room Absorption - Surface Exposure						27.3
Building Façade Noise Level (dBA CNEL)						72.0
Resultant Interior Noise Level (dBA CNEL)						**45**

* Corrections for Façade Level was accounted for in the modeling.

APPENDIX K.
TRANSPORTATION IMPACT STUDY

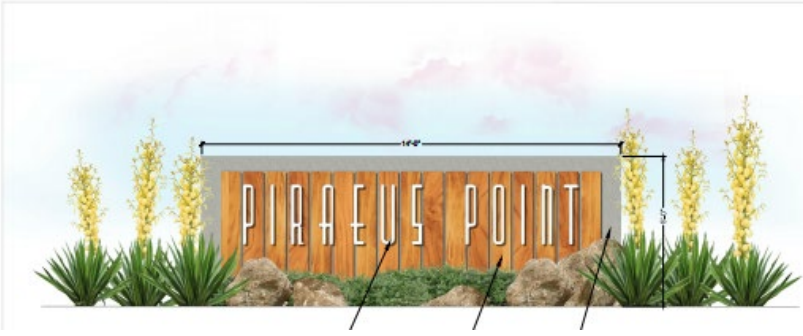
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Transportation Impact Study

Piraeus Point

September 21, 2022





Prepared For:

LENNAR

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DRAFT

1.0 Introduction

The purpose of this Transportation Impact Study (TIS) is to identify and document any significant transportation related impacts associated with the Piraeus Point project (Proposed Project), and to recommend mitigation measures for identified impacts, as necessary.

1.1 Project Description

The Piraeus Point project entails the development of a 149-home modern townhome community. The project will be utilizing State Density Bonus Law. A Design Review Permit and Coastal Development Permit (both issued by the City of Encinitas) are necessary to allow for development of the property located at the northeast corner of Piraeus Street and Plato Place (APNs 254-144-01-00 and 216-110-35-00) in the Leucadia community of the City of Encinitas (City). The project location is displayed in Figure 1.1.

A Design Review Permit is required in order to ensure project consistency with the design review guidelines established by the City. The Coastal Development Permit is required in conjunction with the issuance of the Design Review Permit, given the project's location within the Coastal Zone.

The community would consist of 52 one-bedroom homes, 37 two-bedroom homes, and 60 three-bedroom homes for a total of 149 residential homes, which would be built within 16 separate three-story residential buildings. A total of 271 parking spaces are planned, including private garage spaces and outdoor shared parking. Proposed amenities include a pool, spa, pool house, and lounge seating. Of the 149 residential homes proposed in the community, 134 would be market-rate homes and 15 would be "very low" income affordable residential homes. The Proposed Project site plan is displayed in Figure 1.2.

The project site is currently vacant land. The site is one of 16 sites included in the *City of Encinitas Housing Element Update*, which was adopted by the City on March 13, 2019. As part of that Housing Element Update, a portion of the project site was designated with an R-30 overlay zone.

Surrounding land uses include single family residences (to the east and south), Piraeus Street and Interstate 5 (to the west), and vacant land (to the north).

1.2 Proposed Project Trip Generation

Table 1 displays the Proposed Project's anticipated trip generation. Trip generation rates were derived from *SANDAG's (Not So) Brief Guide of Vehicular Traffic Generation Rates in the San Diego Region, April 2002*.

Table 1.1 Proposed Project Trip Generation

Land Use	Units	Trip Rate	ADT	AM					PM				
				%	Trips	Split	In	Out	%	Trips	Split	In	Out
Multi-Family Units (20+ DU/Acre)	149 DU	6/DU	894	8%	72	(2:8)	14	58	9%	81	(7:3)	57	24

As shown, the Proposed Project is anticipated to generate a total of 894 daily trips.

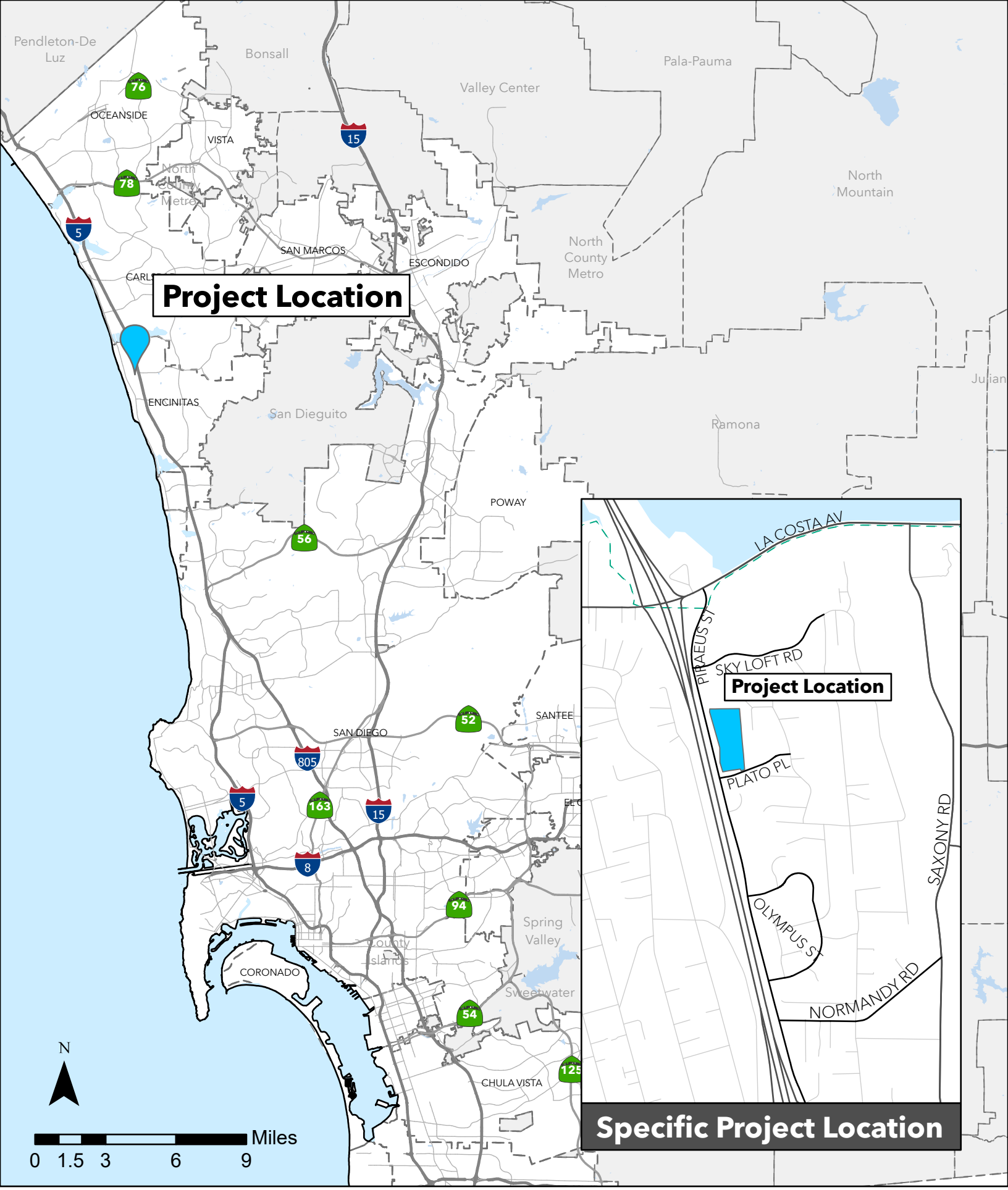


Figure 1.1
Project Location

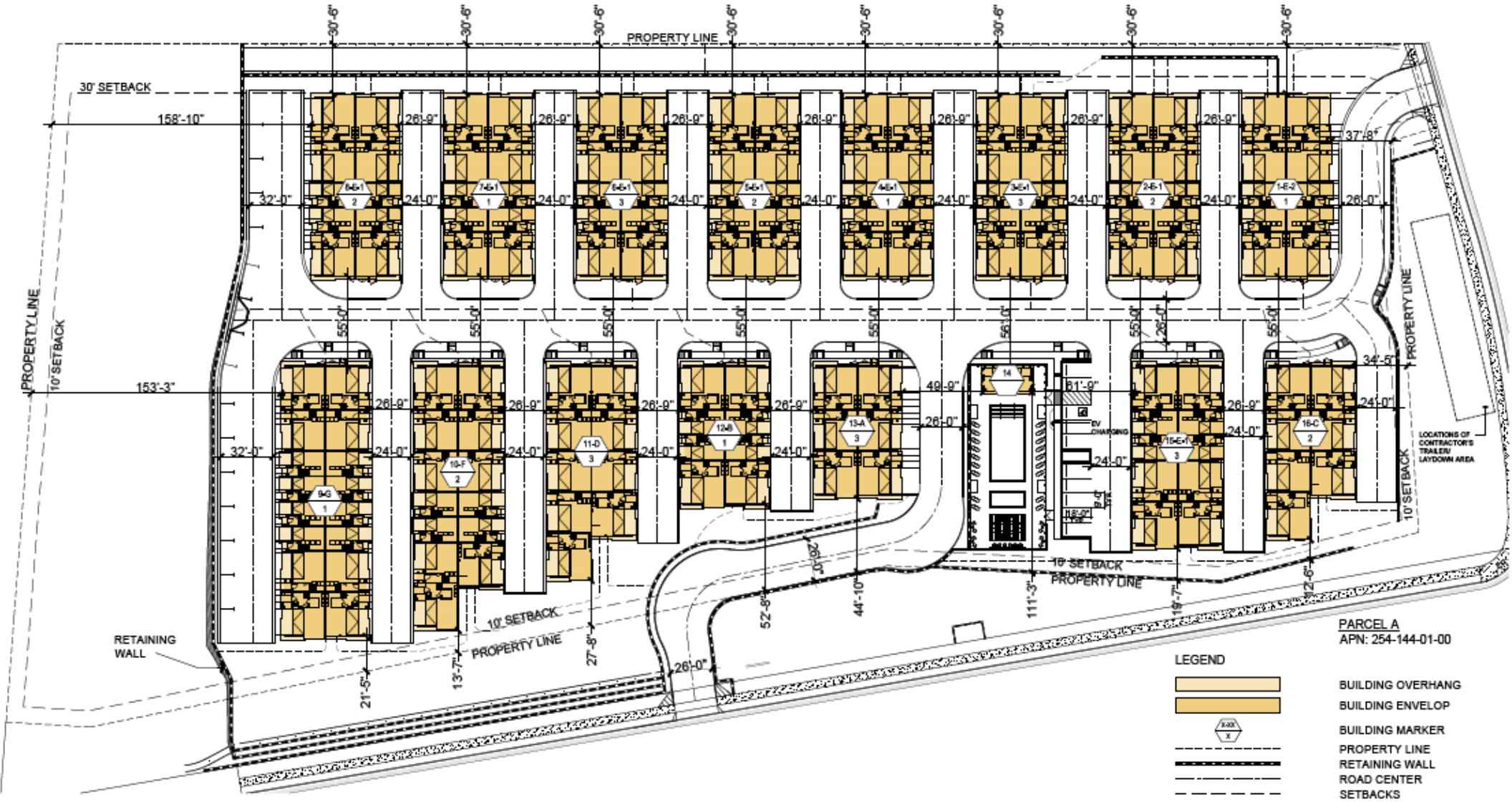


Figure 1.2

Proposed Project Site Plan

1.3 Project Setting

Access to the Proposed Project from the regional transportation network would be provided via Interstate 5 Freeway, La Costa Avenue, Leucadia Boulevard, Piraeus Street, and Plato Place. These roadways would either provide a direct connection to Proposed Project site, via project driveways (on Piraeus Street and Plato Place) or would provide a critical link between the Proposed Project and the regional transportation network. Descriptions of these transportation network facilities are described below:

Interstate 5 (I-5) – Within the project study area, I-5 is a north-south freeway that runs through the entire San Diego region. Access from the I-5 to the study area is taken from the La Costa Avenue and Leucadia Boulevard interchanges. Within the City, I-5 has four northbound and four southbound general purpose lanes. The posted speed limit on I-5 is 65 miles per hour (mph).

La Costa Avenue – Between the I-5 SB Ramps and El Camino Real, La Costa Avenue is a four-lane roadway with a posted speed limit of 55 mph. Parking is prohibited along all both sides of this segment of the roadway. La Costa Avenue has a raised median east of the I-5 NB ramps and a pained median between the I-5 SB and NB Ramps. Six-foot wide Class II Bike Lanes are present on both sides of roadway. Sidewalks are provided on both sides of the roadway between the I-5 SB Ramps and Piraeus Street; however, sidewalks are only provided along the northside of the roadway, along Batiquitos Lagoon, east of Piraeus Street. It should be noted that there are no active land uses on the southside of the roadway for pedestrians to access. There are no transit services or facilities located along La Costa Avenue within the project study area. La Costa Avenue is classified at as Four-Lane Major roadway by the *City of Encinitas Circulation Element, January 2003*; thus, it is built to its ultimate classification.

Leucadia Boulevard – Between the I-5 SB Ramps and Garden View Road, Leucadia Boulevard is a four-lane roadway, with a raised median, and a posted speed limit of 45 mph. Parking is prohibited on both sides of this segment of the roadway. Buffered Class II bike lanes are provided along both sides of the roadway. Sidewalks are provided along both sides of Leucadia Boulevard between the I-5 SB Ramps and Quail Gardens Drive. A nine-foot wide Class I Multi-Use Path is provided on the south side of the roadway east of Quail Gardens Drive. Single family residents as well as the Doug Timmons Golf Course are the fronting land uses to this segment of Leucadia Boulevard. NCTD Bus Route 304 runs along Leucadia Boulevard/Olivenhain Road, between Saxony Road and Rancho Santa Fe Road. Leucadia Boulevard is classified at as Four-Lane Major roadway by the *City of Encinitas Circulation Element, January 2003*; thus, it is built to its ultimate classification.

Piraeus Street – The Proposed Project will take access via a single driveway located on Piraeus Street. Between La Costa Avenue and Leucadia Boulevard, Piraeus Street is a two-lane roadway, divided by a double yellow line, with a posted speed limit of 45 mph. Parking is prohibited on both sides of this segment of the roadway. Class II Bike Lanes are provided on both sides of the roadway, with the exception of the segment between Christine Place and Olympus Street, in which a Class III Bike Route, designated by sharrows, is provided in the northbound direction, with the Class II Bike Lanes continuing in the southbound direction. Sidewalks are generally not provided along Piraeus Street, with the exception of a 300 ft segment on the eastside of the roadway directly north of Normandy Road, as well as along the eastside of the roadway between Leucadia Boulevard and Ocean View Way. There are no land uses that directly front Piraeus Street in which pedestrians would access. There are no transit services or facilities located along Piraeus Street. The *City of Encinitas Circulation Element, January 2003* does not classify Piraeus Street as a Circulation Element roadway.

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Plato Place – The Proposed Project will have an emergency access point connection to Plato Place. Plato Place is a two-lane, undivided roadway, with no posted speed limit. Parking is prohibited along both sides of the roadway. There are currently no bicycle, pedestrian, or transit facilities located along Plato Place. Plato Place is fronted by approximately six single family homes, and provides a connection point between a single family neighborhood to the east and Piraeus Street. The *City of Encinitas Circulation Element, January 2003* does not classify Plato Place as a Circulation Element roadway.

Figure 1.3 display the transportation network around the Proposed Project site.

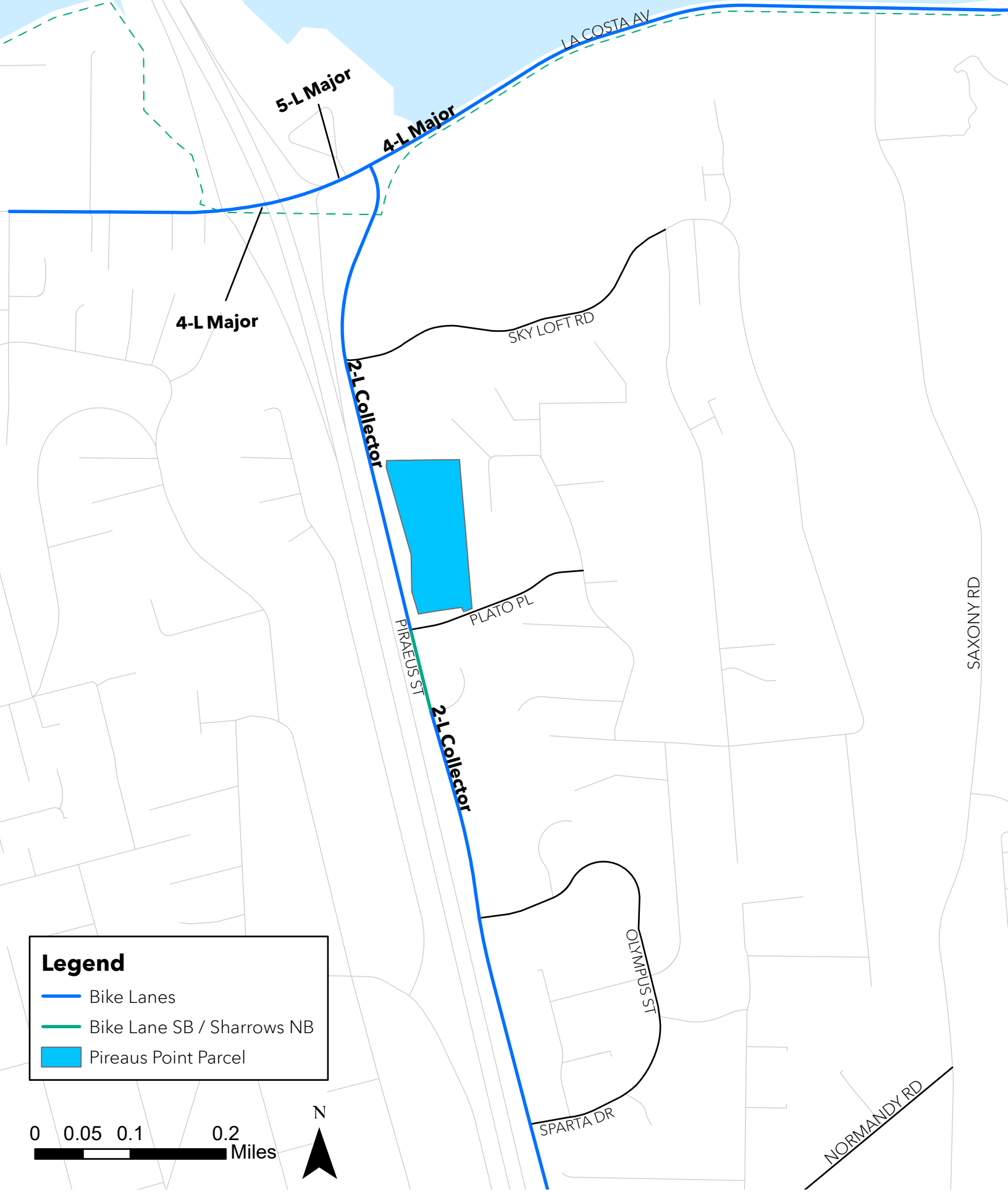
1.4 Report Organization

Following this Introduction chapter, this report is organized into the following sections:

2.0 *Analysis Methodology* – This chapter describes the methodologies and standards utilized to analyze and identify the transportation related impacts associated with the Proposed Project.

3.0 *Transportation Related Impacts and Mitigation* – This chapter derives and analyzes the projected Vehicle Miles Traveled (VMT) that will be generated by the Proposed Project. This chapter also identifies if the Proposed Project related VMT would create significant project related impacts, as it relates to the standards outlined in the California Environmental Quality Act (CEQA). Finally, the chapter provides recommendations for mitigation measures to reduce the identified transportation related impacts, if necessary, and evaluates the feasibility of the proposed mitigation measures.

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Piraeus Point

Figure 1.3
Local Transportation Network

2.0 Analysis Methodology and Threshold

2.1 Background (SB-743)

On September 27, 2013, Governor Edmund G. Brown, Jr. signed California Senate Bill 743 (SB-743) into law, starting a process that is expected to fundamentally change the way transportation impact analysis is conducted under CEQA. Within the State's CEQA Guidelines, these changes will include elimination of auto delay, level of service (LOS), and similar measurements of vehicular roadway capacity and traffic congestion as the basis for determining significant impacts.

On December 2018, the Resources Agency certified and adopted the CEQA Guidelines update package, which included the California Natural Resources Agency Guidelines for the Implementation of the California Environmental Quality Act. As a result, the California Governor's Office of Planning and Research (OPR) updated and released the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory) in December 2018[1]. Based on these updated guidelines, lead agencies had until July 1, 2020 to comply with the updated CEQA revision. Therefore, all lead agencies are now required to comply with the December 2018 CEQA guidelines, as well as the requirements outlined under SB-743.

2.2 CEQA Guidelines Section 15064.3

Section 15064.3(b) of the CEQA Guidelines outlines how transportation related impacts should be evaluated and identified under CEQA. This section was included within the December 2018 update to implement the requirements outlined within SB-743:

> (1) *Land Use Projects*. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.

As outlined in the section, Vehicle Miles Traveled (VMT) must be used to evaluate the transportation related impacts associated with land use projects.

2.3 Analysis Guidelines and Significance Thresholds

The City has not yet adopted significance thresholds which utilize VMT to assess transportation related impacts, is as required under Section 15064.3(b)(1) of the CEQA Guidelines. Therefore, the methodologies, substantial evidence, and recommended significance thresholds presented in OPR's Technical Advisory were used to assess and identify the VMT related impacts that may be associated with the Proposed Project. It should be noted that the *Guidelines for Transportation Impact Studies in the San Diego Region, May 2019* (Regional Guidelines) is an additional resource that can be used to identify and determine VMT related impacts within the San Diego Region. However, the VMT related significance thresholds presented in Regional Guidelines were derived, and are consistent with, OPR's Technical Advisory. Additionally, no jurisdiction within the San Diego Region has officially adopted or indorsed the Regional Guidelines to this point, thus they are only used for information purposes. Therefore, OPR's

[1] https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

Technical Advisory was used as the primary source in determining the thresholds for the Proposed Project.

2.4 Screening Criteria

OPR's Technical Advisory outlines several screening criteria in which land development can be assumed to have a less than significant VMT related impact, and are thus screened out from conducting a detailed VMT analysis. OPR's identified screening criteria includes small project screening (generates less than 110 daily trips), projects located within a VMT efficient area, projects located within a Transit Priority Area (TPA), 100% affordable housing projects, and locally serving uses. The Proposed Project does not meet any of the identified screening criteria, and therefore is required to conduct a detailed VMT analysis.

2.5 Significance Thresholds

As outlined in Section E.2. of OPR's Technical Advisory (Recommended Numeric Thresholds for Residential, Office, and Retail Projects):

> Recommended threshold for residential projects: A proposed project exceeding a level of 15 percent below existing VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita. Proposed development referencing a threshold based on city VMT per capita (rather than regional VMT per capita) should not cumulatively exceed the number of units specified in the SCS for that city, and should be consistent with the SCS.

A threshold of 15% below the San Diego region's[2] base year VMT per capita was used to identify VMT related impacts. Based on SANDAG Series 14 Transportation Forecast (Series ID 458), the average VMT per capita for the San Diego Region is 18.9 miles. Therefore, the significance threshold used to evaluate and identify the Proposed Project's VMT related impacts was 16.1 miles [18.9 miles X (100% - 15%)].

2.6 Cumulative Analysis

As outlined in Section C.1. of the Technical Advisory (Recommendations Regarding Methodology):

> A project that falls below an efficiency-based threshold that is aligned with long-term environmental goals and relevant plans would have no cumulative impact distinct from the project impact. Accordingly, a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa.

Since the Proposed Project's VMT related impacts will be assessed utilizing an efficiency-based metric (VMT per capita), the Proposed Project's direct (project) and cumulative impacts can be assumed to be the same, thus, no additional cumulative analysis is required.

2.7 VMT Analysis Tool

As outlined under CEQA Guidelines Section 15064.3(b):

> (4) *Methodology.* A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional

[2] To be conservative, the regional VMT per capita (18.9 miles) was selected for the threshold over the City's VMT per Capita (22.1 miles).

judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

The SANDAG Series 14 Regional Growth Forecast (ABM2+)[3] is the most up-to-date transportation forecast within the San Diego region. ABM2+ utilizes a tour-based methodology to calculate both vehicular trip generation and VMT output. This is consistent with the recommendations outlined in Section B1 of ORP's Technical Advisory. Based on these findings, the ABM2+ was identified as the most accurate and correct tool to evaluate the Proposed Project's VMT related impacts. As such, the San Diego Region SB-743 VMT Maps[4] was utilized to derive the VMT per capita for the Proposed Project site.

2.8 VMT Reduction / Transportation Demand Management

The quantification of all VMT reductions associated with Transportation Demand Management (TDM) measures were calculated based on the measures and methodologies outlined in the California Air Pollution Control Officers Association's (CAPCOA*) Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity* (GHG Handbook)[5]. The GHG Handbook provides methods to quantify GHG emission reductions from a specified list of measures, primarily focused on project-level actions. The GHG Handbook also includes a method to assess potential benefits of different climate vulnerability reduction measures, as well as measures that can be implemented to improve health and equity, again at the project level. The majority of the measures outlined under the Transportation Section of the GHG Handbook focus on the associated reductions in VMT (as it can be directly associated with GHG) that can be tied to specific TDM measures.

CAPCOA's GHG Handbook is an update to CAPCOA's Quantifying Green House Gas Mitigation Measures, August 2010[6], which has been the main resource used within the State of California to calculate VMT reductions for both Transportation and GHG related impacts over the past decade. CAPCOA's GHG Handbook has refined and added to the VMT reduction methodologies included within the Original CAPCOA Manual to best reflect the on-going research that has occurred over the last 10+ years. Therefore, CAPCOA's GHG Handbook provides the best, and most current, substantial evidence to calculate VMT reductions associated with TDM measures.

[3] The SANDAG Series 14 Regional Growth Forecast is the long-range forecast of population, housing, and employment that was inputted into ABM2+ for the proposed Plan. The Sustainable Communities Strategy (SCS) land use pattern is a subregional allocation of forecasted growth and development (population, housing, and jobs) based on the Series 14 Regional Growth Forecast. Data used to develop the SCS land use pattern are based on the most recent planning assumptions, considering local general plans and other factors, per California Senate Bill 375 (Steinberg, 2008) (SB 375) (Government Code Section 65080[b][2][B]). A detailed description of how the SANDAG Model calculates VMT is provided at the following location: https://www.sandag.org/uploads/2050RTP/F2050RTPTA15.pdf

[4] https://sandag.maps.arcgis.com/apps/webappviewer/index.html?id=5b4af92bc0dd4b7babbce21a7423402a

[5] https://www.airquality.org/residents/climate-change/ghg-handbook-caleemod

[6] http://www.aqmd.gov/docs/default-source/ceqa/handbook/capcoa-quantifying-greenhouse-gas-mitigation-measures.pdf

3.0 Transportation Impact & Mitigation

This chapter derives and analyzes the projected VMT per capita that will be generated by the Proposed Project. This chapter also identifies if the Proposed Project related VMT per capita would create significant project related impact, based on the thresholds outlined in Section 2.0. Finally, the chapter provides recommendations for mitigation measures that may reduce the Proposed Project's impacts to less than significant levels, and evaluates the feasibility of the proposed mitigation measures, if necessary.

