APPENDIX 2-A: NOTICE OF PREPARATION (NOP) OF A DRAFT ENVIRONMENTAL IMPACT REPORT (EIR) FOR THE PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING PROJECT

City of Pacifica
Notice of Preparation – Environmental Impact Report
Pacifica School District Workforce Housing Project

Date: October 22, 2021

To: State Clearinghouse
State Trustee Agencies
Other Public Agencies
Interested Organizations and Individuals

From: Christopher Dacumos, Consulting Senior Planner
City of Pacifica, Planning Department
540 Crespi Drive
Pacifica, CA 94044

Subject:	Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Pacifica School District Workforce Housing Project
Lead Agency:	City of Pacifica Planning Department
Project Title:	Pacifica School District Workforce Housing Project
Project Location:	City of Pacifica (see Figure 1: Regional Location)
Public Comment Period:	October 22, 2021, through November 22, 2021 (comments due by 5:00 PM)

INTRODUCTION

Notice is hereby given that the City of Pacifica (City), as the Lead Agency, will prepare a project-level Environmental Impact Report (EIR) for the Pacifica School District Workforce Housing Project (proposed project) pursuant to and in accordance with Title 14, Section 15060(d) of the California Code of Regulations, the California Environmental Quality Act (CEQA), and the State of California CEQA Guidelines. The purpose of the Notice of Preparation (NOP) is to solicit input and feedback from the public and regulatory agencies on the project, including project alternatives and environmental impacts. Consistent with Section 15063(a) of the CEQA Guidelines, an Initial Study is not included with this NOP.

The purpose of an EIR is to inform decision-makers and the public of the environmental effects of a project that an agency may implement or approve. The EIR process is intended to provide information sufficient to evaluate a project and its potential for significant impacts on the environment, to examine methods of reducing adverse impacts, and to consider alternatives to the project. In accordance with the requirements of CEQA, the EIR will include the following:

- Project summary;
- Project description;
- Description of the existing environmental setting and potential environmental impacts for each environmental topic, except for effects not found to be significant (CEQA Guidelines Section 15128);
- Mitigation measures proposed to minimize significant effects;
- Alternatives to the proposed project; and
- Environmental consequences, including any significant environmental effects which cannot be avoided if the project is implemented; significant irreversible and irretrievable commitments of resources; growth inducing impacts of the proposed project; and cumulative impacts.

PROJECT LOCATION

The proposed project is located on an approximately 12.49-acre site in the Park Pacifica neighborhood of the City of Pacifica located at 930 Oddstad Boulevard (APN 023-672-600). The site is bounded by Big Bend Drive to the north, Yosemite Drive to the south, Oddstad Boulevard to the west, and a portion of the Santa Cruz mountains and the City's Frontierland Park to the east (**Figure 1: Regional Location**). The site is currently developed with a single-story school building, circulation improvements, recreational fields and courts, parking areas, and landscaping. The site is currently unoccupied as the former Oddstad public elementary school, originally constructed in 1964 and owned by the Pacifica School District, has laid vacant since 2005. Surrounding land uses include single-family residences, a City-

owned and operated public park, and a commercial shopping center approximately one-third (0.33 miles) mile south of the project site at the intersection of Oddstad Boulevard and Terra Nova Boulevard (**Figure 2: Project Vicinity**).

PROJECT DESCRIPTION

Overview

In response to the declining school-age population in the area, the Pacifica School District closed the former Oddstad elementary school in 2005. Since then, the need for affordable housing options for the District's current and future workforce has increased. The project proposes to demolish the existing, non-operational elementary school in order to construct 70 residential units, 11 of which will be below market rate affordable housing units pursuant to the City of Pacifica Municipal Code, as well as community amenities, and other site improvements such as landscaping and parking (**Figure 3: Site Plan**). To accommodate the proposed development, the project will amend the existing General Plan land use designation from Oddstad School to Low Density Residential, which allows for a density range of 3 to 9 dwelling units per acre. In addition, the site's zoning designation will be amended from Single-Family Residential (R-1) to Planned Development District (P-D). Entitlements requested from the applicant include the following, and are collectively referenced as File No. 2020-009:

- General Plan Amendment
- Rezoning
- Development Agreement
- Development Plan
- Specific Plan
- Vesting Tentative Parcel Map

Proposed Plan

The project includes a three-lot subdivision including Lot 1 (5.02-acres), Lot 2 (4.69-acres), and Lot 3 (2.78-acres), totaling 12.49-acres. As proposed, the project will be constructed and implemented in two phases, details of which are discussed below. In addition, the project will preserve approximately 2.13-acres of the site as undeveloped hillside along the eastern property line for defensible space to support fire prevention site design. Building architecture would vary among the four building types: A, B, C, and D (**Figure 4: Building Elevations)**.

Lot 1, approximately 5.02-acres of the southern portion of the site, will include the existing recreational field, parking lots, and basketball courts, allowing for continued recreational use by the community and fulfillment of the project's parkland dedication requirement. The off-street parking for this portion of the site will be accessed via the existing driveway on Oddstad Boulevard, approximately 300 feet north of its intersection with Yosemite Drive.

Phase 1 of the project includes construction of:

- Four residential buildings providing 45 units
    - Building A is two stories with an overall height of 30-feet and has 27 total units comprised of 21 one-bedroom units and 6 two-bedroom units
    - Buildings B1, B2, and B3 are two-stories with an overall height of 25-feet 9 3/4-inches and provide 6 units in each building for a total of 18 units. Each building is comprised of 4 two-bedroom units and 2 three-bedroom units
- Three residential amenity buildings:
    - Community building approximately 1,015 square-feet with an overall height of 20-feet 7 1/8-inches
    - Restroom approximately 800 square-feet with an overall height of 16-feet 5 3/4-inches
    - Office approximately 900 square-feet with an overall height of 23-feet 11 3/4-inches
- Bike storage accommodating parking for up to 18 bicycles
- Refuse enclosure approximately 406 square-feet
- Surface parking with 96 total parking spaces including 53 covered (2 ADA) and 43 uncovered (2 ADA)
- Usable open space
- Landscaping

- Circulation improvements
- retention of the recreational field, parking areas, and basketball court which will be limited to restriping the existing parking areas and basketball courts.

Phase 2 of the project includes construction of:

- Three residential buildings providing 25 units
    - Buildings C1 and C2 are two stories with an overall height of 25-feet 3 3/4-inches and provide 4 units in each building for a total of 8 units. Each building is comprised of 2 two-bedroom and 2 three-bedroom units
    - Building D is two stories with an overall height of 30-feet and has 17 total units comprised of 11 one-bedroom units and 6 two-bedroom units
- Bike storage accommodating parking for up to 18 bicycles
- Refuse enclosure approximately 246 square feet
- Surface parking with 142 total parking spaces including 83 covered (2 ADA) and 59 uncovered (4 ADA) parking spaces
- Usable open space
- Landscaping
- Circulation improvements

Vehicular access to the proposed Phase 1 and Phase 2 residential units will be provided via installation of a new two-way driveway located along Oddstad Boulevard, north of the site's existing driveway.

POTENTIAL ENVIRONMENTAL EFFECTS

The EIR will evaluate the project for potential impacts on the environment and will determine the potential environmental consequences of future change. The proposed project could potentially affect the following environmental factors, each of which will be addressed in the EIR:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural and Tribal Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Transportation and Circulation
- Utilities and Service Systems
- Wildfire

The following environmental factors are expected to be scoped out from further review as part of the DEIR:

- Agricultural and Forestry Resources
- Energy
- Mineral Resources
- Parks and Recreation

The EIR will also include a discussion of cumulative impacts of relevant projects in and around the project area combined with those of the project. An evaluation of project alternatives that could reduce significant impacts will also be evaluated in the EIR, including identification of an environmentally superior alternative consistent with CEQA Guidelines Section 15126.6.

To ensure that the EIR for the project is thorough and adequate and to ensure that the issues of concern to the public and public agencies are addressed, the City is requesting comments and guidance on the scope and content of the EIR from interested public agencies, organizations, and individuals. Public comments on the scope of issues to be evaluated in the EIR are encouraged and should be focused on environmental issues rather than the merits of the project. With respect to the views of Responsible and Trustee Agencies as to significant environmental issues, the

City is seeking information related to reasonable alternatives and mitigation measures that are relevant to each agency's statutory responsibilities in connection with the project.

PUBLIC SCOPING MEETING

A public Scoping Meeting will be held via teleconference on **Thursday, November 4 at 6 p.m.** Public agencies, organizations, and interested members of the public are invited to participate in this meeting and provide verbal or written comments on the proposed project. Please find the instructions for meeting participation below:

Option1: Join from a PC, Mac, iPad, iPhone or Android device:
Please click this URL to join: https://us06web.zoom.us/j/83130778540

Option 2: Join by phone:
US: (669) 900-6833
Webinar ID: 831 3077 8540
International numbers available: https://us06web.zoom.us/u/k2rebXSXM

COMMENTS REQUESTED

If you wish to comment during the NOP comment period, the City is accepting written comments beginning **October 22, 2021** until the close of the NOP comment period at **5:00 p.m. on November 22, 2021.** Comments on the NOP are due no later than the close of the 30-day review period**.**

Please send all written comments to Christopher Dacumos, Consulting Senior Planner, with the City of Pacifica, at the address shown above or email to publiccomment@pacifica.gov with the subject "Pacifica School District Workforce Housing Project EIR". Public agencies providing comments are asked to include a contact person for the agency. Please direct questions about the proposed project to Christopher Dacumos at planner1@ci.pacifica.ca.us or by phone to (707) 655-0370.

FIGURE 1: REGIONAL LOCATION

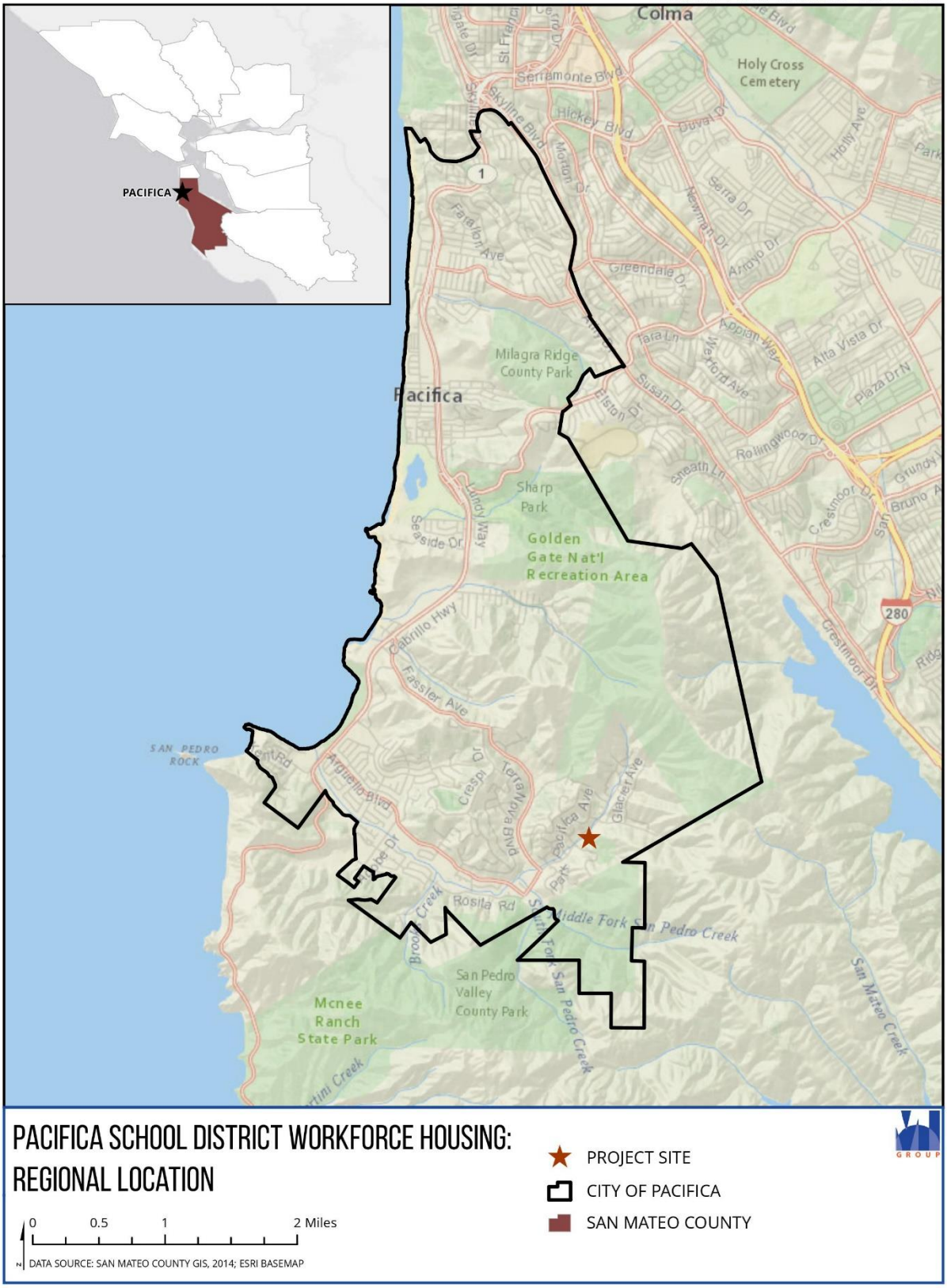


FIGURE 2: PROJECT VICINITY

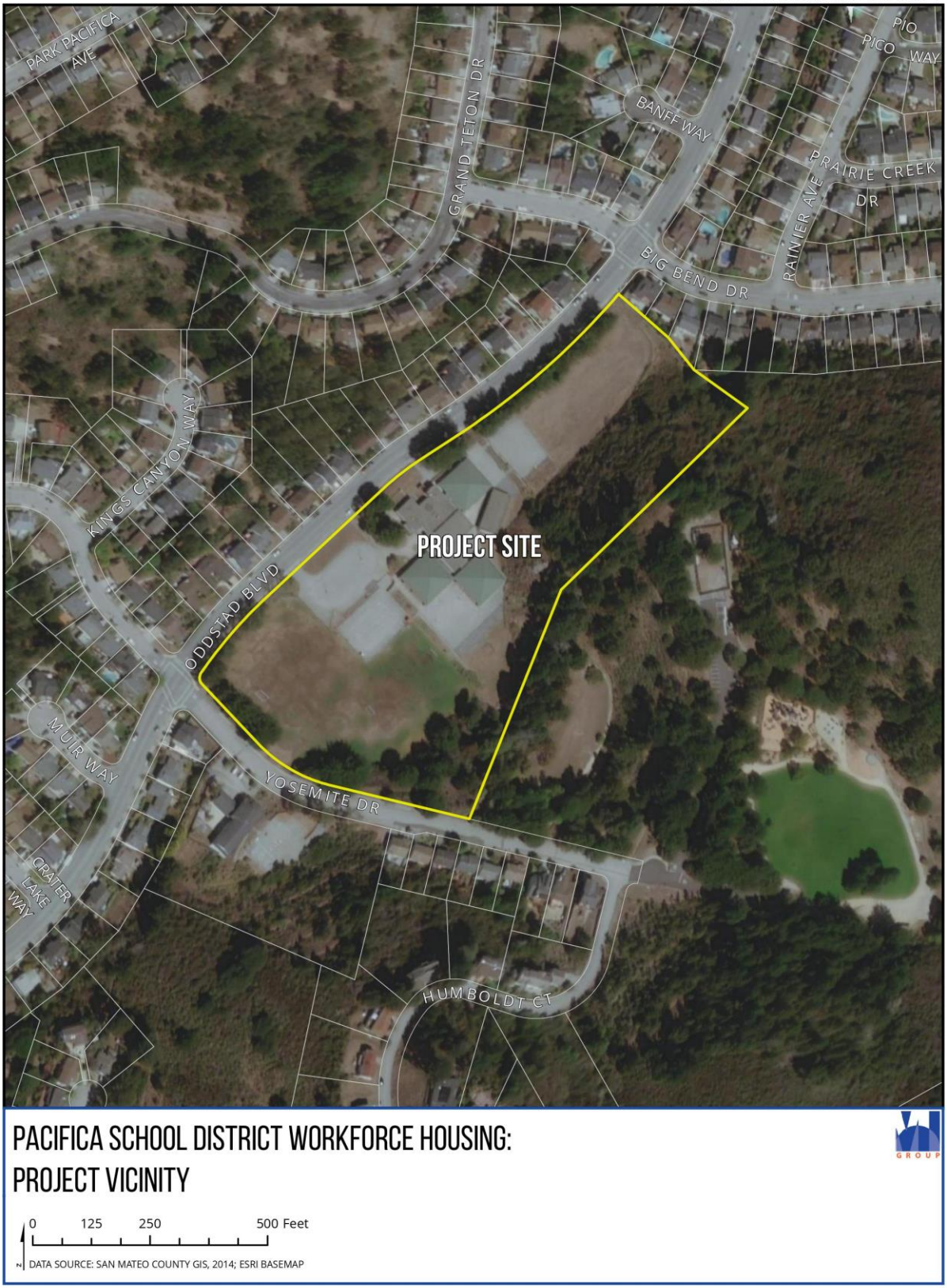


FIGURE 3: SITE PLAN



PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING:
PROJECT VICINITY

0 125 250 500 Feet

DATA SOURCE: SAN MATEO COUNTY GIS, 2014; ESRI BASEMAP

FIGURE 4: TYPICAL ELEVATIONS

Building A



Building B



FIGURE 4: TYPICAL ELEVATIONS (CONT'D)

Building C



Building D



APPENDIX 2-B: NOTICE OF PREPARATION COMMENT LETTERS

NOP Comment Letter: Native American Heritage Commission (NAHC)

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

October 26, 2021

Christopher Dacumos
City of Pacifica, Planning Department
540 Crespi Drive
Pacifica, CA 94044

Re: 2021100457, Pacifica School District Workforce Housing Project, San Mateo County

Dear Mr. Dacumos:

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 (http://ohp.parks.ca.gov/?page_id=1068) 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: Katy.Sanchez@nahc.ca.gov.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Environmental Planner

cc: State Clearinghouse

NOP Comment Letter: Deborah MacDonald, Bruce Lockwood

Pacifica School District WorkForce Housing OPPOSITION!

deborah macdonald <hbmacd@sbcglobal.net>

Mon 11/22/2021 2:55 PM

To: Public Comment <publiccomment@pacifica.gov>; Dacumos, Christopher <planner1@ci.pacifica.ca.us>; woodhouse@pacificaci.pacifica.ca.us <woodhouse@pacificaci.pacifica.ca.us>

[CAUTION: External Email]

I am writing regarding the Oddstad Workforce housing project. When we purchased our home in May2002, the school was operating. We were informed by our realtor that the area was zoned for single family housing and with plans for development when the school was no longer need.
So the bait and switch begins. This was to be used for employees of the school district, that is what has been presented since day one, that seems to be a blatant lie. The plea was housing for the teachers, then for all district employees only, now they are throwing in 11 below low income units. Are they going to also be employees of the school?? If not this was not what the neighborhood was told before the bond was put to the vote of the public, most likely the people in the immediate area would not have voted for it.
The School only needs 66% of seventy units, so 50 units (generous). Who will be renting the other 20 units, again the voters were told this housing was SPECIFICALLY for the Pacifica School District, did some say bait and switch, the voters were mislead I suspect on purpose. The district should be mindful of their activities as the voters have been very supportive over the years for the benefit of schools.
I wonder how a school district that is beyond financially strapped is able to become a property manager. Take a look at our taxes, 44% goes to School bonds or assessments associated with education. The tax payer pays the salary of teachers, the education of the students, and now for the housing of educators. I am under the impression that the units will be all inclusive, PGE, water, and garbage. paid for by the tax payers by way of the bond measures. The costs to the consumer is increasing is the district going to be able to keep up with inflation, doubtful because they have no money to begin with. What happens when the school goes into bankruptcy or is forced to consolidate with an other district because decreased enrollment which is effecting many districts. More and more the private school is becoming an option due to the high income levels of the surrounding areas.
How will the district afford the up keep of such a large project.I suspect it will only be a matter of time before it will be come ghetto, just as many a housing project since the early 1900's. It will bring blight and increased crime, to a very peaceful and treasured neighborhood.Look at SF public housing, not a place I would live, this project is public housing, paid for by the taxpayer, for a specific group of people not LOW income.The city of Pacifica has no stake in the project. Again NO one voted for LOW income public housing in Park Pacifica.
What will be the maximum occupancy of each unit and who will monitor it. It is well known that many cultures have no problem living with extended family. Who will monitor if a 2 bedroom unit, rented to 2 adults with 2 children and after 2 months, in moves Mom and Dad or cousin and his wife and child,or adult children who lost

housing. now we have added potentially 2 more vehicles and we the tax payer are now payer for people not entitled to be living these units
Lets talk traffic, dumping 140 vehicles will have a huge impact on the daily commute, Terra Nova and Fassler are a parking lot in the morning, how can this project have any thing but a negative impact on the neighborhood and our quality of life.
Pacifica aging infrastructure is not capable of supporting the impact to city services and this project is not adding any financial support to the city coffers in the form of taxes
The PSD has said it only need 66% of proposed units. Who rents the rest of the units? What happens to occupants when they leave the district or retire? What if there is not enough employees interest to rent these units? Remember the public narrowly approved this measure for SCHOOL DISTRICT HOUSING needs. not for general public. If it were not for it being school district project neighbors would be in an uproar and the single family zoning change would most likely NOT be approved, knowing the mind set of Pacificans.
I would ask that district not build any more units than necessary, and to maintain 100% school district employees, as proposed at the time of the vote by the public.
I do feel sorry for all of those being forced into indentured servitude by the PSD, and its inability to pay a living wage. I pray that the economy will make it fiscally impossible for this project to proceed and that the quality of life goes unchanged.
Why ruin one neighborhood to accommodate the questionable needs of a few on OUR TAX dollar. The city and state and county need to stop the destruction of single family homes and their neighborhoods, with low income housing and the associated blight. My question is what will be the next in the well crafted bait and switch game, the school district can no longer be taken at its word, they need to remember the age old saying DON'T bite the hand that feeds you, that next assessment or bond may not pass because of deception in the past. If they only need 50 units, keep it at 50 until it is proven that they can indeed house 50 district employees and lose the larger units, if people are so desperate to be housed 2 bedrooms is more than generous, for any government subsidized housing.

Deborah MacDonald
Bruce Lockwood
927 Yosemite Drive
Pacifica CA 650 557 9875

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APPENDIX 3-A: PROJECT DRAWINGS, PREPARED BY BDE ARCHITECTURE, MAY 11, 2021

PACIFICA SCHOOL DISTRICT
WORKFORCE HOUSING

CONCEPT SITE PLAN



VICINITY MAP



PROJECT DESCRIPTION

The site, located at 930 Oddstad Boulevard, currently within the R1-Residential zoning area, is bound by Big Bend Drive to the north, Yosemite Drive to the south, Oddstad Boulevard to the west and a large hill to the east. The planned workforce housing project is proposed to be re-zoned to a Planned Development District (P-D) zoning and shall apply for a General Plan Amendment. The project is to be located in the northern portion of the property extending from the existing school building parking lots to Big Bend Drive. Site elevations vary from approximately elevation 232 feet to the south and 250 feet at the northern end of the site.

The project shall consist of seven (7) craftsman style two-story residential buildings built in two phases: Phase , consisting of 4 buildings with 45 units. Phase 2 consists of 3 buildings comprised of 25 units. The 70 multifamily dwelling units range in size, consisting of 1-bedroom, 2-bedroom, and 3-bedroom flats and townhomes. Four (4) additional 1-story buildings shall serve as the site office, bike storage area and trash staging enclosures associated with the residential use. Two (2) additional 1-story buildings shall serve as a community amenity building with access from the adjoining site. The buildings shall be wood frame and have a mixture of fiber cement lap siding, vertical board and batten and shingle siding with high performance vinyl windows and asphalt shingle roofs. The buildings feature wood trellis canopies and porches. There are 2 landscaped courtyards with seating areas designed to serve the residential areas. Vehicular and pedestrian access and utility service will be from Oddstad Boulevard. The project proposes a single driveway for vehicular access and will provide drive aisles and concrete sidewalks/paths for vehicular and pedestrian circulation. One of the units shall house the on-site property manager.

There are 142 off-street at grade parking spots provided for residents and guests to the facilities along with 36 covered garage spots attached to the townhome buildings. 81 grade parking spots will be provided with carports. A total of 36 covered and secured bike parking stalls are to be provided in 2 bike storage location. All buildings shall be of Type V construction. Existing hardscape areas, softscape areas and existing 1964 school building will be removed to accommodate the proposed development. The existing Monterey Cypress trees along Oddstad Boulevard shall remain with the exception of five (5) trees which will be replaced with the new landscaping.

PROJECT INFORMATION

ZONING: R-1 RESIDENTIAL
APN: 023-672-600
LAND USE: ODDSTAD SCHOOL

TYPE OF CONSTRUCTION
RESIDENTIAL: TYPE VA

CURRENT USE ON SITE
PARKING LOT FOR ADJACENT BUILDINGS

LOT AREA:
TOTAL AREA (LOT2 & 3): 325,479 SF (7.5 AC)

LOT 2 204,275 (4.69 AC)
PROPOSED LOT COVERAGE: 15.60% (31,879 SF)

BLDG A:	14,003 SF
BLDG B1:	4,806 SF
BLDG B2:	4,806 SF
BLDG B3:	4,806 SF
COMMUNITY BLDG:	1,000 SF
PUBLIC RESTROOMS:	712 SF
OFFICE BLDG:	900 SF
BIKE STORAGE:`	385 SF
TRASH:	461 SF
TOTAL:	31,879 SF

LOT 3 121,204 (2.78 AC)
PROPOSED LOT COVERAGE: 14.30% (17,326 SF)

BLDG C1:	3,492 SF
BLDG C2:	3,492 SF
BLDG D:	9,708 SF
BIKE STORAGE:	388 SF
TRASH:	246 SF
TOTAL:	17,326 SF

PROPOSED RESIDENTIAL UNITS:

44 UNITS
26 TOWNHOMES
70

RESIDENTIAL DENSITY: 9.33 DU /ACRE

PARKING
REQUIRED PARKING: 142
PROVIDED PARKING: 142

BIKE PARKING: LONG TERM: 36
SHORT TERM: 6
TOTAL: 42

REQUIRED ACCESSIBLE UNITS

PER SECTION 11B-233.3.1.1: 5% OF TOTAL UNITS TO BE ACCESSIBLE (MINIMUM 1 REQUIRED)

5% OF 70 (UNITS): 3.5 (4) UNITS

LOT ARE PER DWELLING UNIT

MINIMUM LOT AREA PER DWELLING UNIT REQUIRED: 2,075 SQFT

TOTAL LOT AREA PER DWELLING UNIT PROVIDED: 326,824 SQFT / 70 UNITS: 4,668 SQFT

OWNER DESIGN TEAM

OWNER ADVISORS
BROOKWOOD GROUP
50 CALIFORNIA ST. SUITE 1500
SAN FRANCISCO, CA 94111
P: 415.956.5056

OWNER DESIGN CONSULTANT
BDE ARCHITECTURE
934 HOWARD ST.
SAN FRANCISCO, CA 94103
P: 415.677.0966

SEIDEL ARCHITECTS
545 SANSOME ST
SAN FRANCISCO, CA 94111
P: 415.397.5535

OWNER LANDSCAPE CONSULTANT
JETT LANDSCAPE
ARCHITECTURE + DESIGN
2 THEATRE SQUARE, SUITE 218
ORINDA, CA 94563
P: 925.254.5422

OWNER CIVIL ENG. CONSULTANT
BKF ENGINEERS
255 SHORELINE DRIVE, SUITE 200
REDWOOD CITY, CA 94065
P: 650.482.6427

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L2.0	DETAILS AND PRECEDENT IMAGES

PROJECT STATISTICS

Unit Type	A1 (1BR)	B1 (2BR)	TH-B1 (2BR)	TH-B2 (2BR)	TH-C1 (3BR)	TOTALS
SQFT	781	1005	1312	1401	1812	
Ground Floor	15	6	6	10	10	47
2nd Floor	16	7	N/A	N/A	N/A	23
Totals	31	13	6	10	10	70
%	44%	19%	9%	14%	14%	100%

Common Program	
Building	SQFT
Residents' Commons	1000
Public Facility Building	712
Office	900
Bike Storage A	385
Bike Storage B	388
Trash Enclosure A	461
Trash Enclosure B	246
Tenant Storage - BLDG A	1208
Tenant Storage - BLDG B	667

PARKING

Parking Required				
	Uncovered	Covered	Guest	Total
PHASE 1				
A	17	27		44
B1	6	6		12
B2	6	6		12
B3	6	6		12
SUB-TOTAL	35	45	11	91
PHASE 2				
C1	4	4		8
C2	4	4		8
D	12	17		29
SUB-TOTAL	20	25	6	51
Total	55	70	17	142

Compact (30% Of Total Parking)
REQUIRED
27
15
42

Parking Provided						
				ADA		
	Uncovered	Covered	Guest	Covered	Uncovered	Total
PHASE 1						
A						
B1	4	8				12
B2	4	8				12
B3	4	8				12
SITE	29	27		2	2	60
SUB-TOTAL	41	51	0	2	2	96
PHASE 2						
C1	2	6				8
C2	2	6				8
D						0
SITE	10	18		0	2	28
SUB-TOTAL	14	30	0	0	2	46
Total	55	81	0	2	4	142

Compact (30% of Total Parking)
Provided
22
0
22

ALL UNITS TO BE CONSIDERED ASSIGNED UNITS.
2% ACCESSIBLE PARKING OF 142 PARKING SPACES - 3 PARKING SPACES

BUILDING FLOOR AREA

BUILDING A
LEVEL 1: 12,795 SF
LEVEL 2: 13,590 SF

TOTAL: 26,385 SF

BUILDING B1, B2,& B3:
LEVEL 1: 3,194 SF (GARAGE AREA: 1,612 SF)
LEVEL 2: 4,176 SF

TOTAL: 7,370 SF X 3 = 22,110 SF

BUILDING C1 & C2:
LEVEL 1: 2,280 SF (GARAGE AREA: 1,212 SF)
LEVEL 2: 2,862 SF

TOTAL: 5,142 SF X 2 = 10,284 SF

BUILDING D:
LEVEL 1: 8,653 SF
LEVEL 2: 9,684 SF

TOTAL: 18,337 SF

TOTAL BUILDING FLOOR AREA:

BUILDING A: 26,385 SF
BUILDING B1: 7,370 SF
BUILDING B2: 7,370 SF
BUILDING B3: 7.370 SF
BUILDING C1: 5,142 SF
BUILDING C2: 5,142 SF
BUILDING D: 18,337 SF
PUBLIC FACILITY BLDG: 712 SF
RESIDENTS' COMMONS 1,000 SF
OFFICE BLDG: 900 SF
BIKE STORAGE (1&2): 773 SF
TRASH ENCLOSURE (1&2): 707 SF

TOTAL: 81,208 SF

*** Garages, Covered Porches, Tenant Storage Spaces, and Electrical Rooms have been excluded from habitabale gross area calculations.**

TOTAL AREA (LOTS 2 & 3): 325,479 SF
FAR: 81,208 / 325,479 = 0.250

PERCENTAGE OF AREA COVERED PER LANDUSE:

TOTAL AREA OF BUILDING FOOTPRINTS ON SITE: 40,843 SQFT (0.937 ACRE)
TOTAL AREA (LOTS 2 & 3): 325,479 SQFT

(40,843/ 325,479) x 100 = 12.54%

TOTAL AREA OF RECREATIONAL SPACE ON SITE:
i. OUTDOOR SEATING AREA: 1,256 SQFT (0.0288 ACRE)
ii. RECREATION BUILDING OUTDOOR SPACE: 5,762 SQFT (0.1322 ACRE)
TOTAL: 7,018 SQFT (0.1610 ACRE)
TOTAL AREA (LOTS 2 & 3): 325,479 SQFT (7.472 ACRE)

(7,018/ 325,479) X 100 = 2.156%

TOTAL AREA OF CIRCULATION SPACE ON SITE: 20,836 (0.478 ACRE)
TOTAL AREA (LOTS 2 & 3): 325,479 SQFT

(20,836/ 325,479) X 100 = 6.40%

POPULATION DENSITY						
PHASE 1	BUILDING TYPE	UNIT TYPE	AVG. NET SQFT	TOTAL UNITS	MAXIMUM OCCUPANTS	TOTAL OCCUPANTS
	A (FLATS)	1 BED	783	21	2	42
		2 BED	998	6	3	18
	B1 (TOWNHOMES)	2 BED	1,357	4	3	12
		3 BED	1,812	2	4	8
	B2 (TOWNHOMES)	2 BED	1,357	4	3	12
		3 BED	1,812	2	4	8
	B3 (TOWNHOMES)	2 BED	1,357	4	3	12
		3 BED	1,812	2	4	8
SUBTOTAL PHASE 1				45		
PHASE 2	BUILDING TYPE	UNIT TYPE	AVG. NET SQFT	TOTAL UNITS		
	C1 (TOWNHOMES)	2 BED	1,401	2	3	6
		3 BED	1,812	2	4	8
	C2 (TOWNHOMES)	2 BED	1,401	2	3	6
		3 BED	1,812	2	4	8
	D (FLATS)	1 BED	1,401	11	2	22
		2 BED	1,812	6	3	18
SUBTOTAL PHASE 2				25		
TOTAL				70		188

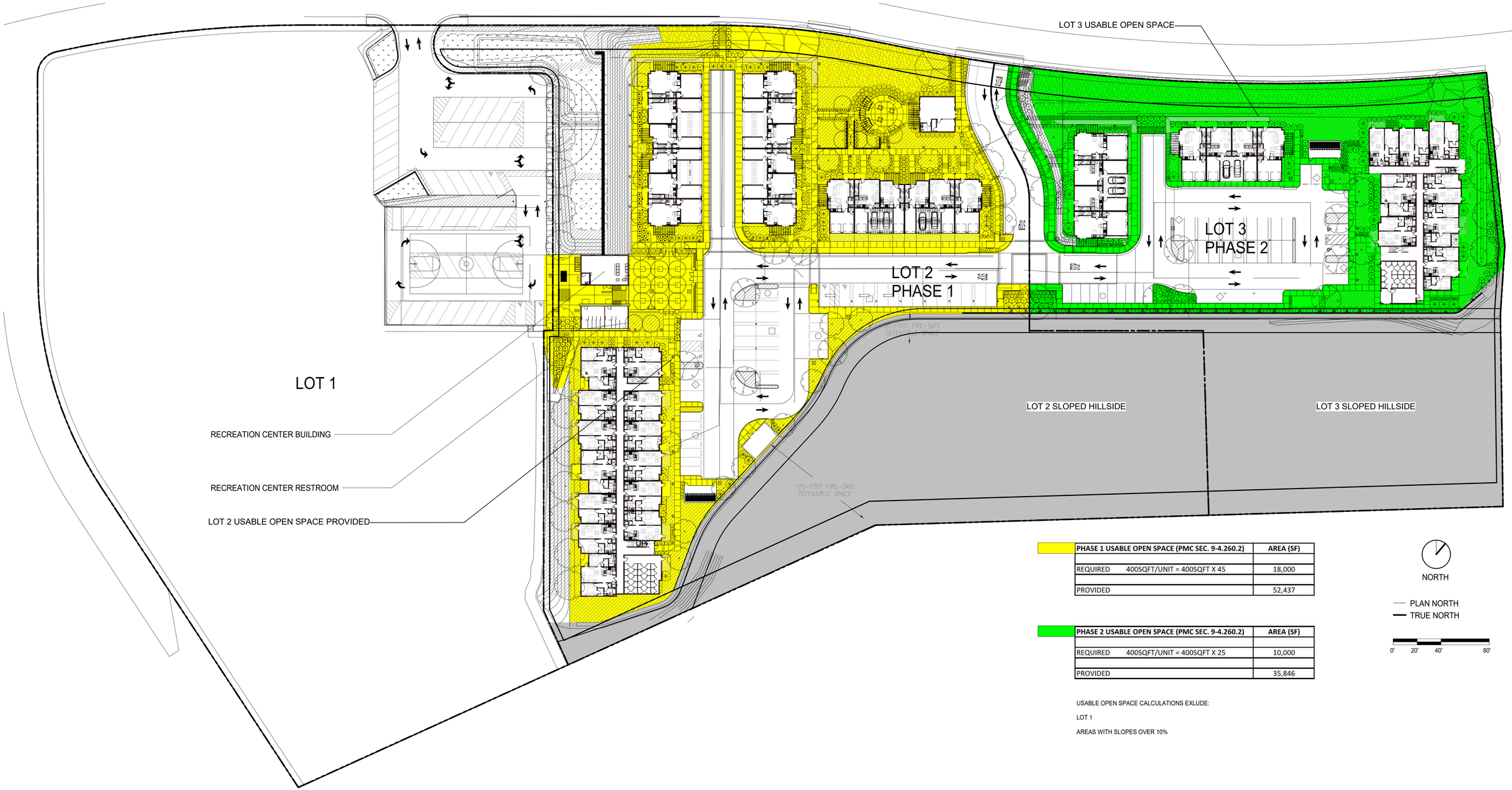
*As per California Health and Safety Code Division 31, Part 1, Chapter 2, 50052.5(h)

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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING

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	PHASE 1 USABLE OPEN SPACE (PMC SEC. 9-4.260.2)	AREA (SF)
	REQUIRED 400SQFT/UNIT = 400SQFT X 45	18,000
	PROVIDED	52,437

	PHASE 2 USABLE OPEN SPACE (PMC SEC. 9-4.260.2)	AREA (SF)
	REQUIRED 400SQFT/UNIT = 400SQFT X 25	10,000
	PROVIDED	35,846

USABLE OPEN SPACE CALCULATIONS EXLUDE:

LOT 1

AREAS WITH SLOPES OVER 10%

NORTH

PLAN NORTH

TRUE NORTH

0' 20' 40' 80'

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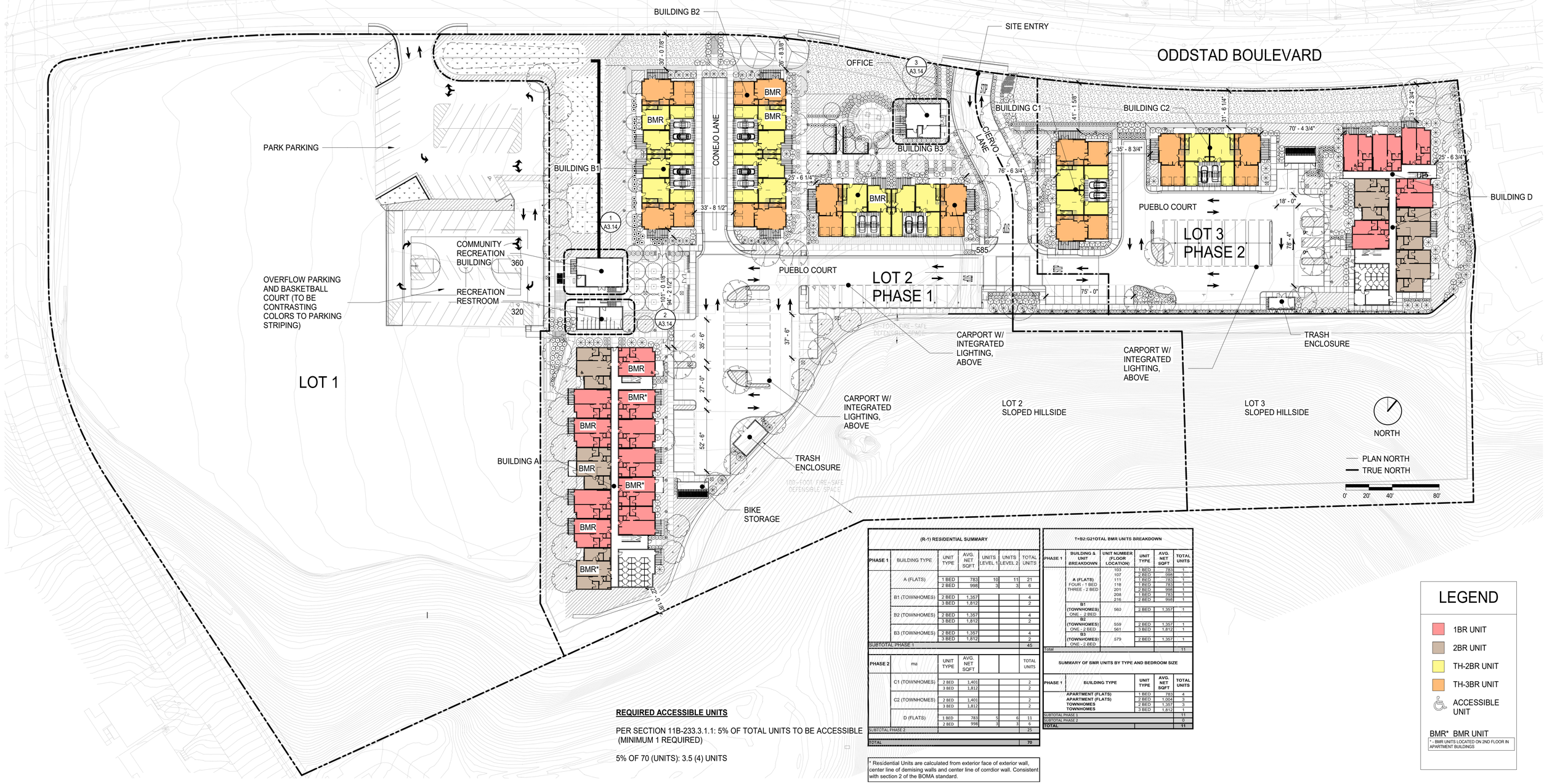
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A0.2

OPEN SPACE AREAS

NOVEMBER 2, 2022

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REQUIRED ACCESSIBLE UNITS

PER SECTION 11B-233.3.1.1: 5% OF TOTAL UNITS TO BE ACCESSIBLE (MINIMUM 1 REQUIRED)

5% OF 70 (UNITS): 3.5 (4) UNITS

(R-1) RESIDENTIAL SUMMARY

PHASE 1	BUILDING TYPE	UNIT TYPE	AVG. NET SQFT	UNITS LEVEL 1	UNITS LEVEL 2	TOTAL UNITS
	A (FLATS)	1 BED	783	10	11	21
		2 BED	998	3	3	6
	B1 (TOWNHOMES)	2 BED	1,357			4
		3 BED	1,812			2
	B2 (TOWNHOMES)	2 BED	1,357			4
		3 BED	1,812			2
	B3 (TOWNHOMES)	2 BED	1,357			4
		3 BED	1,812			2
SUBTOTAL PHASE 1						45
PHASE 2	ma	UNIT TYPE	AVG. NET SQFT			TOTAL UNITS
	C1 (TOWNHOMES)	2 BED	1,401			2
		3 BED	1,812			2
	C2 (TOWNHOMES)	2 BED	1,401			2
		3 BED	1,812			2
	D (FLATS)	1 BED	783	5	6	11
		2 BED	998	3	3	6
SUBTOTAL PHASE 2						25
TOTAL						**70**

T+S2:G21TOTAL BMR UNITS BREAKDOWN

PHASE 1	BUILDING & UNIT BREAKDOWN	UNIT NUMBER (FLOOR LOCATION)	UNIT TYPE	AVG. NET SQFT	TOTAL UNITS
	A (FLATS) FOUR - 1 BED THREE - 2 BED	103	1 BED	783	1
		107	2 BED	998	1
		111	1 BED	783	1
		118	1 BED	783	1
		201	2 BED	998	1
		208	1 BED	783	1
		216	2 BED	998	1
	B1 (TOWNHOMES) ONE - 2 BED	560	2 BED	1,357	1
	B2 (TOWNHOMES) ONE - 2 BED	559	2 BED	1,357	1
		561	3 BED	1,812	1
	B3 (TOWNHOMES) ONE - 2 BED	579	2 BED	1,357	1
Total					11

SUMMARY OF BMR UNITS BY TYPE AND BEDROOM SIZE

PHASE 1	BUILDING TYPE	UNIT TYPE	AVG. NET SQFT	TOTAL UNITS
	APARTMENT (FLATS)	1 BED	783	4
	APARTMENT (FLATS)	2 BED	1,004	3
	TOWNHOMES	2 BED	1,357	3
	TOWNHOMES	3 BED	1,812	1
SUBTOTAL PHASE 1				11
SUBTOTAL PHASE 2				0
TOTAL				**11**

* Residential Units are calculated from exterior face of exterior wall, center line of demising walls and center line of corrdior wall. Consistent with section 2 of the BOMA standard.