3.1 VMT Impact Analysis

Figure 3.1 displays the ABM2+ VMT output for the Proposed Project site. Table 3.1 evaluates the projected VMT per capita in which the Proposed Project's site is anticipated to generate and compares it to the regional significance threshold to identify if the Proposed Project will have a significant VMT related impact.

Table 3.1 VMT Impact Analysis

Project Site VMT Per Capita (Miles)[1]	Regional VMT Per Capita Threshold (Miles)	Difference (Miles)	Difference (%)	Significant Impact?
23.7	16.1	7.6 miles over	+32.1%	Yes

[1]Source: San Diego Region SB-743 VMT Maps (TAZ 1395)

As shown in the table, the Proposed Project site is anticipated to generate a VMT per capita of 7.6 miles per resident over the regional the regional threshold, thus resulting in a significant VMT related impact. The Proposed Project would need to reduce its overall VMT generation by 32.1% (7.6 miles / 23.7 miles) to reduce this impact to less than significant.

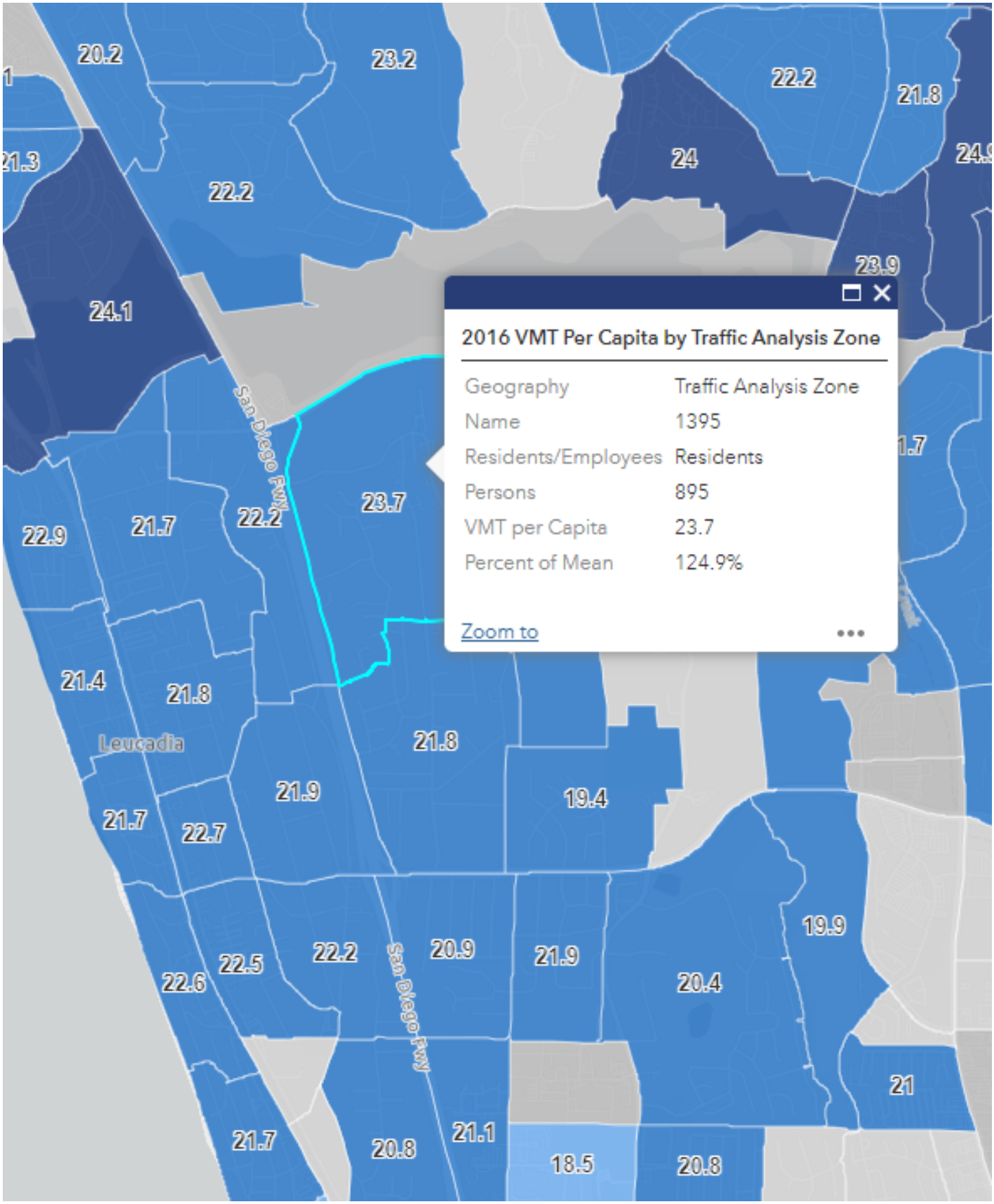
3.2 Mitigation

As noted in Section 3.1, the Proposed Project is projected to have a significant VMT related impact. To reduce the impact to a less than significant level, TDM measures will need to be implemented to reduce project related VMT. Therefore, a TDM analysis was conducted using CAPCOA's GHG Handbook to provide an understanding of the types and magnitude of TDM related design features and programs the Proposed Project would need to implement to reduce these impacts to less than significant levels.

It should be noted that the CAPCOA GHG Handbook does not include every potential TDM measure that could potentially reduce the Proposed Project's VMT. However, the effectiveness and methods to calculate VMT reductions for TDM measures not included within the CAPCOA GHG Handbook have not been recognized or agreed upon by the State, the San Diego Region, or the City and may be subject to challenge. Therefore, measures outside of the CAPCOA Handbook were not considered as mitigation strategies and their reductions were not considered due to the lack of substantial evidence to support their effectiveness.

Table 3.2 reviews each of the TDM measures included in the CAPCOA GHG Handbook and identifies if the TDM measure would be applicable to the Proposed Project. The reductions that would be associated with each identified feasible measure were then calculated in Section 3.3.

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Source: SANDAG Series 14 Transportation Forecast (Scenario ID 458)

San Diego Region SB743 VMT Maps (arcgis.com)

Figure 3.1

Project Site VMT Generation

Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-1	Increase Residential Density	This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of dwelling units (du) compared to the average residential density in the U.S. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. Increasing residential density results in shorter and fewer trips by single-occupancy vehicles and thus a reduction VMT. This measure is best quantified when applied to larger developments and developments where the density is somewhat similar to the surrounding area due to the underlying research being founded in data from the neighborhood level.	0.0%-30.0% Project VMT	*Yes* - The Proposed Project will have a net density of 21.7 dwelling units per acre. This is well above the residential density of a typical development cited within the CAPCOA Handbook of 9.1 units per acre. Note: VMT reductions associated with increased density may be already accounted for within ABM2+, in which the Proposed Project VMT per capita was calculated. See Section 3.3 for more discussion.
T-2	Increase Job Density	This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of jobs compared to the average job density in the U.S. Increased densities affect the distance people travel and provide greater options for the mode of travel they choose. Increasing job density results in shorter and fewer trips by single-occupancy vehicles and thus a reduction in GHG emissions.	0.0%-30.0% Project VMT	*N/A* - This measure only applies to employment based projects. Therefore, this measure cannot be applied to the Proposed Project since it is only comprised of residential uses.
T-3	Provide Transit-Oriented Development	This measure would reduce project VMT in the study area relative to the same project sited in a non-transit-oriented development (TOD) location. TOD refers to projects built in compact, walkable areas that have easy access to public transit, ideally in a location with a mix of uses, including housing, retail offices, and community facilities. Project site residents, employees, and visitors would have easy access to high-quality public transit, thereby encouraging transit ridership and reducing the number of single-occupancy vehicle trips and VMT.	6.9%-31.0% Project VMT	*N/A* – There are currently no transit facilities or services along Piraeus Street or any other roadway directly accessing the Proposed Project. Therefore, it is not feasible for the Proposed Project to be designed as a TOD.

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Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-4	Integrate Affordable and Below Market Rate Housing	This measure requires below market rate (BMR) housing. BMR housing provides greater opportunity for lower income families to live closer to job centers and achieve a jobs/housing match near transit. It is also an important strategy to address the limited availability of affordable housing that might force residents to live far away from jobs or school, requiring longer commutes. The quantification method for this measure accounts for VMT reductions achieved for multifamily residential projects that are deed restricted or otherwise permanently dedicated as affordable housing.	0.0%-28.6% Project VMT	*Yes* - Of the 149 residential homes proposed in the community, 134 would be market-rate homes and 15 (10%) would be "very low" income affordable residential homes. See Section 3.3 for more discussion.
T-5	Implement Commute Trip Reduction Program (Voluntary)	This measure will implement a voluntary commute trip reduction (CTR) program with employers. CTR programs discourage single- occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking, thereby reducing VMT. Voluntary implementation elements are described in this measure.	0.0%-4.0% Commute VMT	*N/A* - This measure only applies to employment based projects. Therefore, this measure cannot be applied to the Proposed Project since it is only comprised of residential uses.
T-6	Implement Commute Trip Reduction Program (Mandatory Implementation and Monitoring)	This measure will implement a mandatory CTR program with employers. CTR programs discourage single-occupancy vehicle trips and encourage alternative modes of transportation such as carpooling, taking transit, walking, and biking, thereby reducing VMT.	0.0%-26.0% Commute VMT	*N/A* - This measure only applies to employment based projects. Therefore, this measure cannot be applied to the Proposed Project since it is only comprised of residential uses.
T-7	Implement Commute Trip Reduction Marketing	This measure will implement a marketing strategy to promote the project site employer's CTR program. Information sharing and marketing promote and educate employees about their travel choices to the employment location beyond driving such as carpooling, taking transit, walking, and biking, thereby reducing VMT.	0.0%-4.0% Commute VMT	*N/A* - This measure only applies to employment based projects. Therefore, this measure cannot be applied to the Proposed Project since it is only comprised of residential uses.

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Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-8	Provide Ridesharing Program	This measure will implement a ridesharing program and establish a permanent transportation management association with funding requirements for employers. Ridesharing encourages carpooled vehicle trips in place of single-occupied vehicle trips, thereby reducing the number of trips and VMT.	0.0%-8.0% Commute VMT	*N/A* - This measure only applies to employment based projects. Therefore, this measure cannot be applied to the Proposed Project since it is only comprised of residential uses.
T-9	Implement Subsidized or Discounted Transit Program	This measure will provide subsidized or discounted, or free transit passes for employees and/or residents. Reducing the out-of-pocket cost for choosing transit improves the competitiveness of transit against driving, increasing the total number of transit trips and decreasing vehicle trips. This decrease in vehicle trips results in reduced VMT.	0.0%-5.5% Project VMT	*N/A* – There are currently no transit stops within a mile of the Proposed Project site. Due to the lack of transit access within the area, subsidized transit passes would not be effective in reducing the sites overall VMT.
T-10	Provide End-of-Trip Bicycle Facilities	This measure will install and maintain end-of-trip facilities for employee use. End-of-trip facilities include bike parking, bike lockers, showers, and personal lockers. The provision and maintenance of secure bike parking and related facilities encourages commuting by bicycle, thereby reducing VMT.	0.1%-4.4% Commute VMT	*N/A* - This measure only applies to employment based projects. Therefore, this measure cannot be applied to the Proposed Project since it is only comprised of residential uses.
T-11	Provide Employer-Sponsored Vanpool	This measure will implement an employer-sponsored vanpool service. Vanpooling is a flexible form of public transportation that provides groups of 5 to 15 people with a cost-effective and convenient rideshare option for commuting. The mode shift from long-distance, single-occupied vehicles to shared vehicles reduces overall commute VMT.	3.4%-20.4% Commute VMT	*N/A* - This measure only applies to employment based projects. Therefore, this measure cannot be applied to the Proposed Project since it is only comprised of residential uses.
T-12	Price Workplace Parking	This measure will price onsite parking at workplaces. Because free employee parking is a common benefit, charging employees to park onsite increases the cost of choosing to drive to work. This is expected to reduce single-occupancy vehicle commute trips, resulting in decreased VMT.	0.0%-20.0% Commute VMT	*N/A* - This measure only applies to employment based projects. Therefore, this measure cannot be applied to the Proposed Project since it is only comprised of residential uses.

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Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-13	Implement Employee Parking Cash-Out	This measure will require project employers to offer employee parking cash-out. Cash-out is when employers provide employees with a choice of forgoing their current subsidized/free parking for a cash payment equivalent to or greater than the cost of the parking space. This encourages employees to use other modes of travel instead of single occupancy vehicles. This mode shift results in people driving less and thereby reduces VMT.	0.0%-12.0% Commute VMT	*N/A* - This measure only applies to employment based projects. Therefore, this measure cannot be applied to the Proposed Project since it is only comprised of residential uses.
T-14	Provide Electric Vehicle Charging Infrastructure	This measure is GHG reducing only and does not result in a reduction in VMT.	N/A	*N/A* – Measure does not apply to VMT reductions.
T-15	Limit Residential Parking Supply	This measure will reduce the total parking supply available at a residential project or site. Limiting the amount of parking available creates scarcity and adds additional time and inconvenience to trips made by private auto, thus disincentivizing driving as a mode of travel. Reducing the convenience of driving results in a shift to other modes and decreased VMT. Evidence of the effects of reduced parking supply is strongest for residential developments.	0.0%-13.7% Project VMT	*Not Feasible* – The Proposed Project will provide more parking spaces than what is required by California State Government Code 65915. Thus, this measure would not apply.
T-16	Unbundle Residential Parking Costs from Property Cost	This measure will unbundle, or separate, a residential project's parking costs from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost. On the assumption that parking costs are passed through to the vehicle owners/drivers utilizing the parking spaces, this measure results in decreased vehicle ownership and, therefore, a reduction in VMT. Unbundling may not be available to all residential developments, depending on funding sources.	0.0%-15.7% Project VMT	*Not Feasible* – The Proposed Project units are designed to incorporate an attached private garage with each unit. As such, unbundling parking from individual uses is not feasible.

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Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-17	Improve Street Connectivity	This measure accounts for the VMT reduction achieved by a project that is designed with a higher density of vehicle intersections compared to the average intersection density in the U.S. Increased vehicle intersection density is a proxy for street connectivity improvements, which help to facilitate a greater number of shorter trips and thus a reduction in VMT.	0.0%-30.0% Community VMT	*N/A* – The Proposed Project will not create any additional intersections or roadway segments.
T-18	Provide Pedestrian Network Improvement	This measure will increase the sidewalk coverage to improve pedestrian access. Providing sidewalks and an enhanced pedestrian network encourages people to walk instead of drive. This mode shift results in a reduction in VMT and GHG emissions.	0.0%-6.4% Community VMT	*Yes* – the Proposed Project will construct over 1,100 linear feet of new sidewalk facilities on both Piraeus Street and Plato Place, along their project frontage. See Section 3.3 for more discussion.
T-19A	Construct or Improve Bike Facility	This measure will construct or improve a single bicycle lane facility (only Class I, II, or IV) that connects to a larger existing bikeway network. Providing bicycle infrastructure helps to improve biking conditions within an area. This encourages a mode shift on the roadway parallel to the bicycle facility from vehicles to bicycles, displacing VMT. When constructing or improving a bicycle facility, a best practice is to consider local or state bike lane width standards. A variation of this measure is provided as T-19-B, Construct or Improve Bike Boulevard.	0.0%-0.8% Parallel Roadway VMT	*N/A* – All bicycle facilities along the Proposed Project frontage have been implemented. Therefore, no additional bicycle improvements are planned to be implemented within the Proposed Project's purview.
T-19B	Construct or Improve Bike Boulevard	Construct or improve a single bicycle boulevard that connects to a larger existing bikeway network. Bicycle boulevards are a designation within Class III Bikeway that create safe, low-stress connections for people biking and walking on streets. This encourages a mode shift from vehicles to bicycles, displacing VMT. A variation of this measure is provided as T-19-A, Construct or Improve Bike Facility, which is for Class I, II, or IV bicycle infrastructure	0.0%-0.2% Roadway VMT	*N/A* – All bicycle facilities along the Proposed Project frontage have been implemented. Therefore, no additional bicycle improvements are planned to be implemented within the Proposed Project's purview.

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Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-20	Expand Bikeway Network	This measure will increase the length of a city or community bikeway network. A bicycle network is an interconnected system of bike lanes, bike paths, bike routes, and cycle tracks. Providing bicycle infrastructure with markings and signage on appropriately sized roads with vehicle traffic traveling at safe speeds helps to improve biking conditions (e.g., safety and convenience). In addition, expanded bikeway networks can increase access to and from transit hubs, thereby expanding the "catchment area" of the transit stop or station and increasing ridership. This encourages a mode shift from vehicles to bicycles, displacing VMT. When expanding a bicycle network, a best practice is to consider bike lane width standards from local agencies, state agencies, or the National Association of City Transportation Officials' Urban Bikeway Design Guide.	0.0%-0.5% Community VMT	*N/A* – All bicycle facilities along the Proposed Project frontage have been implemented. Therefore, no additional bicycle improvements are planned to be implemented within the Proposed Project's purview.
T-21A	Implement Conventional Carshare Program	This measure will increase carshare access in the user's community by deploying conventional carshare vehicles. Carsharing offers people convenient access to a vehicle for personal or commuting purposes. This helps encourage transportation alternatives and reduces vehicle ownership, thereby avoiding VMT. A variation of this measure, electric carsharing, is described in Measure T-21-B, Implement Electric Carshare Program	0.0%-0.15% Community VMT	*Not Feasible* – Public car share programs are not currently available within the City. However, should a car share company want to locate a carshare on the property, the Proposed Project could accommodate its residents. It should be noted that existing rideshare services (Uber & Lyft) would be available to Proposed Project residents. However, they are assumed to be accounted for under the baseline.
T-21B	Implement Electric Carshare Program	The additional GHG reductions associated with this measures, as compared to T-21A do not effect VMT.	N/A	*N/A* – Measure does not apply to VMT reductions.

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Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-22A	Implement Pedal (Non-Electric) Bikeshare Program	This measure will establish a bikeshare program. Bikeshare programs provide users with on-demand access to bikes for short-term rentals. This encourages a mode shift from vehicles to bicycles, displacing VMT. Variations of this measure are described in Measure T-22-B, Implement Electric Bikeshare Program, and Measure T-22-C, Implement Scootershare Program.	0.0%-0.02% Community VMT	*N/A* – See Measure T-22B.
T-22B	Implement Electric Bikeshare Program	This measure will establish an electric bikeshare program. Electric bikeshare programs provide users with on-demand access to electric pedal assist bikes for short-term rentals. This encourages a mode shift from vehicles to electric bicycles, displacing VMT. Variations of this measure are described in Measure T-22-A, Implement Pedal (Non-Electric) Bikeshare Program, and Measure T-22-C, Implement Scootershare Program.	0.0%-0.06% Community VMT	*Not Feasible* – BCycle operates a public electric bicycle share program within the City. However, there are no bike share stations located near the Proposed Project site. Therefore, the program would not encourage a mode shift with project residents.
T-22C	Implement Scootershare Program	This measure will establish a scootershare program. Scootershare programs provide users with on-demand access to electric scooters for short-term rentals. This encourages a mode shift from vehicles to scooters, displacing VMT. Variations of this measure are described in Measure T-22-A, Implement Pedal (Non-Electric) Bikeshare Program, and Measure T-22-B, Implement Electric Bikeshare Program	0.0%-0.07% Community VMT	*N/A* – The City does not currently have a scootershare program.

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Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-23	Provide Community-Based Travel Planning	This measure will target residences in the plan/community with community-based travel planning (CBTP). CBTP is a residential-based approach to outreach that provides households with customized information, incentives, and support to encourage the use of transportation alternatives in place of single occupancy vehicles, thereby reducing household VMT.	0.0%-2.3% Community VMT	*Yes* - It is assumed that the Proposed Project HOA will provide alternative modes of transportation information to residents and tenant as a part of the "New Resident" or "New Tenant" package. The HOA will also provide residents with transit schedules within the area, and alert residents when new transit services are added, or services are charged. The HOA will also act as Travel Advisor, providing new residents and tenants with information regarding how members of households can travel in alternative ways that meet their needs. See Section 3.3 for more discussion.
T-24	Implement Market Price Public Parking (On-Street)	This measure will price all on-street parking in a given community, with a focus on parking near central business districts, employment centers, and retail centers. Increasing the cost of parking increases the total cost of driving to a location, incentivizing shifts to other modes and thus decreasing total VMT to and from the priced areas.	0.0%-30.0% Community VMT	*N/A* – The proposed Project is not located near any central business districts, employment centers, and retail centers; therefore, this measure is not applicable.
T-25	Extend Transit Network Coverage or Hours	This measure will expand the local transit network by either adding or modifying existing transit service or extending the operation hours to enhance the service near the project site. Starting services earlier in the morning and/or extending services to late-night hours can accommodate the commuting times of alternative-shift workers. This will encourage the use of transit and therefore reduce VMT.	0.0%-4.6% Community VMT	*Not Feasible* – The operation and deployment of transit routes within the City is under the jurisdiction of NCTD. Therefore, the City nor the project applicant have the authority to change or increase the existing transit services.

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Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-26	Increase Transit Service Frequency	This measure will increase transit frequency on one or more transit lines serving the plan/community. Increased transit frequency reduces waiting and overall travel times, which improves the user experience and increases the attractiveness of transit service. This results in a mode shift from single occupancy vehicles to transit, which reduces VMT.	0.0%-11.3% Community VMT	*Not Feasible* – The operation and deployment of transit routes within the City is under the jurisdiction of NCTD. Therefore, the City nor the project applicant have the authority to change or increase the existing transit services.
T-27	Implement Transit-Supportive Roadway Treatments	This measure will implement transit-supportive treatments on the transit routes serving the plan/community. Transit-supportive treatments incorporate a mix of roadway infrastructure improvements and/or traffic signal modifications to improve transit travel times and reliability. This results in a mode shift from single occupancy vehicles to transit, which reduces VMT.	0.0%-0.6% Community VMT	*N/A* – There are currently no transit facilities or services located along Piraeus Street; therefore, the Proposed Project does not have the purview to implement Transit-Supportive Roadway Treatments along its frontage.
T-28	Provide Bus Rapid Transit	This measure will convert an existing bus route to a bus rapid transit (BRT) system. BRT includes the following additional components, compared to traditional bus service: exclusive right-of-way (e.g., busways, queue jumping lanes) at congested intersections, increased limited-stop service (e.g., express service), intelligent transportation technology (e.g., transit signal priority, automatic vehicle location systems), advanced technology vehicles (e.g., articulated buses, low-floor buses), enhanced station design, efficient fare-payment smart cards or smartphone apps, branding of the system, and use of vehicle guidance systems. BRT can increase the transit mode share in a community due to improved travel times, service frequencies, and the unique components of the BRT system. This mode shift reduces VMT	0.0%-13.8% Community VMT	*Not Feasible* – The operation and deployment of transit routes within the City is under the jurisdiction of NCTD. Therefore, the City nor the project applicant have the authority to implement or operate BRT services.

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Table 3.2 VMT Impact Feasible Mitigation

#	Measure	Description	Potential Reduction	Feasible?
T-29	Reduce Transit Fares	This measure will reduce transit fares on the transit lines serving the plan/community. A reduction in transit fares creates incentives to shift travel to transit from single-occupancy vehicles and other traveling modes, which reduces VMT. This measure differs from Measure T-8, Implement Subsidized or Discounted Transit Program, which can be offered through employer-based benefits programs in which the employer fully or partially pays the employee's cost of transit.	0.0%-1.2% Community VMT	*Not Feasible* – The operation and deployment of transit routes within the City is under the jurisdiction of NCTD. Therefore, the City nor the project applicant have the authority to change transit fairs.
T-30	Use Cleaner-Fuel Vehicles	This measure is GHG reducing only and does not result in a reduction in VMT.	N/A	*N/A* – Measure does not apply to VMT reductions.

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3.3 TDM Program Effectives

As outlined in Table 3.2, the following TDM measures were identified to be feasible for the Proposed Project to include within its design or implement on-site.

T-1: Increase Residential Density
T-4 : Integrate Affordable and Below Market Rate Housing
T-18: Provide Pedestrian Network Improvement
T-23: Provide Community-Based Travel Planning

The VMT related reductions associated with each of the measures outlined above are calculated within the following sections:

T-1: Increase Residential Density

$$A = \frac{B - C}{C} \times D$$

GHG Calculation Variables

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from project VMT in study area	0–30.0	%	calculated
User Inputs				
B	Residential density of project development	[ ]	du/acre	user input
Constants, Assumptions, and Available Defaults				
C	Residential density of typical development	9.1	du/acre	Ewing et al. 2007
D	Elasticity of VMT with respect to residential density	-0.22	unitless	Stevens 2016

The Proposed Project will have a site density of 21.7 units per acre. Using the methodologies provided within CAPCOA's GHG Handbook, the Proposed Project could have up to a 30% reduction in VMT (see calculation below):

$$\frac{(21.7 \text{ DU/Acre} - 9.1 \text{ DU/Acre})}{9.1 \text{ DU/Acre}} \text{ X } -0.22 = -30.5\% \text{ VMT Reduction} \Rightarrow 30\% \text{ (Max)}$$

It should be noted that ABM2+ does take into account land use density when calculating the VMT per capita. Therefore, some of the calculated reductions may already be assumed within the model. The land use density for the existing residential uses contained within the Proposed Project's Traffic Analysis Zone (TAZ)[7] is 3.2 dwelling units per acre[8], which is well below the Proposed Project density, as well as the 9.1 unit per acre "Typical Project" density assumed in the equation. It can be assumed that some

[7] A TAZ is a geographic area in which the ABM2+ utilizes to group and evaluate land uses. Its geographic areas is most similar to a Census Block Group.
[8] Density for the existing land uses were based on assessor parcel records. Calculations are provided in Attachment 1.

density reduction should be applied. However, since the exact density reduction(s) assumed within the ABM2+ is unknown, the exact amount of additional reduction cannot be accurately calculated. To be conservative, no density reduction was assumed for the purposes of the CEQA analysis.