LEGEND

- 1BR UNIT
- 2BR UNIT
- TH-2BR UNIT
- TH-3BR UNIT
- ACCESSIBLE UNIT

BMR* BMR UNIT

* - BMR UNITS LOCATED ON 2ND FLOOR IN APARTMENT BUILDINGS

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A1.0
CONCEPTUAL SITE PLAN
NOVEMBER 2, 2022

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JOB SITE: 930 ODDSTAD BOULEVARD

ODDSTAD BOULEVARD

600 CIERVO LANE

SITE ENTRY

CIERVO LANE

CONEJO LANE

562
560
558
556
552
500

561
559
557
555
553
551

575 577 579 581 583 585

PUEBLO COURT

LOT 2
PHASE 1

570

788
786

782
780

PUEBLO COURT

PUEBLO COURT

791 793 795 799

PUEBLO COURT

LOT 3
PHASE 2

PUEBLO COURT

799

281/181 282/182 283/183

286/186 285/185

800 PUEBLO COURT

288/188 287/187

289/189

290

PUEBLO COURT

790

798

360

320

215/115

218/118

211/111

216/116

209/109

212/112

207/107

210/110

100 PUEBLO COURT

208/108

205/105

206/106

203/103

201/101

202

PUEBLO COURT

LOT 1

325

315

310

NORTH

PLAN NORTH
TRUE NORTH

0' 20' 40' 80'

LEGEND

201/101 — UNIT NO. ON 2ND FLOOR / UNIT NO. ON 1ST FLOOR

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A1.1

BUILDING ADDRESS
NOVEMBER 2, 2022

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NORTH

PLAN NORTH
TRUE NORTH

0' 4' 8' 16'

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A2.0

BUILDING A - FIRST FLOOR PLAN
NOVEMBER 2, 2022



NORTH

PLAN NORTH
TRUE NORTH

0' 4' 8' 16'

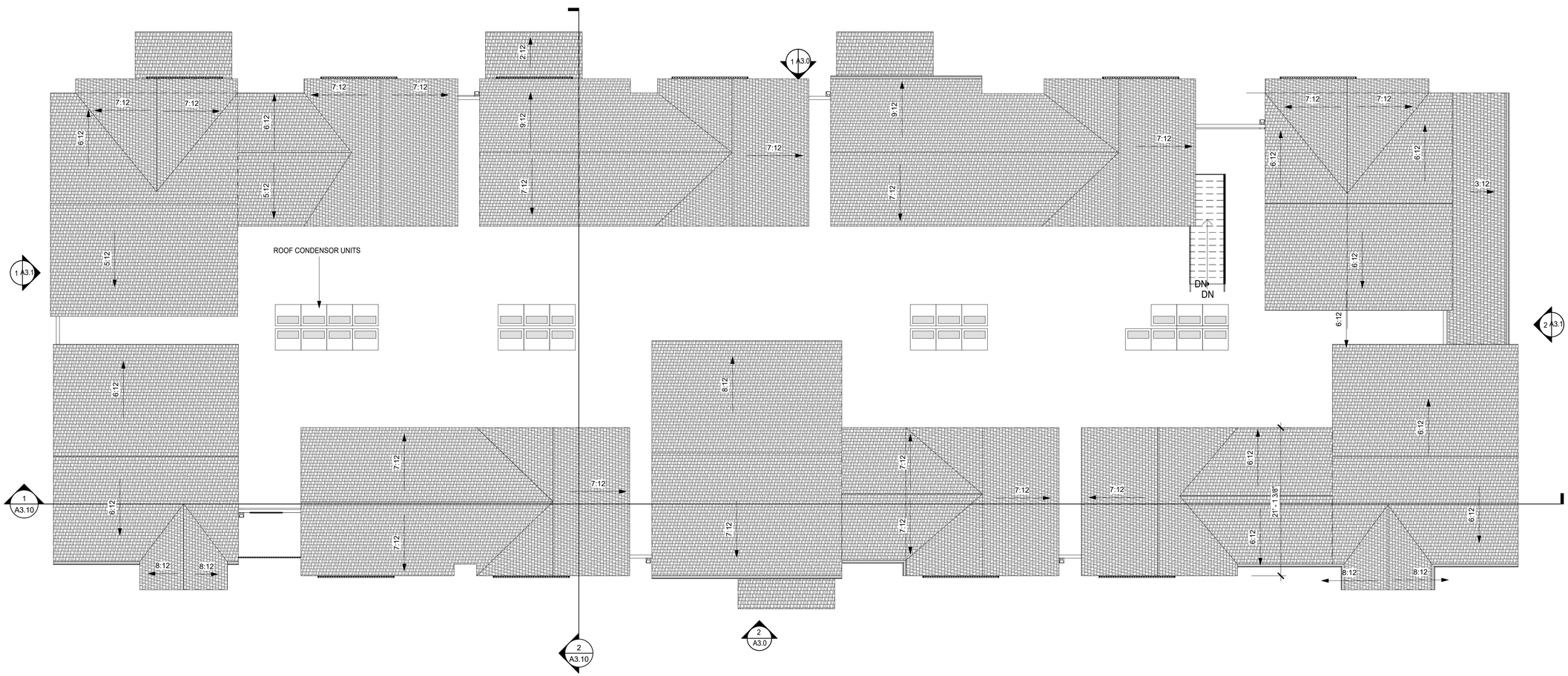
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A2.1
BUILDING A - SECOND FLOOR PLAN
NOVEMBER 2, 2022

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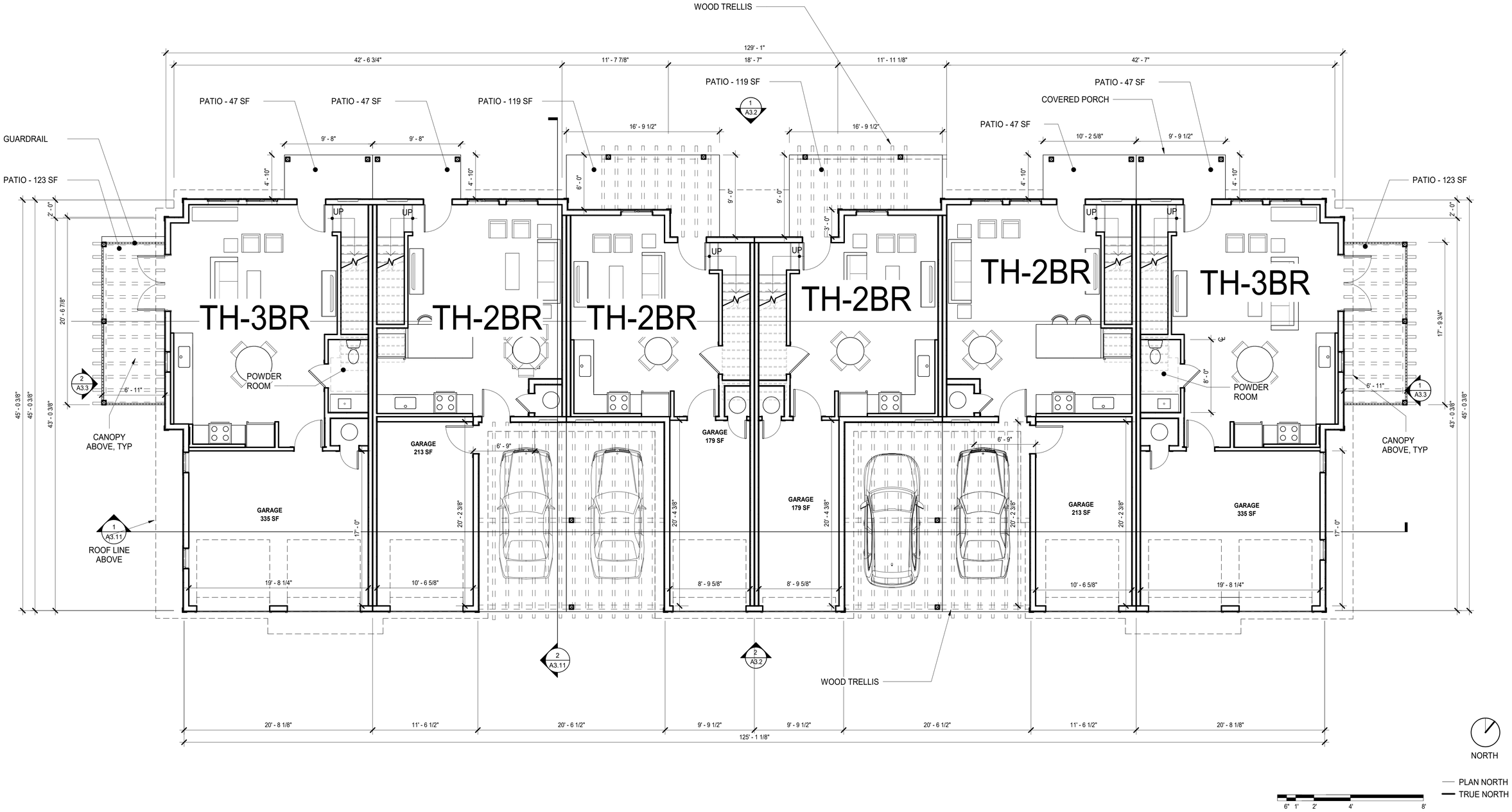
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A2.2

BUILDING A - ROOF PLAN

NOVEMBER 2, 2022

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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING

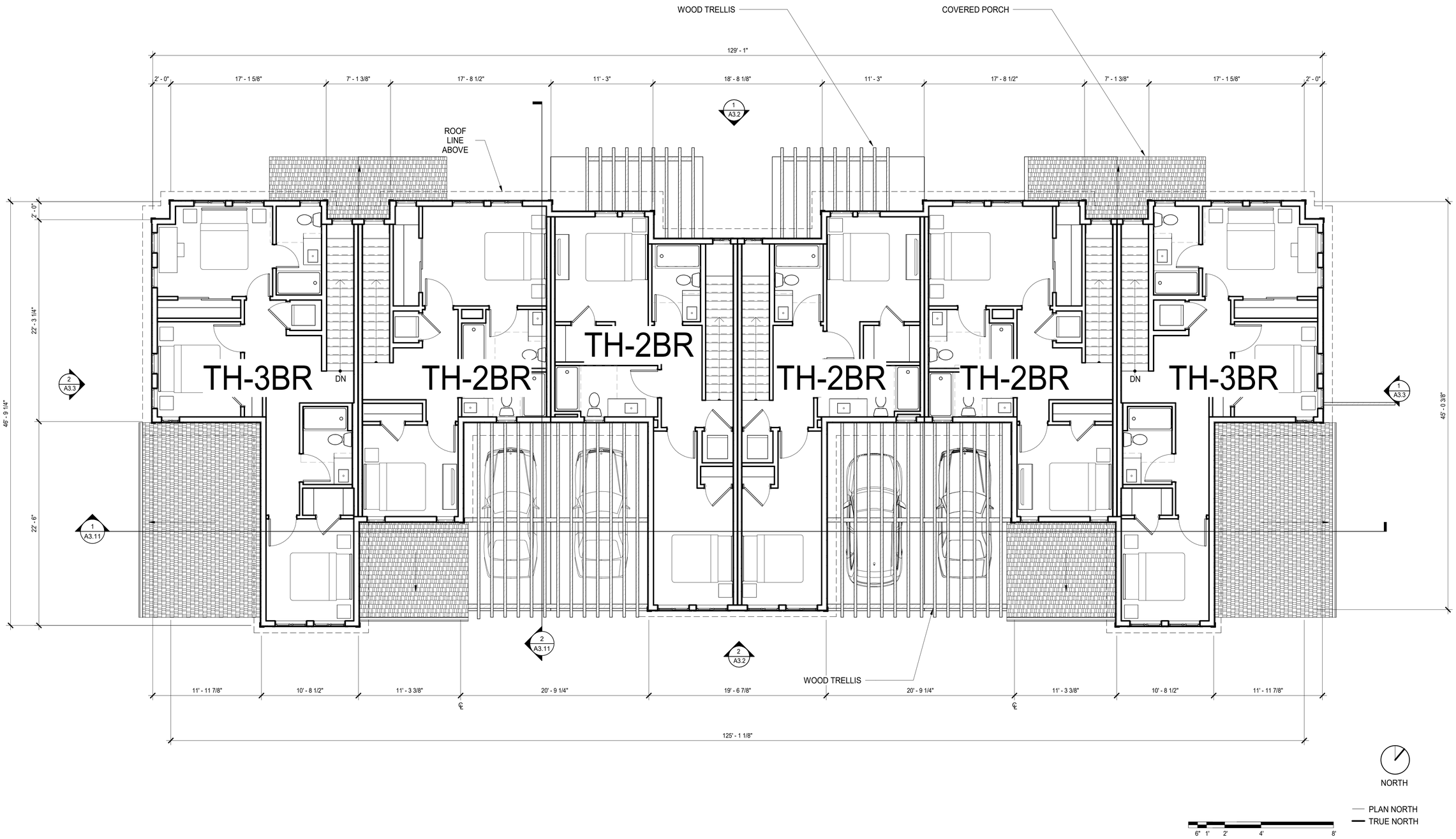
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A2.3

BUILDING B - FIRST FLOOR PLAN

NOVEMBER 2, 2022

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NORTH

PLAN NORTH
TRUE NORTH

6" 1' 2' 4' 8'

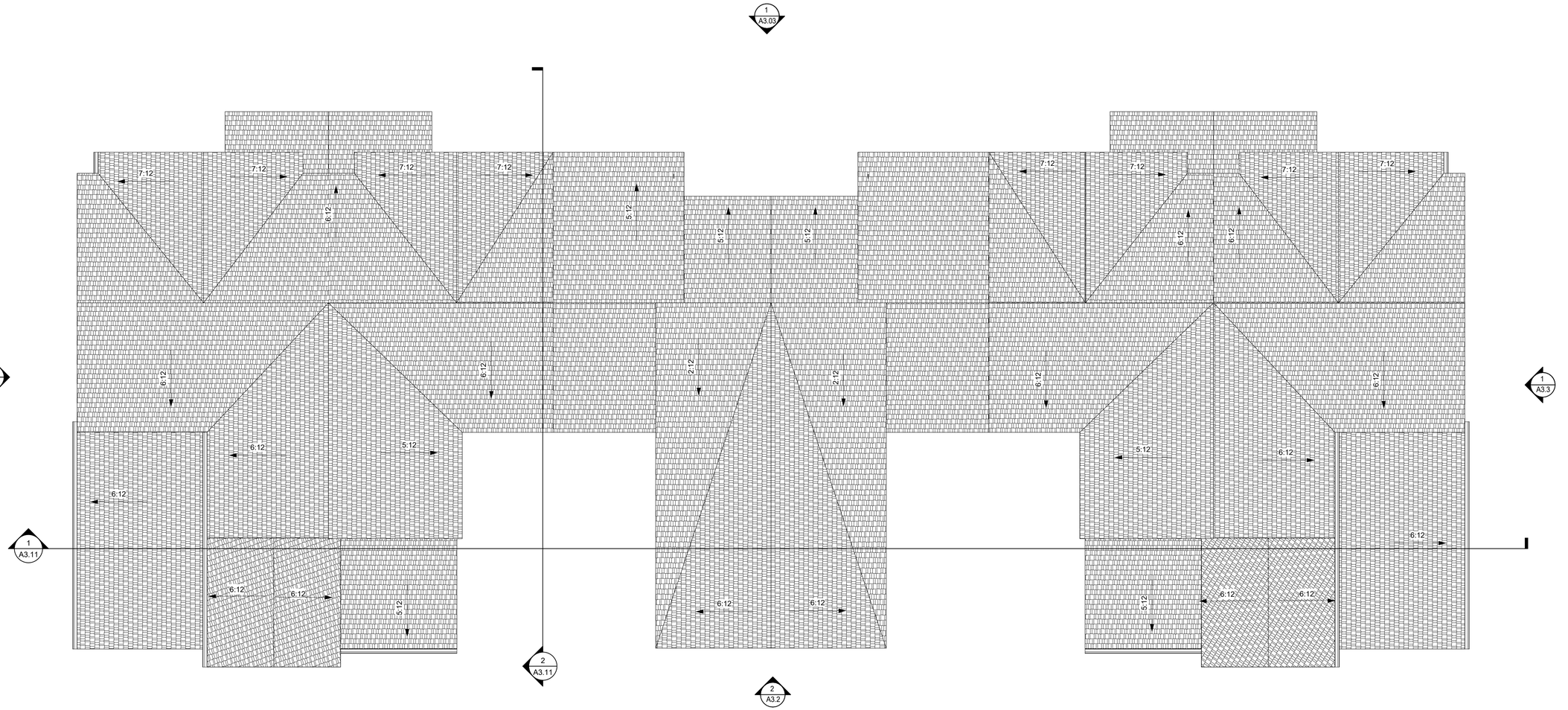
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A2.4
BUILDING B - SECOND FLOOR PLAN
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NORTH

PLAN NORTH
TRUE NORTH

6" 1' 2' 4' 8'

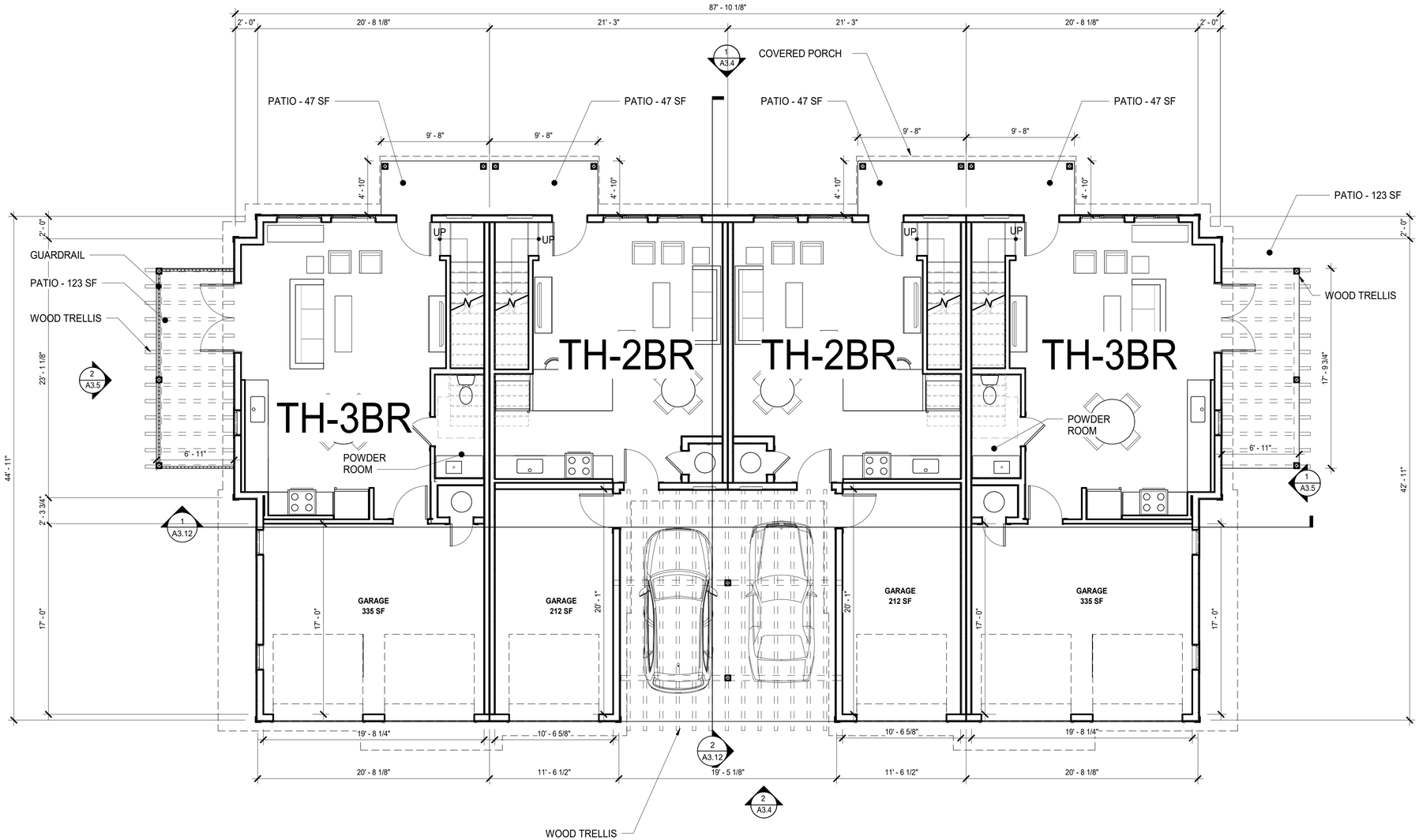
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A2.5
BUILDING B - ROOF PLAN
NOVEMBER 2, 2022

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NORTH

PLAN NORTH
TRUE NORTH

6" 1' 2' 4' 8'

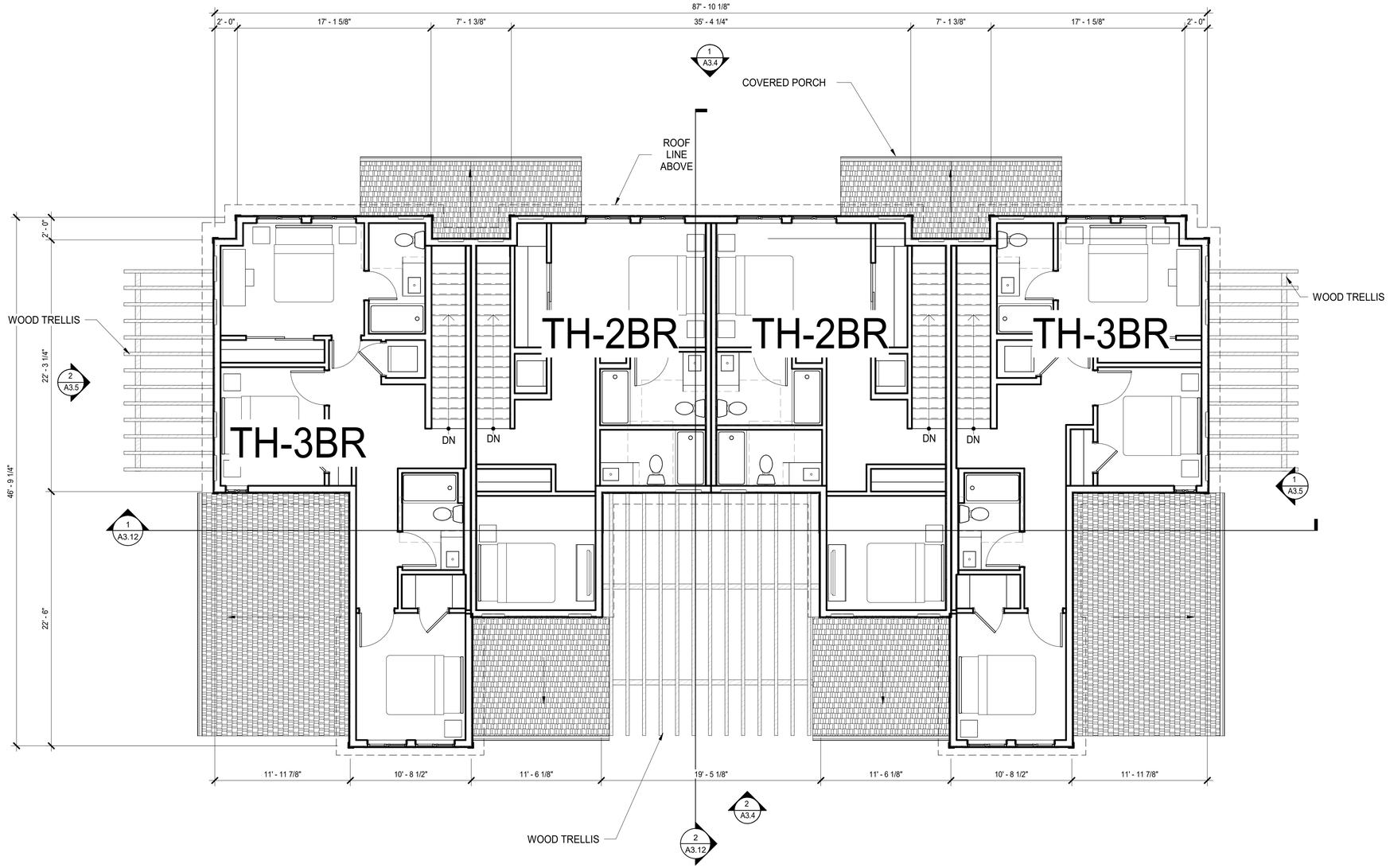
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A2.6
BUILDING C - FIRST FLOOR PLAN
NOVEMBER 2, 2022

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NORTH

PLAN NORTH
TRUE NORTH

6" 1' 2' 4' 8'

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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING

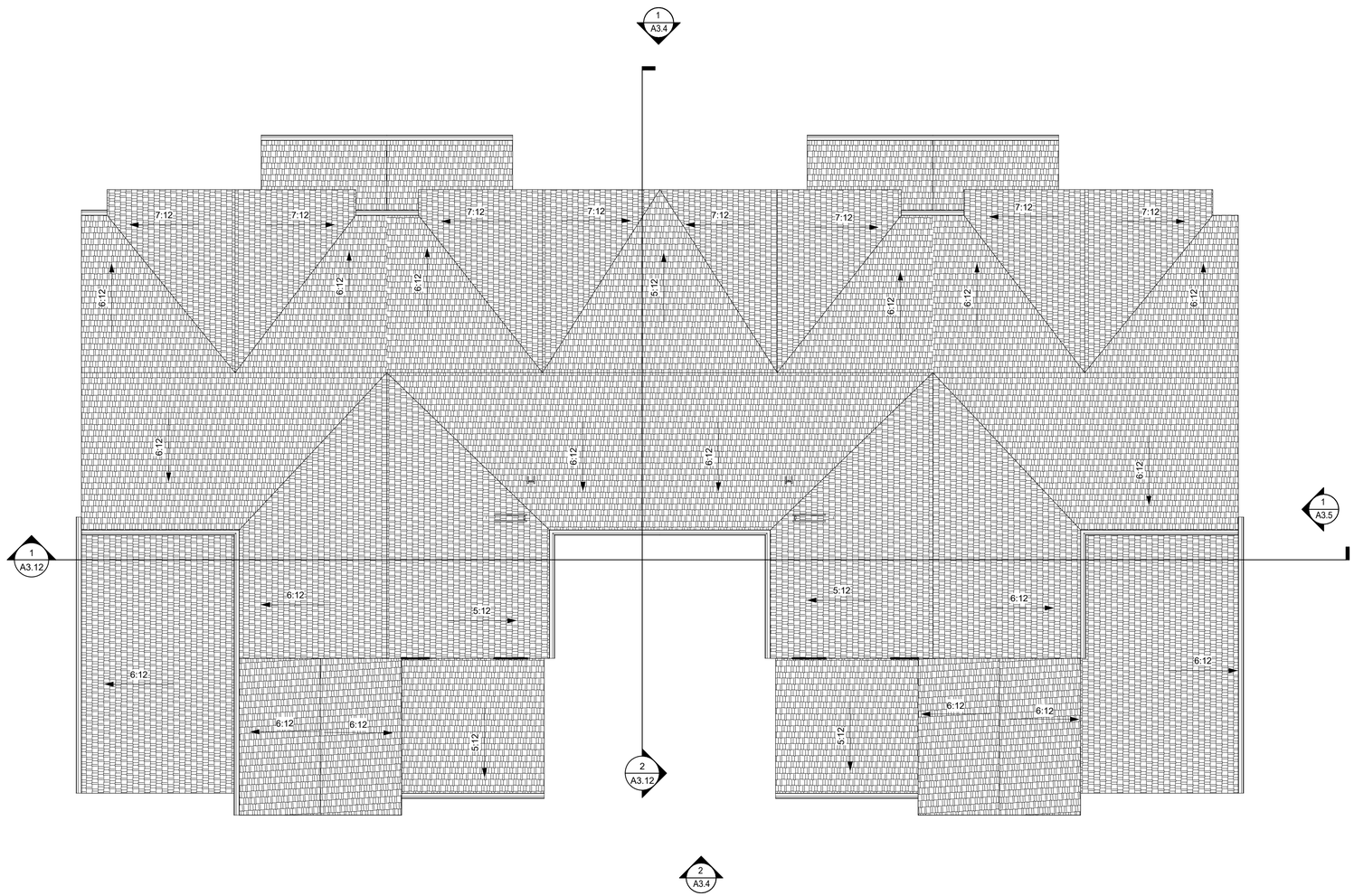
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A2.7

BUILDING C - SECOND FLOOR PLAN

NOVEMBER 2, 2022



NORTH

PLAN NORTH
TRUE NORTH

6" 1' 2' 4' 8'

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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING

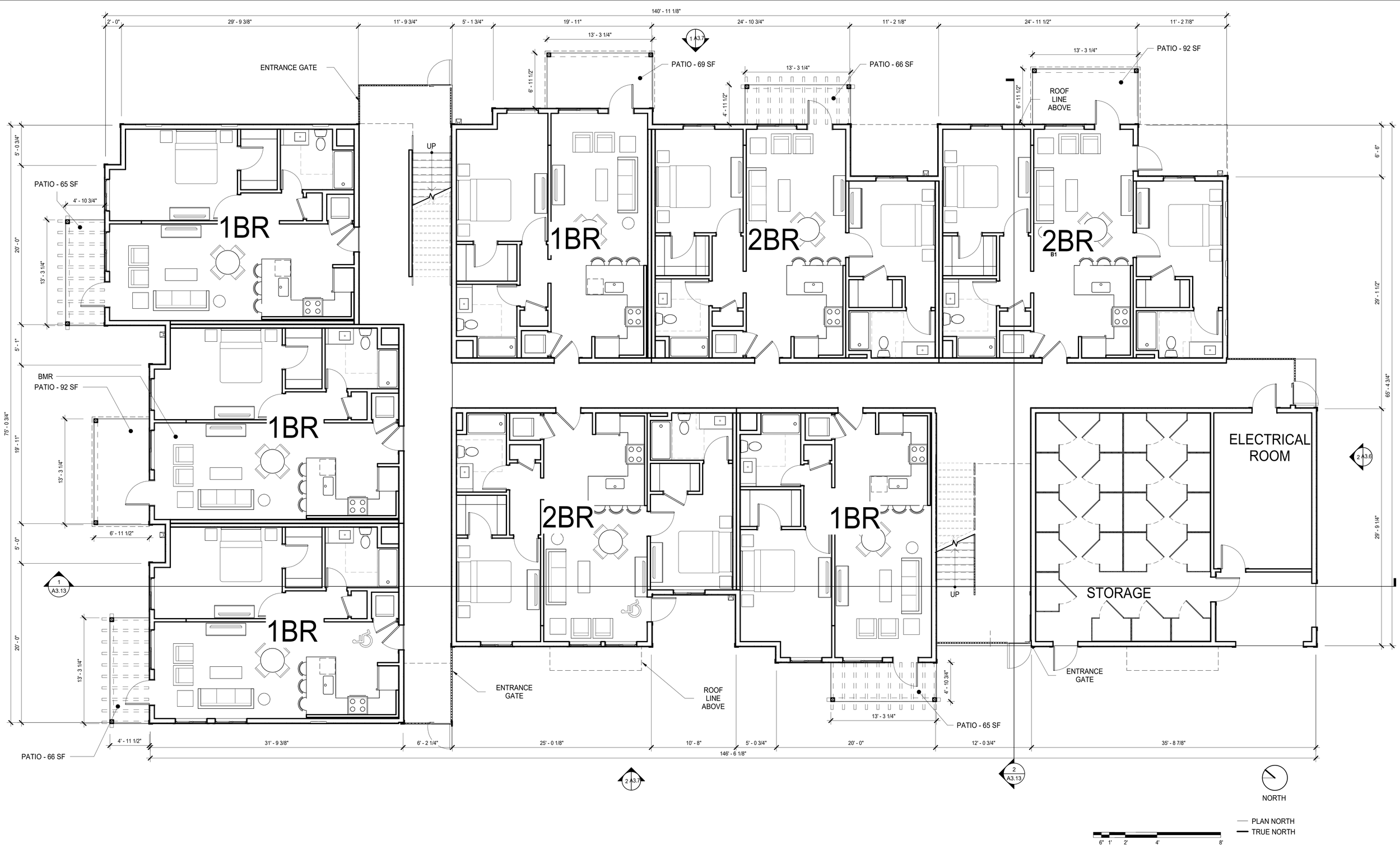
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A2.8

BUILDING C - ROOF PLAN

NOVEMBER 2, 2022

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A2.9

BUILDING D - FIRST FLOOR PLAN

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A2.10

BUILDING D - SECOND FLOOR PLAN

NOVEMBER 2, 2022

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A2.11
BUILDING D - ROOF
NOVEMBER 2, 2022



BUILDING A - WEST ELEVATION 2

1/8" = 1'-0"



BUILDING A - EAST ELEVATION 1

1/8" = 1'-0"

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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING

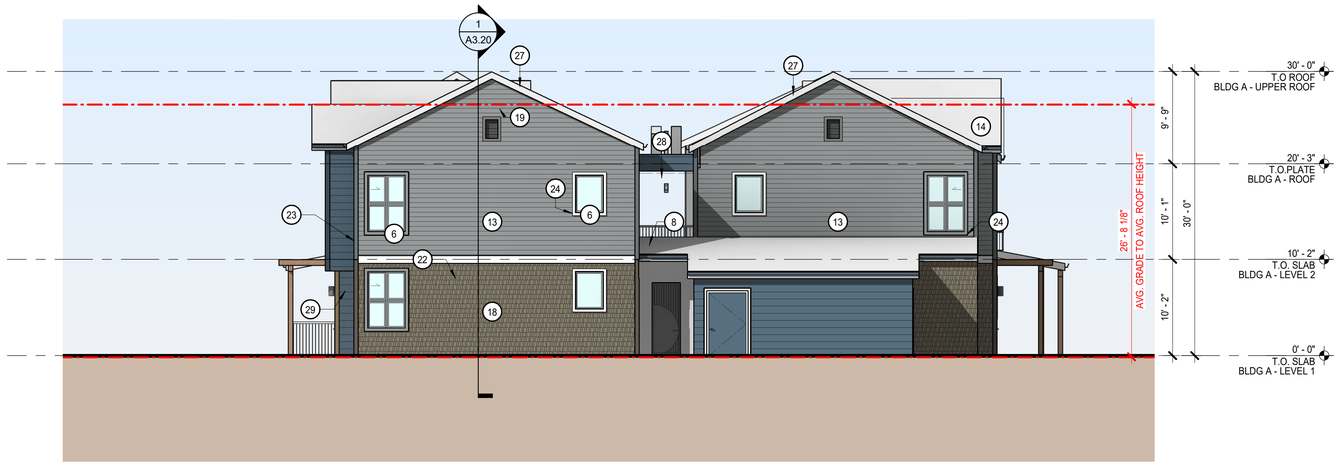
Brookwood Advisors

A3.0

BUILDING A - EAST & WEST ELEVATIONS

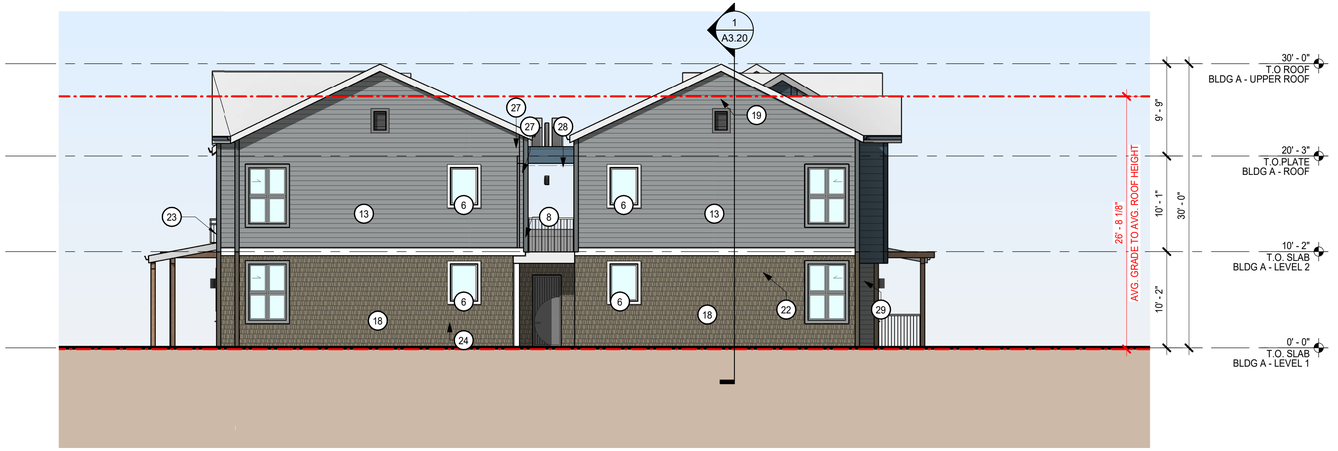
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BUILDING A - SOUTH ELEVATION **2**

1/8" = 1'-0"



BUILDING A - NORTH ELEVATION **1**

1/8" = 1'-0"

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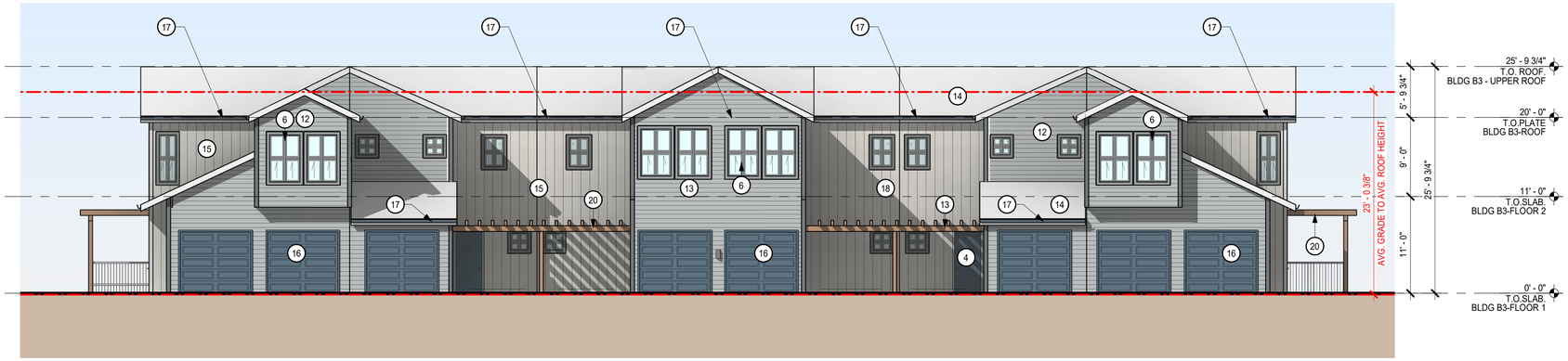
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A3.1

BUILDING A - NORTH & SOUTH ELEVATIONS

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BUILDING B - SOUTH ELEVATION 2

1/8" = 1'-0"



BUILDING B - NORTH ELEVATION 1

1/8" = 1'-0"

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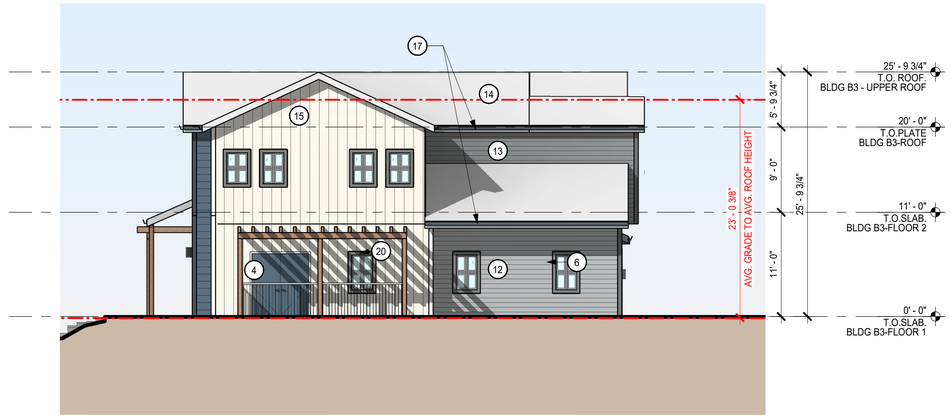
Brookwood Advisors

A3.2

BUILDING B - NORTH & SOUTH ELEVATIONS

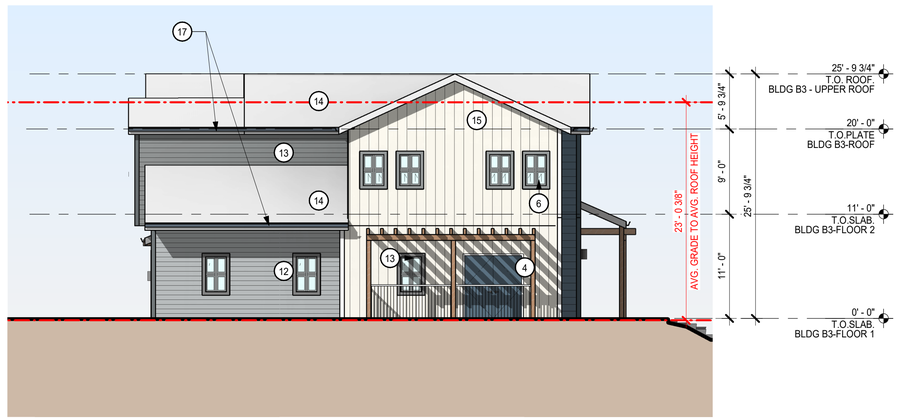
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BUILDING B - WEST ELEVATION 2

1/8" = 1'-0"



BUILDING B - EAST ELEVATION 1

1/8" = 1'-0"

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A3.3

BUILDING B - EAST & WEST ELEVATIONS

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BUILDING C - SOUTH ELEVATION **2**

1/8" = 1'-0"



BUILDING C - NORTH ELEVATION **1**

1/8" = 1'-0"

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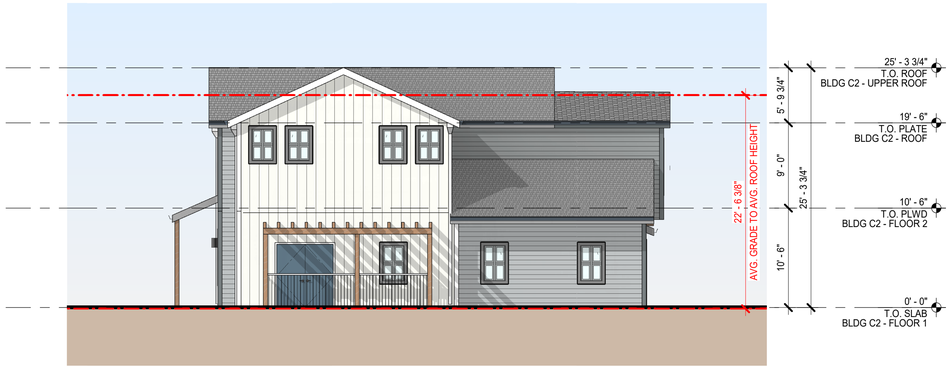
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A3.4

BUILDING C - NORTH & SOUTH ELEVATIONS

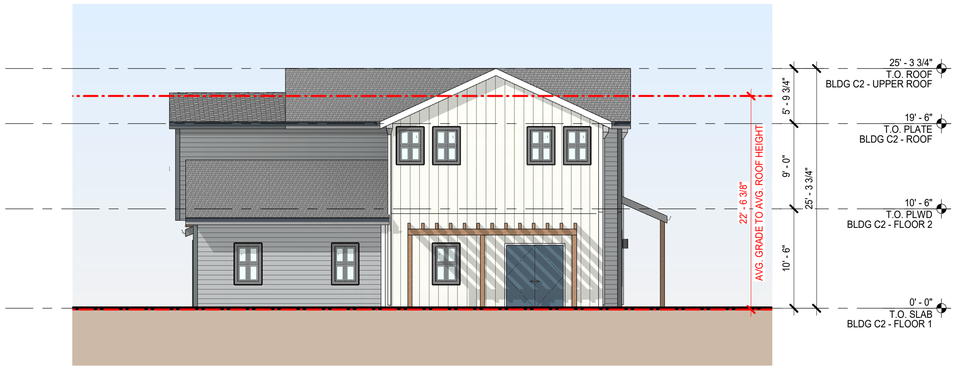
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BUILDING C - WEST ELEVATION 2

1/8" = 1'-0"



BUILDING C - EAST ELEVATION 1

1/8" = 1'-0"

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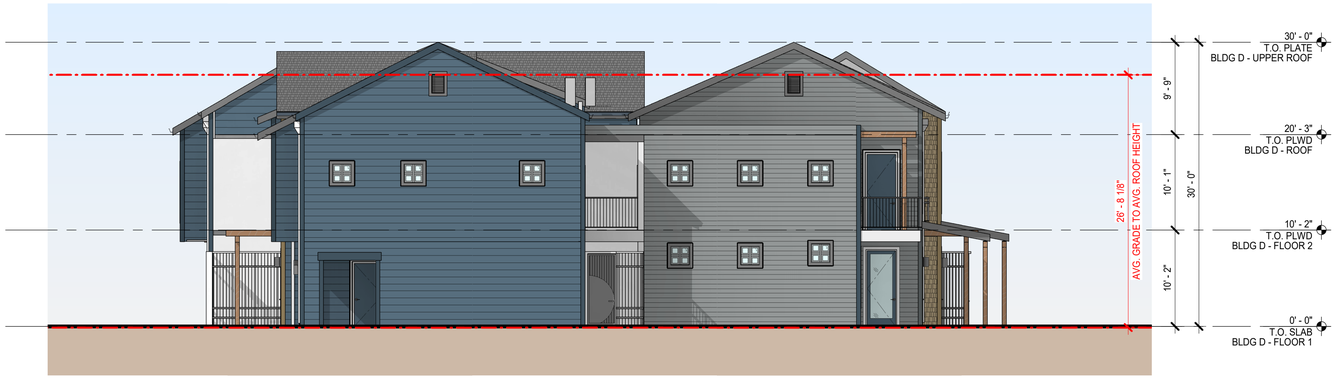
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A3.5