T-4 : Integrate Affordable and Below Market Rate Housing

GHG Reduction Formula

$A = B \times C$

GHG Calculation Variables

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from Project/Site VMT for multifamily residential developments	0–28.6	%	calculated
User Inputs				
B	Percent of multifamily units permanently dedicated as affordable	0–100	%	user input
Constants, Assumptions, and Available Defaults				
C	Percent reduction in VMT for qualified units compared to market rate units	-28.6	%	ITE 2021

The Proposed Project will include 15 "very low" income affordable dwelling units, which will make up just over 10% of the total number units (15 affordable units / 149 total units). Using the methodologies provided within CAPCOA's GHG Handbook, this will result in a 2.86% reduction in VMT for the project site (see calculation below):

10% (Affordable Project Units) X -28.6 = 2.86% VMT Reduction

T-18: Provide Pedestrian Network Improvement

The Proposed Project will construct over 1,100 linear feet of new sidewalk facilities along the project frontage. However, there are no other connecting sidewalk facilities along Piraeus Street or Plato Place. Therefore, pedestrians will not have facilities to continue their walk and connect to external destinations, resulting in little to no mode shift. Thus, no VMT additional reductions can be assumed for the implementation of the proposed sidewalk facilities.

T-23: Provide Community-Based Travel Planning

GHG Reduction Formula

$$A = \frac{C}{B} \times D \times -E \times F$$

GHG Calculation Variables

ID	Variable	Value	Unit	Source
Output				
A	Percent reduction in GHG emissions from household vehicle travel in plan/community	0–2.3	%	calculated
User Inputs				
B	Residences in plan/community	[ ]	residences	user input
C	Residences in plan/community targeted with CBTP	[ ]	residences	user input
Constants, Assumptions, and Available Defaults				
D	Percent of targeted residences that participate	19	%	MTC 2021
E	Percent vehicle trip reduction by participating residences	12	%	MTC 2021
F	Adjustment factor from vehicle trips to VMT	1	unitless	assumed

It is assumed that the Proposed Project HOA will provide alternative modes of transportation information to residents and tenant as a part of the "New Resident" or "New Tenant" package. The HOA will also provide residents with transit schedules within the area, and alert residents when new transit services are added, or services are charged. The HOA will also act as Travel Advisor, providing new residents and tenants with information regarding how members of households can travel in alternative ways that meet their needs.

Based on US Census data, the average people per household within the City is 2.49. Therefore, the Proposed Project would be anticipated to have a total of 371 residents (2.49 people per household X 149 units). All project residents would be targeted with the CBTP.

$$\frac{\text{371 CBTP Targeted Residents}}{\text{371 Total Residents}} \text{ X 19% X 12% X 1= 2.3\%VMT Reduction}$$

3.4 Impact After TDM Plan

Table 3.3 summarizes the VMT reductions that are associated with the Proposed Project's TDM plan. As outlined in Section 3.3, it may not be appropriate to assume the full calculated reduction for some measures under CEQA. As such, the table provides both the fully calculated "Potential Reduction" as well as a more conservative "Assumed Reduction." Both numbers are provided to identify the range in which the Proposed Project's VMT may be reduced. However, to be conservative, only the lower "Assumed Reduction" was used to identify the reductions applied to the Proposed Project's VMT related impacts for the purposes of CEQA.

Table 3.3 TDM Reduction Calculation

#	Measure	Potential Reduction	Assumed Reduction	Notes
T-1	Increase Residential Density	30%	0%	As shown in Section 3.3 up to a 30% reduction can be assumed for the Proposed Project; however, since it is unknow how much of this reduction is captured by ABM 2+, no reduction is assumed.
T-4	Integrate Affordable and Below Market Rate Housing	2.86%	2.86%	N/A
T-18	Provide Pedestrian Network Improvement	0%	0%	The Proposed Project will implement over 1,100 linear feet of sidewalk facilities. However, due to the existing lack of sidewalk facilities within the area, no reduction can be assumed.
T-23	Provide Community-Based Travel Planning	2.3%	2.3%	N/A
VMT Reduction Total		**33.6%**	**5.1%**	Note: As per the CAPCOA GHG Handbook, a dampening effect should be applied to all measures when adding them together. Therefore the total reflects the formula below: 1-[(1-T1) X (1-T-4) X (1-T15)…]

As shown in Table 3.3, if all potential TDM measures were fully realized the Proposed Project's VMT would be reduced by 33.6%. However, as noted in Section 3.3, assuming the full reduction for some of these measures may not be appropriate. Therefore, to be conservative, a 5.1% reduction is assumed, which reduces the Proposed Project's VMT per capita to 22.5 miles.

3.5 Project Mitigation

As outlined within the Proposed Project's TDM, the Proposed Project will implement the following mitigation measures:

- The Proposed Project will construct over 1,100 linear feet of new sidewalk facilities on both Piraeus Street and Plato Place, along their project frontage.
- The Proposed Project HOA will provide alternative modes of transportation information to residents and tenant as a part of the "New Resident" or "New Tenant" package. The HOA will also provide residents with transit schedules within the area, and alert residents when new transit services are added, or services are charged. The HOA will also act as Travel Advisor, providing new residents and tenants with information regarding how members of households can travel in alternative ways that meet their needs.
- The Proposed Project will include 15 "very low" income affordable residential homes.

3.6 Impact After Mitigation

Table 3.4 displays the Proposed Project's anticipated VMT per Capita with the implantation of the identified mitigation measures.

Table 3.4 VMT Related Impact After Mitigation

Regional VMT Per Capita Threshold (Miles)	Project Site Base VMT Per Capita (Miles)	Feasible VMT Reduction Through Mitigation	Project Site VMT Per Capita With Mitigation (Miles)	Significant Impact After Mitigation?
16.1	23.7	5.1%	22.5	Yes

With the assumed reductions associated with the Proposed Project mitigation measures, the Proposed Project's VMT per capita is still above the regional threshold and thus would resulting in a significant impact. As outlined in Table 3.2, there are no additional quantifiable VMT reducing measures in which the Proposed Project can feasibility implement. Therefore, the Proposed Project's VMT related impact would be significant and unavoidable.

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Attachment A: Neighborhood Density Calculations

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Piraeus Point
Surrounding Neighborhood Density Analysis

APN	UNITQTY	Area (Acres)
2163322200	1	0.081
2163310200	1	0.144
2163322100	1	0.115
2163322400	1	0.110
2163310100	1	0.113
2164312600	1	0.127
2163322300	1	0.111
2163322800	1	0.095
2163327400	0	0.243
2163310400	1	0.103
2541627500	1	0.269
2541610800	1	0.483
2541611900	1	0.473
2541731000	1	0.289
2541641400	1	0.335
2541741000	1	0.406
2163323900	1	0.126
2163320500	1	0.107
2163323700	1	0.112
2163320900	1	0.112
2161000800	1	0.538
2163311500	1	0.113
2163311200	1	0.103
2163323100	1	0.098
2163326400	1	0.113
2163321300	1	0.124
2163325300	1	0.100
2161001300	2	0.522
2163325000	1	0.118
2163320600	1	0.100
2163325700	1	0.099
2163325800	1	0.119
2163311800	1	0.119
2161000100	0	2.947
2163326100	1	0.101
2163311400	1	0.093
2163311100	1	0.113
2541501400	2	0.571
2541713800	1	0.231
2541611100	1	0.313
2541731800	1	0.378
2541715800	1	0.233
2163320300	1	0.103
2161002600	0	0.192
2161001100	1	0.509
2161001200	1	0.505
2541731100	1	0.298

Piraeus Point
Surrounding Neighborhood Density Analysis

APN	UNITQTY	Area (Acres)
2541632400	1	0.230
2541631800	2	0.490
2544133800	1	0.381
2541640600	1	0.343
2541730800	1	0.187
2541626700	1	0.499
2163311000	1	0.118
2541733200	0	0.230
2163311600	1	0.107
2541625400	1	0.247
2541625500	1	0.285
2541624800	1	0.568
2541640100	1	0.535
2541642000	1	0.275
2541631200	1	0.339
2541632000	1	0.259
2164311900	1	0.156
2164310400	1	0.156
2541730700	3	0.340
2163322500	1	0.114
2163327000	1	0.110
2163310700	1	0.107
2163310900	1	0.114
2163322000	1	0.115
2163321600	1	0.118
2163324500	1	0.100
2163312100	1	0.113
2163321000	1	0.116
2163325400	1	0.095
2163311300	1	0.113
2163326000	1	0.107
2163321900	1	0.108
2163326200	1	0.100
2163326700	1	0.103
2163326800	1	0.086
2541632700	1	0.241
2541641300	1	0.269
2541730300	1	0.315
2541740700	1	0.555
2541626800	1	0.263
2541624100	0	0.175
2541714400	1	0.400
2541627200	1	0.237
2541627900	1	0.335
2541501500	1	0.374
2541632800	1	0.207
2541714200	2	0.302

Piraeus Point
Surrounding Neighborhood Density Analysis

APN	UNITQTY	Area (Acres)
2541732500	1	0.651
2541626000	1	0.197
2163312700	1	0.096
2541623800	1	0.316
2541501600	1	0.333
2163312600	1	0.096
2541721200	2	1.314
2541632100	1	0.247
2541640500	1	0.243
2163321200	1	0.092
2541501000	1	0.244
2541610700	1	0.300
2541622400	2	0.999
2541740400	1	0.399
2541730900	1	0.283
2163324000	1	0.108
2541640400	1	0.253
2164312700	1	0.197
2163312900	0	16.293
2163326600	1	0.111
2163323600	1	0.113
2541741300	1	0.748
2541640300	1	0.945
2541641600	1	0.500
2541640200	3	0.583
2541632600	1	0.235
2541730100	1	0.680
2163320400	1	0.103
2163324100	1	0.110
2541611700	2	0.688
2541500100	1	0.246
2541715400	1	0.296
2163321400	1	0.114
2163321500	1	0.113
2163323200	1	0.086
2163321100	1	0.100
2541633300	1	0.704
2541642200	1	0.251
2541730600	1	0.705
2541731200	1	0.429
2541731300	1	0.430
2541715600	1	0.278
2541633200	1	0.547
2541732200	1	0.245
2541740900	1	0.435
2541733100	1	0.473
2541624900	1	0.439

Piraeus Point
Surrounding Neighborhood Density Analysis

APN	UNITQTY	Area (Acres)
2541730400	1	0.921
2541732000	1	0.410
2541632900	0	1.888
2541731900	1	0.270
2541733000	1	0.230
2541641900	1	0.213
2541500400	1	0.191
2541715500	1	0.282
2541714300	2	0.400
2541720600	1	0.548
2541626900	1	0.284
2541740800	1	0.719
2541740600	1	0.231
2541632500	1	1.423
2541624600	1	0.360
2541714100	1	0.302
2163325200	1	0.118
2161002100	1	1.124
2161001400	1	0.510
2163324800	1	0.105
2163312000	1	0.106
2163311900	1	0.110
2541716100	1	0.602
2541713900	1	0.231
2541627800	1	0.276
2541627400	1	0.209
2163320700	1	0.110
2163324300	1	0.124
2163324700	1	0.093
2161003800	2	0.483
2161003300	1	1.280
2541720300	2	0.898
2541721300	0	1.230
2163322700	1	0.086
2163326300	1	0.111
2163323000	1	0.132
2163323300	1	0.091
2541715900	1	0.410
2541721500	0	0.766
2163312800	1	0.104
2541625300	1	0.251
2541628300	1	0.453
2541500500	1	0.576
2541500700	1	0.410
2541627700	1	0.236
2541713600	1	0.299
2164320200	0	26.256

Piraeus Point
Surrounding Neighborhood Density Analysis

APN	UNITQTY	Area (Acres)
2161103100	0	20.063
2164320100	0	1.137
2164311400	1	0.376
2164311500	1	0.298
2164311700	1	0.228
2164311200	1	0.154
2164311800	1	0.151
2164311000	1	0.156
2164312000	1	0.159
2164310900	1	0.142
2164312100	1	0.152
2164310800	1	0.144
2164312200	1	0.173
2164310700	1	0.146
2164310600	1	0.171
2164310500	1	0.159
2164313200	1	0.118
2164313100	1	0.135
2164312500	1	0.149
2164310300	1	0.148
2164313000	1	0.135
2164310200	1	0.131
2164312800	1	0.203
2163327100	0	0.603
2163310300	1	0.117
2163326900	1	0.095
2163310500	1	0.102
2163310600	1	0.111
2163326500	1	0.101
2163310800	1	0.105
2163321800	1	0.113
2163325900	1	0.119
2163323400	1	0.127
2163325600	1	0.116
2163311700	1	0.112
2161000500	1	0.499
2161000400	1	0.496
2163325500	1	0.101
2161003000	1	1.916
2163323500	1	0.127
2163320800	1	0.125
2163312300	1	0.102
2163324900	1	0.110
2161001000	1	0.512
2163312500	1	0.116
2161003600	1	0.930
2161001700	1	0.561

Piraeus Point
Surrounding Neighborhood Density Analysis

APN	UNITQTY	Area (Acres)
2163324600	1	0.110
2163324200	1	0.126
2163320100	1	0.116
2163320200	1	0.109
2163324400	1	0.111
2541627300	1	0.246
2541627100	2	0.288
2541714900	1	0.233
2541627600	1	0.235
2541713700	1	0.718
2541500600	1	0.569
2541625600	1	0.241
2541623400	1	0.286
2541623500	1	0.314
2541623600	2	0.321
2541624500	1	0.493
2541625000	1	0.294
2541624700	2	0.342
2541733700	1	0.760
2541730200	1	0.428
2541627000	1	0.218
2541440400	0	0.530
2541633100	1	0.570
2541642100	1	0.210
2541730500	2	0.999
2541440700	0	1.200
2541631700	1	0.538
2541641500	1	0.486
2541731700	1	0.286
2541731500	1	0.430
2544132300	1	0.236
2163322600	1	0.094
2163322900	1	0.147
2161101200	0	18.950
2163321700	1	0.085
2161103500	0	5.237
2163325100	1	0.107
2541710100	2	0.430
2541440100	0	6.642
2541716200	1	0.662
2541625700	1	1.029
2541628200	0	0.478
2541625800	1	0.257
2541625900	1	0.436
2541624300	1	0.388
2541741100	1	0.335
2541740500	1	0.425

Piraeus Point
Surrounding Neighborhood Density Analysis

APN	UNITQTY	Area (Acres)
2541721400	1	0.765
2541501100	1	0.243
2541501200	1	0.300
2541720400	2	0.862
2541720500	2	0.598
2541732600	1	0.299
2541732100	2	0.270
2541633400	2	0.773
2541633500	1	0.710
2163323800	1	0.104
2164310100	1	0.224
2164313300	1	0.210
2541625100	1	0.310
2541640700	2	0.268
2541741200	1	0.348
2161002700	1	0.318
2161003200	1	1.003
2541500800	2	0.227
2541500300	2	0.221
2541611800	1	1.309
2541716000	1	0.597
2541716300	1	0.679
2163312400	1	0.103
2163312200	1	0.102
2164312900	1	0.129
2164312400	1	0.140
2164312300	1	0.115
2164311600	1	0.257
2164311300	1	0.152
2164311100	1	0.155
2541500200	1	0.223
2541500900	1	0.192
2541715700	1	0.344
2541733300	1	0.360
2541731600	1	0.284
2541731400	2	0.431
2541440500	0	0.877
2541440300	0	1.231
2541440600	0	0.670
2541633700	1	0.367
2541634000	0	0.775
2541635100	1	0.827
2541635200	1	0.653
2541641200	1	0.307
2541641100	1	0.244
2546000100	1	0.716
2544132600	2	0.906

Piraeus Point
Surrounding Neighborhood Density Analysis

APN	UNITQTY	Area (Acres)
2546000200	1	0.541
2546001400	1	0.643
2544132700	1	0.257
2544132500	1	0.277
2546001200	1	0.540
2546001300	2	0.733
2546001100	1	0.733
2546000300	1	0.532
2546000400	1	0.590
2546001000	1	0.574
2546000500	2	0.530
2546000700	1	0.524
2546000600	2	0.529
2544131700	2	1.900
2544131300	1	2.293
2161002800	0	0.494
2161003100	1	1.253
2541640900	2	0.501
2161000300	1	1.047
2541640800	1	0.429
2541641000	1	0.227
2544133900	1	0.750
2544133600	2	0.891
2544132000	1	0.336
2544134000	0	0.494
2541622500	1	0.957
2541628000	1	0.262
2541628100	1	0.235
2163327300	0	3.401
2163327500	0	0.741
2163327200	0	6.100
Total	366	114.432
Density	3.20	

APPENDIX L.
AB 52 CORRESPONDENCE

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City of Encinitas
Development Services Department
505 S. Vulcan Avenue, Encinitas, California 92024-3633

August 24, 2022

SUBJECT: AB 52 Notification for the Piraeus Point (City Case # (MULTI-005158-2022; CDP-005161-2022; DR-005160-2022; SUB 005159-2022; AND SUB-005391-2022)

To Whom It May Concern:

Pursuant to Public Resources Code Section 21080.3.1, this letter serves as formal notification of the above-referenced development application for tribal consultation purposes. The project site consists of vacant property (APN# 254-144-01-00 and 216-110-35-00) located at the Northeast corner of Piraeus Street and Plato Place, Encinitas, CA 92024 in the City of Encinitas (see attached location map). The project proposes the development of a 149-home residential townhome community on an approximately 11.8-acre site with more than 50 percent of the project site proposed to be permanently preserved and managed as biological open space.

The project applicant has retained the services of ECORP Consulting, Inc. to conduct a Phase I Archaeological Survey for the project. The survey report, attached for your review, indicated that the CHRIS records search results revealed that 29 precontact resources, four historic-period resources, and two unknown resources are located within one mile of the Project Area. One of these resources, P-37-012130, overlaps with the Project Area. Surface sediments along the eastern edge of the Project Area consist of Holocene surficial sediments atop earlier geological formations, and it is in these strata that precontact archaeological deposits have been previously identified and documented. Due to the presence of sediments contemporaneous with human occupation of the region and the presence of previously recorded precontact resources in the surrounding area and within the Project Area, the potential for subsurface resources in previously undisturbed soils is considered moderate to high. ECORP recommends archaeological and Native American monitoring for any ground disturbance in native soils that may occur as part of the proposed Project so that any discoveries can be managed in accordance with state law. The consulting archaeologist has provided recommendations within the Phase I Archaeology Study in Section 6.0 (Recommended Mitigation Measures) during construction activity.

If you wish to request consultation for this project, please contact me within 30 days. My contact information is:

Nick Koutoufidis
Senior Planner
Encinitas Development Services Department
505 S. Vulcan Avenue
Encinitas, CA 92024

Ph. 760-633-2692
Email: nkoutoufidis@encinitasca.gov

Please let me know if you need any additional information.

Sincerely,
Nick Koutoufidis
Senior Planner



Michael Baker INTERNATIONAL

0 250 500 Feet

Source: ESRI, Nearmap, SanGIS

PIRAEUS POINT

Project Location Map

Figure 1

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APPENDIX M.
PRELIMINARY WASTEWATER REPORT

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PRELIMINARY WASTEWATER REPORT

FOR

PIRAEUS POINT

149 UNIT MULTIFAMILY DEVELOPMENT

PIRAEUS STREET, ENCINITAS, CA 92024

OWNER:
PIRAEUS INVESTOR LLC
158 N MELROSE DR
VISTA, CA 92083

APPLICANT:
LENNAR HOMES OF CALIFORNIA LLC
16465 VIA ESPRILLO, SUITE 150
SAN DIEGO, CA 92127

DATE:
JULY 5, 2022

PREPARED BY:
PASCO LARET SUITER & ASSOCIATES
1911 SAN DIEGO AVE, SUITE 100
SAN DIEGO CA, 92110

TYLER G. LAWSON, RCE 80356 DATE

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	Sewer Flow Estimate	
	Pipeline Sizing	
	Saxony Pump Station	
SECTION 3	CONCLUSION	

APPENDECIES

APPENDIX A	OFFSITE SEWER EXHIBIT
APPENDIX B	CALCULATIONS

SECTION 1

INTRODUCTION

The Preliminary Wastewater Study for the proposed Piraeus Point development has been prepared to analyze the existing wastewater system downstream of the proposed development down to and including Saxony Pump Station (SAXPS). This report intends to present the methodology and calculations used to determine the existing wastewater infrastructure has the capacity to handle the additional wastewater discharge the proposed development will produce.

PROJECT DESCRIPTION

The Piraeus Point project is located east of Interstate 5 and is geographically settled between Piraeus Street to the east and Plato Place to the south. The site is bordered by single family homes to the east, Interstate 5 to the west, and undeveloped open space to the north and south. The current site is vacant and undeveloped.

The development proposes to construct 149 multi-family homes, amenity space, open space and supporting infrastructure over approximately 7 acres. The development proposes to tie into an existing sewer manhole just north of the intersection of Piraeus Street and Plato Place. Wastewater discharge will then enter the Leucadia Water District (LWD) public sewer system and travel in the northerly direction towards La Costa Ave. Further, wastewater will enter an existing 15" main at La Costa Ave. where it will ultimately discharge into the existing SAXPS.

SECTION 2

PLANNING AND DESIGN CALCULATIONS

The existing sewer system was analyzed at a few critical points as seen on the offsite sewer exhibit in Appendix A. Compliance with depth in pipe as well as velocity within the pipe ensures the existing system has sufficient capacity to convey the addition of the Piraeus Point development.

Associated calculations demonstrating the system compliance are outlined hereon.

SEWER FLOW ESTIMATE

The existing peak sewer flow rate is calculated using EDU quantities as provided by LWD. Sewer flow calculations are based on the LWD Standard Specifications and Procedures dated May 2019.

Existing and proposed sewer flow estimates are shown on the offsite sewer exhibit in Appendix A. Table 2-1 summarizes the existing peak flow calculations at critical points analyzed. Table 2-2 summarizes the peak wastewater flows generated post-development at the same critical points.

Peak wastewater flow rates are generated using the following equation:

$$PEAK\ FLOW\ (gpd) = EDU\ \times AVG.SEWAGE\ GENERATION\ FACTOR\ \times PEAKING\ FACTOR$$

Where EDU is the number of additional dwelling units proposed, average sewage generation factor is 215 gpd/edu based on the Leucadia Water District Standard Specifications and Procedures and the peaking factor in existing conditions is 3.32 while in proposed conditions it is 3.50 for a population less than 5,000 per Table 1-2-1 of the LWD Standard Specifications.

EXISTING SEWER GENERATION CALCULATIONS						
LAND USE	**FROM**	**TO**	**UNITS (EDU) [1]**	**AVERAGE FLOW FACTOR (gpd/edu) [2]**	**PEAK FACTOR [3]**	**PEAK SEWAGE FLOW (gpd)**
Residential	MH NO. 4	MH NO. 3	828	215	3.32	591,026
Residential	MH NO. 1A	SAXPS	973.5	215	3.32	694,884

Table 2-1

PROPOSED SEWER GENERATION CALCULATIONS						
LAND USE	**FROM**	**TO**	**UNITS (EDU) [1]**	**AVERAGE FLOW FACTOR (gpd/edu) [2]**	**PEAK FACTOR [3]**	**PEAK SEWAGE FLOW (gpd)**
Residential	MH NO. 4	MH NO. 3	977	215	3.50	854,875
Residential	MH NO. 1A	SAXPS	1,122.5	215	3.50	844,681.3
TOTAL						

Table 2-2

(1) Provided by Leucadia Water District via email dated March 23, 2022
(2) Per LWD Standard Specifications and Procedures Division 1 Part 2, dated May 2019
(3) Per Table 1-2-1 of LWD Standard Specifications and Procedures Division 1 Part 2, dated May 2019

PIPELINE SIZING

All proposed gravity sewers will be designed to convey the peak sewage flow in accordance with the LWD Standards and Specifications. For new pipes with diameter of smaller than 12-inches, the sewer will be designed to convey the peak flow when half full. For new pipes with diameter of 12-inches and larger sewer will be designed to convey a peak sewage flow at three-quarters full. All proposed public sewer will be designed to maintain a minimum design velocity of 2 ft/s.

Pipe design calculations can be found in Appendix B of this report. The pipe calculations show that the proposed development will not negatively impact the existing sewer infrastructure. Appendix B calculates the velocity of waste in the pipe and confirms the depth ratio using the Manning's Equation as stated below.

$$Q = \frac{\mathrm{K}' * D^{\frac{8}{3}} * s^{\frac{1}{2}}}{\mathrm{n}}; \; Q = V * A$$

SAXONY PUMP STATION

Table 2-3 summarizes the existing and proposed average flow into the existing SAXPS basin while Table 2-4 summarizes the existing and proposed peak flows into the SAXPS basin.

EXISTING & PROPOSED SAXSP AVERAGE FLOWS			
BASIN	**UNITS (EDU) [1]**	**FLOW GENERATION FACTOR (gpd/edu) [2]**	**AVERAGE FLOW (gpd)**
Ex. Saxony Basin	1,947	140	272,580
Proposed Development	149	140	20,860
TOTAL			**293,440**

Table 2-3

EXISTING & PROPOSED SAXSP PEAK FLOWS				
BASIN	**UNITS (EDU) [1]**	**FLOW GENERATION FACTOR (gpd/edu) [2]**	**PEAK FACTOR [3]**	**PEAK FLOW (gpd)**
Ex. Saxony Basin	1,947	140	3.32	904,966
Proposed Development	149	140	3.5	73,010
TOTAL				**977,976**

Table 2-4

(1) Provided by Leucadia Water District via email dated March 23, 2022
(2) The Estimated Actual Flow Generation Factor of 140 gpd/edu is based on the Saxony Pump Station Overview provided by LWD.
(3) Per Table 1-2-1 of LWD Standard Specifications and Procedures Division 1 Part 2, dated May 2019

The Saxony Pump Station Overview states that SAXPS consists of two, 40 hp constant speed type pumps. The station operates with two submersible pumps. According to the overview, the rated pump capacity of the station is 900 gpm at 93 ft TDH.

The Saxony Pump Station currently has a total wet well storage volume of 26,595 gal. The Station has an average storage time of 140.5 minutes (2.34 hours) in the existing condition. After the construction of Piraeus Point the average storage time will be 130.5 minutes (2.17 hours).