BUILDING C - EAST & WEST ELEVATIONS

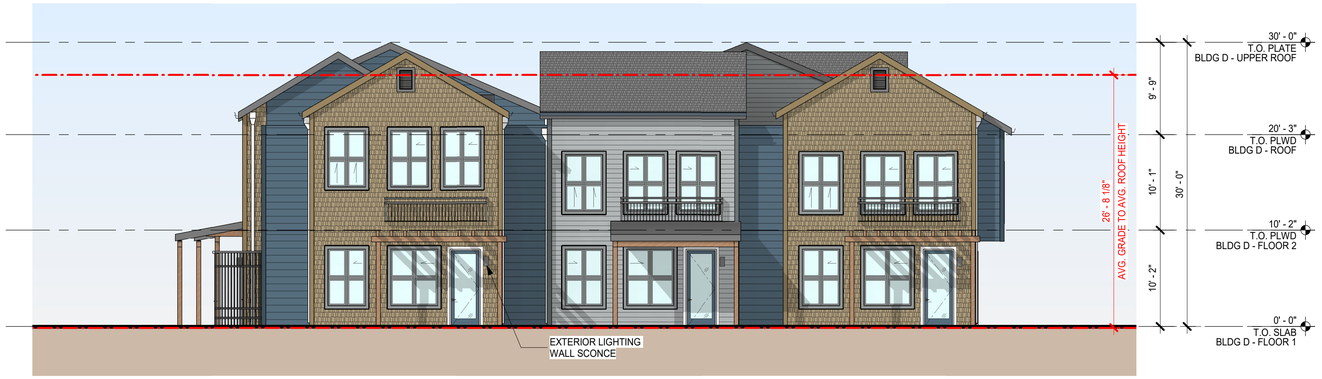
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BUILDING D - SOUTH ELEVATION1 **2**

1/8" = 1'-0"



BUILDING D - NORTH ELEVATION1 **1**

1/8" = 1'-0"

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BUILDING D - WEST ELEVATION1 2

1/8" = 1'-0"



BUILDING D - EAST ELEVATION1 1

1/8" = 1'-0"

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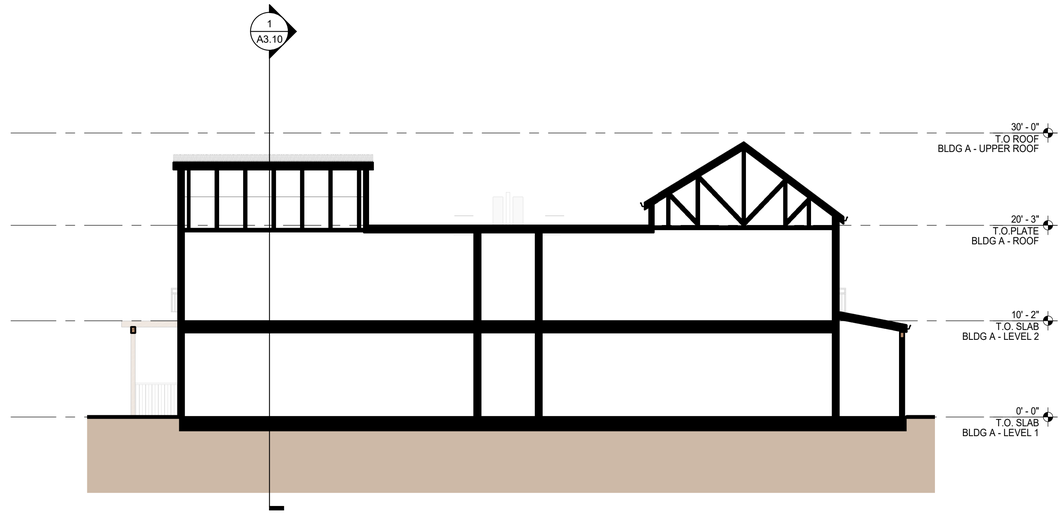
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A3.7

BUILDING D - EAST & WEST ELEVATIONS

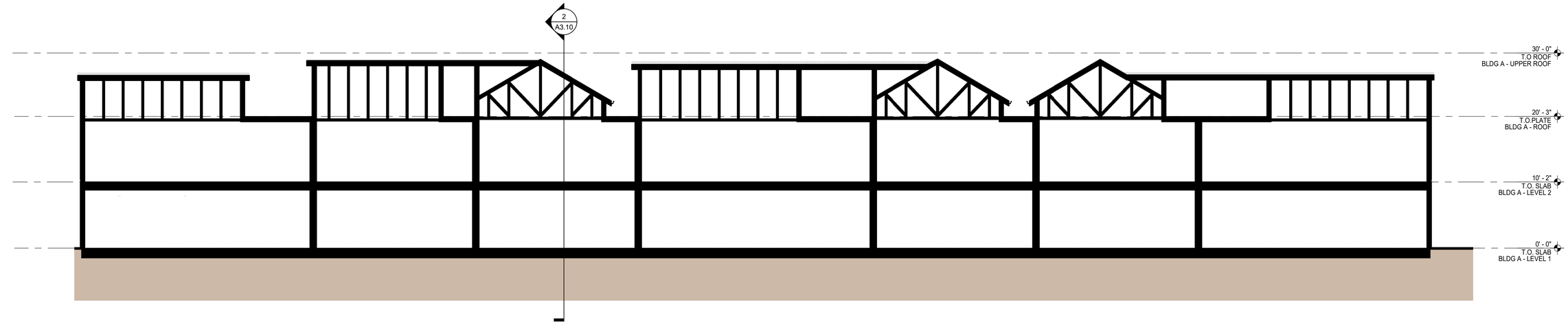
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BUILDING A - SECTION 2

1/8" = 1'-0"



BUILDING A - SECTION 1

1/8" = 1'-0"

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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING

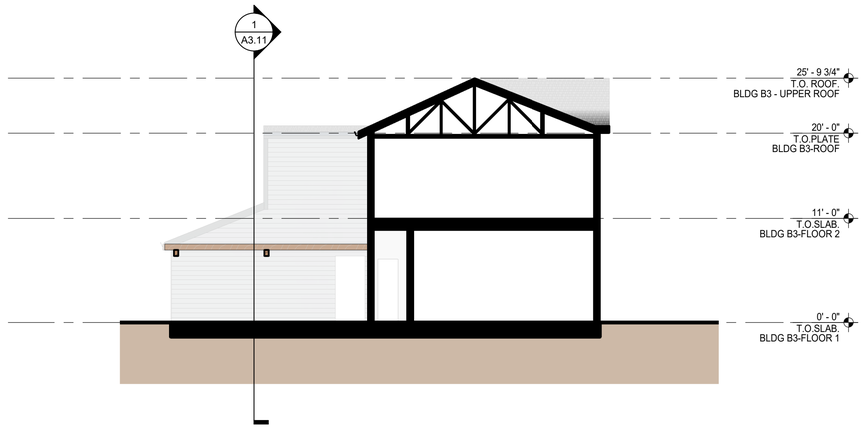
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A3.10

BUILDING A - BUILDING SECTIONS

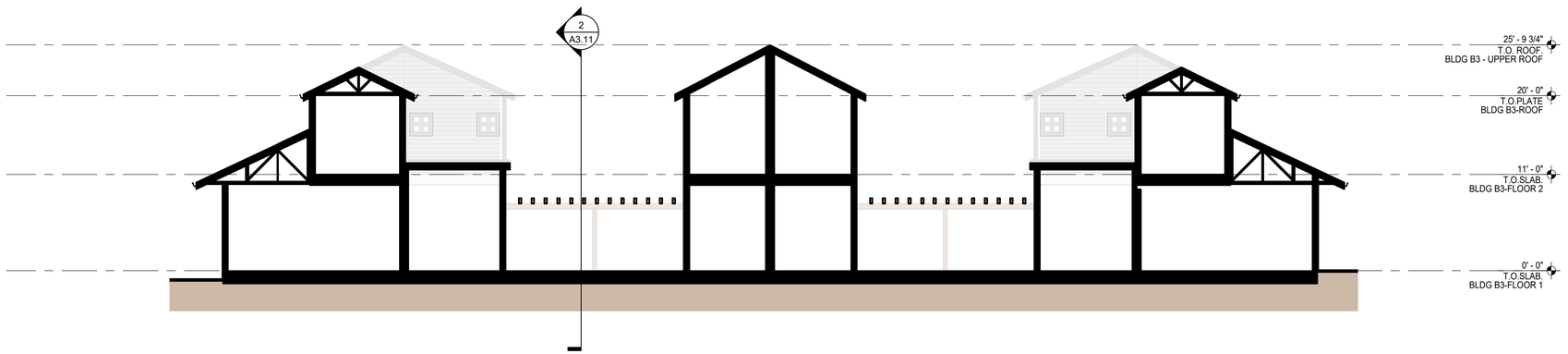
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BUILDING B - SECTION 2

1/8" = 1'-0"



BUILDING B - SECTION 1

1/8" = 1'-0"

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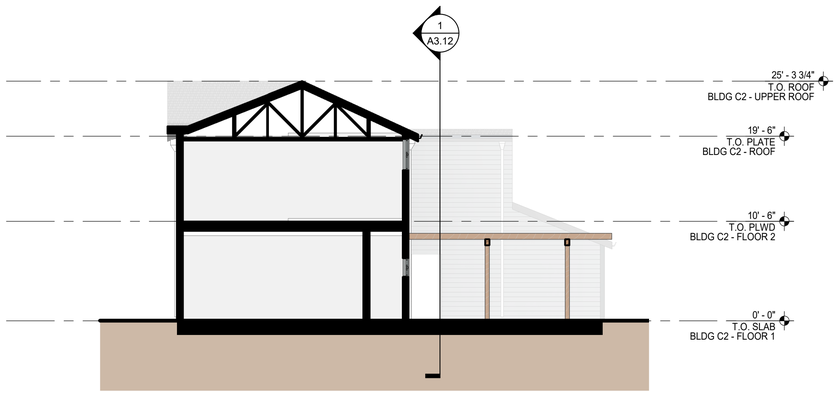
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A3.11

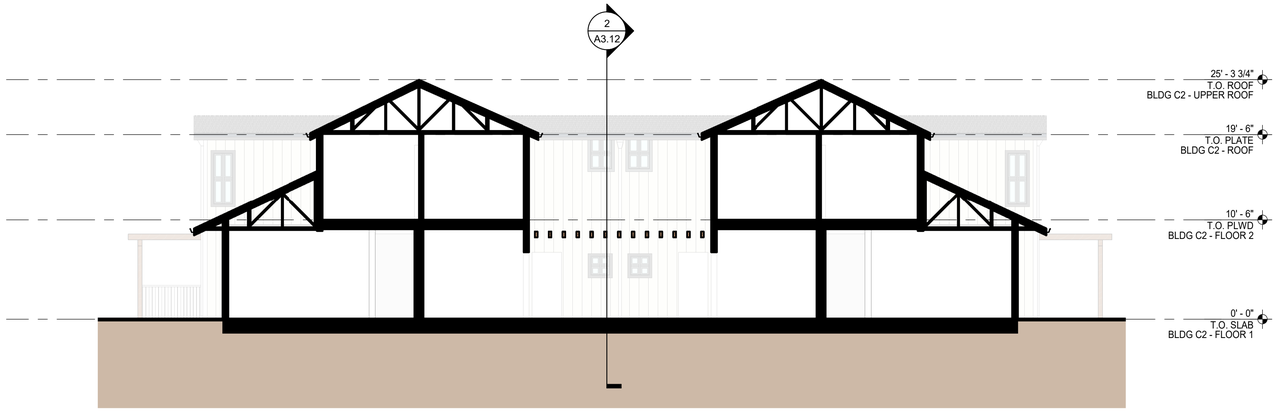
BUILDING B - BUILDING SECTIONS

NOVEMBER 2, 2022



BUILDING C - SECTION 2

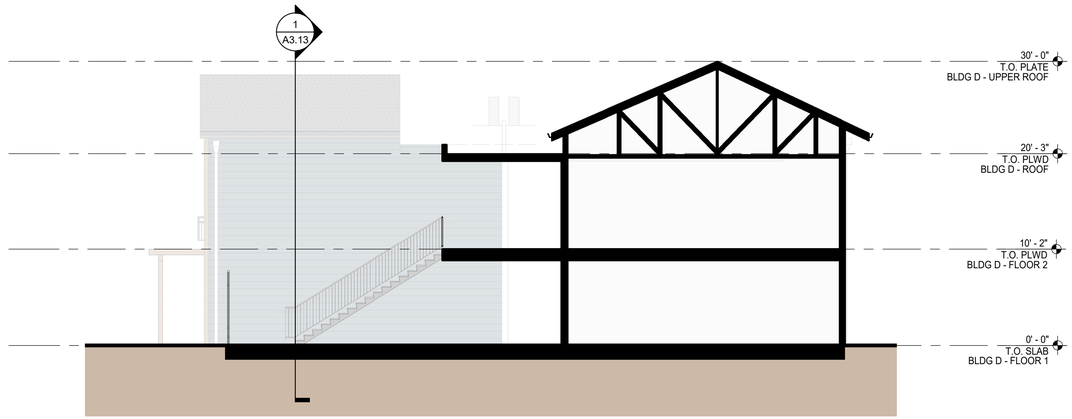
1/8" = 1'-0"



BUILDING C - SECTION 1

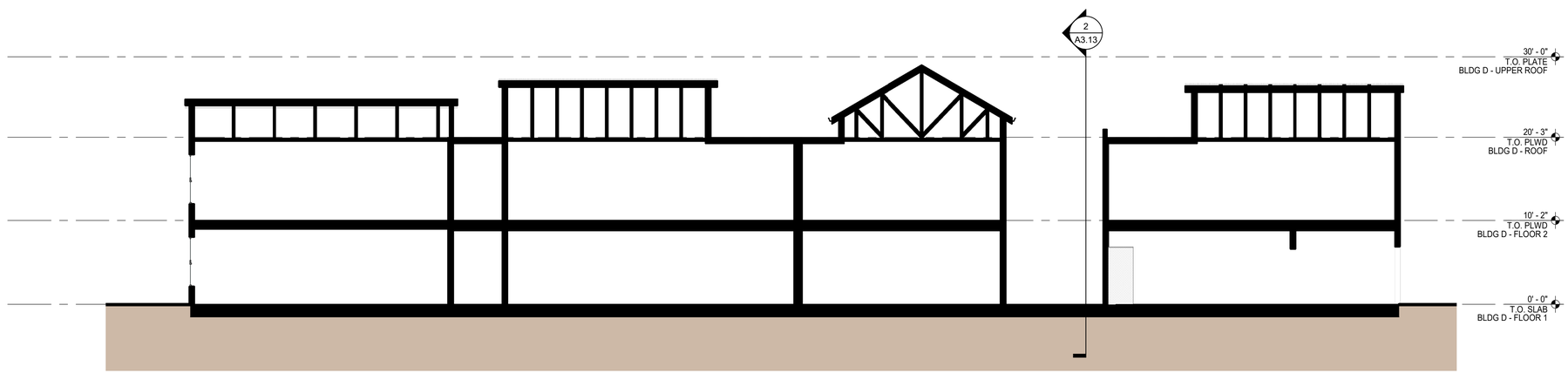
1/8" = 1'-0"

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BUILDING D - CROSS SECTION 2

1/8" = 1'-0"



BUILDING D - LONGITUDINAL SECTION 1

1/8" = 1'-0"

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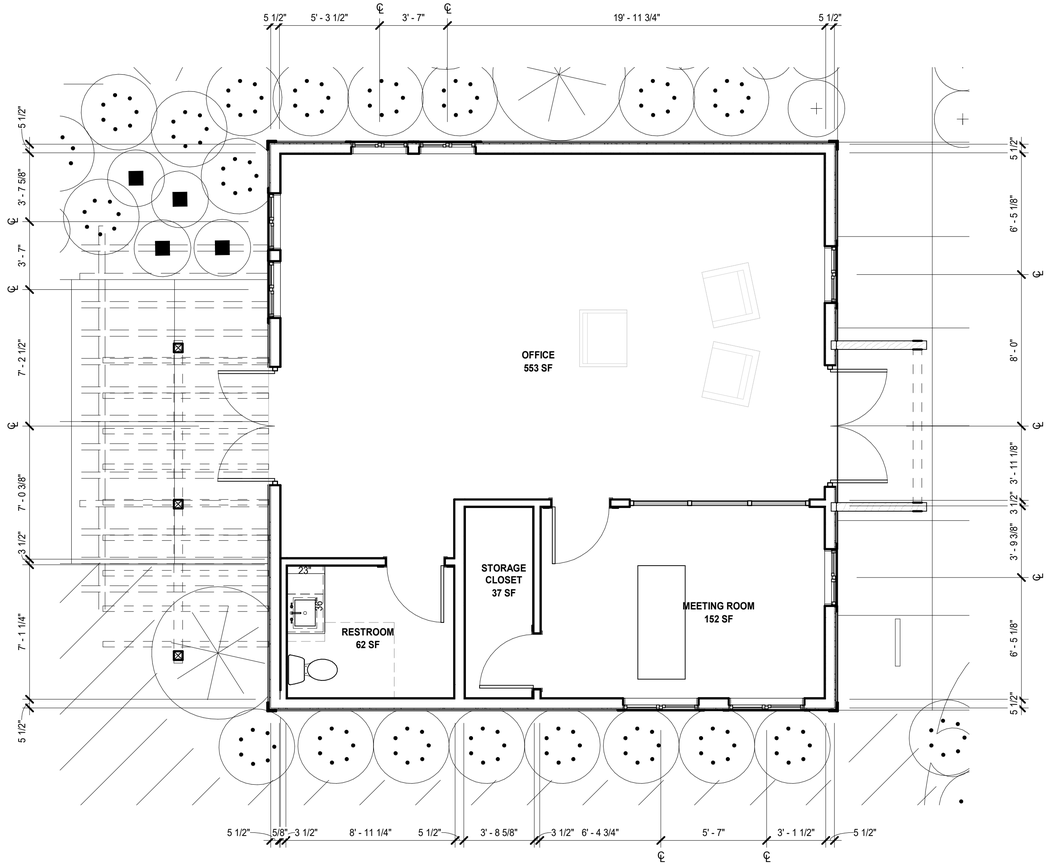
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A3.13

BUILDING D - BUILDING SECTIONS

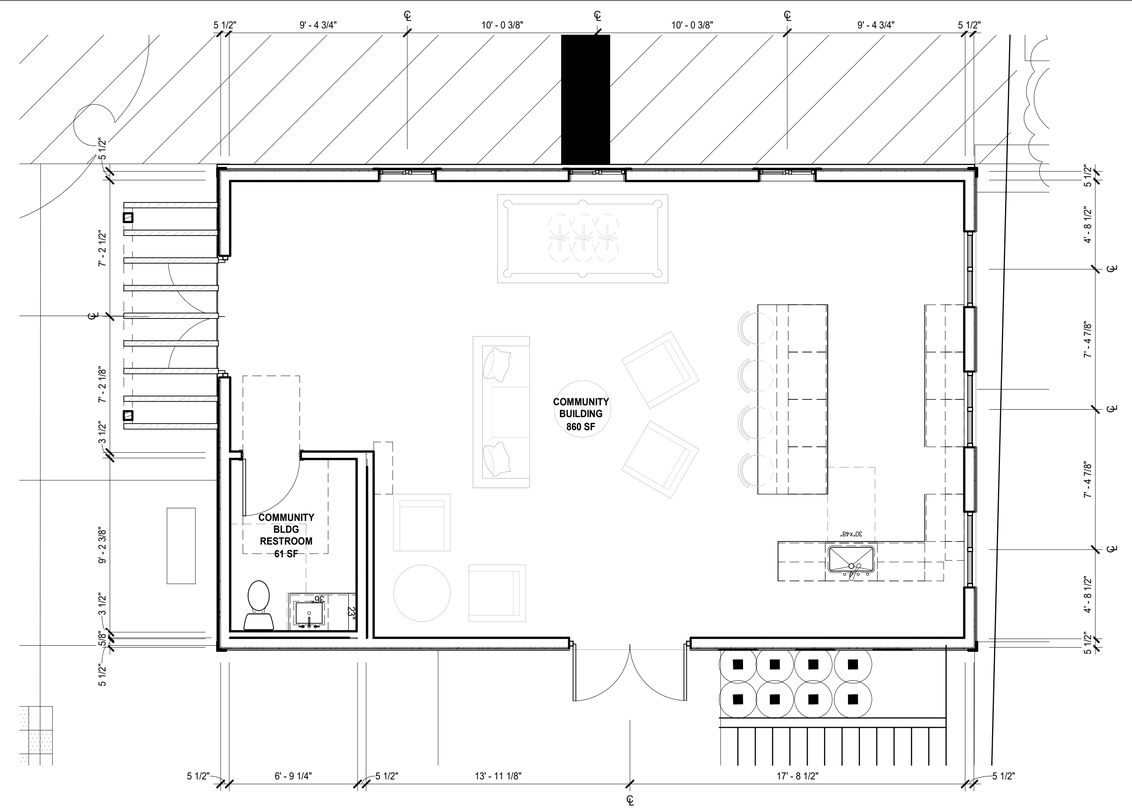
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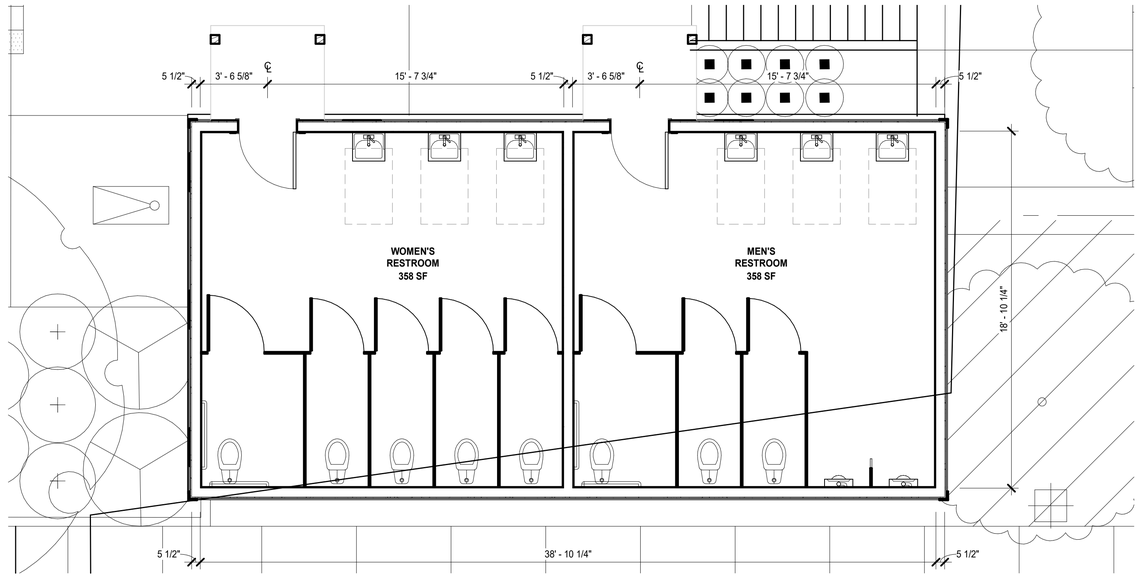
OFFICE BUILDING - PLAN 3

1/4" = 1'-0"



COMMUNITY RECREATIONAL BUILDING - PLAN 1

1/4" = 1'-0"



RECREATION RESTROOM 2

1/4" = 1'-0"

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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING

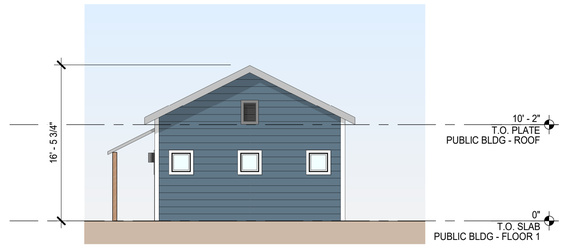
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A3.14

ENLARGED AMENITY PLANS

NOVEMBER 2, 2022

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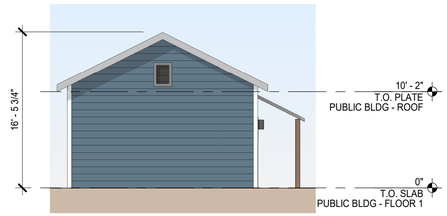
RECREATION RESTROOM - WEST 12

1/8" = 1'-0"



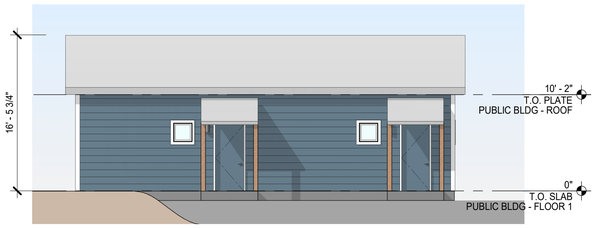
RECREATION RESTROOM -SOUTH 11

1/8" = 1'-0"



RECREATION RESTROOM - EAST 10

1/8" = 1'-0"



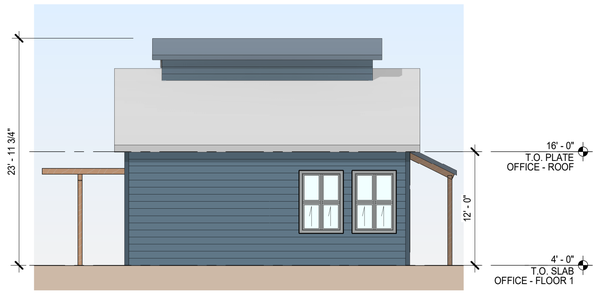
RECREATION RESTROOM - NORTH 9

1/8" = 1'-0"



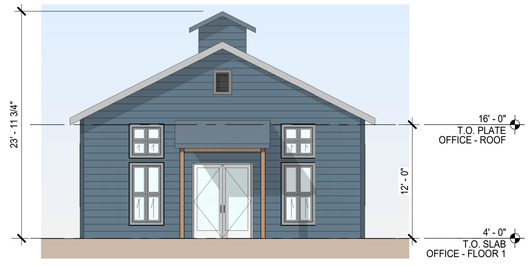
OFFICE - WEST 8

1/8" = 1'-0"



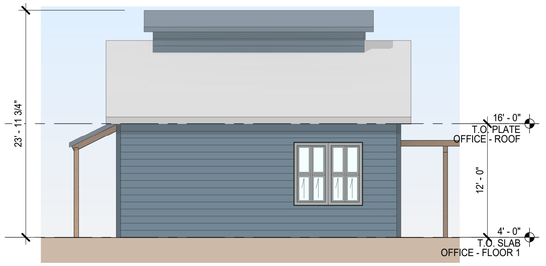
OFFICE - SOUTH 7

1/8" = 1'-0"



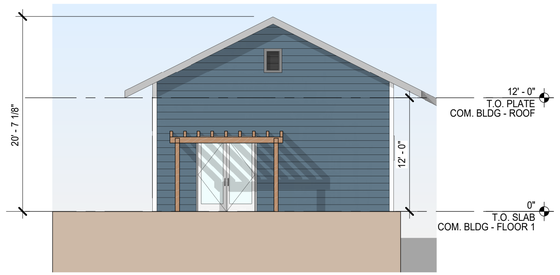
OFFICE - EAST 6

1/8" = 1'-0"



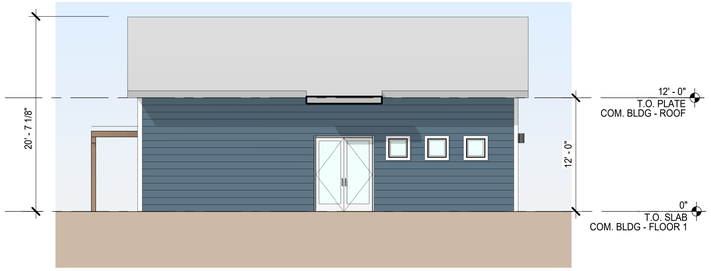
OFFICE - NORTH 5

1/8" = 1'-0"



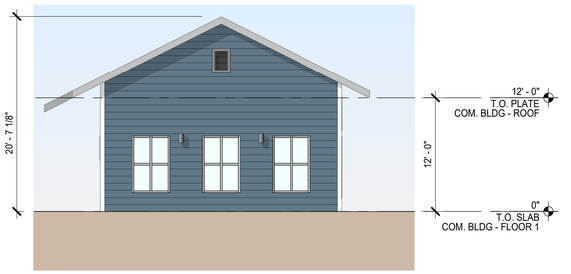
COMMUNITY RECREATIONAL BUILDING - WEST 4

1/8" = 1'-0"



COMMUNITY RECREATIONAL BUILDING - SOUTH 3

1/8" = 1'-0"



COMMUNITY RECREATIONAL BUILDING - EAST 2

1/8" = 1'-0"



COMMUNITY RECREATIONAL BUILDING - NORTH 1

1/8" = 1'-0"

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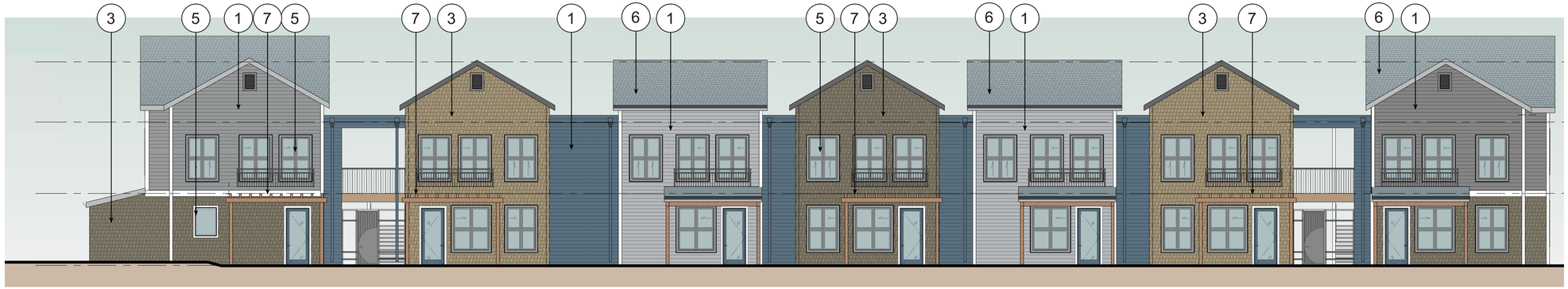
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A3.15

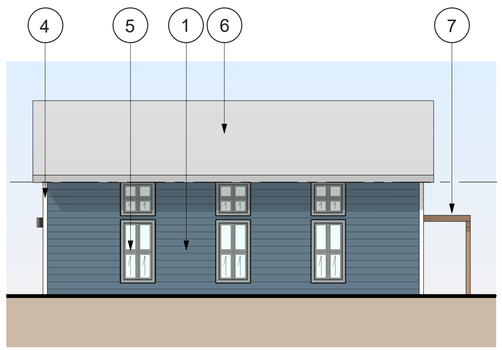
ENLARGED AMENITY PLANS -ELEVATIONS

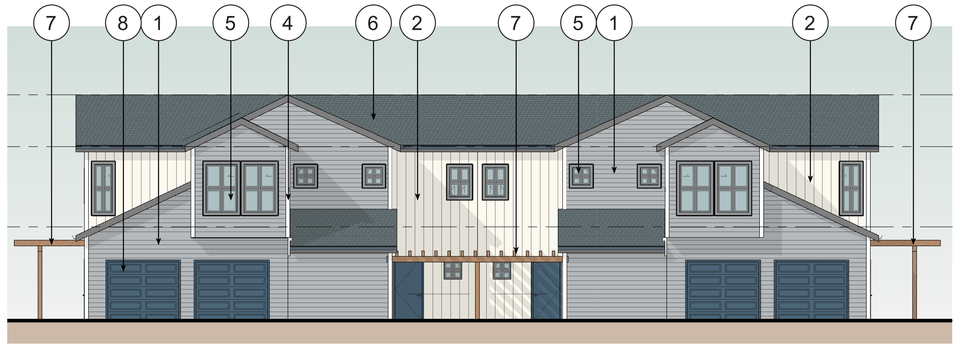
NOVEMBER 2, 2022

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BUILDING A - EAST ELEVATION





BUILDING C2 - SOUTH ELEVATION



SAMPLE FOR TEXTURE ONLY



1 WIDE LAP SIDING



2 BOARD & BATTEN SIDING



4 FIBER CEMENT SHINGLE



4 FIBER CEMENT TRIM

SW 7018 DOVETAIL

SW 6159 HIGH TEA

SW 6509 GEORGIAN BAY

SW 7065 ARGOS

SW 6107 LATTE

SW 7005 PURE WHITE



5 VINYL WINDOWS



6 ASPHALT ROOF SHINGLE







7 TRELLIS





8 SECTIONAL GARAGE DOOR



9 EXTERIOR SCONCE

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COLOR & MATERIALS BOARD

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VIEW NORTH ON YOSEMITE DR 8



VIEW SOUTHWEST ON RAINTREE AVE 5



VIEW SOUTH ON YOSEMITE DR 2



VIEW EAST ON ODDSTAD BLVD 7



VIEW SOUTHWEST ON ODDSTAD BLVD 4



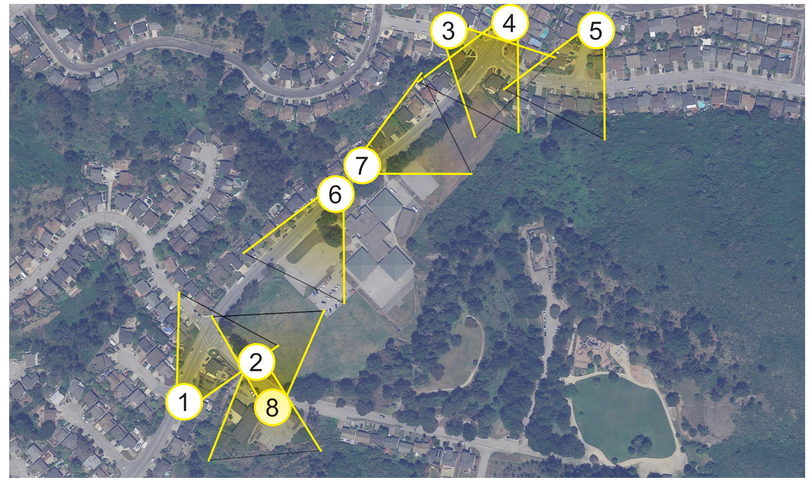
VIEW NORTHEAST ON ODDSTAD BLVD 1



VIEW SOUTHWEST ON ODDSTAD BLVD 6



VIEW SOUTHEAST ON BIG BEND DRIVE 3



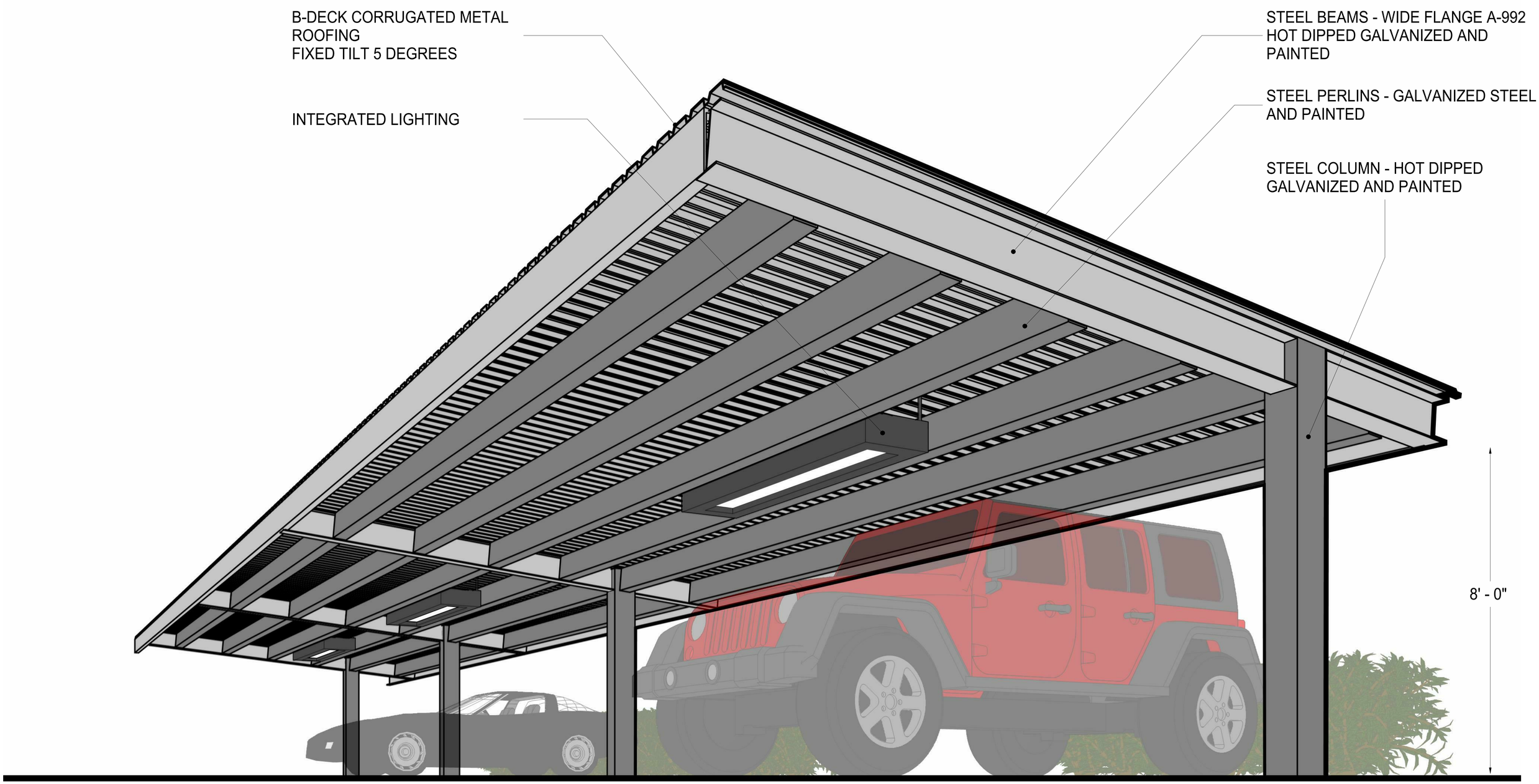
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SITE PHOTOS
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CARPORT MATERIALS

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APPENDIX 3-B: VESTING TENTATIVE PARCEL MAP, PREPARED BY BKF ENGINEERS, FEBRUARY 1, 2021

ABBREVIATIONS

AD	AREA DRAIN
APPROX	APPROXIMATE
BC	BACK OF CURB
BLDG	BUILDING
BW	BOTTOM OF WALL
B/W	BACK OF WALK
CB	CATCH BASIN
C&G	CURB & GUTTER
C , CL	CENTERLINE
CONC	CONCRETE
CO	CLEANOUT
DW	DOMESTIC WATER
D/W	DRIVEWAY
E	ELECTRICAL
(E)	EXISTING
EG	EXISTING GROUND
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
E.V.A.E	EMERGENCY VEHICLE ACCESS EASEMENT
EX	EXISTING
(F)	FUTURE
FDC	FIRE DEPARTMENT CONNECTION
FH	FIRE HYDRANT
FT	FEET
FW	FIRE WATER
G	GAS
GB	GRADE BREAK
GV	GATE VALVE
INV	INVERT
JB	JUNCTION BOX
LF	LINEAR FEET
MH	MANHOLE
MON	MONUMENT
NO.	NUMBER
NTS	NOT TO SCALE
OH	OVERHEAD
(P)	PROPOSED
PA	PLANTED AREA
PAV	PAVEMENT
PG&E	PACIFIC GAS AND ELECTRIC
PL	PROPERTY LINE
PR	PROPOSED
PUE	PUBLIC UTILITY EASEMENT
RD.	ROAD
RIM	RIM ELEVATION
RTG	RIM TO GRADE
R/W	RIGHT OF WAY
S	SLOPE
SD	STORM DRAIN
SDAD	STORM DRAIN AREA DRAIN
SDCO	STORM DRAIN CLEANOUT
SDE	STORM DRAIN EASEMENT
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FEET
SHT	SHEET
SS	SANITARY SEWER
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
SW	SIDEWALK
T	TELEPHONE
TC	TOP OF CURB
TELE	TELEPHONE
TW	TOP OF WALL
TYP.	TYPICAL
WL	WATERLINE
WM	WATER METER
WV	WATER VALVE
W	WATER

SHEET INDEX

C1.0 SHEET INDEX, LEGEND, AND ABBREVIATIONS
C1.1 EXISTING SITE PLAN
C1.2 EXISTING MAPPING INFORMATION
C2.0 CONCEPTUAL SITE PLAN
C2.1 PROPOSED MAPPING INFORMATION
C3.0 CONCEPTUAL GRADING PLAN
C4.0 CONCEPTUAL UTILITY PLAN
C5.0 CONCEPTUAL STORMWATER TREATMENT PLAN
C6.0 CONCEPTUAL SIGNING AND STRIPING PLAN
C7.0 CONCEPTUAL FIRE DEPARTMENT ACCESS PLAN
C7.1 CONCEPTUAL FIRE HYDRANT SPACING PLAN
C8.0 EROSION CONTROL PLAN
C8.1 EROSION CONTROL PLAN

BENCHMARK STATEMENT:

THE ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88 DATUM.

BASIS OF BEARINGS:

THE BEARING OF NORTH 45°12'00" WEST OF CENTERLINE OF YOSEMITE DRIVE, WAS TAKEN AS THE BASIS OF BEARINGS SHOWN ON THESE PLANS

FEMA FLOOD ZONE NOTES:

BASED ON FEMA FIRM PANELS 06081C0128E AND 06081C0129E, A PORTION OF ODDSTAD BOULEVARD FRONTING THE SITE FALLS WITHIN FLOOD AREA ZONE X (0.2% ANNUAL CHANCE FLOOD HAZARD AREA, OR 1% ANNUAL CHANCE WITH AVERAGE DEPTH LESS THAN ONE FOOT OR WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE.)

LEGEND

	PROPOSED	EXISTING
PROPERTY LINE		
EASEMENT		
CONTOUR LINE	510	510
DAYLIGHT LINE		
STORM DRAIN LINE	SD	SD
SANITARY SEWER LINE	SS	SS
WATER LINE	W	W
FIRE WATER LINE	WF	WF
CURB AND GUTTER		
OVERHEAD LINE	OH	OH
ELECTRICAL LINE	E	E
TELEPHONE LINE	T T	T T
FIBER OPTIC LINE	FO	FO
STREET LIGHT LINE	SL	SL
GAS LINE	G	G
JOINT TRENCH	JT	JT
STREET/PARKING LIGHT		
MANHOLE		
CLEANOUT	CO	
DROP INLET, UTILITY BOX		
AREA DRAIN		

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SHEET INDEX, LEGEND, AND ABBREVAITIONS
NOVEMBER 2, 2022

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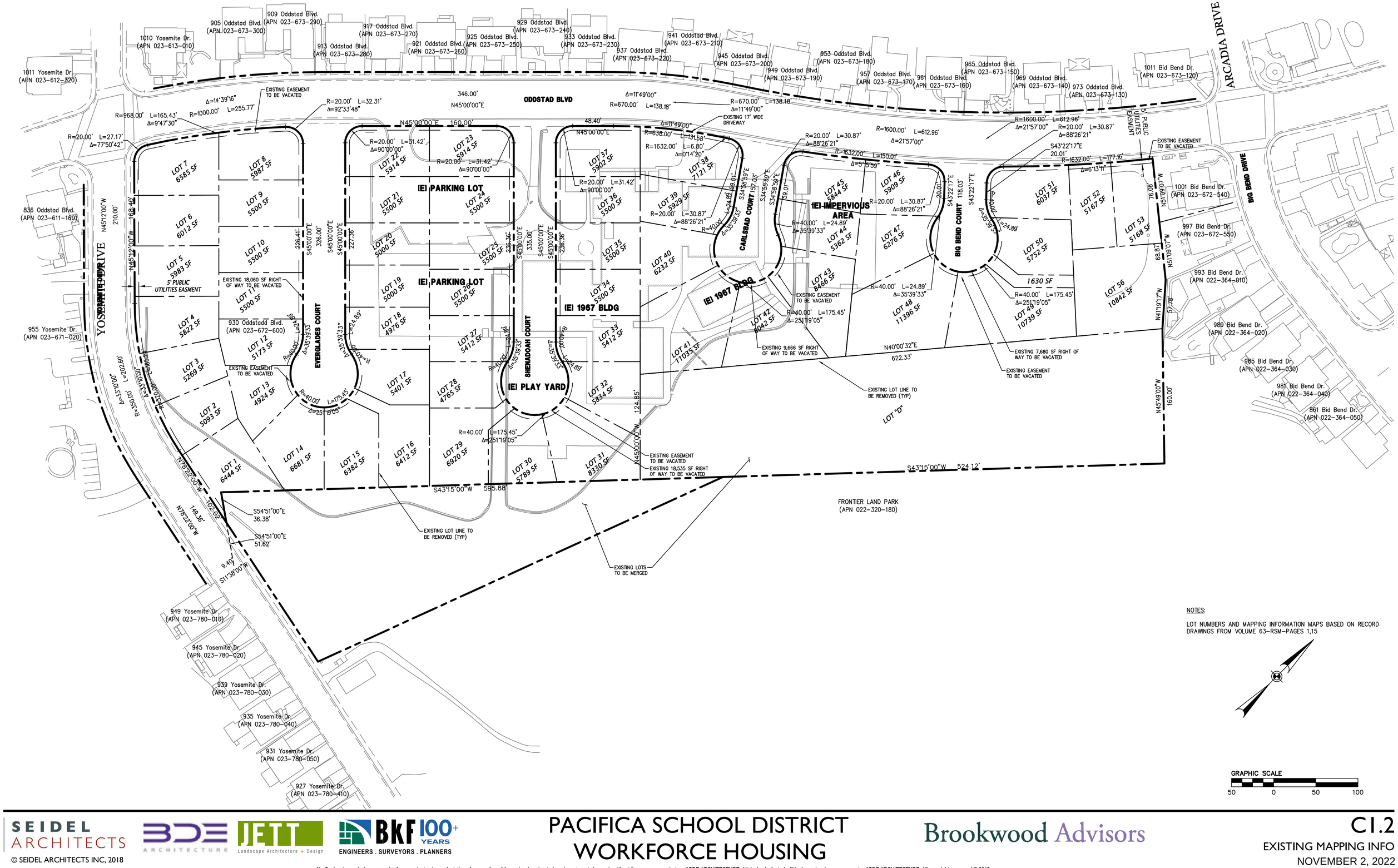
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C1.1
EXISTING SITE PLAN
NOVEMBER 2, 2022

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NOTES:

LOT NUMBERS AND MAPPING INFORMATION MAPS BASED ON RECORD DRAWINGS FROM VOLUME 63-RSM-PAGES 1,15

GRAPHIC SCALE

50 0 50 100

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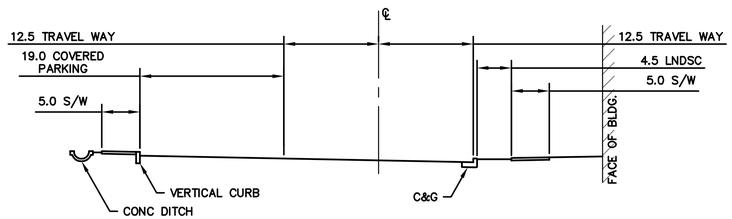
EXISTING MAPPING INFO

NOVEMBER 2, 2022

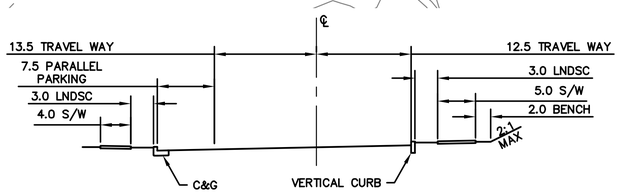
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2. REFER TO ARCHITECTURAL PLANS FOR BUILDING INFORMATION
3. REFER TO LANDSCAEPE PLANS FOR AREAS OUTSIDE VEHICULAR AREAS.