SECTION 3

CONCLUSION

Using Leucadia Water District guidelines this report coupled with the calculations in the Appendixes shows all existing sewer infrastructure can support the development of Piraeus Point. Existing sewer mains meet the maximum depth and minimum velocity requirements as seen in the calculations in

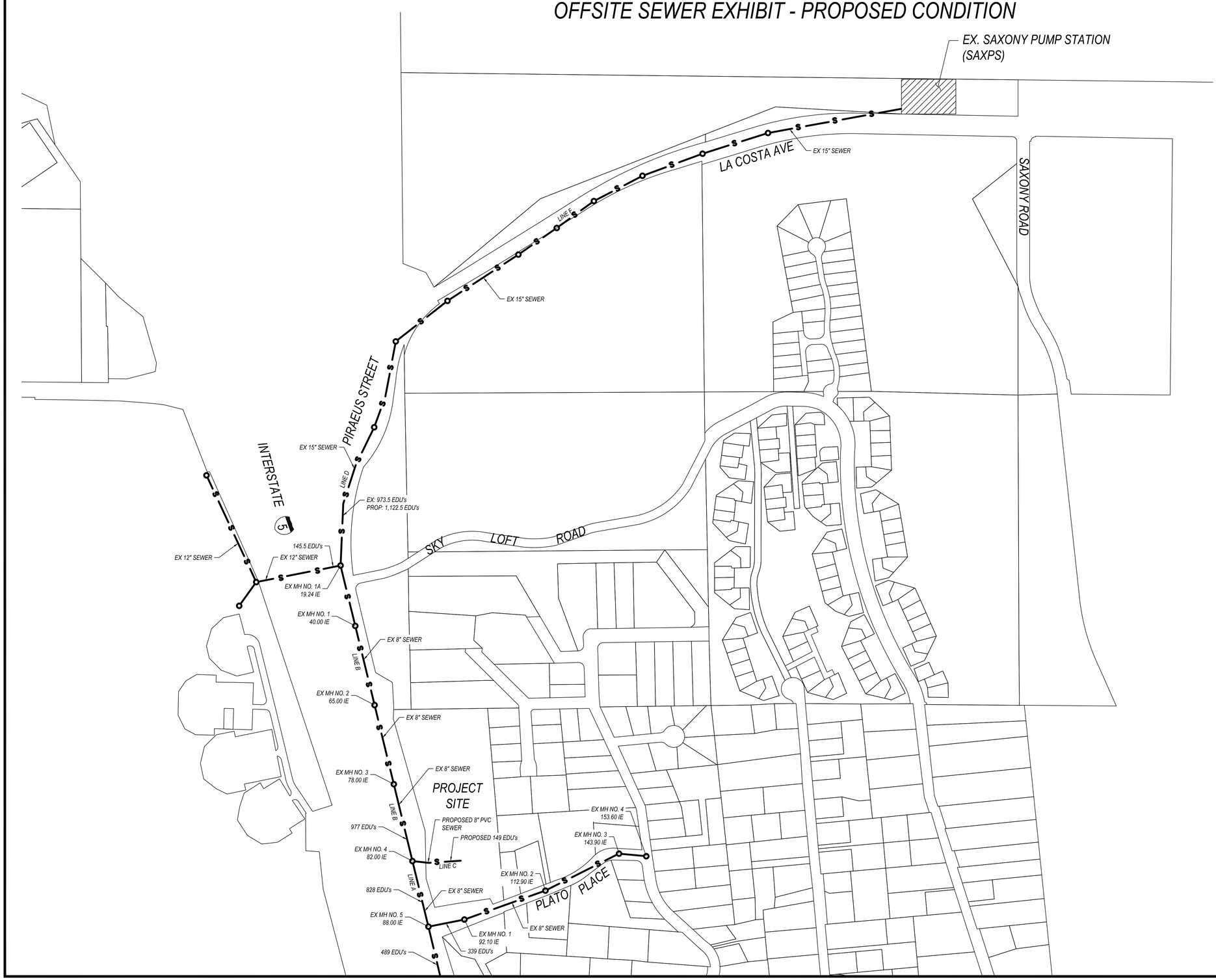
Appendix B. Additionally, Saxony Pump Station has the capacity to treat the additional sewage generated by Piraeus Point.

APPENDIX A

OFFSITE SEWER EXHIBIT

PIRAEUS POINT

OFFSITE SEWER EXHIBIT - PROPOSED CONDITION



PREPARED BY:

PASCO LARET SUITER & ASSOCIATES

San Diego | Encinitas | Orange County

Phone 858.259.8212 | www.plsaengineering.com

APPENDIX B

CALCULATIONS

SEWER STUDY SUMMARY

LINE	FROM	TO	TOTAL EDU'S	AVERAGE FLOW FACTOR (gpd/EDU) (1)	AVG. DRY WEATHER FLOW (gpd)	PEAKING FACTOR (2)	PEAK FLOW (gpd)	PEAK FLOW (DESIGN FLOW)		LINE SIZE (in)	DESIGN SLOPE (%)	DEPTH K'	dn (ft)	dn/D	Ca for Velocity	AREA	VELOCITY (ft/s)	DEPTH IN MAIN MEETS DESIGN GUIDELINES?	VELOCITY IN MAIN MEETS DESIGN GUIDELINES?
								M.G.D.	C.F.S										
PROPOSED DEVELOPMENT																			
A	MH NO. 5	MH NO. 4	828	215	178,020	3.32	591,026	0.59	0.91	8	2.0	0.2478	0.347	0.521	0.414	0.184	4.97	YES	YES
C	PROJECT SITE	MH NO. 4	149	215	32,035	3.5	112,123	0.11	0.17	8	5.6	0.0281	0.11	0.17	0.09	0.04	4.52	YES	YES
B	MH NO. 4	MH NO. 3	977	215	210,055	VARIES	703,149	0.70	1.09	8	1.18	0.3839	0.463	0.695	0.582	0.259	4.20	YES	YES
D (EXISTING)	MH NO. 1A	SAXPS	973.5	215	209,303	3.32	694,884	0.69	1.08	15	0.15	0.1990	0.573	0.458	0.343	0.536	2.01	YES	YES
D (PROPOSED)	MH NO. 1A	SAXPS	1,122.5	215	241,338	VARIES	807,007	0.81	1.25	15	0.15	0.2312	0.624	0.499	0.393	0.614	2.03	YES	YES

(1) PER SECTION 2.02.C-1 (DIVISION 1 PART 2) OF LEUCADIA WASTEWATER DISTRICT STANDARD SPECIFICATIONS AND PROCEDURES

(2) PER TABLE 1-2-1, PEAK FACTORS OF LEUCADIA WASTEWATER DISTRICT STANDARD SPECIFICAITONS AND PROCEDURES

APPENDIX N.
PROJECT FACILITY AVAILABILITY FORMS

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PROJECT FACILITY AVAILABILITY FORM - City of Encinitas

SCHOOL

Please type or use pen
(Two forms are needed if project is to be served by separate school districts)

David W. Shepherd — Owner's Name
Lennar Homes of California, Inc — Phone
858-618-4942

16465 Via Esprillo, Suite 150 — Owner's Mailing Address / Street

San Diego, CA 92127 — City / State / Zip

ORG _____
ACCT _____
ACT _____
TASK _____
DATE _____

Sc

ELEMENTARY _____
HIGH SCHOOL _____
UNIFIED _____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. **LEGISLATIVE ACT**
- ☐ Rezone from ____ zone density/intensity to ____ zone density/intensity.
- ☐ General Plan Amendment
- ☐ Specific Plan
- ☐ Specific Plan Amendment

B. **DEVELOPMENT PROJECT**
- ☒ Major Subdivision (TM)
- ☐ Minor Subdivision (TPM)
- ☐ Boundary Adjustment
- ☐ Major Use Permit (MUP), purpose: _____
- ☐ Time Extension... Case No. _____
- ☐ Expired Map... Case No. _____
- ☐ Other _____

C.
- ☒ Residential ..... Total number of dwelling units _____
- ☐ Commercial ..... Gross floor area _____
- ☐ Industrial ..... Gross floor area _____
- ☐ Other ..... Gross floor area _____

Assessor's Parcel Number(s)
(Add extra if necessary)

254	144	01

Thomas Bros. Page _____ Grid _____

Project address Piraeus and Plato Pl. (Street)

District 1 — Community Planning Area/Subregion
92024 — Zip

D. Total Project acreage _____ Total number of lots 1

Applicant's Signature DocuSigned by: David Shepherd DCC2A1F8A5D3465... Date 1/13/2022

Address 16465 Via Esprillo, Suite 150 San Diego, CA 92127 Phone 858-618-4942

(On completion of above, present to the school district to complete Section 2 below)

SECTION 2. FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: Encinitas Union School District

If not in a unified district, which elementary or high school district must also fill out a form? _____

Indicate the location and distance of proposed schools of attendance. Elementary: Capri miles: .7
Junior/Middle: _____ miles: _____ High school: _____ miles: _____

- ☒ This project will result in the overcrowding of the ☒ elementary ☐ junior/middle ☐ high school. *(check all that apply)*
- ☒ Fees will be levied either in accordance with Government Code Section 53080 or Section 65970 prior to the issuance of building permits.
- ☐ Project is located entirely within the district and is eligible for service.
- ☐ The project is not located entirely within the district and a potential boundary issue may exist with the _____ school district.

FOR LEGISLATIVE ACTS (Rezones, General Plan Amendments, Specific Plans) ONLY:
- ☐ Pursuant to County Ordinance and the Public Facility Element of the General Plan, facilities to serve the project have been committed through a binding agreement satisfactory to the school district.
- ☐ A binding agreement has not yet been signed, but one will be required prior to legislative approval.
- ☐ No binding agreement is necessary.

Authorized signature: Beth Hilton Print name: Beth Hilton

Print title: Director of Fiscal Phone (760)944-4300 x1169

On Completion of Section 2 by the district, applicant is to submit this form with application to the Zoning Counter at the Planning & Community Development Department, 505 S. Vulcan Ave., Encinitas, CA 92024

DPLZC #399Sc(Rev.4/91)

DocuSign Envelope ID: 60B1E704-A0B5-4FA1-A0B3-BE496AFCEE08

PROJECT FACILITY AVAILABILITY FORM

FIRE

F

Please type or use pen

David W. Shepherd Lennar Homes of California, Inc. B5B-61Bo4942
Owner's name Phone

16465 Via Espritto, Suite 150
Owner's mailing address Street

San Diego, CA 92127
City State Zip

ORG_____
ACCT_____
ACT_____
TASK_____
AMT $_____ DATE_____

DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. [X] Major Subdivision (TM) [ ] Specific Plan or Specific Plan Amendment
[ ] Minor Subdivision (TPM) [ ] Boundary Adjustment
[ ] Certificate of Compliance, purpose: _____
[ ] Major Use Permit (MUP), purpose: _____
[ ] Rezone (Reclassification) from _____ to _____ zone
[ ] Time Extension... Case No. _____
[ ] Expired Map..... Case No. _____
[ ] Other _____

B. [X] Residential.....Total number of dwelling units _____
[ ] Commercial.....Gross floor area _____
[ ] Industrial.....Gross floor area _____
[ ] Other.....Gross floor area _____

C. Total Project acreage 6.8 Total lots 1 Smallest proposed lot _____

Assessor's Parcel Number(s)
(Add extra if necessary)

254	144	01

Thomas Bros. Page _____ Grid _____

Project address PIRAEUS & Plato Pl.
Street

District 1 92024
Community Planning Area/Subregion Zip

OWNER/APPLICANT AGREES TO COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's signature: DocuSigned by: David Shepherd DCC2A1F8A5D3465... Date: 1/13/2022

Address: 16465 Via Espritto, Suite 150 San Diego, CA 92127 Phone: B5B-61B-4942

(On completion of above, present to the district that provides fire protection to complete Section 2 and 3 below)

SECTION 2. FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: Encinitas Fire Department

Indicate the location and distance of the primary fire station that will serve the proposed project: Fire Station 3, at 801 ORPHEUS AVE; +/- 1.5 MILES.

A. [X] Project is in the District and eligible for service.
[ ] Project is not in District but it is within its Sphere of Influence boundary, owner must apply for annexation.
[ ] Project is not in the District and not within the District's Sphere of Influence.
[ ] Project is not located entirely within the District and a potential boundary issue exists with the _____ District.

B. [ ] Based on the capacity and capability of the District's existing and planned facilities, fire protection facilities are currently adequate or will be adequate to serve the proposed project. The expected emergency travel time to the proposed project is _____ minutes.
[ ] Fire protection facilities are not expected to be adequate to serve the proposed development within the next five years.

C. [ ] District conditions are attached. The number of sheets attached: _____.
[X] District will submit conditions at a later date.

SECTION 3. FUELBREAK REQUIREMENTS

***Note:** The fuelbreak requirements prescribed by the fire district for the proposed project do not authorize any clearing prior to project approval by the Department of Planning and Land Use.*

[X] Within the proposed project 100 feet of clearing will be required around all structures.
[ ] The proposed project is located in a hazardous wildland fire area, and additional fuelbreak requirements may apply. Environmental mitigation requirements should be coordinated with the fire district to ensure that these requirements will not pose fire hazards.

Date: 1/13/2022 Expiration date: 1/13/2023 *(One year from date of issuance unless district indicates otherwise)*

KBerberet — Kerri Berberet, Sr. Deputy Fire Marshal — 760-633-2820
Authorized signature — *Print name and title* — *Phone*

On completion of Section 2 and 3 by the District, applicant is to submit this form with application to: Zoning Counter at the Planning and Community Development Department, 505 S. Vulcan Ave., Encinitas, CA 92024

DocuSign Envelope ID: 60B1E704-A0B5-4FA1-A0B3-BE496AFCEE08

PROJECT FACILITY AVAILABILITY FORM- City of Encinitas

SEWER

Please type or use pen

David W. Shepherd Lennar Homes of California, Inc 858-618-4942
Owner's Name Phone

16465 Via Esprillo, Suite 150
Owner's Mailing Address Street

San Diego, CA 92127
City State Zip

ORG _____
ACCT _____
ACT _____
TASK _____
DATE _____ AMT $ _____
DISTRICT CASHIER'S USE ONLY

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. ☒ Major Subdivision (TM) ☐ Certificate of Compliance: _____
☐ Minor Subdivision (TPM) ☐ Boundary Adjustment
☐ Specific Plan or Specific Plan Amendment
☐ Rezone (Reclassification) from _____ to _____ zone
☐ Major Use Permit (MUP), purpose: _____
☐ Time Extension... Case No. _____
☐ Expired Map... Case No. _____
☐ Other _____

B. ☒ Residential . . . Total number of dwelling units _____
☐ Commercial. . . Gross floor area _____
☐ Industrial. . . . Gross floor area _____
☐ Other. . . . . Gross floor area _____

C. Total Project acreage 6.8 Total number of lots 1

D. Is the project proposing its own wastewater treatment plant? Yes ☐ No ☐ 150 units
Is the project proposing the use of reclaimed water? ☐ ☐

Assessor's Parcel Number(s)
(Add extra if necessary)

254	144	01

Thomas Bros. Page _____ Grid _____

Project address Piracus and Plato Pl.
Street

Comm. Advisory Board Area

Owner/Applicant agrees to pay all necessary construction costs and dedicate all district required easements to extend service to the project.
OWNER/APPLICANT MUST COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: David Shepherd Date: 1/13/2022
DocuSigned by: 6A5D4B5

Address: 16465 Via Esprillo, Suite 150 San Diego, CA 92127 Phone: 858 618 4942

(On completion of above, present to the sewer district to establish facility availability. Section 2 below)

SECTION 2. FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District name Leucadia Wastewater District Service area Encinitas

A. ☒ Project is in the district.
☐ Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the district and is not within its Sphere of Influence boundary.
☐ The project is not located entirely within the district and a potential boundary issue exists with the _____ District.

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached. Number of sheets attached: _____
☐ Project will not be served for the following reason(s): _____

C. ☐ **District conditions are attached. Number of sheets attached:** _____
☐ **District has specific water reclamation conditions which are attached. Number of sheets attached:** _____
☒ **District will submit conditions at a later date.**

D. ☐ **How far will the pipeline(s) have to be extended to serve the project?** N/A

Date: 1/18/22 Expiration date: 1/18/23 *(One year from date of issuance unless district indicates otherwise)*

Authorized signature: Ian Riffel Print name: Ian Riffel

Print title: Field Services Specialist Phone: (760) 753-0155

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF FACILITIES OR SERVICE BY THE DISTRICT. On completion of Section 2 by the district, applicant is to submit this form with application to the Zoning Counter at the Planning & Community Development, 505 S. Vulcan Ave., Encinitas, CA 92024

DocuSign Envelope ID: 60B1E704-A0B5-4FA1-A0B3-BE496AFCEE08

PROJECT FACILITY AVAILABILITY FORM - City of Encinitas

SCHOOL

Please type or use pen
(Two forms are needed if project is to be served by separate school districts)

David W. Shepherd — Lennar Homes of California, Inc — 858-618-4942
Owner's Name — Phone

16465 Via Esprillo, Suite 150
Owner's Mailing Address — Street

San Diego, CA 92127
City — State — Zip

ORG _____
ACCT _____
ACT _____ ELEMENTARY _____
TASK _____ HIGH SCHOOL _____
DATE _____ UNIFIED _____
DISTRICT CASHIER'S USE ONLY

Sc

SECTION 1. PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. **LEGISLATIVE ACT**
- ☐ Rezone from ____ zone density/intensity to ____ zone density/intensity.
- ☐ General Plan Amendment
- ☐ Specific Plan
- ☐ Specific Plan Amendment

B. **DEVELOPMENT PROJECT**
- ☒ Major Subdivision (TM)
- ☐ Minor Subdivision (TPM)
- ☐ Boundary Adjustment
- ☐ Major Use Permit (MUP), purpose: _____
- ☐ Time Extension... Case No. _____
- ☐ Expired Map... Case No. _____
- ☐ Other _____

C.
- ☒ Residential . . . . . Total number of dwelling units _____
- ☐ Commercial . . . . . Gross floor area _____
- ☐ Industrial . . . . . Gross floor area _____
- ☐ Other . . . . . Gross floor area _____

Assessor's Parcel Number(s)
(Add extra if necessary)

254	144	01

Thomas Bros. Page _____ Grid _____

Project address Piraeus and Plato Pl.
Street

District 1 — 92024
Community Planning Area/Subregion — Zip

D. Total Project acreage 0.7 — Total number of lots 1

Applicant's Signature David Shepherd — Date 1/13/2022
Doc Signed by: DCC2A1F8A5D3465

Address 16465 Via Esprillo, Suite 150 San Diego, CA 92127 — Phone 858-618-4942

(On completion of above, present to the school district to complete Section 2 below)

SECTION 2. FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District Name: San Dieguito Union High School District

If not in a unified district, which elementary or high school district must also fill out a form? _____

Indicate the location and distance of proposed schools of attendance. Elementary: _____ miles: _____
Junior/Middle: Diegueno Middle School miles: +/- 5.1 High school: La Costa Canyon High School miles: +/- 5.3

- ☑ This project will result in the overcrowding of the ☐ elementary ☐ junior/middle ☐ high school. *(check all that apply)*
- ☑ Fees will be levied either in accordance with Government Code Section 53080 or Section 65970 prior to the issuance of building permits.
- ☑ Project is located entirely within the district and is eligible for service.
- ☐ The project is not located entirely within the district and a potential boundary issue may exist with the _____ school district.

FOR LEGISLATIVE ACTS (Rezones, General Plan Amendments, Specific Plans) ONLY:
- ☐ Pursuant to County Ordinance and the Public Facility Element of the General Plan, facilities to serve the project have been committed through a binding agreement satisfactory to the school district.
- ☐ A binding agreement has not yet been signed, but one will be required prior to legislative approval.
- ☐ No binding agreement is necessary.

Authorized signature: John Addleman — Print name: John Addleman

Print title: San Dieguito Union High School District — Phone: 760-753-6491 Director of Planning & Financial Management

On Completion of Section 2 by the district, applicant is to submit this form with application to the Zoning Counter at the Planning & Community Development Department, 505 S. Vulcan Ave., Encinitas, CA 92024

DPUZC #399Sc(Rev 4/91)

DocuSign Envelope ID: 60B1E704-A0B5-4FA1-A0B3-BE496AFCEE08

PROJECT FACILITY AVAILABILITY FORM - City of Encinitas

WATER

Please type or use pen

David W. Shepherd — 16465 Via Esprillo, Suite 150 — 858-618-4942
Owner's Name — Phone

16465 Via Esprillo, Suite 150
Owner's Mailing Address — Street

San Diego, CA 92127
City — State — Zip

ORG _____
ACCT _____
ACT _____
TASK _____
DATE _____ AMT $ _____
DISTRICT CASHIER'S USE ONLY

SECTION 1: PROJECT DESCRIPTION — TO BE COMPLETED BY APPLICANT

A. ☒ Major Subdivision (TM) ☐ Specific Plan or Specific Plan Amendment
☐ Minor Subdivision (TPM) ☐ Certificate of Compliance: _____
☐ Boundary Adjustment
☐ Rezone (Reclassification) from _____ to _____ zone.
☐ Major Use Permit (MUP), purpose: _____
☐ Time Extension... Case No. _____
☐ Expired Map... Case No. _____
☐ Other _____

B. ☒ Residential ..... Total number of dwelling units _____
☐ Commercial ..... Gross floor area _____
☐ Industrial ..... Gross floor area _____
☐ Other ..... Gross floor area _____

C. Total Project acreage 6.8 Total number of lots 1

D. Is the project proposing the use of groundwater? ☐ Yes ☒ No
Is the project proposing the use of reclaimed water? ☐ Yes ☒ No

Assessor's Parcel Number(s)
(Add extra if necessary)

254	144	01

Thomas Bros. Page _____ Grid _____

Project address: District 1 — 92024
Community Planning Area/Subregion — Zip

Owner/Applicant agrees to pay all necessary construction costs, dedicate all district required easements to extend service to the project and COMPLETE ALL CONDITIONS REQUIRED BY THE DISTRICT.

Applicant's Signature: DocuSigned by David Shepherd DCC2A1F8A5D3465... Date: 1/13/2022

Address: 16465 Via Esprillo, Suite 150 San Diego, CA 92127 Phone: 858-618-4942

(On completion of above, present to the water district to establish facility availability, Section 2 below)

SECTION 2. FACILITY AVAILABILITY — TO BE COMPLETED BY DISTRICT

District name: San Dieguito Water District Service area: Encinitas, CA

A. ☒ Project is in the district.
☐ Project is not in the district but is within its Sphere of Influence boundary, owner must apply for annexation.
☐ Project is not in the district and is not within its Sphere of Influence boundary.
☐ The project is not located entirely within the district and a potential boundary issue exists with the _____ District.

B. ☒ Facilities to serve the project ☒ ARE ☐ ARE NOT reasonably expected to be available within the next 5 years based on the capital facility plans of the district. Explain in space below or on attached ___. (Number of sheets)
☐ Project will not be served for the following reason(s): _____

C. ☐ **District conditions are attached. Number of sheets attached:** _____
☐ **District has specific water reclamation conditions which are attached. Number of sheets attached:** _____
☒ **District will submit conditions at a later date.**

D. ☐ **How far will the pipeline(s) have to be extended to serve the project?** _____

Date: 1/14/2022 Expiration date: 1/14/2023 *(One year from date of issuance unless district indicates otherwise.)*

Authorized signature: _____ Print name: Christina Olson

Print title: Senior Engineer Phone: (760) 633-2792

NOTE: THIS DOCUMENT IS NOT A COMMITMENT OF SERVICE OR FACILITIES BY THE DISTRICT. On completion of Section 2 by the district, applicant is to submit this form with application to the Zoning Counter at the Planning & Community Development Dept., 505 S. Vulcan Ave., Encinitas, CA 92024

DPL#399W(Rev.4/12/91)

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APPENDIX O.
FIRE PROTECTION PLAN

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PIRAEUS POINT
FIRE PROTECTION PLAN
APN 254-144-01-00
Encinitas, California



April 20, 2022, Revised 9/26/2022 & 11/18/2022

Prepared for:

Lennar
16465 Via Esprillo, Suite 150
San Diego, CA 92127

Prepared by:

Herbert A Spitzer
Senior Wildland Fire Associate
***FIRE*WISE 2000, LLC**



Reviewed and Certified by:

Mel Johnson, Certified CEQA Wildland Fire Consultant
***FIRE*WISE2000, LLC**
PO Box 339
Lower Lake, CA 95457
760-745-3947
Info@firewise 2000.com

Piraeus Point
Fire Protection Plan
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FIRE PROTECTION PLAN
Piraeus Point
Encinitas, CA
April 20, 2022, Revised 9/26/2022 & 11/18/2022

Executive Summary

This Fire Protection Plan (FPP) evaluates the proposed Piraeus Point development located at the intersection of Piraeus Street and Plato Place east of Interstate 5 in the city of Encinitas, California to ensure it does not unnecessarily expose people or structures to wildfire risks and hazards. The FPP identifies and prioritizes the measures necessary to adequately mitigate those impacts. The FPP has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions and fire history. It considers water supply, access, structure ignitability and ignition resistant building materials, fire protection systems and equipment, impacts to existing emergency services, defensible space and vegetation management.

The project was analyzed to identify potential adverse impacts and acceptable mitigation measures for the wildland fire hazards. The evaluation determined that the Encinitas Fire Department (EFD) and adjacent fire departments through mutual aid will be able to provide adequate emergency services. Fire sprinklers are required for all the occupancies.

Additionally, this FPP includes fuel modification requirements to mitigate the exposure of people or structures to a significant risk of loss, injury, or death from wildland fires. Zone 1A and 1B will be a landscaped level building pad and is commonly called the defensible space zone for fire suppression forces and aids in protecting structures from radiant and convective heat. This landscaped zone is permanently irrigated and consists of fire resistant and maintained plantings, the first five feet from each structure shall be absent of landscaping and combustible material. Zone 2, the area beyond Zone 1A or 1B, is a thinning zone and excludes all prohibited highly combustible native vegetation. The Homeowner Association will be responsible to the Encinitas Fire Department for the annual completion of all designated fuel modification treatments prior to June 15th or when fuels become cured.

Finally, this plan and its requirements will be incorporated by reference into the final project conditions of approval to ensure compliance with codes/regulations and significance standards.

Note that this plan is an update to the previous Piraeus Street FPP that was developed on November 18, 2019 and subsequently revised on December 6, 2019. This new plan accounts for new building locations and the planned removal of a portion of the hazardous fuels located to the north of the structures.

FIRE PROTECTION PLAN
Piraeus Point
Encinitas, California
April 20, 2022, Revised 9/26/2022 & 11/22/2018

1.0 - INTRODUCTION

This Fire Protection Plan (FPP) encompasses the proposed Piraeus Point multi-family development. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the necessary measures to mitigate those impacts. As part of the assessment, the plan has considered the property location, topography, geology, combustible vegetation (fuel types), climatic conditions, and fire history. The plan addresses water supply, access (including emergency access where applicable), structural ignitability and ignition resistant building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect one or more-at-risk communities and essential infrastructures. The plan recommends measures that each property owner and the homeowners association will take to reduce the probability of the ignition of the structures addressed by this plan. Appendices attached to this FPP are part of this FPP.