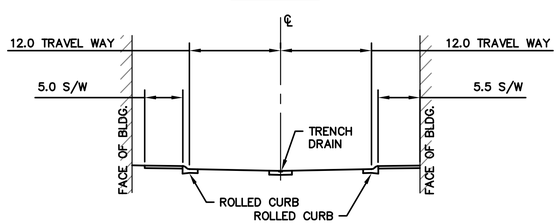
ODDSTAD BLVD
INSTALL CURB RAMPS
(P) LOT LINE
STORMWATER TREATMENT AREA
REPLACE DRIVEWAY WITH STD CURB, GUTTER AND SIDEWALK
PROPOSED DRIVEWAY
20' FRONT SETBACK
5' PUBLIC UTILITIES EASEMENT
1011 Bid Bend Dr. (APN 023-673-120)
969 Oddstad Blvd. (APN 023-673-140)
973 Oddstad Blvd. (APN 023-673-130)
965 Oddstad Blvd. (APN 023-673-150)
961 Oddstad Blvd. (APN 023-673-160)
957 Oddstad Blvd. (APN 023-673-170)
953 Oddstad Blvd. (APN 023-673-180)
949 Oddstad Blvd. (APN 023-673-190)
945 Oddstad Blvd. (APN 023-673-200)
941 Oddstad Blvd. (APN 023-673-210)
937 Oddstad Blvd. (APN 023-673-220)
933 Oddstad Blvd. (APN 023-673-230)
929 Oddstad Blvd. (APN 023-673-240)
925 Oddstad Blvd. (APN 023-673-250)
921 Oddstad Blvd. (APN 023-673-260)
917 Oddstad Blvd. (APN 023-673-270)
913 Oddstad Blvd. (APN 023-673-280)
909 Oddstad Blvd. (APN 023-673-290)
905 Oddstad Blvd. (APN 023-673-300)
1010 Yosemite Dr. (APN 023-613-010)
1011 Yosemite Dr. (APN 023-612-320)
836 Oddstad Blvd. (APN 023-611-160)
955 Yosemite Dr. (APN 023-671-020)
930 Oddstad Blvd. (APN 023-672-600)
YOSEMITE DRIVE
BIG BEND DRIVE
(E) D/W
(E) PARKING LIGHTS TO REMAIN.
(P) EASEMENT
(E) PARKING LOT TO BE MODIFIED AND RESTRIPED.
(E) PARKING LOT TO REMAIN AND BE RESTRIPED.
(P) BASKETBALL COURT TO BE STRIPED WITH A CONTRASTING COLOR TO THE PARKING STALLS. THE PARKING LOT WILL BE CLOSED DURING SCHEDULED GAMES. GAME SCHEDULES WILL BE THROUGH THE PROPERTY MANAGEMENT.
5' PUBLIC UTILITIES EASMENT
(P) LOT 1
(P) PUBLIC ACCESS EASEMENT
(P) LOT 2 PHASE 1
(P) LOT 3
BLDG. B1
BLDG. B2
BLDG. B3
OFFICE BLDG
BLDG. C2
BLDG. D
BIKE STORAGE
BLDG. C1 PHASE 2
COMMUNITY ROOM
RESTROOM
TRASH ENCL
BIKE STORAGE
BLDG. A
CARPORT, SAD
PHASE LINE
PROPOSED DRIVE AISLES AND SURFACE PARKING
PROPOSED BUILDINGS (TYP)
RETAINING WALL
PROPOSED E.V.A.E
PROPOSED SETBACK LINE
PROPOSED BOUNDARY
20' BACK SETBACK
(P) LOT LINE
5' SIDE SETBACK
PROPOSED LIMIT OF WORK
CONC DITCH
1001 Bid Bend Dr. (APN 023-672-540)
997 Bid Bend Dr. (APN 023-672-550)
993 Bid Bend Dr. (APN 022-364-010)
989 Bid Bend Dr. (APN 022-364-020)
985 Bid Bend Dr. (APN 022-364-030)
981 Bid Bend Dr. (APN 022-364-040)
861 Bid Bend Dr. (APN 022-364-050)
949 Yosemite Dr. (APN 023-780-010)
945 Yosemite Dr. (APN 023-780-020)
939 Yosemite Dr. (APN 023-780-030)
935 Yosemite Dr. (APN 023-780-040)
931 Yosemite Dr. (APN 023-780-050)



SECTION 2



SECTION 1



SECTION 3

GRAPHIC SCALE
50 0 50 100

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C2.0
CONCEPTUAL SITE PLAN
NOVEMBER 2, 2022

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2. REFER TO ARCHITECTURAL PLANS FOR BUILDING INFORMATION
3. REFER TO LANDSCAEPE PLANS FOR AREAS OUTSIDE VEHICULAR AREAS.

ODDSTAD BLVD

1011 Yosemite Dr. (APN 023-612-320)
1010 Yosemite Dr. (APN 023-613-010)
905 Oddstad Blvd. (APN 023-673-300)
909 Oddstad Blvd. (APN 023-673-290)
913 Oddstad Blvd. (APN 023-673-280)
917 Oddstad Blvd. (APN 023-673-270)
921 Oddstad Blvd. (APN 023-673-260)
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961 Oddstad Blvd. (APN 023-673-160)
965 Oddstad Blvd. (APN 023-673-150)
969 Oddstad Blvd. (APN 023-673-140)
973 Oddstad Blvd. (APN 023-673-130)
1011 Bid Bend Dr. (APN 023-673-120)

N45°00'00"E 346.00'
(P) LOT LINE
R=968.00' L=208.74' Δ=12°21'18"
R=20.00' L=27.17' Δ=77°50'42"
R=24.00' L=55.12' Δ=131°35'57"
N45°00'00"E 65.58'
R=10.00' L=15.71' Δ=90°00'00"
Δ=11°49'00" R=638.00' L=131.58'
S36°42'08"E 14.84'
R=60.00' L=37.73' Δ=36°01'54"
R=1632.00' L=511.81' Δ=17°58'07"
5' PUBLIC UTILITIES EASMENT
S51°09'07"E 144.95'

BLDG. B1
BLDG. B2
BLDG. B3
OFFICE BLDG
R=60.00' L=28.99' Δ=27°41'10"
S72°14'01"E 59.36'
BLDG. C2
BLDG. D
BIKE STORAGE
BLDG. C1 PHASE 2
(P) LOT 3 121,204 SF 2.78 AC
(P) LOT 2 PHASE 1 204,275 SF 4.69 AC
S45°02'52"E 109.32'
PHASE LINE
145.00' S44°57'08"W
PROPOSED E.V.A.E

YOSEMITE DRIVE
BIG BEND DRIVE
836 Oddstad Blvd. (APN 023-611-160)
N45°12'00"W 169.46'
5' PUBLIC UTILITIES EASMENT
955 Yosemite Dr. (APN 023-671-020)
930 Oddstad Blvd. (APN 023-672-600)
S45°00'00"W 7.50'
S45°00'00"E 204.50'
COMMUNITY ROOM
RESTROOM
(P) LOT 1 218,588 SF 5.02 AC
N45°00'00"W 233.44'
(P) LOT LINE
TRASH ENCL
BIKE STORAGE
BLDG. A
S45°00'00"E 233.44'
153.84' S46°45'00"E
PROPOSED BOUNDARY
S45°49'00"E 160.00'
S43°15'00"W 524.12'

1001 Bid Bend Dr. (APN 023-672-540)
997 Bid Bend Dr. (APN 023-672-550)
993 Bid Bend Dr. (APN 022-364-010)
S41°19'17"E 57.78'
989 Bid Bend Dr. (APN 022-364-020)
985 Bid Bend Dr. (APN 022-364-030)
981 Bid Bend Dr. (APN 022-364-040)
861 Bid Bend Dr. (APN 022-364-050)

FRONTIER LAND PARK (APN 022-320-180)

S54°51'00"E 51.62'
N78°22'00"W 299.73'
S69°30'43"E 49.64'
S20°29'17"W 528.25'

949 Yosemite Dr. (APN 023-780-010)
945 Yosemite Dr. (APN 023-780-020)
939 Yosemite Dr. (APN 023-780-030)
935 Yosemite Dr. (APN 023-780-040)
931 Yosemite Dr. (APN 023-780-050)

GRAPHIC SCALE
50 0 50 100

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C2.1
PROPOSED MAPPING PLAN
NOVEMBER 2, 2022

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CONNECT TO EXISTING OUTFALL
STORMWATER TREATMENT/DETENTION OVERFLOW
5.00 P.U.E.
ODDSTAD BLVD
TW 233.0
BW 236.3
CONNECT TO EXISTING OUTFALL
REMOVE (E) TREES
BW 239.2
BW 240.6
BW 241.8
BW 243.2
BW 244.1
BW 244.8
CONNECT TO EXISTING 72" RCP
5.00 P.U.E.
UNLINED BIORETENTION BASIN FG 229.5
TW 236.5
PAV 242.62
3:1 MAX SLOPE AT BIORETENTION AREAS, TYP.
LINED BIORETENTION BASIN FG 228.5
DISCHARGE TO STORMWATER TREATMENT/DETENTION BASIN
TW 235.5
REPLACE SDDI GRATE WITH SOLID COVER
LINED BIORETENTION BASIN FG 231.5
UNLINED BIORETENTION BASIN FG 231.0
BLDG B1 LVL 1 FF 243.30
BLDG B2 LVL 1 FF 243.30
OFFICE BLDG LVL 1 FF 240.7
TRENCH DRAIN
BLDG B3 LVL 1 FF 244.0
RIDGE 242.57
ROAD CENTERLINE, TYP
GRADE BREAK
BLDG C1 LVL 1 FF 248.25
BLDG C2 LVL 1 FF 248.5
BIKE STORAGE
BLDG D LVL 1 FF 251.0
LINED BIORETENTION BASIN FG 248.0
DISCHARGE TO STORMWATER TREATMENT/DETENTION BASIN
REPLACE SDDI GRATE WITH SOLID COVER
COMMUNITY ROOM LVL 1 FF 236.5
RESTROOM LVL 1 FF 236.5
TW 235.5
TC 243.20
TC 243.03
PAV 241.58
PAV 242.85
TC 243.16 CARPORT, SAD
LOT 2
TC 243.9
TC 243.8
TC 244.1
TC 243.3
TC 244.3
TC 244.8
PAV 243.6
TC 248.08
PAV 247.39
TC 247.70
TC 248.4
(P) MANHOLE (TYP)
LOT 3 PAV 248.7
PAV 248.0
TC 246.82
PAV 247.1
CARPORT, SAD
PAV 249.0
PAV 247.0
TC 247.7
TC 248.4
TC 249.5
TRASH ENCL
TC 250.3
TC 249.7
PAV 244.0
TC 245.0
TC 247.9
(P) LOT LINE
LOT 1
BLDG A LVL 1 FF 243.5
BIKE STORAGE
TRASH ENCL
(P) INLET (TYP)
CARPORT, SAD
(E) GND 241.0
(E) GND 242.0
(E) GND 240.0
(E) GND 243.1
(E) GND 241.5
CONC DITCH
TW 243.5
(E) GND 243.0
TW 249.5
(E) GND 249.0
PHASE LINE
TW 251.5
(E) GND 251.0
(P) LIMIT OF WORK
(E) GND 257.0
RETAINING WALL
TW 260.0
HP
(P) GND 259.5
TW 253.3
(E) GND 252.8

EARTHWORK NOTES:

1. EARTHWORK NUMBERS ARE APPROXIMATE AND FOR PLANNING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR PERFORMING TAKEOFFS FOR THEIR OWN PURPOSES AS MEANS AND METHODS AND CONSTRUCTION TECHNIQUES MAY AFFECT EARTHWORK QUANTITIES.
2. EARTHWORK NUMBERS DO NOT INCLUDE TRENCH, FOUNDATION OR FOOTING SPOILS.
3. EARTHWORK NUMBERS DO NOT INCLUDE BULKING OR SHRINKAGE FACTORS.

SITE GRADING APPROXIMATE EARTHWORK QUANTITIES:

CUT:	5,230 CY
FILL:	7,090 CY
NET:	1,860 CY IMPORT

GRAPHIC SCALE
30 0 30 60

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C3.0
CONCEPTUAL GRADING PLAN
NOVEMBER 2, 2022

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ODDSTAD BLVD

(P) DOMESTIC WATER

(P) SEWER LATERAL

(P) IRRIGATION

(P) FIRE HYDRANT (TYP)

(P) SEWER LATERAL

(P) FIRE HYDRANT (TYP)

(P) DOMESTIC WATER

OFFICE BLDG

BLDG B1

BLDG B2

BLDG B3

BLDG C1

BLDG C2

BIKE STORAGE

BLDG D

CARPORT, SAD

LOT 3

(P) SEWER MANHOLE (TYP)

(P) SEWER SERVICE (TYP)

LOT 2

COMMUNITY ROOM

RESTROOM

TRASH ENCL

CARPORT, SAD

(P) JOINT TRENCH (TYP)

PHASE LINE

(P) SEWER LINE (TYP)

(P) WATER LINE (TYP)

(P) FIRE SERVICE (TYP)

(P) DOMESTIC WATER SERVICE (TYP)

(P) LOT LINE

LOT 1

BLDG A

TRASH ENCL

BIKE STORAGE

GRAPHIC SCALE

30 0 30 60

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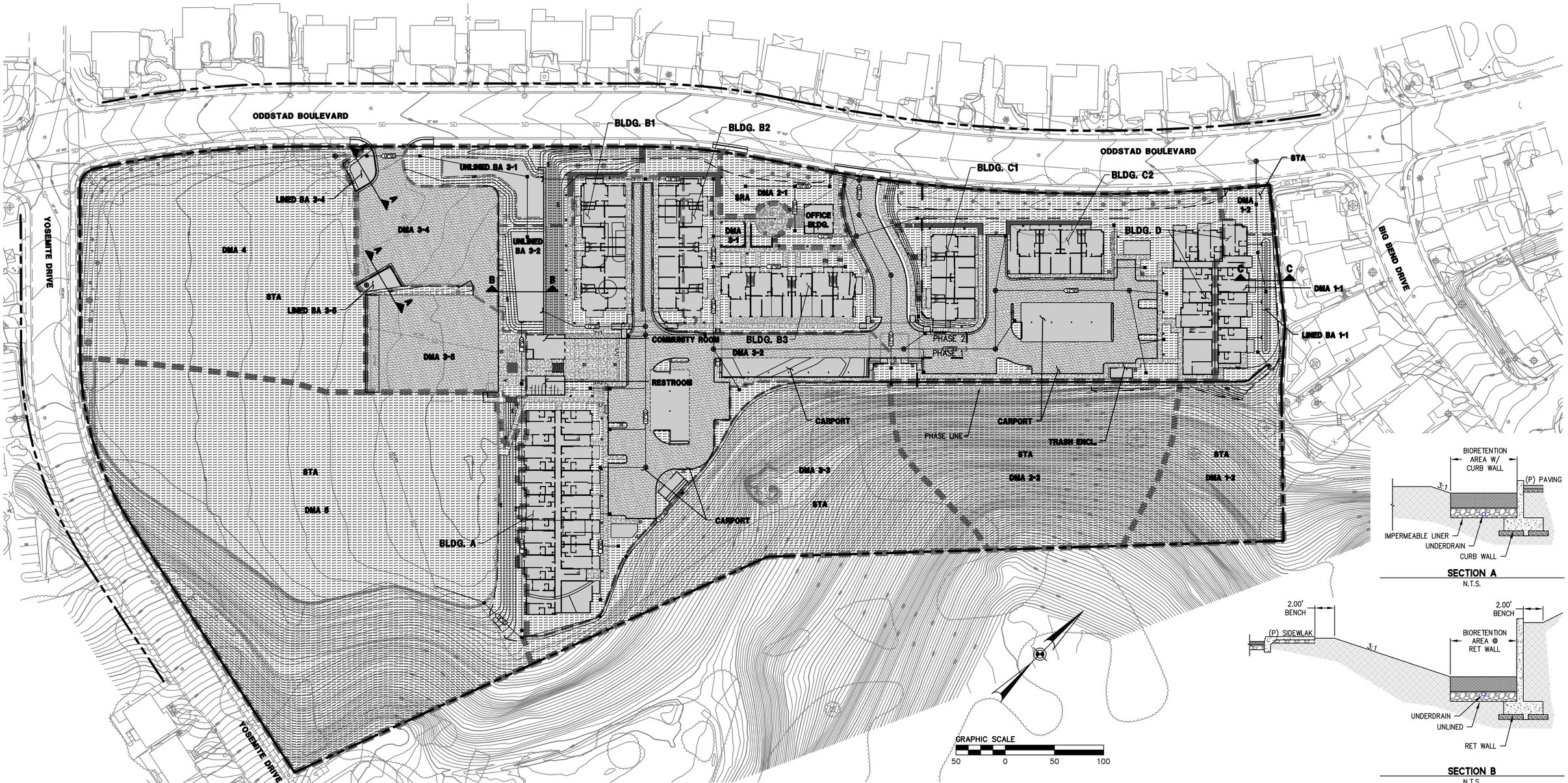
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CONCEPTUAL UTILITY PLAN

NOVEMBER 2, 2022

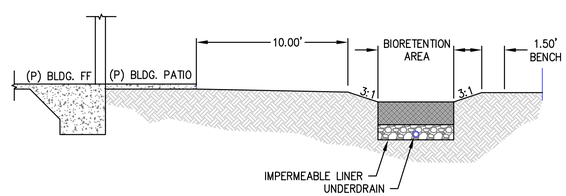
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SECTION A
N.T.S.

SECTION B
N.T.S.



SECTION C
N.T.S.

PROPOSED

DMA	PERVIOUS (SF)				IMPERVIOUS (SF)			TREATMENT (SF)			SUB TOTAL (SF)
	LANDSCAPE	SELF-TREATING/ RETAINING	BIORETENTION	TOTAL PERVIOUS	ROOF	ROAD ,PATH, S/W	TOTAL IMPERVIOUS	TYPE	REQ*	PROVIDED	
1-1	3,959	-	221	**4,180**	4,637	300	**4,937**	BR	213	221	**9,117**
1-2	-	22,856	-	**22,856**	-	380	**380**	STA	-	-	**23,236**
2-1	1,300	5,586	-	**6,886**	900	716	**1,616**	SRA	-	-	**8,502**
2-2	-	39,235	-	**39,235**	-	1,180	**1,180**	STA	-	-	**40,415**
3-1	38,873	-	2,770	**41,643**	28,658	36,238	**64,896**	BR	2,751	2,770	**106,539**
3-2	13,803	-	2,710	**16,513**	32,693	32,949	**65,642**	BR	2,681	2,710	**82,155**
3-3	-	46,290	-	**46,290**	-	1,545	**1,545**	STA	-	-	**47,835**
3-4	315	-	646	**961**	-	15,800	**15,800**	BR	633	646	**16,761**
3-5	1,220	-	602	**1,822**	-	14,585	**14,585**	BR	588	602	**16,407**
4	-	64,030	-	**64,030**	-	-	**0**	STA	-	-	**64,030**
5	-	127,450	-	**127,450**	-	1,625	**1,625**	STA	-	-	**129,075**
TOTAL	**59,470**	**305,447**	**6,949**	**371,866**	**66,888**	**105,318**	**172,206**		**6,867**	**6,949**	**544,072**

*Bioretention sizing is based on 4% of the effective impervious area as defined in the San Mateo County C3 Technical Guidance

ABBREVIATIONS

BA	BIORETENTION AREA
DMA	DRAINAGE MANAGEMENT AREA
SRA	SELF RETAINING AREA
STA	SELF TREATING AREA

LEGEND

- LIMIT OF WORK/DMA BOUNDARY
- SUB-DMA BOUNDARY
- LANDSCAPING
- STORMWATER TREATMENT
- CONC PAVING
- AC PAVING
- ROOF

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CONCEPTUAL STORMWATER TREATMENT PLAN
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ODDSTAD BLVD

48' (E) ROADWAY

INSTALL CURB RAMPS

30' OF RED CURB

REPLACE DRIVEWAY WITH STD CURB, GUTTER AND SIDEWALK

PROPOSED DRIVEWAY

STOP BAR AND LEGEND

STOP SIGN

CENTERLINE STRIPING

GREEN CURB

RED CURB

CURB WALL

LOT 1

(E) PARKING LOT TO REMAIN. RESTRIPE PARKING LOT

BLDG. B1

BLDG. B2

BLDG. B3

OFFICE BLDG

PARALLEL PARKING, TYP

BLDG. C1

BLDG. C2

BLDG. D

LOT 2

LOT 3

PHASE 1

PHASE 2

COMMUNITY ROOM

RESTROOM

BLDG. A

TRASH ENCL

BIKE STORAGE

ACCESSIBLE STALLS (TYP)

COMPACT STALLS (TYP)

CROSSWALK STRIPING (TYP)

PARKING STRIPE (TYP)

EXISTING BUILDING TO BE REMOVED (TYP)

CARPORT OVERHEAD, SAD

PROPOSED DRIVE AISLES AND SURFACE PARKING

PHASE LINE

CONC DITCH

TRASH ENCLOSURE

RETAINING WALL

PROPOSED BOUNDARY

PROPOSED LIMIT OF WORK

PAVEMENT MARKING LEGEND

- TWO-WAY BLUE RETROFLECTIVE MARKER. BLUE MARKERS SHALL BE PLACED ON THE LEFT HAND SIDE OF ALL TRAVEL LANES TO THE FIRE HYDRANT UP TO THE CENTER OF THE STREET.
- YIELD LINE PER CALTRANS STANDARD PLAN A24E
- TYPE 1 ARROW PER CALTRANS STD PLAN A24A
- TYPE IV (L & R) ARROW PER CALTRANS STD PLAN A24A
- TYPE IV (L) ARROW PER CALTRANS STD PLAN A24A
- TYPE IV (R) ARROW PER CALTRANS STD PLAN A24A
- STOP BAR AND LEGEND PER CALTRANS STD PLAN A24E AND A24D

GENERAL NOTES

1. LOCATIONS OF EXISTING SIGNS, STRIPING, AND PAVEMENT MARKERS ARE APPROXIMATE ONLY. NEW ROADSIDE SIGNS SHALL CONFORM TO THE LATEST PROVISIONS OF THE CITY OF PACIFICA STANDARDS, CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD), AND THE PROJECT SPECIFICATIONS.
2. CONCRETE SIDEWALK FINISH AND SCORING PATTERN SHALL BE:
   - 2.1. PER CITY OF PACIFICA STANDARDS WITHIN THE PUBLIC RIGHT-OF-WAY, OR
   - 2.2. PER THE LANDSCAPE PLANS ON-SITE.
3. A TRAFFIC CONTROL PLAN SHALL BE APPROVED BY THE CITY OF PACIFICA PRIOR TO THE CLOSURE OF ROADS AND SIDEWALKS.