The FPP must be submitted to and be approved by the Encinitas Fire Department (EFD), and is based upon current requirements of the EFD and Wildland-Urban Interface (WUI) Development Standard Guidelines and the current requirements as of the date of this report under the authority of the International Urban-Wildland Interface Code, including pertinent local Fire Ordinances; California Code of Regulations Title 24, Part 9, and Title 14, section 1280; The California Fire Code and Local Amendments including Appendices to Chapters 1 & 4 and Appendices B, F & H; Chapter 7A-California Building Code; the California State and Local Responsibility Area Fire Hazard Severity Zone Map; California Government Code, sections 51175 through 51189; California Public Resources Codes sections 4201 through 4204; the National Fire Protection Association Standard 13-R; and the City of Encinitas Ordinances 2019-27 and 2021-08.

2.0 PROJECT LOCATION, DESCRIPTION AND ENVIRONMENTAL SETTING

2.1 Project Location

The Piraeus Point Project is located northeast of the intersection of Piraeus Street and Plato Place just east of Interstate 5 in the City of Encinitas, California. The Project is located less than one mile inland from the Pacific Ocean.

2.2 Project Description

The Project abuts existing homes on the east side, Piraeus Street is to the west which parallels Interstate 5, Plato Place is to the south, and natural open space can be seen to the north (Photo #1). The parcel consists of approximately 6.9 acres which includes the development of 149 three-story single-family condominium units, a portion of which will be located adjacent to natural open space including Southern Maritime Chaparral and Diegan Coastal Sage Scrub.



Photo 1 - *Aerial View of Project Area. Note the existing homes to the east and Interstate 5 to the west, both form barriers to wildland fire progression.*

2.3 Environmental Setting

The baseline information that captures various aspects of the environmental condition within the Project area.

2.3.1 Topography

The Project is located on uneven terrain with slopes ranging between 2% and 40% and elevations ranging from approximately 100 feet to 170 feet in elevation. A significant portion of the site was previously graded as a large area is nearly level.

2.3.2 Climate

The climate within the project area is characterized as a Mediterranean type climate with generally mild, wet (12-14 inches per year) winters, with the bulk of the annual precipitation falling between December and March. Long, hot, and very dry summer seasons frequently occur with occasional multi-year droughts.

The most critical wind pattern to the project area is an off-shore wind coming out of the north/northeast, typically referred to as a Santa Ana wind. Such wind conditions in this area are usually associated with strong (> 40 MPH), hot, dry winds with very

low (< 15%) relative humidity. Santa Ana winds originate over the dry desert land and can occur anytime of the year; however, they generally occur in the late fall (September through November). This is also when non-irrigated vegetation is at its lowest moisture content.

The typical prevailing summer wind pattern is out of the south or southwest and normally is of a much lower velocity (5-15 MPH with occasional gusts to 30 MPH) and is associated with higher relative humidity readings (> 30% and frequently more than 60%) due to a moist air on-shore flow from the ocean. All other (northwest, south, west) wind directions may be occasionally strong and gusty. However, they are generally associated with cooler moist air and have higher relative humidity (> 40%). They are considered a serious wildland fire weather condition when wind speeds reach > 20 MPH.

Figures 1 and 2 below are charts of weather data obtained from the Camp Pendleton Military Base Remote Automated Weather Station (RAWS) located 10.5 miles north of the project site at an elevation of 245 feet. The station is approximately 2.6 miles inland from the Pacific Ocean and located on a ridge. Winds tend to subside as the Pacific Ocean is approached and at lower elevation. The RAWS location has the best historical weather data for the area.

Note that when strong winds occur, they frequently occur at the same time as very low relative humidity thus creating a significant wildland fire threat. For the purpose of this FPP, wind gusts of 50 MPH will be utilized to represent "*worst case*" weather. All weather data was retrieved from the Western Regional Climate Center located in Reno, Nevada.

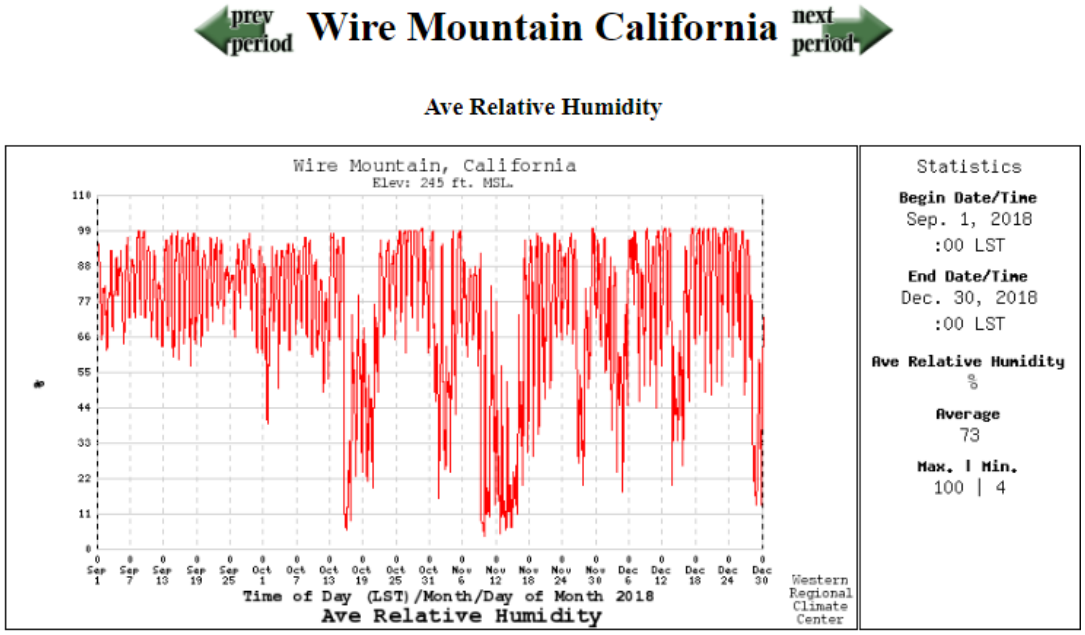


***Figure 1**: Relative Humidity at the Camp Pendleton Military Base RAWS for the period of September 1, 2018 through December 30, 2018. Note when the humidity was below 20 percent. Data was retrieved from the Western Region Climate Center.*

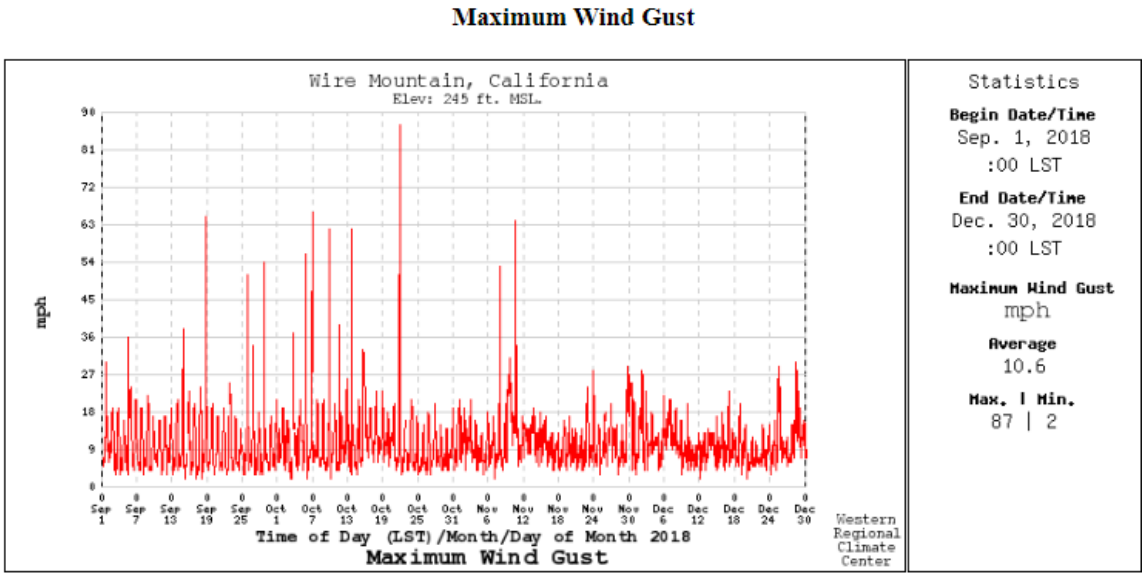


Figure 2: Maximum Wind Gusts at the Camp Pendleton Military Base RAWS for the period of September 1, 2018 through December 30, 2018. Note the strong wind gusts that occurred in early November that correspond to the very low relative humidity shown in Figure 1.

2.3.3 Off-Site Vegetation

There are existing homes to the east of the project which have managed fuel treatment zones. Interstate 5 is to the west and Plato Place to the south of the property. To the north of the property is an unmanaged natural open space of dense brush (Photo #1).

2.3.4 On-site Fire Vegetation

The interior of the proposed project area is a mixture of grass and weeds on the graded areas and various native plant communities and habitat-types on the remaining areas. The area contains coastal sage, buckwheat, prickly pear, tree tobacco, annual grasses and weeds. The natural area to the north contains plant species such as coyote brush, mission manzanita, chamise, and tree tobacco and has a high fuel load.



Photo 2 – *Looking Southwest from the Interior of the Project. All the level area will be built upon. Due to previous disturbance, the flat areas are primarily covered in grasses and weeds.*



Photo 3 *– Approximately location of where the entrance road from Piraeus Steet will be located.*

The northern portion of the property consists of dense native vegetation with a high fuel load (Photo 4). The northern section also contains the steepest slopes which are uphill into the Project.



Photo 4 - *North Side Canyon Vegetation.*

Piraeus Street borders the western boundary of the project and separates the project from Interstate 5; a major eight lane divided highway as shown in Photo 5.



Photo 5 - *Looking southwest toward the corner of Plato Place and Piraeus Street from near the center of Project. Interstate 5 is the roadway in the distance.*

2.3.5 Fire History

Fire history data was acquired from the State of California Fire History Database. There have been several large fires of 100 acres or more that have occurred near the Piraeus Point project in the past (see Figure 3). Due in part to urbanization, the size of wildland fires has trended downward.

No Name Fire – 40,248 acres occurred in 1943.

No Name Fire – 126 acres occurred in 1970.

Harmony Fire – 9,359 acres occurred in 1996.

Poinsettia Fire – 600 acres occurred in 2014.

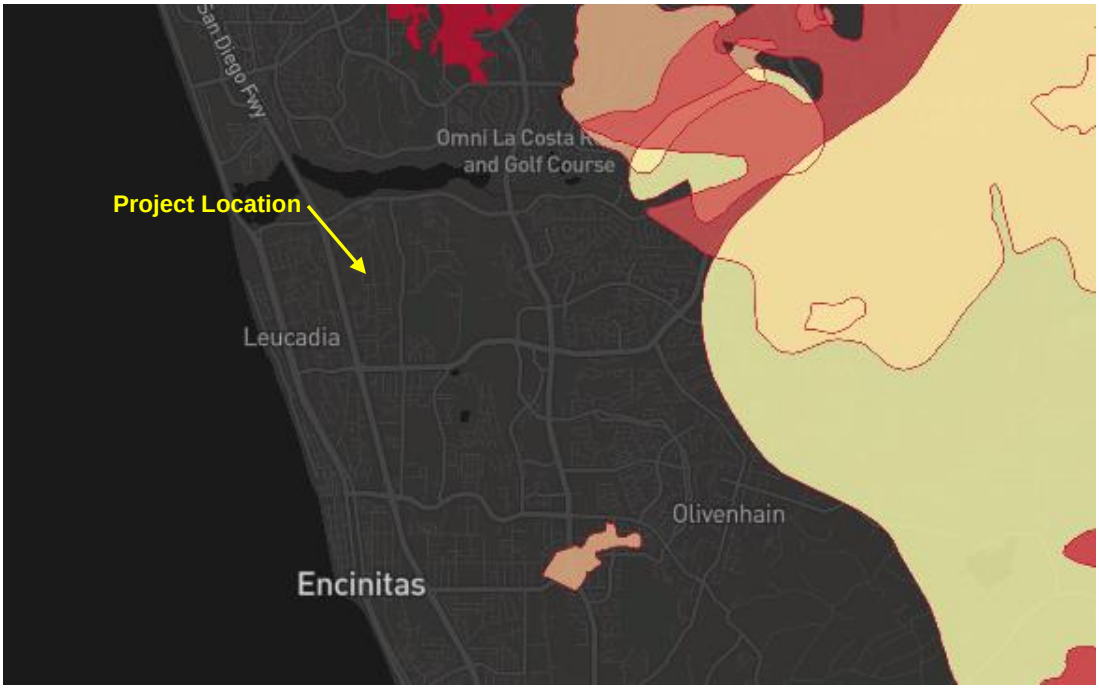


Figure 3 *– Encinitas Wildland Fire History (Note: The area in dark grey has no recorded large fire history. However, there were very likely numerous smaller fires that were never mapped.*

The 2014 Poinsettia Fire occurred on May 14, 2014 in the nearby city of Carlsbad. A total of 600 acres were burned causing $22.5 million in damages with eight (8) residences and an 18-unit complex destroyed. The 1996 Harmony Fire occurred on October 21, 1996 northeast of the property. It burned 9,359 acres and destroyed 101 homes and resulted in one fatality. There have undoubtedly been several smaller wildland fires that did not reach 100 acres or more in size and thus were not mapped. Such smaller fires are not reported in the State of California Fire History database.

2.3.6 On-site and Off-site Land Uses

The parcel of land scheduled for development is undeveloped and had previously been partially cleared/graded of vegetation with some agricultural activity as recent as 2010. Native and protected Southern Maritime Chaparral is located north of proposed multi-family housing units. The land to the east consists of developed residential properties with existing fuel treatment zones and thus does not present a wildland fire hazard. To the west and south are Piraeus Street and Plato Place, respectively. Interstate 5 is also located to the west and parallels Piraeus Street. There are small areas of wildland vegetation in both of these directions.

2.3.7 Public and Private Ownership of Land in the Vicinity

Lennar as applicant does not yet own the property comprising the Project site but is under contract to purchase once entitlements are perfected. All other properties in the vicinity are private parcels with homes or public land utilized for transportation purposes.

3.0 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

This FPP evaluates the potential adverse environmental effects that the proposed Piraeus Point development may have from wildland fire and proposes appropriate mitigations for any adverse impacts to ensure that this development does not unnecessarily expose people or structures to a significant risk of loss, injury, or death. The following guidelines for the determination of significance are used:

1. **Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

   The project is bordered by existing development on three sides (homes or roadways). Fuel modification and other requirements outlined in this FPP reduce the exposure of people or structures to a less than significant risk of loss, injury or death involving wildland fires.

2. **Would the project result in inadequate emergency access?**

   Existing roadways are sufficient to provide emergency access. Piraeus Street is a significant 2 lane highway with a bike lane on either side thus providing approximately 32 feet of paved surface for emergency response. Plato Place is a less significant roadway that provides access from the east through the existing community.

3. **Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable emergency service ratios, response times or other performance service ratios, response times or other performance objectives for fire protection?**

   Existing facilities are adequate to provide acceptable emergency service and response times. Two existing fire stations are located within 2.5 miles of the project. The City of Encinitas has 6 fire stations strategically located to provide round-the-clock coverage to the community. Fifty-one (51) fire fighters are available for each shift as described on the Fire Department web site. The city, with a population estimated at over 62,900 in 2018 has fifty-one career firefighters.

   NFPA, in 2019, rated career firefighters by population protected and found for communities of between 50,000 and 99,999, the number of career firefighters per 1,000 population is on average 1.29 nationally. Based on this statistic alone, the city should have 49 firefighters to be average within the nation. This appears to be adequate at this time and with the development, additional property taxes will be raised which can be used to maintain minimum fire department standards.

4. **Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

   A fire flow analysis must be completed and approved by the EFD prior to construction.

4.0 ANALYSIS OF PROJECT EFFECTS

The project demonstrates compliance (or proposes modification and "findings" consistent with the San Diego CCFC Appendix Chapter 1 Section 104.8) with applicable fire regulations, including but not limited to the California Fire Code, California Code of Regulations, and/or the City of Encinitas Fire Code.

The comprehensive Fire Protection Plan and the Project design are consistent with the San Diego County Planning & Development Services recommendations including fuel modification.

The project meets the emergency response objectives identified in the Public Facilities Element of the County General Plan.

4.1 Adequate Emergency Services

The Piraeus Point Project is within the response area of the Encinitas Fire Department. The closest fire station is Station #3, located at 801 Orpheus Avenue. It is approximately 1.5 miles from the Project. Estimated response time (get away and travel per Google Maps) from this station to the site is approximately five (5) minutes. Carlsbad Fire Station #4 is 2.4 miles from the site with a response time of approximately six (6) minutes. Figure 4 which follows shows the location of fire stations in proximity to the project. Despite the relatively proximity of the nearest fire station, there is no assurance that the Station #3 engine company will be in its station when a wildfire threatens the Piraeus Point Project from an ignition outside the development. Engines may respond from other stations further away or from other incidents. The California Department of Forestry and Fire Protection (CAL FIRE) as well as other fire departments, can be requested under Mutual Aid or Automatic Aid agreements to respond to wildfire events in the area.

The goal of this FPP therefore is to make the Piraeus Point Project as safe as possible until such time as firefighting equipment arrives and/or residents can be evacuated. With the implementation of the fuel modification, ignition resistant construction measures, and other mitigation measures described in this FPP, the Piraeus Point Project will be provided with a higher degree of protection from wildfire than many existing communities in San Diego County. The project will not directly result in the expansion of area fire protection services but there will be an incremental increase in the demand for fire protection and emergency services.

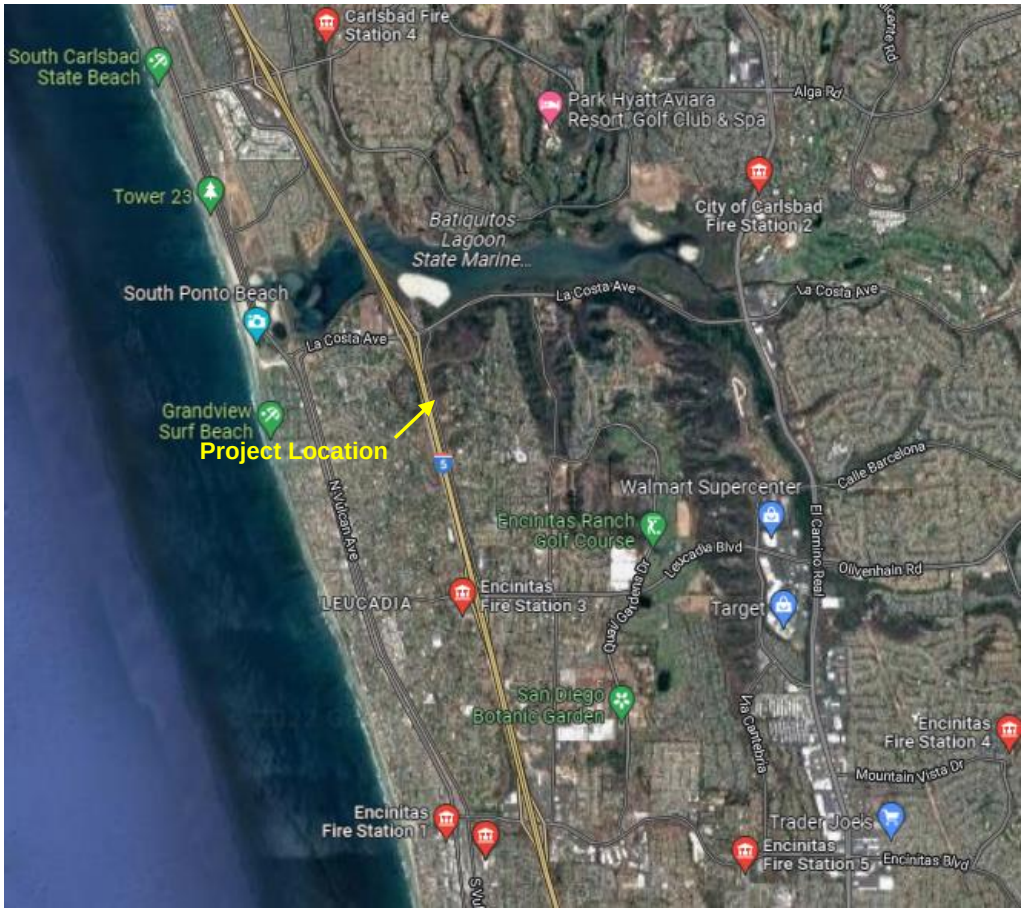


Figure 4 *– Fire Stations located near the Project (arrow) are shown in Red. Includes both the City of Encinitas as well as the City of Carlsbad Fire Departments.*

4.2 Fire Access

Ingress and egress for residents will be from either Piraeus Point or Plato Place. All streets shall be designed to the City of Encinitas and the EFD road standards. No fire apparatus access roadway or driveway shall exceed a 15% grade without mitigation. If the grade is to be over 15%, the mitigation required is to have the entire length of the >15% grade road surface constructed of Portland cement concrete with a deep broom finish running perpendicular to the direction of travel to enhance traction.

All fire apparatus access roads shall be of an all weather surface designed to the City of Encinitas standards and shall be designed to support imposed loads of fire apparatus not less than 75,000 lbs. Fire apparatus roadways shall have an unobstructed improved width of not less than 24 feet, curb line to curb line, or edge of pavement to edge of pavement where no curbs are proposed with an angle of departure and approach not to exceed twelve percent (12%). All fire access roadways shall be signed No Parking to maintain access.

All dead end fire apparatus access roadways in excess of 150 feet in length shall be provided with a EFD approved turnaround.

The Piraeus Point development will not be a gated community. However, should the community in the future wish to install gates, they shall meet the following requirements. All gates providing access from a road to a driveway shall be located a minimum of 30 feet from the nearest edge of the roadway and shall be at least two feet wider than the width of the traffic lane(s) serving the gate. An automatic gate across a fire access roadway or driveway shall be equipped with an approved emergency key-operated switch overriding all command functions and opening the gate. A gate accessing more than four residences or residential lots or a gate accessing hazardous institutional, educational or assembly occupancy group structure, shall also be equipped with an approved emergency traffic control activating strobe light sensor or other device approved by the fire code official, which will activate the gate on the approach of emergency apparatus with a battery back-up or manual mechanical disconnect in case of power failure. An automatic gate shall meet fire department policies deemed necessary by the fire code official for rapid, reliable access. An automatic gate serving more than one dwelling is required to install an approved emergency key-operated switch and/or an approved emergency traffic control activating strobe light sensor approved by the EFD, at an approved location, which overrides all command functions and opens the gate. Where this section requires an approved key-operated switch, it may be dual keyed or equipped with dual switches provided to facilitate access by law enforcement personnel. Electric gate openers, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.

4.3 Water Supply

The Piraeus Point water supply will be provided by the San Dieguito Water District. Hydrants, mains and water pressures shall be designed to comply with City of Encinitas and Encinitas Fire Department requirements. The Project design shall provide for all sides of each structure to be reached with a maximum hose pull of 150 feet from a fire access roadway/driveway. Fire hydrants shall be installed at a minimum spacing of 300 feet, and be of a type satisfactory to the Encinitas Fire Department. Hydrants shall be intalled at intersections, at the beginning radius of cul-de-sacs, and every 300 feet of fire access roadways (as per Encinitas Municipal Code). The EFD will determine exact locations of fire hydrants. The minimum fire flow shall be 2,500 GPM at 20 psi residual pressure for a 2-hour duration. Residential hydrants shall have one (1) 4” connection and two (2) 2 ½” connections. A two-sided blue reflective road marker shall be installed on the road surface to indicate the locations of fire hydrant(s).

4.4 Ignition Resistant Construction and Fire Protection Systems

All structures within the Piraeus Point Project shall meet all wildland/interface standards to the satisfaction of the Encintas Fire Department and be designed and constructed with ignition resistant construction requirements. All construction and ignition resistive requirements shall meet the current International Wildland-Urban Interface Code (IWUIC), City of Encinitas Ordinances, and the CA Fire and Building Code. The Encinitas Fire Department may refer to and utilize County standards for any construction and ignition resistive requirements. For a brief summary description of the Chapter 7A construction requirements, see APPENDIX ‘C’. All residential structures will have automatic interior fire sprinklers. The interior fire sprinkler system shall meet National Fire Protection Standard (NFPA) 13R and current Encinitas requirements.

All combustible building materials, decks, balconies, patio, covers, gazebos and fences will be permanently prohibited in all Fuel Treatment Zones. These structures may be

allowed if constructed with ignition resistive building materials as per the City of Encintas Fire Code. The owners are not restricted from having concrete patios, concrete walkways, water features, or a swimming pool within this zone. Refer to APPENDIX 'D' for photos and descriptions of non-combustible decks, patio covers, and railings.

The Homeowners Associate (HOA) will be required to maintain Zones 1A & 1B fuel modification standards and will keep each structure's roof and rain gutters free of leaves, needles and other combustible debris and all firewood and other combustible materials must be properly stored away from each structure so that burning embers falling on or near the structure have no suitable host. The Piraeus Point owners/HOA are responsible for maintainence of the structures with each unit owner being required to keep all doors and windows tightly closed whenever a wildland fire is reported in the vicinity.

4.5 Defensible Space and Vegetation Management

Defensible space requirements for on and off-site fuels are described below.

4.5.1 Off-site Fire Hazard and Risk Assessment

The project area is located in a Very High Fire Hazard Severity Zone (https://myencinitas.encinitasca.gov/map/). The heaviest fuels are located to the north. To the east of the project there are existing homes which pose an insignificant wildfire threat due to landscaping, irrigation and other improvements (Photo #1). Piraeus Street runs the entire length of the western side of the proposed project and separates the development from Interstate 5, a major eight lane divided highway.

4.5.2 On-site Fire Hazard and Risk Assessment

All the interior vegetation will be eliminated in the grading process for the proposed structures and roadways. To the north of the northern proposed buildings and outside the fuel treatment zones, an area of Southern Maritime Chaparral will remain (See Section 9.0 – Fire Protection Plan Map) The greatest threat to this project is the Chaparral as it consists of heavier fuels that are taller and denser than the Coastal Sage, grass and weeds that exists to the west and south. A wildland fire burning in this area under a Santa Ana wind condition could pose a threat to all the residences. However, with a treated area created between the buildings and the natural area and the special fire protection features described in Section 6.1, this threat will be significantly reduced**.** This buffer area will be thinned of dead and dying vegetation which will be beneficial.

Any wildfire in the vicinity of the project can cause firebrands to be carried a long distance (one mile or more) by fire drafts or strong winds. Any wind or topography driven wildfire burning under a northeastern (*Santa Ana*) wind pattern will create a wildland fire hazard to all the structures in the proposed development due to falling embers. All wildland plants and grasses will pose a fire hazard annually as the plants cure or lose both live and dead fuel moisture during hot and dry summer seasons.

The proposed fuel modification treatments, irrigated landscaping, the use of ignition resistant building materials, and additional required construction features described in Section 6.1 will mitigate to less than significant levels the potential loss of any structures due to direct fire impingement or radiant heat around the perimeter of the houses.

4.6 Vegetative Fuel Assessment

The minute-by-minute movement of a wildland fire will probably never be totally predictable--certainly not from weather conditions forecast many hours before the fire. Nevertheless, practice and experienced judgment in assessing the fire environment coupled with a systematic method of calculating fire behavior yields surprisingly good results (Scott, Burgen 2005).

The BehavePlus Fire Modeling System is among the most widely used systems for wildland fire prediction according to Dr. Patricia L. Andrews (2014). The BehavePlus fire behavior computer modeling system was developed by USDA–Forest Service research scientists at the Intermountain Forest Fire Laboratory, Missoula, Montana, and is utilized by wildland fire experts nationwide. Since the model was designed to predict the spread of a fire, the fire model describes the fire behavior only within the flaming front. The primary driving force in the fire behavior calculations is the dead fuel that are less than one-fourth inch in diameter. These are the fine fuels that carry the fire. Fuels larger than three (3") inches in diameter are not included in the calculation (Andrews 1986).

Over the past decade, California and much of the Western United States has been experiencing increased fire behavior from what was typically seen in the past as documented by firefighters from multiple agencies. It is due in part to our warming climate, which frequently results in lower relative humidity over prolonged periods of time in turn resulting in lower moisture content in both living and dead wildland fuels. When fuels are drier, they burn hotter and are easier to ignite, especially on hot days as the fuel temperature is closer to its ignition temperature. The fire behavior calculation inputs for the anticipated fuel moistures for both living and dead fuels have been adjusted to account for climate change and thus, better represent "worst case" weather.

BehavePlus, Version 6.0.0, is an updated and enhanced form of the BEHAVE System. The BEHAVE fire model describes a wildfire spreading through surface fuels, which are the burnable materials within six (6') feet of the ground and contiguous to the ground. Regardless of the limitations expressed, experienced wildland fire managers can use the BEHAVE modeling system to project the expected fire intensity, rate-of-spread and flame lengths with a reasonable degree of certainty for use in Fire Protection Planning purposes.

The BehavePlus 6.0.0 Fire Behavior Model was used to make the fire behavior assessments and projections for the hazardous vegetative fuels located in proximity to the proposed residential buildings. The fire scenario projection are based on "worst case" fire weather assumptions for the project area. The fire scenarios below display the expected Rate of Fire Spread (expressed in ft/min), Fireline Intensity (expressed in British Thermal Units per foot per second) and Flame Length (expressed in feet) for two (2) separate BehavePlus predictions: one for the untreated fuels, followed by one for the treated fuels. Treated fuels, located in a fuel modification zone, change how wildfire behaves or burns. A fire burning in a fuel modification zone is less descructive, less costly, and easier to control as the flame length, rate of spread and energy output are reduced, often signficantly. Each scenario also includes the calculation inputs used in the BehavePlus program which were obtained from project site observations and fuel moisture levels typically observed during fire season.

Fire Scenario #1 – Fire Approaching from the North ***(Late Fire Season With Above Average 50 MPH North, Northeast, and East Santa Ana Wind Conditions)***	
Fire Behavior Calculation Input Data • **40 percent slope** • **50 mph 20-foot wind speed** • **320º aspect** • **45º wind direction (from north)**	**Anticipated Fuel Moistures** *** 1-Hour Fine Fuel Moisture of ……2%** *** 10-Hour Fuel Moisture of……3%** *** 100-Hour Fuel Moisture of. ……5%** *** Live Herbaceous Fuel Moisture of…….. 30%** *** Live Woody Fuel Moisture of……..... 50%**
Expected Fire Behavior Untreated Vegetation **Combined Fuel Model: [sh5—High Load, dry climate shrub (70%) and sh7—Very high load, dry climate shrub (30%)]**	
Rate of Spread - 848 ft/min	
Fireline Intensity - 2,778 BTU's/foot/second	
Flame Length - 52.4 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model: [gr1—Short, sparse, dry climate grass (70%) and tl6–Moderate load, broadleaf litter (30%)]**	
Rate of Spread - 45 ft/min	
Fireline Intensity - 580 BTU's/foot/second	
Flame Length - 7.3 feet	

Fire Scenario #2– Fire Approaching from the South ***(Late Fire Season With Above Average 30 MPH South, Southeast, or Southwest Wind Conditions)***	
Fire Behavior Calculation Input Data • **20 percent slope** • **30 mph 20-foot wind speed** • **180º aspect** • **180º wind direction (from north)**	**Anticipated Fuel Moistures** *** 1-Hour Fine Fuel Moisture of ……2%** *** 10-Hour Fuel Moisture of……3%** *** 100-Hour Fuel Moisture of. ……5%** *** Live Herbaceous Fuel Moisture of…….. 30%** *** Live Woody Fuel Moisture of……..... 60%**
Expected Fire Behavior Untreated Vegetation **Combined Fuel Model: [gr2-Low load, dry climate grass (70%) and sh1—Low load, dry climate shrub (30%)]**	
Rate of Spread - 214 ft/min	
Fireline Intensity - 423 BTU's/foot/second	
Flame Length - 11.9 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model: [gr1-Short, sparse, dry climate grass (70%) and tl6–Moderate load, broadleaf litter (30%)]**	
Rate of Spread - 34 ft/min	
Fireline Intensity - 580 BTU's/foot/second	
Flame Length - 5.4 feet	

Fire Scenario #3 – Fire Approaching from the West ***(Late Fire Season With Above Average 30 MPH South, Southeast, or Southwest Wind Conditions)***	
Fire Behavior Calculation Input Data • **25 percent slope** • **30 mph 20-foot wind speed** • **270º aspect** • **225º wind direction (from north)**	**Anticipated Fuel Moistures** *** 1-Hour Fine Fuel Moisture of ……2%** *** 10-Hour Fuel Moisture of……3%** *** 100-Hour Fuel Moisture of. ……5%** *** Live Herbaceous Fuel Moisture of…….. 30%** *** Live Woody Fuel Moisture of……..... 60%**
Expected Fire Behavior Untreated Vegetation **Combined Fuel Model: [gs2—Moderate load, dry climate grass-shrub (60%) and gr4—Moderate load, dry climate grass (40%)]**	
Rate of Spread - 363 ft/min	
Fireline Intensity - 606 BTU's/foot/second	
Flame Length - 24.6 feet	
Expected Fire Behavior in Treated Fuels **Combined Fuel Model: [gr1—Short, sparse, dry climate grass (70%) and tl6–Moderate load, broadleaf litter (30%)]**	
Rate of Spread - 34 ft/min	
Fireline Intensity - 580 BTU's/foot/second	
Flame Length - 5.4 feet	

5.0 FUEL TREATMENT ZONE DESCRIPTIONS & REQUIRED TREATMENTS

Described below are the required treatments for the Fuel Treatment Zones. All distances described in this report are measured horizontally. Fuel modification requires 100 feet of treated area consisting of 50 feet of irrigated Zones 1A & 1B adjacent to each structure followed by 50 feet of non-irrigated thinning Zone 2. The Piraeus Point development will have a Homeowner Association (HOA). The HOA will be required to oversee and perform the herein described fuel treatments. These fuel treatments when combined with the required construction features described in Section 6.0 should mitigate any radiant heat or direct flame impingement for the projected 52.4-foot flame lengths under the worst-case weather and fuels scenarios.

Following are the required fuel treatments.

5.1 Irrigated Zone 1A – HOA Maintained, *(Shown as ||| on the Fire Protection Plan Map)*

Defined

Zone 1A is commonly called the defensible space zone. It is an permanently irrigated zone and shall be free of all combustible construction and materials, typically 50 feet in width. It comprises the the entire area around the front, back, and side yards of the proposed stuctures. It is also located on manufactured slopes. It also applies to plant material established in pots or large containers.

Required Landscaping

- Zone 1A will be cleared of all existing native vegetation and replanted with drought tolerant and irrigated fire resistant lawns, ground covers and shrubs. Non-flammable concrete patios, driveways, swimming pools, water features, walkways, boulders, rock, and gravel can be used to break up fuel continuity within Zone 1A.
- Landscaping shall be irrigated and primarily consists of fire resistant, maintained native or ornamental plantings usually less than 18 inches in height. However, this zone may contain occasional fire resistant trees and single well-spaced ornamental shrubs up to 48 inches in height, intermixed with ground covers and lawn.
- Shrubs shall be single specimens or a grouping not exceeding three plants. Mature height of plants shall not exceed 18 inches. At mature growth, single plants or groupings of plants shall be separated from each other by at least 5 feet. Plants shall not be located under vents or windows or within five feet to either side of a window. Single specimens of plants or a grouping not exceeding three plants are allowed under mature trees.
- Shrubs (perennial woody plants of not more than 12 feet) may be placed in this zone provided that they are grouped with not more than 3 plants in a grouping. Each grouping shall be separated by 3x height of the shrub as measured between crowns.
- Combustible ground covers (mulch, bark, wood chips, etc.) are not permitted within this zone.
- Trees shall be single specimens or groupings of not more than three trees selected from the approved plant list.
- Trees must be planted so that when they reach maturity the tips of their branches are at least 10 feet away from any structure and must have a minimum of six feet of vertical separation from low growing irrigated vegetation beneath the canopy of the tree.
- Plants in this zone need to be fire resistant and should not include any pyrophytes that are high in oils and resins such as pines, eucalyptus, cedar, cypress or juniper species. Thick, succulent or leathery leaf species with high moisture content are the most “fire resistant”. For proper plant selection refer to APPENDIX ‘A’ for the Encinitas recommended plant list and APPENDIX ‘B’ for the Encinitas Prohibited Plant List.
- The area within 5 feet of each home shall be absent of most plants including all the plants listed in Appendix A. A few scattered potted plants may be grown as long as they are not located beneath windows or vents or within 5 feet of a window.
- No combustible mulches shall be allowed within 5 feet of a structure.

Required Maintenance

- Zone 1A shall be maintained year round by the individual property owner(s) as required by this FPP or the EFD.
- Sprinkler systems shall be checked weekly to insure proper working order.
- Any dead or dying plant material shall be removed and replaced monthly.
- Shrubs and trees are to be bi-annually maintained free of dead material.
- Trees will be maintained so that their crown cover will be more than ten (10) feet from any structure.
- Tree crowns shall be raised 3x the height of the overtopping shrub or 6 feet, whichever is greater.

- All tree crowns will be separated by 20 feet and maintained to keep a separation of six feet between the ground fuels (shrubs and ground covers) and the lower limbs.
- Shrub over 18 inches shall be maintained to have their canopies separated by 3x the height of the shrub.
- All trees must be maintained to the current ANSI A300 Standard for Tree Care Operations, Tree, Shrub, and Other Woody Plant Maintenance [see (https://www.tcia.org/TCIA/Build_Your_Business/A300_Standards/A300_Standards.aspx)]. This is an industry standard for landscape maintenance.

5.2 Irrigated Zone 1B - HOA Maintained Public Land *(Shown as  on the Fire Protection Plan Map)*

Defined

Begins at the edge of Zone 1A and combined with Zone 1A extends up to 50 feet from a structure within public land. All combustible buildings and materials are prohibited in this zone (e.g. decks, patio covers, gazebos).

Required Landscaping and Maintenance

Irrigated Zone 1B has the same landscaping and maintenance requirements as Zone 1A except that the land upon which it is performed is public. See Zone 1A above.

5.3 Thinning Zone 2 – HOA Maintained *(Shown as  on the Fire Protection Plan Map).*

Defined

Zone 2 is a transition area between the strict requirements of irrigated Zone 1A or 1B and the undisturbed native vegetation designed to maintain a reasonably open character in this area. Zone 2 is typically a non-irrigated thinning zone 50 - 100 feet in width depending on location beginning at the outer edge of Zone 1A or 1B. Thinning zones are utilized to reduce the fuel load of a wildland area adjacent to buildings thereby reducing both radiant and convective heat of wildland fires. The intent is to achieve and maintain an overall 50 percent reduction of the canopy cover spacing and a 50 percent reduction of the original fuel loading by reducing the fuel in each remaining shrub or tree without substantially decreasing the canopy cover. Shrub and tree root system are to be retained to prevent erosion.

Required Landscaping

- Thinning the native vegetation to a point where 50% open space is created.
- Removal of all dead, woody debris and exotic flammable vegetation including designated undesirable plants (Appendix B).
- If native shrub and chaparral are located within a tree's drip line, the lowest branch of the tree shall be a distance from the ground of at least three times the height of the shrub/chaparral or ten (10) feet, whichever is greater.
- Allowances for the needs of protected species and habitats will be considered in this zone.
- No combustible construction or materials are allowed in Zone 2.

Required Maintenance

- Annually maintain all tree crowns to keep a separation of ten feet between the ground fuels (shrubs and ground covers) and the lower limbs. All trees must be maintained to the current ANSI A300 standards [*Tree, Shrub, and Other Woody*

Plant Maintenance —Standard Practices (Pruning)] see https://wwv.isa-arbor.com/store/product/124.

- Annually remove any undesirable non-native vegetation (see APPENDIX 'B') to maintain a 50% thinning from the original vegetation cover.
- Native annual and perennial grasses shalll be allowed to grow and produce seed during the winter and spring. As grasses begin to cure (dry out), they shall be cut to 4 inches or less in height.
- Bi-annually remove all dead and dying vegetation and highly flammable species (see APPENDIX 'B').
- If a native shrub is located within a tree's dripline, the lowest branch of the tree shall be a distance from the ground of at least three times the height of the shrub/chaparral or six (6) feet, whichever is greater.
- Should vines be planted to partially cover a retaining wall, they shall be inspected and all dead material removed every two months.

5.4 Roadside Fuel Treatment (HOA Maintained) Shown as ▦ on the Fire Protection Plan Map.

The area located 20 feet on either side of each access road that is maintained to Irrigated Zone 1A criteria described above in Section 5.1. Should water availability become an issue at any time in the future, this zone is critical to maintain free of combustible vegetation and materials for safer evacation and access by emergency responders.

Required Landscaping and Maintenance

Roadside Fuel Treatment is maintained as Irrigated Zone 1A described above throughout the year.

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6.0 Construction Standards

All structures within the Piraeus Point project shall meet all wildland/interface standards to the satisfaction of the Encintas Fire Department and be designed and constructed with ignition resistant construction requirements. All construction and ignition resistive requirements shall meet the current International Wildland-Urban Interface Code (IWUIC) and amendments; City of Encinitas Ordinances 2019-27 and 2021-08; and the CA Fire and Building Codes. The EFD may refer to and utilize County standards for any construction and ignition resistive requirements. For a summary description of the current construction requirements as of date of this report see APPENDIX 'C'.

AUTOMATIC FIRE SPRINKLER SYSTEM: An automatic Fire Sprinkler System shall be installed in each building including all garages as per NFPA 13, the most current edition shall be applied to EFD policies. Detailed sprinkler plans shall be submitted to the Fire Prevention Bureau and approved prior to installation. Plans and installation must be completed by a California licensed C-16 fire protection contractor.

All accessory structures such as decks, balconies, patios, covers, gazebos and fences shall be built from non-combustible or ignition resistant materials. Refer to APPENDIX 'D' for photos and descriptions of non-combustible decks, patio covers, and railings.

Construction or building permits shall not be issued until the fire code official inspects and approves required vegetation clearance, fire apparatus access, and water supply for the

construction site. The issuance of building permits regarding these requirements shall be in accordance with the standards required by the City of Encinitas.

Prior to the delivery of building construction materials to the project site the following conditions shall be completed to the satisifaction of the EFD.

- All wet and dry utilities shall be installed and approved by the appropriate inspecting department or agency.
- As a minimum, the first lift of asphalt paving shall be in place to provide a permanent all weather surface for emergency vehicles.
- All fire hydrants shall be installed, in service, and accepted by the EFD and applicable water district.
- Clearance of Zone 1A and 1B vegetation and approved Zone 2 vegetation management shall be provided prior to combustible material arriving on the site and shall be maintained throughout the duration of construction. Fire code officials may require additional vegetation management and/or defensible space when warranted.

6.1 Additional Required Construction Features – All Structures

Due to the concern for embers during wildland fire, the following additional construction features are required for all structures within the Piraeus Point development:

a. All vents in the structures shall be “Brandguard”, “O’Hagin Fire & Ice® Line – Flame and Ember Resistant” or equivalent type vents.

b. All operable windows shall be provided with metal mesh bug screens over the operable opening to replace traditional vinyl bug screens to prevent embers from entering the structure during high wind conditions when windows may be inadvertently left open.

6.2 Additional Required Construction Features – See Fire Protection Plan Map

As mitigation for driveways that exceed 150 feet in length, the following additional building features shall be required of the structures shown in grey on the Fire Protection Plan Map:

a. Exterior walls facing the driveway shall have 2 hour rated walls.

b. Interior fire sprinkler shall be extended to the attic space including the areas over bathrooms and closets.

7.0 MITIGATION MEASURES, DESIGN, AND EVACUATION CONSIDERATIONS

- All newly constructed structures will be built to ignition resistant building requirements (see APPENDIX ‘C’ for a summary of these requirements) including the installation of automatic interior fire sprinkler systems (National Fire Protection Association – NFPA Standard 13R)

- Fuel treatments surrounding all structures that abut flammable native vegetation shall be landscaped and irrigated (see Fire Protection Plan Map).

- This report and its recommendations shall be incorporated by reference into the final project Conditions of Approval to ensure compliance with codes/regulations and significance standards.

All residents, guests, workers, and owners shall utilize the following evacuation procedures:

Ready, Set, Go is the evacuation strategy proposed for the Project. Should a wildfire exist that threatens the property or safety of people at the site, the following actions shall be implemented:

1. ***Ready – Preparing for the Fire Threat:*** *Take personal responsibility and prepare long before the threat of a wildfire so the home is ready in case of a fire. Maintain a defensible space by clearing brush away from all structures and range facilities. Use fire-resistant landscaping and harden structures with fire-safe construction measures. Assemble emergency supplies and belongings in a safe spot. Make sure all individuals within the area are 'on the same page' in commitment to advance preparation. Plan escape routes.*

2. ***Set – Situational Awareness When a Fire Starts:*** *Pack vehicle(s) with emergency items. Stay aware of the latest news from local media and the local fire department for updated information on the fire and perform the following:*

   - ✓ *Close all windows and doors that lead outside to prevent sparks from entering the house.*
   - ✓ *Close all doors within the house in case the house does catch on fire; this will slow down the spread of the fire from room to room.*
   - ✓ *Move all combustible materials in the home away from windows to prevent the possibility of heat from a fire radiating through windows and glass doors and catching flammable materials inside the home on fire. This includes drapes, curtains, and furniture.*
   - ✓ *Close windows and all Venetian blinds or noncombustible window coverings.*
   - ✓ *Turn on the lights in each room, porch, and yard. This aids in visibility when the smoke gets thick and darkens the sky.*
   - ✓ *Fill all sinks, bathtubs, and buckets with water in case the power goes out.*
   - ✓ *Shut off any gas valves within the house or outside.*
   - ✓ *Open the damper on fireplaces to stabilize inside/outside pressure, but close fireplace screens to keep sparks from igniting the house. Turn off exhaust fans in kitchens.*

3. Go – Leave early! *Following an Action Plan makes one prepared and firefighters are now able to best maneuver the wildfire and ensuring everyone's safety. Follow instructions given by the Fire Department official on site.*

The primary evacuation route will be via Piraeus Street but the direction to evacuate will be determined by the Fire Department in consultation with other agencies.

7.1 Additional Requirements

- Fuel Modification shall be completed prior to commencing any construction. During construction, at least 50 feet of clearance around the structures shall be kept free of all flammable vegetation as an interim fuel modification zone during construction of structures, except where habitat protection is required.

- All access roadways and driveways shall be constructed and subsequently approved by EFD prior to the delivery of combustible materials.

- Hydrants and all fire department connections shall be installed and approved prior to the delivery of combustible materials.

- Debris and trimmings produced by thinning and pruning will be removed from the site, or, if left, shall be converted into mulch and evenly dispersed to a maximum depth of four inches. Such trimmings will not be located within 50 feet of structures nor designated protected habitat.

- Any damaged or replacement window, siding, roof coverings, and specific non-combustible wall will meet or exceed the original intent of this Fire Protection Plan.

7.2 Mandated Inclusions in the Piraeus Point Covenants and Agreements

The Piraeus Point Covenant and Agreement shall include the following statements:

1. The HOA is responsible for all Zone 1A and 1B fuel treatment measures within the property.

2. All annual Zone 2 fuel treatment maintenance is the responsibility of the HOA.

3. Trash dumping and or disposal of yard trimmings in the fuel treatment zones shall not be allowed.

4. The Encinitas Fire Department (EFD) will hold the HOA accountable for enforcement of all wildland fire protection issues discussed in this plan.

5. All landscaping plans, including additional structures, must be reviewed and approved under the guidance and approval of the EFD.

6. As used herein, "Fire Prevention Maintenance" shall mean the following:

   (i) All portions of the property that constitute Fuel Modification Zones or designated interior/manufactured slopes shall be regularly maintained by the owners on a year-round basis in accordance with the Fire Protection Plan on file with the property manager for the development.

   (ii) The irrigation system for all Fuel Modification Zones shall always be kept in good condition and proper working order.

8.0 Owner/Occupant Education

Each occupant, shall be aware of the herein described fire protection measures. Of particular importance are APPENDICES ‘A’, ‘B’, and ‘D’ of this plan. These provide guidance in the types of plants, building features, and materials that are allowed to be established in landscaped and fuel modification areas. Plant selection is critical as embers often travel over a mile during Santa Ana wind events.

A copy of this plan shall be available for review in the sales office for each occupant to review. In the event of the sale of the property, the new property owner shall be provided with a copy of this FPP to insure continued compliance with all Fuel Modification maintenance and construction

requirements. The HOA shall yearly provide the residents with information regarding the wildfire mitigation efforts necessary for fire safety that are contained within this FPP.

9.0 FIRE PROTECTION PLAN MAP

Attached as a separate document to this FPP is the FIRE PROTECTION PLAN MAP which depicts the location of all fuel treatment locations and descriptions. Appendix 'F' contains a small version of the plan showing the fuel treatment zones. Due to the map size in this document, it is best to use the attached full size map or pdf file containing the map for implementation purposes.

10.0 CONCLUSIONS

This FPP evaluated the adverse environmental effects that a proposed multi-family development may have from wildland fire and to properly mitigate those impacts to ensure that this development does not unnecessarily expose people or structures to a significant risk of loss, injury or death involving wildland fires.

- The requirements of this FPP provide the fuel treatment standards to mitigate the exposure of people or structures to a significant risk of loss, injury, or death. Zone 1A and portions of 1B includes the level building pad and provides the defensible space zone for fire suppression forces and will protect structures from radiant and convective heat. Zone 2 thinning zone consists of fire resistant and maintained plantings.
- The development will have adequate emergency access in terms of access and construction standards for roadways and streets. The EFD will provide fire protection and other fire departments including CAL FIRE will assist through mutual aid.
- Water supplies will provide adequate water for fire protection.

11.0 LIST OF PREPARERS, PERSONS AND ORGANIZATIONS CONTACTED

11.1 List of Preparers

The principal author and preparer of this Fire Protection Plan is Herbert A. Spitzer, Senior Wildland Fire Associate of ***FIREWISE*2000, LLC.** The document has been reviewed and certified by Melvin Johnson, Owner and San Diego County DPLU Certified CEQA Wildland Fire Consultant of ***FIREWISE*2000, LLC**.

11.2 List of Persons Contacted or who Provided Input During the Course of this Project

1. David Shepherd, Director of Entitlements, Lennar
2. Caroline Garcia, Biological Consultant – ECORP Consulting, Inc.
3. Hans Schmidt, Fire Marshal, City of Encinitas
4. Jesus Alan Figueroa – Schmidt Design
5. Brian Grover – Nolan Communities

12.0 REFERENCES

The most current edition of the documents described below shall be utilized.

1. Andrews, PL (2014) Current status and future needs of the BehavePlus Fire Modeling System. International Journal of Wildland Fire 2014, 23, 21–33. http://www.publish.csiro.au/wf/WF12167

2. *Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model,* General Technical Report RMRS-GTR-153. June 2005. Joe H. Scott, Robert E. Burgan, United States Department of Agriculture - Forest Service, Rocky Mountain Research Station, Missoula, Montana.

3. *Behave Plus Fire Modeling System, Version 5.0.5,* General Technical Report RMRS-GRT-106WWW Revised. July 2008. Patricia L. Andrews, Collin D. Bevins, Robert Seli. United States Department of Agriculture - Forest Service, Rocky Mountain Research Station, Missoula, Montana.

4. National Fire Protection Association - NFPA 1140 *Standard for Wildland Fire Protection*. Print, 117 pp., 2022 Edition.

5. National Fire Protection Association - NFPA 13R Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies.

6. California Code of Regulations, Title 14, section 1280 and Title 24 Part 9

7. California Public Resources Codes sections 4201 through 4204

8. California Government Code, sections 51175 through 51189

9. California Fire Code including Local Amendments and Appendices to Chapters 1 & 4 and Appendices B, F & H

10. *County of San Diego. Plant List and Acceptable Plants for a Defensible Space in Fire Prone Areas. Department of Planning and Land Use, December 1998.*

11. *Chapter 7A-California Building Code*

12. *The California State and Local Responsibility Area Fire Hazard Severity Zone Map*

13. Encinitas Fire Department – *Wildland/Urban Interface Development Standard Guidelines*

14. Encinitas Fire Department Ordinance 2019-27 adopting the City of Encinitas Fire Code.

15. City of Encinitas Ordinance 2021-08, Amendments to the Municipal Code.

APPENDIX ‘A’

City of Encinitas
Plant List

City of Encinitas
Fire Prevention Bureau
505 S. Vulcan Avenue, Encinitas, California 92024-3633

In an effort to protect homes from a future devastating Wildland fire, the Encinitas Fire Department has put together this booklet. You will find valuable information pertaining to both desirable and undesirable trees, shrubs, ground covers, vines, and palm trees. The goal of this brochure is to educate the public on issues pertaining to landscaping and to keep their homes safe. Please feel free to contact us if you have any questions, comments, or concerns.

Canopy Trees: Broad spreading trees that make good accent trees.			
Grow 25-50 ft. tall and should be spaced 30-40 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Albizia julibrissin	Silk Floss	10	D
Chorisia speciosa	Floss Silk Tree	10	D
Cinnamomum camphora	Camphor	10	E
Erythrinia species	Coral	10	D
Ficus species		10	D
Jacaranda mimosifolia		10	D
Koelreuteria paniculate	Golden Raintree	10	D
Melaleuca linarifolia	Paperbark	10	E
Pinus halepensis	Aleppo Pine	30	E
Platanus acerfolia	Sycamore	10	D
Phoenix canariensis	Canary Island Date Palm	30	E
Podacarpus gracilior	Fern Pine	10	E
Pyrus kawakami	Evergreen Pear	10	E
Quercus species	Oak	10	E
Rhus lancea	African Sumac	10	E
Robinia pseudoacacia	Black Locust	10	D
Schinus species	Pepper Tree	30	E
Spathodea campanulata	African Tulip Tree	10	D
Tipuana tipu	Tipu Tree	10	D
Ulmus parvifolia	Chinese Elm	10	D
Zelkova serrata	Sawleaf Zelkova	10	D

Vertical Growing Trees: Upright character and are good choices for narrow areas.			
Grow up to 30 ft. tall and should be spaced 20-30 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Betula pendula	European White Birch	10	D
Brachychiton populeneus	Bottle Tree	10	D
Callistemon viminalis	Weeping Bottle Brush Tree	30	E
Dracena Drago	Dragon Tree	10	E
Hymenosporum flavum	Sweetshade Tree	10	E
Maytenus boaria	Mayten	10	E
Melaleuca quinquenervia	Paperbark Tree	10	E
Metrosideros tomentosa	New Zealand Christmas Tree	10	E
Tristania conferta	Brisbane Box Tree	10	E

Ornamental Trees: Various canopy heights and widths that serve many uses such as accent trees.			
Grow 15-40 ft. tall and should be spaced 20-25 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Acer palmatum	Japanese Maple	10	D
Agonis flexuosa	Peppermint Tree	10	E
Arbutus unedo	Strawberry Tree	10	E
Avocado species		30	E
Bauhinia species	Orchid tree	10	D
Cassia leptophylla	Gold Medallion Tree	10	D
Cercis candensis	Redbud	10	D
Citrus species		10	E
Cupniopsis anacardiodes	Carrotwood tree	10	E
Geijera parvifolia	Australian Willow	10	E
Lagerstroemia indica	Crape myrtle	10	D
Lagunaria patersonii	Primrose Tree	10	E
Magnolia species		10	E/D
Olea europaea	Olive Tree	10	E
Pistacia chinensis	Chinese Pistache	10	D
Prunus species		10	E/D
Pyrus species	Ornamental Pear	10	E/D
Tabebuia species	Trumpet Tree	10	E/D

Low-Multi Branching Trees: Large shrubs and small tree forms good for under-story screening.			
Grow 10-25 ft. tall and should be spaced 15-20 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Acacia species		30	E
Eriobotrya deflexa	Bronze Loquat	10	E
Feijoa sellowiana	Guava	10	E
Melalueca nesophila	Pink Melalueca	10	E
Myoporum laetum		10	E
Pittosporum undulatum	Victorian Box	10	E
Punica granatum	Pomegranate	10	D
Thevitia thevetiodes	Giant Thevitia	10	E

Tall Skyline Trees: Dramatic Silhouettes against the skyline.			
Grow 40-70 ft. tall and should be spaced 30-40 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Acer macrophyllum	Bigleaf Maple	10	D
Alnus rhombifolia	White Alder tree	10	D
Cedrus species	Cedar tree	30	E
Eucalyptus species		30	E
Fraxinus species	Ash tree	10	D
Grevilla robusta	Silk Oak	10	D
Liriodendron tulipifera	Tulip Tree	10	D
Liquidambar species	Sweet gum	10	D
Pinus canariensis	Canary Island Pine	30	E
Pinus torreyana	Torrey Pine	30	E
Platanus racemosa	Sycamore	10	D
Populus fremonti	Western Cottonwood	10	D
Populus nigri	Lombardy Poplar	10	D

Palm Trees: Vary from single to multiple trunks.			
Grow 20-100 ft. tall and should be spaced 20-40 ft. apart.			
Botanical Name	**Common Name**	**Dripline To Structure (ft.)**	**Evergreen or Deciduous**
Archontophoenix alexandrae	Alexandra Palm	10	E
Archontophoenix cunninghamiana	King Palm	10	E
Brahea armata	Blue Hesper Palm	30	E
Brahea edulis	Guadalupe Palm	30	E
Chamaerops humilis	Mediterranean Fan Palm	30	E
Cycas revoluta	Sago Palm	10	E
Howea forsteriana	Kentia Palm	30	E
Phoenix canariensis	Canary Island Date Palm	30	E
Phoenix dactylifera	Date Palm	30	E
Phoenix reclinata	Senegal Date Palm	30	E
Phoenix roebelenii	Pygmy Date Palm	30	E
Syagrus romanzoffianum	Queen Palm	10	E
Trachycarpus fortunei	Windmill Palm	30	E
Washingtonia filifera	California Fan Palm	30	E
Washingtonia robusta	Mexican Fan Palm	30	E
All other Palm species	Various Palms	30	E

NOTE:

** This booklet is intended to guide the public on what types of trees and shrubs are acceptable to the Encinitas Fire Department. Other trees and shrubs not listed are still acceptable to use upon approval by the Encinitas Fire Department.

** Trees listed as requiring 30' spacing from dripline to structure are considered non-fire resistive trees by the Encinitas Fire Department. Consult a design professional or the Encinitas Fire Department for site specific questions regarding tree placement

** Trees that grow near power lines pose a potential electrical hazard. San Diego Gas & Electric (SDG&E) is required by law to maintain minimum clearances between all vegetation and power lines. No tree should be allowed to grow within 10 feet of electrical conductors. SDG&E provides a suggested species list of trees that are appropriate to grow under or adjacent to power lines. This list, along with other information regarding SDG&E Vegetation Management, can be found at http://sdge.com/safety/treesafety.

City of Encinitas
Fire Prevention Bureau
505 S. Vulcan Avenue, Encinitas, California 92024-3633

Shrubs	
Botanical Name	**Common Name**
Abelia grandiflora	Glossy abelia
Abutilon palmeri	Indian Mallow
Aesculus californica	California buckeye
Alyogyne huegelii	Blue Hibiscus
Atriplex canescens	Four-wing saltbush
Atriplex glauca	Saltbush
Atriplex lentiformis	Quail saltbush
Buxus species	Boxwood
Baccharis glutinosa	Mule fat
Baccharis pilularis	Coyote Bush
Carissa grandiflora	Natal Plum
Ceanothus spp.	California lilac
Cistus spp.	Rockrose
Coprosma repens	Mirror plant
Echium candicans	Pride of Madiera
Elaeagnus pungens	Silverberry
Encelia californica	California sunflower
Eriobotrya deflexa	Bronze loquat
Eriophyllum confertiflorum	Golden Yarrow
Escallonia spp.	Escallonia
Euryops pectinatus	Shrub daisy
Feijoa sellowiana	Pineapple guava
Galvezia speciosa	Bush snapdragon
Heteromeles arbutifolia	Toyon
Ilex species	Holly
Lavandula spp.	Lavender
Leptospermum scoparium	New Zealand Tea Tree
Ligustrum japonicum	Japanese privot
Mahonia aquifolium	Oregon grape
Myoporum laetum	Myoporum
Myrtus communis	Myrtle
Nerium Oleander	Dwarf oleander
Photina spp.	Photina

Tel: (760) 633-2820; Fax: (760) 633-2818

Pittosporum tobria	Tobria
Plumbago auriculata	Cape plumbago
Prunus caroliniana	Carolina Laurel Cherry
Prunus ilicifolia	Hollyleaf cherry
Punica granatum	Pomegranate
Pyracantha species	Firethorn
Quercus dumosa	Coast scrub oak
Rhamnus californica	Coffeeberry
Rhaphiolepis indica	India hawthorn
Rhus integrifolia	Lemonadeberry
Ribes speciosum	Fuchsia-flowered gooseberry
Rosa species	Rose
Rosa banksiae	Lady Bank's rose
Salvia greggii	Autumn sage
Salvia leucantha	Mexican bush sage
Santolina chamaecyparissus	Lavender cotton
Trichostema lanatum	Wooly blue curls
Westringia fruticosa	Coast rosemary
Xylosma congestum	Shiny Xylosma

Perennials	
Botanical Name	**Common Name**
Achillea species	Yarrow
Agapanthus species	Lily-of-the-Nile
Amaryllis belladonna	Naked Lady
Anigozanthos species	Kangaroo paw
Artemisia 'power castle'	
Baileya multiradiata	Desert marigold
Camissonia cheiranthifolia	Beach evening primrose
Camellia species	Camellia
Clivia miniata	Clivia
Coreopsis grandiflora	
Coreopsis maritime	Sea dahlia
Dietes species	Fortnight lily
Felicia ammeloides	Blue marguerite
Heuchera species/hybrids	Coral Bells
Iris douglasiana	Pacific coast iris
Kniphofia uvaria	Red-hot poker
Lantana species	Lantana
Limonium perezii	Sea lavender

Narcissus species	Daffodil
Oenothera species	Primrose
Penstemon species	
Senecio cineraria	Dusty miller
Sisyrinchium bellum	Blue-eyed grass
Tagetes lemonii	Mountain marigold
Tulbaghia violacea	Society garlic

Ground Covers	
Botanical Name	**Common Name**
Ajuga reptans	Carpet bugle
Arctostaphlos edmunsii 'Little Sur'	Little Sur manzanita
Arctostaphlos hookeri 'Monterey carpet'	Monterey carpet manzanita
Baccharis pilularis 'Twin Peaks' or 'Pigeon Point'	Coyote bush
Carex species	Sedge
Carissa macrocarpa	Natal Plum
Ceanothus griseus horizontalis	Ceanothus
Cerastium tomentosum	Snow-in-summer
Delosperma alba	White trailing iceplant
Erigeron karvinskianus	Fleabane, Mexican Daisy
Fragaria chiloensis	Wild strawberry
Gazania hybrids	Gazania species
Lampranthus species	Iceplant
Lantana montevidensis	Lantana
Mahonia repens	Creaping Mahonia
Malephora crocea	Iceplant
Malephora luteola	Iceplant
Myoporum parvifolium	Myoporum
Oenothera berlandieri	Mexican evening primrose
Oenothera stubbei	Saltillo evening primrose
Osteospermum fruticosum	Trailing African daisy
Pelargonium peltatum	Ivy geranium
Rosmarinus officinalis 'Protratus'	Trailing Rosemary
Sedum brevifolium	Stonecrop
Sedum confusum	Stonecrop
Sedum rubrotinctum	Pork and beans
Thymus species	Thyme

Verbena species	Verbena

Vines	
Botanical Name	**Common Name**
Bougainvillea species	Bougainvillea
Calliandra haematocephala	Pink powder puff
Clematis species	Clematis species
Clytostoma callistegioides	Violet trumpet vine
Distictis buccinatoria	Blood-red trumpet vine
Distictis 'Rivers'	Royal trumpet vine
Grape species	Wine grapes
Hardenbergia comptoniana	Lilac vine
Mandevilla hybrids	Mandevilla
Pandorea jasminoides	Bower vine
Parthenocissus tricuspidata	Boston ivy
Passiflora species	Passion vine
Rosa species	Climbing rose types
Thunbergia gregorii	Orange clock vine
Trachelospermum jasminoides	Star jasmine
Vitis californica	California wild grape
Wisteria sinensis	Chinese wisteria

Succulents and Cacti	
Botanical Name	**Common Name**
Aeonium species	
Agave species	
Aloe species	
Cereus perivianus	Peruvian apple cactus
Crassula argentea	Jade plant
Dudleya species	
Echeveria species	Hen and chicks
Euphorbia species	
Kalanchoe blossfeldiana	Kalanchoe
Opuntia species	Cacti
Sansevieria trifasciata	Mother-in-law's tongue
Sedum species	Stonecrop
Yucca gloriosa	Spanish dagger

APPENDIX ‘B’

City of Encinitas
Undesirable Plant List

Undesirable Plants and Weeds

The following plants and weeds have been declared "undesirable" within the 100-foot Fuel Modification Zone surrounding all structures. All vegetation is listed alphabetically by botanical name, followed by the common name.

BOTANICAL NAME	COMMON NAME
Adenostoma fasciculatum	Chamise
Adenostoma sparsifolium	Red Shanks
Anthemix cotula	Mayweed
Artemisia californica	California Sagebrush
Arundo Donax	Giant Cane
Brassica rapa	Wild Turnip, Yellow Mustard, Field
Brassica nigra	Black Mustard
Cardaria draba	Hoary Cress, Perennial Peppergrass
Cirsium vulgare	Wild Artichoke
Conyza canadensis	Horseweed
Cortaderia selloana	Pampas Grass
Cytisus Spp.	Scotch Broom, French Broom
Eriogonum fasciculatum	Common Buckwheat
Heterotheca grandiflora	Telegraph plant
Lactuca serriola	Prickly Lettuce
Nicotiana bigelovii	Indian Tobacco
Nicotiana glauca	Tree Tobacco
Salsola australis	Russian Thistle or Tumbleweed
Salvia mellifera	Black Sage

APPENDIX 'C'

Ignition Resistant Construction Requirements

The following is a summary of the current requirements for ignition resistant construction for high fire hazard areas under Chapter 7A of the California Building Code (CBC) 2019 edition and the current California Residential Code. However the requirements listed below are **not** all inclusive and all exterior building construction including roofs, eaves, exterior walls, doors, windows, decks, and other attachments must meet the current CBC Chapter 7A ignition resistance requirements, the California Fire Code, and any additional County and/or City codes in effect at the time of building permit application. See the currrent applicable codes for a detailed description of these requirements and any exceptions.

1. All structures will be built with a Class A Roof Assembly and shall comply with the requirements of Chapter 7A and Chapter 15 of the California Fire Code. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.

2. Roof valley flashings shall be not less than 0.019-inch (0.48 mm) No. 26 gage galvanized sheet corrosion-resistant metal installed over not less than one layer of minimum 72-pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909, at least 36-inch-wide (914 mm) running the full length of the valley.

3. Attic or foundation ventilation louvers or ventilation openings in vertical walls shall be covered with a minimum of 1/16-inch and shall not exceed 1/8-inch mesh corrosion-resistant metal screening or other approved material that offers equivalent protection.

4. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to resist the intrusion of flames and embers, be fire stopped with approved materials or have one layer of a minimum 72-pound (32.4 kg) mineral-surfaced nonperforated cap sheet complying with ASTM D3909 installed over the combustible decking.

5. Enclosed roof eaves and roof eave soffits with a horizontal underside, sloping rafter tails with an exterior covering applied to the under-side of the rafter tails, shall be protected by one of the following:
    - noncombustible material
    - Ignition-resistant material
    - One layer of $^{5}/_{8}$-inch Type X gypsum sheathing applied behind an exterior covering on the underside of the rafter tails or soffit
    - The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the rafter tails or soffit including assemblies using the

gypsum panel and sheathing products listed in the Gypsum Association Fire Resistance Design Manual

- Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in Section 707A.10 when tested in accordance with the test procedures set forth in ASTM E2957.
- Boxed-in roof eave soffit assemblies with a horizontal underside that meet the performance criteria in accordance with the test procedures set forth in SFM Standard 12-7A-3.

Exceptions: The following materials do not require protection:
1. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
2. Fascia and other architectural trim boards.

6. The exposed roof deck on the underside of unenclosed roof eaves shall consist of one of the following:
    - Noncombustible material, or
    - Ignition-resistant material, or
    - One layer of 5/8-inch Type X gypsum sheathing applied behind an exterior covering on the underside exterior of the roof deck, or
    - The exterior portion of a 1-hour fire resistive exterior wall assembly applied to the underside of the roof deck designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Association fire Resistance Design Manual.

    Exceptions: The following materials do not require protection:
    1. Solid wood rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
    2. Solid wood blocking installed between rafter tails on the exposed underside of open roof eaves having a minimum nominal dimension of 2 inch (50.8 mm).
    3. Gable end overhangs and roof assembly projections beyond an exterior wall other than at the lower end of the rafter tails.
    4. Fascia and other architectural trim boards.

7. Vents - ventilation openings for enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents, other materials or other devices that meet one of the following requirements:

    A. Vents listed to ASTM E2886 and complying with all the following:
        i. There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
        ii. There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.

iii. The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

B. Vents shall comply with all the following:
   i. The dimensions of the openings therein shall be a minimum of $^1/_{16}$-inch (1.6 mm) and shall not exceed $^1/_8$-inch (3.2 mm).
   ii. The materials used shall be noncombustible.
   Exception: Vents located under the roof covering, along the ridge of roofs, with the exposed surface of the vent covered by noncombustible wire mesh, may be of combustible materials.
   iii. The materials used shall be corrosion resistant.

8. Vents shall not be installed on the underside of eaves and cornices.

   Exceptions:
   1. Vents listed to ASTM E2886 and complying with all the following:
      - There shall be no flaming ignition of the cotton material during the Ember Intrusion Test.
      - There shall be no flaming ignition during the Integrity Test portion of the Flame Intrusion Test.
      - The maximum temperature of the unexposed side of the vent shall not exceed 662°F (350°C).

   2. The enforcing agency shall be permitted to accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.

   3. Vents complying with the requirements of Section 706A.2 shall be permitted to be installed on the underside of eaves and cornices in accordance with either one of the following conditions:

      3.1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with Section 903.3.1.1 or,

      3.2. The exterior wall covering, and exposed underside of the eave are of noncombustible materials, or ignition-resistant materials, as determined in accordance with SFM Standard 12-7A-5 Ignition-Resistant Material and the requirements

9. All chimney, flue or stovepipe openings that will burn solid wood will have an approved spark arrester. An approved spark arrester is defined as a device constructed of nonflammable materials, having a heat and corrosion resistance equivalent to 12-gauge wire, 19-game galvanized steel or 24-gage stainless steel. or other material found satisfactory by the Fire Protection District, having ½-inch perforations for arresting burning carbon or sparks nor block spheres having a diameter less than 3/8 inch (9.55 mm). It shall be installed to be visible for the purposes of inspection and maintenance and removeable to allow for cleaning of the chimney flue.

10. All multi-family structures will have automatic interior fire sprinklers installed according to the National Fire Protection Association (NFPA) 13R 2021 edition - *Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies*.

11. The exterior wall covering or wall assembly shall comply with one of the following requirements:
    - Noncombustible material, or
    - Ignition resistant material, or
    - Heavy timber exterior wall assembly, or
    - Log wall construction assembly, or
    - Wall assemblies that have been tested in accordance with the test procedures for a 10-minute direct flame contact expose test set forth in ASTM E2707 with the conditions of acceptance shown in Section 707A.3.1 of the California Building Code, or
    - Wall assemblies that meet the performance criteria in accordance with the test procedures for a 10-minute direct flame contact exposure test set forth in SFM Standard 12-7A-1.

    Exception: Any of the following shall be deemed to meet the assembly performance criteria and intent of this section including;
    - One layer of 5/8-inch Type X gypsum sheathing applied behind the exterior covering or cladding on the exterior side of the framing, or
    - The exterior portion of a 1-hour fire resistive exterior wall assembly designed for exterior fire exposure including assemblies using the gypsum panel and sheathing products listed in the Gypsum Associate Fire Resistance Design Manual.

12. Exterior walls shall extend from the top of the foundation to the roof and terminate at 2-inch nominal solid blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.

13. Gutters shall be provided with the means to prevent the accumulation of leaf litter and debris within the gutter that contribute to roof edge ignition.

14. All rain gutters, down spouts and gutter hardware shall be constructed from metal or other noncombustible material to prevent wildfire ignition along eave assemblies.

15. No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.

16. All projections (exterior balconies, decks, patio covers, unenclosed roofs and floors, and similar architectural appendages and projections) or structures less than five feet from a building shall be of non-combustible material, one-hour fire resistive construction on the underside, heavy timber construction or pressure-treated exterior fire-retardant wood. When such appendages and projections are attached to exterior

fire-resistive walls, they shall be constructed to maintain same fire-resistant standards as the exterior walls of the structure.

17. Deck Surfaces shall be constructed with one of the following materials:
    - Material that complies with the performance requirements of Section 709A.4 when tested in accordance with both ASTM E2632 and ASTM E2726, or
    - Ignition-resistant material that complies with the performance requirements of 704A.3 when tested in accordance with ASTM E84 or UL 723, or
    - Material that complies with the performance requirements of both SFM Standard 12-7A-4 and SFM Standard 12-7A-5, or
    - Exterior fire-retardant treated wood, or
    - Noncombustible material, or
    - Any material that complies with the performance requirements of SFM Standard 12-7A-4A when the attached exterior wall covering is also composed of noncombustible or ignition-resistant material.

18. Accessory structures attached to buildings with habitable spaces and projections shall be in accordance with the Building Code. When the attached structure is located and constructed so that the structure or any portion thereof projects over a descending slope surface greater than 10 percent, the area below the structure shall have all underfloor areas and exterior wall construction in accordance with Chapter 7A of the Building Code.

19. Exterior windows, skylights and exterior glazed door assemblies shall comply with one of the following requirements:
    - Be constructed of multiplane glazing with a minimum of one tempered pane meeting the requirements of Section 2406 Safety Glazing, or
    - Be constructed of glass block units, or
    - Have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 257, or
    - Be tested to meet the performance requirements of SFM Standard 12-7A-2.

20. All eaves, fascia and soffits will be enclosed (boxed) with non-combustible materials. This shall apply to the entire perimeter of each structure. Eaves of heavy timber construction are not required to be enclosed as long as attic venting is not installed in the eaves. For the purposes of this section, heavy timber construction shall consist of a minimum of 4x6 rafter ties and 2x decking.

21. Detached accessory buildings that are less than 120 square feet in floor area and are located more than 30 feet but less than 50 feet from an applicable building shall be constructed of noncombustible materials or of ignition-resistant materials as described in Section 704A.2 of the California Building Code.

    Exception: Accessory structures less than 120 square feet in floor area located at least 30 feet from a building containing a habitable space.

22. All side yard fence and gate assemblies (fences, gate and gate posts) when attached to the home shall be of non-combustable material. The first five feet of fences and other items attached to a structure shall be of non-combustible material.

23. Exterior garage doors shall resist the intrusion of embers from entering by preventing gaps between doors and door openings, at the bottom, sides, and tops of doors, from exceeding 1/8 inch. Gaps between doors and door openings shall be controlled by one of the methods listed in this section.
    - Weather-stripping products made of materials that:
      (a) have been tested for tensile strength in accordance with ASTM D638 (Standard Test Method for Tensile Properties of Plastics) after exposure to ASTM G155 (Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials) for a period of 2,000 hours, where the maximum allowable difference in tensile strength values between exposed and non-exposed samples does not exceed 10%; and (b) exhibit a V-2 or better flammability rating when tested to UL 94, Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances.
    - Door overlaps onto jambs and headers.
    - Garage door jambs and headers covered with metal flashing.

24. Exterior doors shall comply with one of the following:
    1. The exterior surface or cladding shall be of noncombustible material or,
    2. The exterior surface or cladding shall be of ignition-resistant material or,
    3. The exterior door shall be constructed of solid core wood that complies with the following requirements:
       3.1. Stiles and rails shall not be less than 1-3/8 inches thick.
       3.2. Panels shall not be less than 1-1/4 inches thick, except for the exterior perimeter of the panel that shall be permitted to taper to a tongue not less than 3/8 inch thick.
    4. The exterior door assembly shall have a fire-resistance rating of not less than 20 minutes when tested according to NFPA 252 or,
    5. The exterior surface or cladding shall be tested to meet the performance requirements of Section 707A.3.1 when tested in accordance with ASTM E2707 or,
    6. The exterior surface or cladding shall be tested to meet the performance requirements of SFM Standard 12-7A-1.

25. Fire access tunnels shall have two hour rated walls consisting of two layers of 5/8" Type 'X' gypsum wallboard panels on each side of the studs. The EZ Taping Systems "Fire Tape" product or equivalent should be used as an alternative to convention joint tape when:
    1. Two or more layers of listed Type 'X' gypsum wallboard are applied vertically with joints staggered and joints of the face board are":
       a. Tightly butted and taped with EZ Taping Systems "Fire Tape" or equivalent product or

b. Finished with joint compound of EZ Taping Systems “Fire Tape” or equivalent product if the gap between gypsum wallboard panels is visible at the joint.

2. Two or more layers of USG “Sheetrock” Fire code C gypsum wallboard are applied (horizontally or vertically).
3. Gypsum panels shall be attached with Type S drywall screws, placed 8” oc to vertical edges and 12” oc to top and bottom runners and intermediate studs.
4. Fire Tape shall be nominal 2” wide and applied on the vertical joints at studs.

** FAHJ – Fire Authority Having Jurisdiction
SFM – State Fire Marshal
NFPA – National Fire Protection Association

APPENDIX ‘D’

Non-Combustible & Fire-Resistant Building Materials For Balconies, Carports, Decks, Patio Covers and Floors

Examples of non-combustible & fire-resistant building materials for balconies, carports decks, patio covers, and floors are as follow:

I. **NON-COMBUSTIBLE HEAVY GAGE ALUMINUM MATERIALS** - *Metals USA Building Products Group - Ultra-Lattice*



Ultra-Lattice Stand Alone Patio Cover



Ultra-Lattice Attached Patio Cover



Ultra-Lattice Solid Patio Cover



Ultra-Lattice Vs. Wood

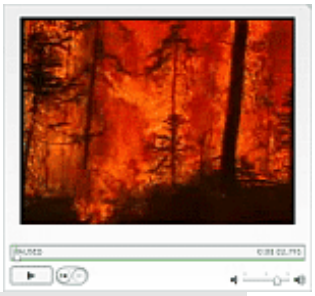
II. FRX Exterior Fire-Retardant Treated Wood

Exterior Fire Retardant Treated (FRT) Wood

FRX® fire retardant treated wood may be used in exterior applications permitted by the codes where: public safety is critical, other materials would transfer heat or allow fires to spread, sprinkler systems cannot easily be installed, corrosive atmospheres necessitate excessive maintenance of other materials, or fire protection is inadequate or not readily available. The International Building, Residential and Urban-Wildland Interface Codes and regulations permit the use of fire-retardant treated wood in specific instances. See below for typical exterior uses and typical residential uses.

Typical Exterior Uses

- Balconies
- Decks



Homeowners and Residential Architects: See this 2-minute video and the diagram below.



For information on fire retardant treated wood for exterior uses, visit www.frxwood.com.

Decking (SFM Standard 12-7A-4)

III. **TREX COMPANY, INC –** "Trex Accents ®: Fire Defense ™" wood and polyethylene composite deck board, nominal 5/4" thick x 5-1/2" width, nominal density of 0.036 lb./in^3.

Trex Accents®: Fire Defense™

The perfect blend of beauty and brawn.

Trex's #1 selling platform, Trex Accents®, exceeds the strict fire regulations set by the State of California and San Diego County.



- Offers superior safety performance:
  - Exceeds ASTM E84 Class B Flame Spread.
  - Exceeds 12-7A-4 Part A (underflame) and Part B (Burning Brand).
- Self-extinguishing even under extreme fire exposure.
- Approved for use by the California State Fire Marshal's Office and San Diego County. Read the California Department of Forestry and Fire Protection, Office of the State Fire Marshal WILDLAND URBAN INTERFACE (WUI)PRODUCTS Report. (PDF)

IV. SOLID “WOOD” DECKING

◊Company Name: Various Manufacturers

Product Description: Solid “Wood” decking: “Redwood”, “Western Red Cedar”, “Incense Cedar”, “Port Orford Cedar”, and “Alaska Yellow Cedar”.

Sizes: Minimum nominal 2” thickness (American Softwood Lumber Standard PS 20). Lumber grades: Construction Common and better grades for Redwood, 3 Common and better grades for Cedars, and commercial decking or better grades for both Redwood and Cedars.

Special instructions: solid wood decking shall be 3x decking and installed over solid wood joists spacing 24” or less on center with 6x6 columns, 4x10 or 6x8 beams and 4x8 joists.

V. Vents

Examples of Approved Vents

Brandguard



O’Hagin Fire & Ice® Line – Flame and Ember Resistant

An available option for all O’Hagin attic ventilation products, this attic vent not only features all the same design, construction elements and color choices as the O’Hagin Standard Line, but also features an interior stainless-steel matrix that resists the intrusion of flames and embers. This patent-pending attic vent is accepted for use by many local fire officials for installation in Wildland Urban Interface (WUI) zones.



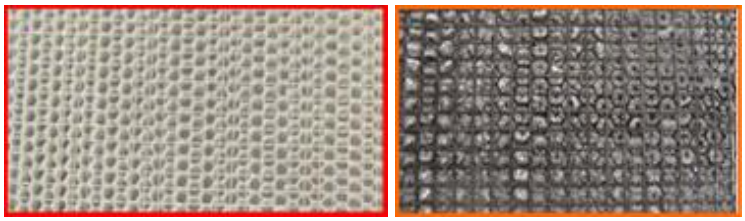
Vulcan Vents

The founders of Gunter Manufacturing have been working closely over the last two years, with the scientists and inventors of Vulcan Technologies to bring to market this incredible product.

Combining our quality vent products with the fire-stopping honeycomb matrix core designed by Vulcan has produced unique and remarkable results.

At Gunter manufacturing we have over 50 years combined sheet metal manufacturing experience. Special orders are not a problem. Our vent frames are industry standard frames so there is little or no learning curve for installers and contractors. Our goal is to provide people with the vents they need to secure their homes with additional safety against wildfires and give them piece of mind from knowing that their home is protected by a product that works!

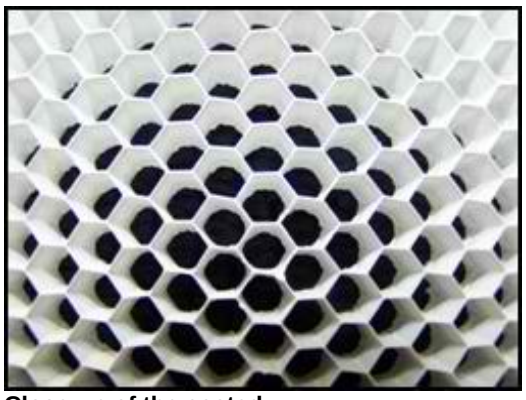
The core of our fire and ember safe vents are manufactured out of hi-grade aluminum honeycomb and coated with an intumescent coating made by FireFree Coatings. The intumescent coating is designed to quickly swell up and close off when exposed to high heat. The expanded material acts as an insulator to heat, fire and embers



Before **After**

After the cells close off, they are extremely well insulated, and fire or embers cannot penetrate.

Even before the cells close off, the vent is designed to protect against flying embers. In many cases embers will attack a home before fire ever comes near, so this feature is very important.



Close-up of the coated honeycomb matrix.





Fire easily passes through a standard vent, on the left, but stops cold when it comes up against a Vulcan Vent shown on right.

APPENDIX E

DEFINITIONS & TERMS USED IN FIRE PROTECTION AND FUEL MODIFICATION PLANS

AASHTO HB-17 – Standard Specifications for Highway Bridges, 17th edition produced by the American Association of State and Highway Transportation Officials.

AIRTANKER – a fixed-wing aircraft that is used to drop either water or a fire retardant on or in the path of a wildfire.

ANSI – American National Standards Institute. Its mission is to enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems and to safeguard their integrity. Standard A300 is utilized in tree care, especially woody plants. The goal of ANSI A300 is to provide performance standards based on current research and sound practice for writing specifications to manage trees, shrubs, and other woody plants.

ASTM – American Society for Texting and Materials.

BRUSH/CHAPARRAL – The predominant plant community in the canyons of southern California and portions of the California Coast Range and foothills of the Sierra Nevada Mountains.

CLASS A FIRE RATING - A class A fire rating is the best fire rating of materials that can be achieved. Class A fire ratings indicate a flame spread rating somewhere between zero and 25 with zero being the that can be achieved. Materials that fall into a Class A rating include things like brick, gypsum wallboard, and fiber cement exterior materials. These materials do not burn well and are very unlikely to contribute fuel to a fire.

CLIMAX VEGETATION – The final stage in ecological plant succession in which a relatively constant environment is reached and species composition no longer changes in a directional fashion, but fluctuates about some mean, or orange, community composition.

COMBUSTIBLE – Any material that, in the form in which it is used and under the conditions anticipated will ignite and burn or will add appreciable heat to an ambient fire.

COMBUSTIBLE VEGETATION – Means material that in its natural state will readily ignite, burn, and transmit fire from native or landscape plants to any structure or other vegetation. Combustible vegetation Includes dry grass, brush, weeds, litter, or other flammable vegetation that creates a fire hazard.

CONDUCTION - Direct transfer of heat by objects touching each other.

CONVECTION HEAT - Transfer of heat by atmospheric currents. This is most critical under windy conditions and in steep terrain.

CROWN - Upper part of tree or other woody plant carrying the main branch system and foliage.

CANOPY – A more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees or other woody growth.

DEAD FUEL MOISTURE – The moisture content of dead organic fuels, expressed as a percentage of the oven dry weight of a sample, that is controlled entirely by exposure to environmental conditions. Dead fuel moistures are monitored in 1-Hr (grass leaves), 10-Hr (fuels 0.24" to 1" in diameter) , 100-Hr (fuels that range between 1-3 inches in diameter) and 1000-Hr (fuels that are in the 3–8-inch diameter class.

DEFENSIBLE SPACE - An area around the perimeter of structures or developments, whether natural or man-made where material capable of allowing a fire to spread unchecked has been treated, cleared, or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.

DRIPLINE - Ground area at the outside edge of the canopy.

DROUGHT TOLERANCE - The ability of a plant or tree to survive on little water.

ENVIRONMENTALLY SENSITIVE AREA - any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activities and development.

EROSION – a geological process in which earthen materials are worn away either gradually or immediate wearing away of the land by water, ice or wind. of a slopes form or stability due to hydraulic action, abrasion, attrition, and solution where water dissolves the underlying rocks.

FINE FUELS - Fuels such as grass, leaves, and draped pine needles which, when dry, ignite readily and are consumed rapidly (also called flash fuels).

FIRE BEHAVIOR – The way a fire reacts to the influences of fuel, weather, and topography.

FIRE BREAK - Removal of growth, usually in strips, around housing developments to prevent a fire from spreading to the structures from open land or vice versa.

FIRE FLOW – the flow rate of a water supply, measured at 20 psi (137.9 kPa) residual pressure, that is available for the responding fire department for manual firefighting, typically that is water that is available at the surround fire hydrants, but can be supplied with another approved source such as a static water supply like a tank or pond, or even using a fire department anker shuttle service.

FIRE HAZARD - refers to the state of the fuel, exclusive of weather or the environs in which the fuel is found.

FIRE HAZARD SEVERITY ZONES – Are geographical areas designated pursuant to California Public Resources Code sections 4201 through 4204 and classified as Very High, High and Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated pursuant to California Government Code sections 51175 through 51189. The California Code of

Regulations, Title 14, Section 1280 entitles maps of these geographical areas as "Maps of the Fire Hazard Severity Zones in the State Responsibility Area of California."

FIRE RESISTANT - Any plant will burn with enough heat and proper conditions. Resistance is often used as a comparative term relating to the ability of a plant to resist ignition.

FIRE RESISTIVE PLANT LIST - List of plants exhibiting characteristics of low fuel volume, fire resistance, and drought tolerance which make them desirable for planting in areas of high fire danger.

FIRE RETARDANCE - Relative comparison of plant species related to differences in fuel volume, inherent flammability characteristics, and ease of fire spread.

FIRE WEATHER – The types of weather that create favorable conditions for the start and spread of wildfires are collectively referred to as fire weather.

FLAME LENGTH – The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

FOEHN WIND – is a type of dry, relatively warm, downslope wind that occurs in the lee (downwind side) of a mountain range. The descending air is warmed and dried due to adiabatic compression producing critical fire weather conditions. Locally called by various names including but not limited to Santa Ana winds, Devil winds, North winds, Mono winds, etc.

FUEL – Any combustible materials, especially petroleum-based products and wildland vegetation.

FUEL BREAK - A wide strip or block of land on which the native or pre-existing vegetation has been permanently modified so that fires burning into it can be more readily extinguished.

FUEL LOAD - The weight of fuels in a given area, usually expressed in tons per acre.

FUEL MODEL – A simulated fuel complex for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

FUEL MODIFICATION PLAN - An approved plan or document which identifies specific fuel modification zones within a property that are subject to fuel modification. Fuel modification plans show the area and location of all hardscape/softscape improvements and fuel modification necessary to achieve the minimum acceptable level of risk to structures from fires in combustible vegetation.

FUEL MODIFICATION ZONE - A specific area where vegetation has been removed, planted, or modified in conjunction with an approved fuel modification plan that increases the likelihood that a structure will survive a wildfire, improve the defensible space around the structure for firefighting activities, and prevents direct flame contact with structures. Vegetation includes native and ornamental plants, non-native naturalized grasses, and other invasive or naturalized species. Fuel modification activities can include removal, partial or total replacement of existing plants with adequately spaced drought-tolerant and fire-resistive species and thinning of existing native or ornamental species.

FUEL MOISTURE CONTENT - The amount of water in a fuel, expressed as a percentage of the oven dry weight of that fuel.

FUEL VOLUME - The amount of fuel in a plant in a given area of measurement. Generally, an open-spaced plant will be low in volume.

FUEL TYPE - An identifiable association of fuel elements of distinctive species, form, size, arrangement, or other characteristics that will cause a predictable rate of spread or resistance to control under specified weather conditions.

GPM – Gallons per minute.

GROUND FUELS - All combustible materials such as grass, duff, loose surface litter, tree or shrub roots, rotting wood, leaves, peat, or sawdust that typically support combustion.

HAZARD REDUCTION – Any treatment of living and dead fuels that reduces the potential spread or consequence of a fire.

HERBACEOUS FUEL MOISTURE - In NFDRS, a calculated value representing the approximate moisture content of the live herbaceous vegetation in the rating area expressed as a percentage of the oven dry weight of the sample

HOA or homeowners' association, a self-governing organization in "common-interest" communities where homeowners collectively pay fees to maintain the units or neighborhood. HOA's are typically run by resident homeowners, unpaid volunteers who are elected to a board of directors that oversees the HOA's management.

HORIZONTAL CONTINUITY - The extent or horizontal distribution of fuels at various levels or planes.

LADDER FUELS - Fuels which provide vertical continuity between strata. Fire is able to carry from surface fuels by convection into the crowns with relative ease.

LITTER -The uppermost layer of loose debris composed of freshly fallen or slightly decomposed organic material such as dead sticks, branches, twigs, leaves or needles.

LIVE FUEL MOISTURE – The moisture content in living plants. All living plants have different physiological properties that dictate how they take in and store moisture from the environment, particularly the soil. The moisture level is highest in the spring following winter precipitation during a period known as green-up. Plants during green-up may not burn to due their high moisture content. Over the course of a fire season, these typically fall to low levels in late summer and fall. The range of moisture content is from 30-300 percent of the plants oven dry weight.

LONG TERM - In perpetuity of the fuel modification plan requirement.

MITIGATION – Action that moderates the severity of a fire hazard or risk.

NATIVE SPECIES – A species which is a part of the original fauna or flora of the area in question.

NATIONAL FIRE DANGER RATING SYSTEM (NFDRS) – A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

NFPA – National Fire Protection Association. A USA based trade association with international members as well. The Association creates and maintains standards and codes that are used by business, local governments, and other organizations to help improve fire safety.

NONCOMBUSTIBLE – Material at which no part will ignite and burn when subjected to fire.

OSFM – Office of the state Fire Marshal, supported by CAL FIRE. Mission is to protect life and property through fire prevention engineering programs, law and code enforcement and education.

POA – Property Owners Association, comprises property owners that own property in an area, but those properties can be made up of several different types including but not limited to single-family homes, condos, duplexes, townhouses, and commercial properties. The POA is similar to a HOA. The POA's purpose are long-term development, overall community improvement, and protection of property values.

PROBABILITY OF IGNITION - A rating of the probability that a firebrand (glowing or flaming) will cause a fire, providing it lands on receptive fuels. It is calculated from air temperature, fuel shading, and fuel moisture.

PRUNING – the removal of growth from a plant in order to reduce the fuel load. The material removed may be dead or dying wood, or simply a portion or number of branches of an individual plant.

PSI – Abbreviation for pounds per square inch.

RADIANT HEAT - Transfer of heat by electromagnetic waves which can therefore, travel against the wind. For example, it can preheat the opposite side of a burning slope in a steep canyon or a neighboring home to the ignition point.

RAWS – Remote Automatic Weather Stations (RAWS) are strategically located throughout the United States. RAWS may can be permanently installed or portable solar powered weather stations that provide timely local weather data used primarily in fire management. Weather observations are transmitted at hourly periods via the GOES satellite to the Wildland Fire Management Information System.

RATE OF SPREAD - The relative activity of a fire in extending its horizontal dimensions. It is expressed as rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually, it is expressed in chains or acres per hour for a specific period in the fire's history.

RELATIVE HUMIDITY – The ratio of the amount of moisture in the air, to the maximum amount of moisture that air would contain if it were saturated.

RISK – The measure of the probability of a fire starting as determined by the presence and activity of causative agents. Natural causes include volcanic eruption and lightning. Risk also

results from an exposure to a wildland fire (direction flames, radiant heat, or firebrands (embers).

SANTA ANA WIND – Strong, extremely dry downslope winds that originate inland and affect coastal Southern California and northern Baja California. They originate from cool, dry high-pressure air masses in the Great Basin.

SHALL - Indicates a mandatory requirement.

SLOPE – Is the variation of terrain from the horizontal; the number of feet, rise or fall per 100 feet, measured horizontally, expressed as a percentage.

SPECIAL MAINTENANCE AREA - Interior/manufactured slope or non-irrigated portions of a community where hazards are not otherwise mitigated. The area is regulated as part of a fuel modification plan and subject to specific fuel modification requirements.

SPOT FIRE – Fire ignited outside the perimeter of the main fire by a firebrand or ember.

SUBDIVISION - A parcel of land that is subdivided to create multiple individual lots for residential purposes in accordance with the State of California Subdivision Map Act.

SURFACE FIRE - Fire that burns loose debris on the surface of the ground, which includes dead branches, leaves, and low vegetation.

TARGET SPECIES - Undesirable species that are generally removed as part of the fuel modification plan (see Attachment 7).

THINNING – cutting and removal of vegetation from the land without disturbance to or destruction of the root system and/or soil surface.

TRAVEL TIME – time enroute to or from an emergency incident.

UL – Underwriters Laboratories. UL is a not-for-profit product safety testing, consulting and certification organization with a global reach and acceptance.

URBAN INTERFACE - That line, area, or zone where structures and other human development meet or intermingle.

VERTICAL CONTINUITY - The proximity of fuels to each other that governs the fire's capability to sustain itself. Vertical continuity applies to the relationship of aerial fuels to surface fuels or fuels low to the ground.

VERY HIGH FIRE HAZARD SEVERITY ZONE (Local Agency) - A geographical area designated in accordance with the California Government Code Section 51179, by a local jurisdiction by ordinance, which contains the type and condition of vegetation, topography, climate and structure density which potentially increases the possibility of uncontrolled fire spread through vegetative fuels threatening life or property. For the purposes of this standard and for Developments municipal code, Local Agency Very High Fire Hazard Severity Zones shall be established based on a finding supported by substantial evidence in the record that the requirements of 51182 are necessary for effective fire protection within the area.

APPENDIX ‘F’

FIRE PROTECTION PLAN MAP EXHIBIT

The following two pages contain the Fire Protection Plan Map Exhibit for the Piraeus Point Project in the City of Encinitas. For fuel treatment zone maintenance, it is highly recommended that either the full-size map or pdf document be used.

FIRE PROTECTION LEGEND

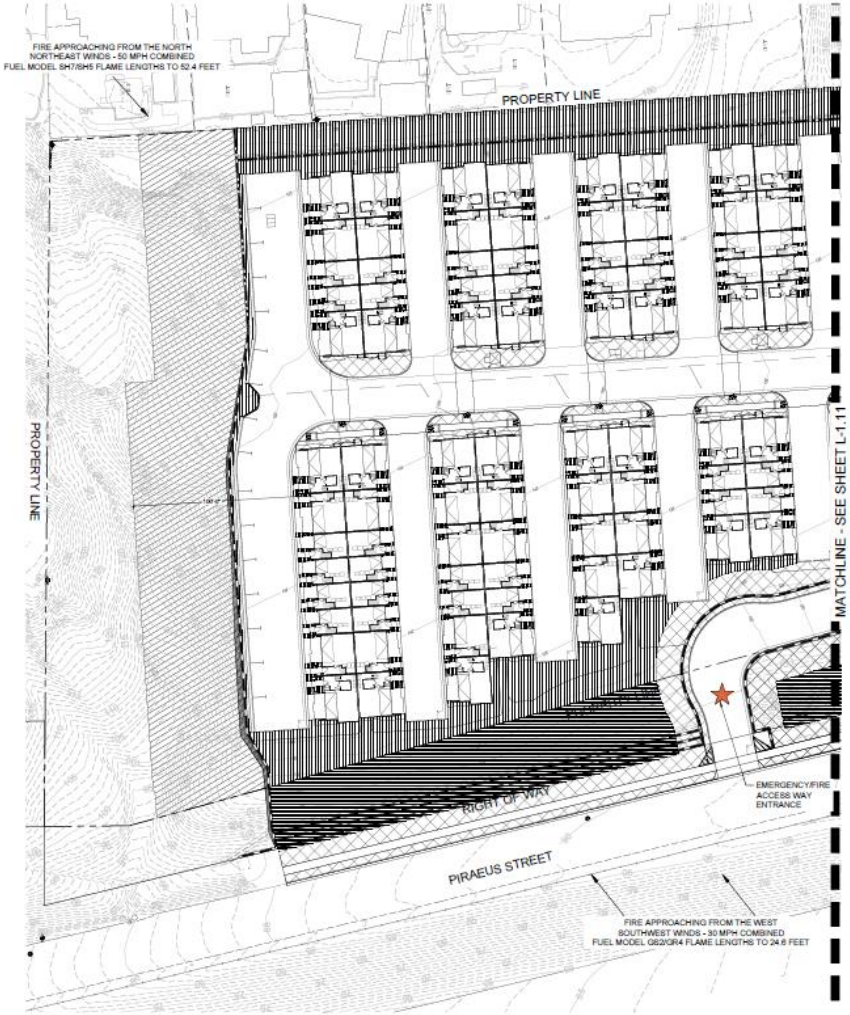
IRRIGATED ZONE 1A (HOA MAINTAINED)
AN IRRIGATED LANDSCAPE ZONE TYPICALLY 50 FEET IN WIDTH FROM EACH STRUCTURE. ONLY PLANTS FROM THE APPROVED CITY OF ENCINITAS PLANT LIST ARE TO BE INSTALLED AND MAINTAINED. ALL COMBUSTIBLE BUILDING MATERIALS INCLUDING COMBUSTIBLE DECKS, PATIO COVERS AND GAZEBOS ARE PROHIBITED IN THIS ZONE. SEE FIRE PROTECTION PLAN FOR DETAILS.

IRRIGATED ZONE 1B (HOA MAINTAINED)
AN IRRIGATED LANDSCAPED ZONE UP TO 50 FEET IN WIDTH THAT IS LOCATED ON THE LANDS THAT ARE PUBLICLY OWNED BUT MAINTAINED BY THE PIRAEUS DEVELOPMENT HOA. IT ALSO INCLUDES MANUFACTURED SLOPES LOCATED MORE THAN 50 FEET FROM A STRUCTURE. SEE ZONE 1A ABOVE FOR FURTHER DETAILS.

THINNING ZONE 2 (HOA MAINTAINED)
AN AREA THAT BEGINS ON THE NORTH SIDE OF THE RETAINING WALL NORTH OF THE NORTHERN BUILDING8 THAT EXTENDS NORTHWARD FOR A DISTANCE OF 100 FEET FROM THE FRONT OF EACH BUILDING FACE. THIS AREA MAY INCLUDE SINGLE OR SMALL CLUSTERS OF TRIMMED FIRE RESISTANCE NATIVE PLANTS UP TO 18 INCHES IN HEIGHT AND TRIMMED NATIVE TREES LIMBED UP TO 6 FEET FROM THE GROUND WHERE 50% OF THE VEGETATION IS REMOVED. SELECTED NATIVE PLANT CLUSTERS MUST BE SEPARATED BY AT LEAST 1 1/2 TIMES MATURE HEIGHT OF THE RETAINED PLANTS. THE GRASSES SHALL BE WEED WHIPPED AND MAINTAINED AT LEAST ANNUALLY TO 4" OR LESS IN STUBBLE HEIGHT ONCE THEY HAVE CURED. SEE FIRE PROTECTION PLAN FOR ADDITIONAL DETAILS.

ROADSIDE FUEL TREATMENT (HOA MAINTAINED)
A MINIMUM OF 20 FEET IN WIDTH ON THE DOWNHILL SIDE AND 20 FEET IN WIDTH ON THE UPHILL OF THE ROADWAY OR DRIVEWAY PRISM THAT IS CLEAR OF ALL COMBUSTIBLE VEGETATION AND LANDSCAPED TO ZONE 1A CRITERIA. THE LAND UPON WHICH THIS ZONE EXISTS MAY BE PRIVATELY OR PUBLICLY OWNED.

EMERGENCY/FIRE ACCESS WAY ENTRANCE



Certified By
4/20/2022, Revised 9/26/2022
Mel Johnson, Certified CUQA Wildland Fire Consultant FIRE WISE2000, LLC. PO Box 339 Lower Lake, CA 95457 (760) 745-3947

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Irvine, CA 92618

PIRAEUS POINT
ENCINITAS, CA # 2021-0513

SEPTEMBER 16, 2022

SCHMIDT DESIGN GROUP

0 15 30 60
SCALE: 1" = 30'-0"

FIRE PROTECTION LEGEND & PLAN

L-1.9

FIRE PROTECTION LEGEND

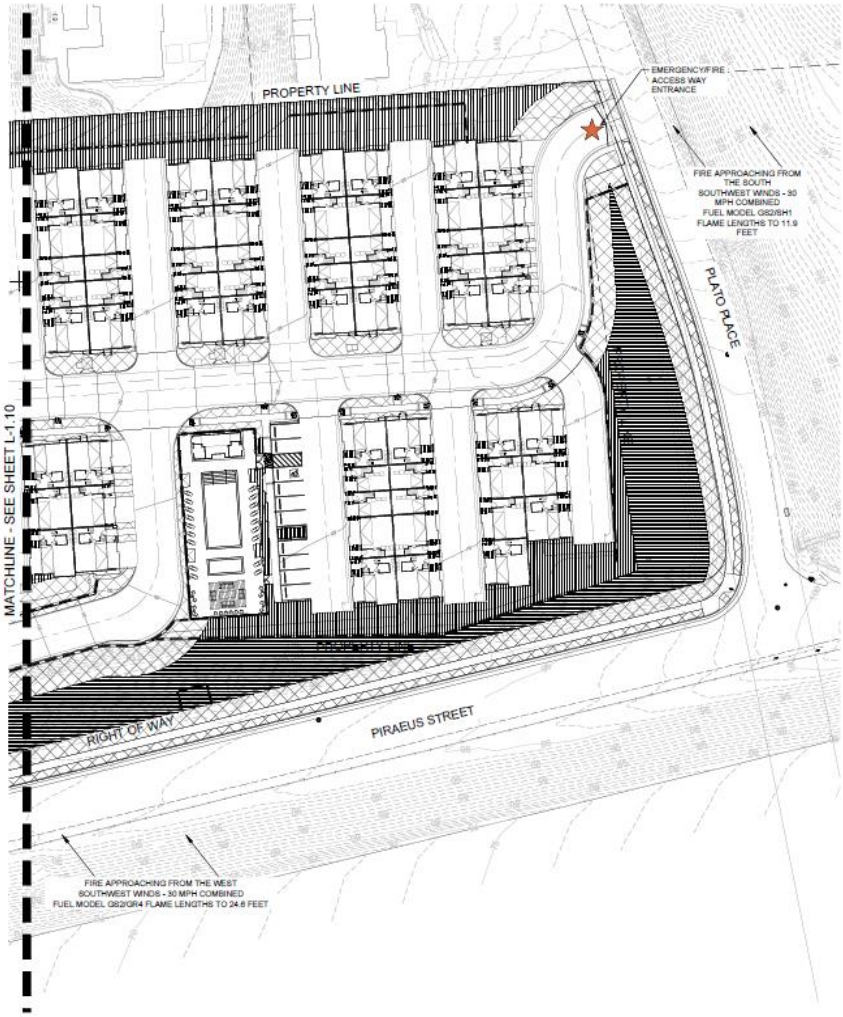
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SCHMIDT DESIGN GROUP

0 15 30 60
SCALE: 1" = 30'-0"

FIRE PROTECTION LEGEND AND PLAN

L-1,10