GRAPHIC SCALE

30 0 30 60

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C6.0
CONCEPTUAL SIGNING AND STRIPING PLAN
NOVEMBER 2, 2022

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ODDSTAD BLVD

BLDG. B1

BLDG. B2

BLDG. B3

OFFICE BLDG

BLDG. C1

BLDG. C2

BLDG. D

BLDG. A

COMMUNITY ROOM

RESTROOM

BIKE STORAGE

TRASH ENCL

TRASH ENCL

150' FROM ROUTE

125' FROM ROUTE

135' FROM ROUTE

85' FROM ROUTE

120' FROM ROUTE

145' FROM ROUTE

110' FROM ROUTE

95' FROM ROUTE

70' TO TRUCK

55' TO TRUCK

45' TO TRUCK

CENTRAL FDC LOCATIONS

CARPORT OVERHEAD, SAD

LIMITS OF FIRE ACCESS ROAD (TYP)

(P) E.V.A.E CARPORT OVERHEAD, SAD

LEGEND

- HOSE PULL FROM ACCESS ROUTE
- END OF HOSE
- HOSE PULL FROM HYDRANT TO TRUCK
- FIRE APARATUS ACCESS ROUTE
- FIRE APARATUS STAGING
- (E) FIRE HYDRANT
- (P) FIRE HYDRANT
- (P) FDC
- (P) PIV
- (P) BACKFLOW

GENERAL NOTES

1. PER ARCHITECTURAL PLANS (BRIDGING DOCUMENTS) DATED 4/01/2020
   - 1.1. BUILDING CONSTRUCTION IS TYPE VA
   - 1.2. FIRE AREA < 97,700 SF (COMPARTMENTALIZED ALL FC-1 FLOOR AREAS)
2. THE FOLLOWING IS PER CFC 2019:
   - 2.1. REQUIRED FIRE FLOW PER APPENDIX B (TABLE B105.1 (2))) = 5.500 GPM (1/2 REDUCTION PER TABLE B105.1 (1)) = 2,750 GPM
   - 2.2. 3 REQUIRED HYDRANTS (PER TABLE C102.1)
   - 2.3. 400' MAX SPACING BETWEEN HYDRANTS (PER TABLE C102.1)
   - 2.4. MINIMUM FIRE LANE IS 20' PER APPENDIX D.
3. THE MINIMUM INSIDE RADIUS FOR A FIRE LANE IS 28' PER DISCUSSIONS WITH THE NORTH COUTY FIRE AUTHORITY.

GRAPHIC SCALE

30 0 30 60

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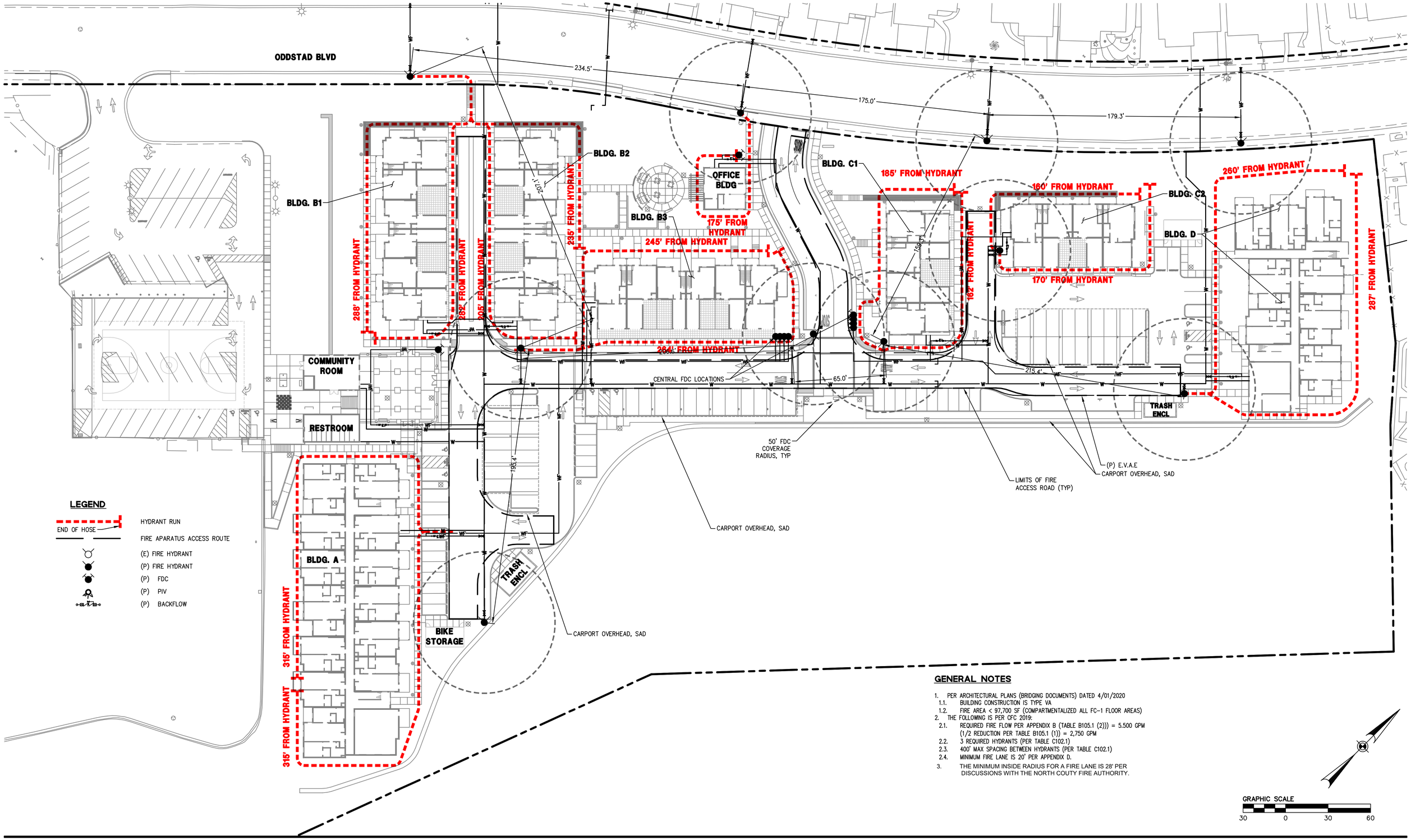
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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING

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C7.0
CONCEPTUAL FIRE DEPARTMENT ACCESS PLAN
05/11/2021

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GENERAL NOTES

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   - 1.2. FIRE AREA < 97,700 SF (COMPARTMENTALIZED ALL FC-1 FLOOR AREAS)
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3. THE MINIMUM INSIDE RADIUS FOR A FIRE LANE IS 28' PER DISCUSSIONS WITH THE NORTH COUTY FIRE AUTHORITY.

GRAPHIC SCALE
30 0 30 60

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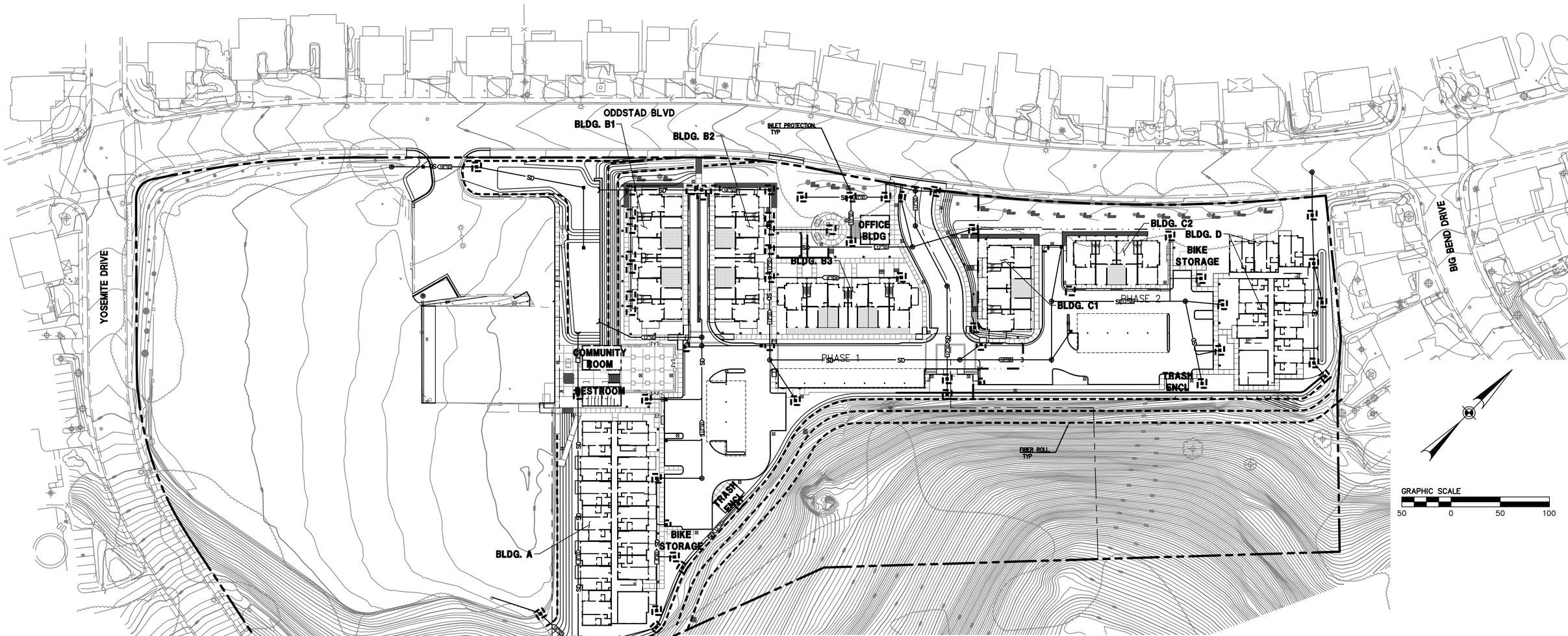
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C7.1
CONCEPTUAL FIRE HYDRANT SPACING PLAN
05/11/2021

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EROSION CONTROL NOTES

1. PROJECT DISTURBS MORE THAN 1 ACRE AND SHALL REQUIRE A SWPPP.

2. THE EROSION CONTROL DETAILS ARE FOR WORK ASSOCIATED WITH THE TREE REMOVAL BETWEEN YEAR ROUND. IF THESE CONDITIONS ARE NOT MET, THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN TO THE CITY OF DALY CITY PUBLIC WORKS FOR REVIEW AND APPROVAL. SHOULD THE PROPOSED ONSITE STORM DRAIN SYSTEM NOT BE INSTALLED BY OCTOBER 15, TEMPORARY SEDIMENT BASINS SHALL BE INSTALLED AROUND THE OPENINGS OF ANY EXISTING STORM PIPES WHICH DRAIN IN THE SITE. TEMPORARY SEDIMENT BASINS SHALL BE SIZED TO ACCOMMODATE ANTICIPATED RUNOFF FROM ALL UNPAVED PORTIONS OF THE SITE.

3. ALTHOUGH SPECIFIC LOCATIONS FOR SEDIMENT CONTROL FACILITIES ARE NOT SHOWN ON THESE PLANS, IT IS INTENDED THIS EROSION CONTROL PLAN BE MODIFIED WHEN NECESSARY TO MEET FIELD CONDITIONS. BASIN AND TRAP SIZES AND ELEVATIONS MAY BE ADJUSTED AS LONG AS THE MINIMUM AREAS AND DEPTHS FOR SEDIMENT SETTLING AND STORAGE ARE NOT REDUCED.

4. THE INTENT OF THESE DETAILS IS TO PROVIDE THE INITIAL CONCEPT FOR INTERIM EROSION CONTROL. THE CONTRACTOR SHALL UPDATE THE PLANS TO REFLECT CHANGING SITE CONDITIONS. PLAN UPDATES SHALL BE BASED UPON GENERAL SURVEY DATA. EROSION CONTROL EFFECTIVENESS SHALL ALSO BE MONITORED AND THE PLANS UPGRADED AS REQUIRED TO PREVENT SIGNIFICANT QUANTITIES OF SEDIMENT FROM ENTERING THE DOWNSTREAM DRAINAGE SYSTEM.

5. THESE DETAILS MAY NOT COVER ALL THE SITUATIONS THAT ARISE DURING CONSTRUCTION DUE TO UNANTICIPATED FIELD CONDITIONS. IN GENERAL, THE CONTRACTOR IS RESPONSIBLE FOR KEEPING THE STORM RUN OFF FROM LEAVING THE SITE. FIBER ROLLS, SAND BAGS, AND SILT FENCES SHALL BE USED BY THE CONTRACTOR ON AN AS NEEDED BASIS TO INHIBIT SILT FROM LEAVING THE SITE AND ENTERING THE STORM DRAIN SYSTEM. ALL EXISTING, TEMPORARY, OR PERMANENT CATCH BASINS SHALL USE ONE OF THE SEDIMENT BARRIERS SHOWN.

6. THE CONTRACTOR WILL BE LIABLE FOR ANY AND ALL DAMAGES TO PUBLIC AND/OR PRIVATE OWNED AND MAINTAINED ROAD CAUSED BY THE CONTRACTOR'S GRADING ACTIVITIES, AND WILL BE RESPONSIBLE FOR THE CLEANUP OF ANY MATERIAL SPILLED ON ANY PUBLIC ROAD ON THE HAUL ROUTE. ADJACENT PUBLIC ROADS SHALL BE CLEANED AT THE END OF EACH WORKING DAY.

7. DURING THE RAINY SEASON, ALL PAVED AREAS ARE TO BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE IS TO BE MAINTAINED SO AS TO MINIMIZE SEDIMENT-LADEN RUNOFF TO ANY STORM DRAIN SYSTEM.

8. ALL EROSION CONTROL FACILITIES MUST BE INSPECTED AND REPAIRED DAILY DURING THE RAINY SEASON. ALL SLOPES SHALL BE REPAIRED AS SOON AS POSSIBLE WHEN DAMAGED.

9. BORROW AND TEMPORARY STOCKPILES SHALL BE PROTECTED WITH APPROPRIATE EROSION CONTROL MEASURES (TARPS, FIBER ROLLS, SILT FENCES ETC.) OR COVERED WITH VISQUEEN TO ENSURE SILT DOES NOT LEAVE THE SITE OR ENTER THE STORM DRAIN SYSTEM.

10. ALL TRUCK TIRES SHALL BE CLEANED PRIOR TO EXITING THE PROPERTY.

11. DURING PERIODS WHEN STORMS ARE FORECAST – (BETWEEN OCT 15 – APR 15)
A. EXCAVATED SOILS SHOULD NOT BE PLACED IN STREETS OR ON PAVED AREAS.
B. ANY EXCAVATED SOILS SHOULD BE REMOVED FROM THE SITE BY THE END OF THE DAY.
C. WHERE STOCKPILING IS NECESSARY, USE A TARPAULIN OR SURROUND THE STOCKPILED MATERIAL WITH STRAW BALES, SILT FENCE, OR OTHER RUNOFF CONTROLS.
D. USE INLET CONTROLS (E.G. FILTER MAT) FOR STORM DRAINS ADJACENT TO THE STOCKPILED SOIL.
E. THOROUGHLY SWEEP ALL PAVED AREAS EXPOSED TO SOIL EXCAVATION AND PLACEMENT.

12. IF NO WORK HAS PROGRESSED FOR A PERIOD OF 6-WEEKS, FINAL DRAINAGE AND EROSION CONTROL IMPROVEMENTS SHALL BE INSTALLED IN ACCORDANCE WITH AN APPROVED WINTERIZATION PLAN.

13. EROSION CONTROL IMPROVEMENTS SHALL BE INSPECTED AFTER EACH STORM AND REPAIRED AND/OR UPGRADED AS REQUIRED BY THE SWPPP. SEDIMENT AND DEBRIS SHALL BE REMOVED FROM TEMPORARY BASINS AND DRAIN INLETS AFTER EACH STORM.

14. HAUL ROADS ARE CURRENTLY NOT SHOWN ON THE PLANS. EROSION CONTROL MEASURES SHALL BE TAKEN TO MINIMIZE EROSION RELATED TO HAUL ROADS.

15. DISPOSAL AREAS FOR SEDIMENT TO BE DETERMINED IN FIELD. WHEN MATERIAL IS STOCKPILED, IT SHALL BE SURROUNDED BY A SILT FENCE/FIBER ROLLS.

16. TEMPORARY AND PERMANENT SLOPES GREATER THAN 3 FEET SHALL BE SEEDED UNLESS ALTERNATIVE MEASURES ARE USED.

18. THE NAME, ADDRESS, AND 24 HOUR TELEPHONE NUMBER OF THE PERSON RESPONSIBLE FOR IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE PROVIDED TO THE CITY.

19. SHOULD IT APPEAR THAT THE EROSION CONTROL PLAN, OR ANY OTHER MATTER THERETO, IS NOT SUFFICIENTLY DETAILED OR EXPLAINED ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE BKF PROJECT ENGINEER AT (650) 482-6300 FOR SUCH FURTHER EXPLANATIONS AS MAY BE NECESSARY.

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C8.0
EROSION CONROL PLAN
NOVEMBER 2, 2022

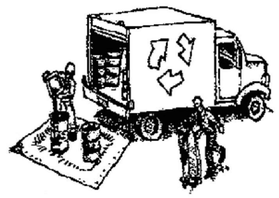
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SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

Materials & Waste Management



Non-Hazardous Materials

- ❑ Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- ❑ Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- ❑ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- ❑ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- ❑ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ❑ Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- ❑ Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- ❑ Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- ❑ Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- ❑ Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- ❑ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

Construction Entrances and Perimeter

- ❑ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ❑ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Equipment Management & Spill Control



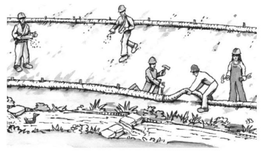
Maintenance and Parking

- ❑ Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- ❑ Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- ❑ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- ❑ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- ❑ Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.

Spill Prevention and Control

- ❑ Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- ❑ Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- ❑ Clean up spills or leaks immediately and dispose of cleanup materials properly.
- ❑ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- ❑ Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- ❑ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ❑ Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number, 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

Earthmoving



- ❑ Schedule grading and excavation work during dry weather.
- ❑ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ❑ Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- ❑ Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.
- ❑ Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

Contaminated Soils

- ❑ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.

Paving/Asphalt Work



- ❑ Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- ❑ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ❑ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- ❑ Do not use water to wash down fresh asphalt concrete pavement.

Sawcutting & Asphalt/Concrete Removal

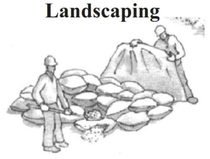
- ❑ Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ❑ Shovel, abosorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner!).
- ❑ If sawcut slurry enters a catch basin, clean it up immediately.

Concrete, Grout & Mortar Application



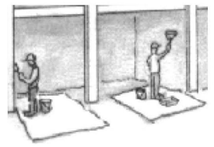
- ❑ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ❑ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- ❑ When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

Landscaping



- ❑ Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- ❑ Stack bagged material on pallets and under cover.
- ❑ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

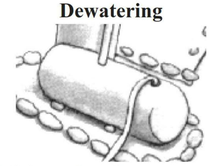
Painting & Paint Removal



Painting Cleanup and Removal

- ❑ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- ❑ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ❑ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- ❑ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ❑ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

Dewatering



- ❑ Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- ❑ Divert run-on water from offsite away from all disturbed areas.
- ❑ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ❑ In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

Storm drain polluters may be liable for fines of up to $10,000 per day!

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APPENDIX 3-C: ARBORIST REPORT, PREPARED TRAVERSO TREE SERVICE, MARCH 18, 2020

TRAVERSO TREE SERVICE
WHEN IT HAS TO BE DONE RIGHT

March 18, 2020

Kenneth R. Klebanoff
Brookwood Advisors
50 California Street, Suite 1500
San Francisco, CA 94111
415-956-5056 | kklebanoff@brookwoodgroup.com

Re: Arborist Report for 930 Oddstad Blvd, Pacifica

Dear Kenneth,

This arborist report addresses the proposed school district housing project at Oddstad Blvd. The project area encompasses an empty lot south of the Oddstad Blvd & Big Bend Dr intersection down to 930 Oddstad. Per the City of Pacifica's Municipal Code Chapter 12, Preservation of Heritage Trees, the scope of work includes:

- Tag, identify and measure all trees ≥ 6" diameter within 20' of proposed improvements, including all trees along the street frontage.
- Note heritage trees, defined as any tree with a trunk circumference of 50" or greater (≥16" diameter) measured at 24" above grade. Eucalyptuses are exempt.
- Assess individual tree health and structural condition.
- Assess proposed improvements for potential encroachment.
- Based on proposed encroachment, tree health, structure, and species susceptibility, make recommendations for preservation.
- Note tree #s & locations of protection fencing for JETT Landscape Architecture's reference.

The data and tree protection recommendations contained within this report will be used by JETT staff for their tree protection plan.



Figure 1. The existing school has closed, but the parking lot and sports field are used by the public. Workforce housing is proposed for the site.

Project Summary

The project site is currently developed with a school campus, along with its parking lot to the south and a sports field to the north (Figure 1). Although the school is closed, the field appears to be used recreationally by the public, and the parking lot is used to access the public park to the south. The east and west property lines comprise a steep slope & Oddstad Blvd, respectively.

I assessed twenty-seven (27) trees during my site visit. Twenty-two trees (81%) consist of large mature & aging Monterey cypresses (*Hesperocyparis macrocarpa,* Figure 2). These trees are primarily located along Oddstad Blvd, where their surface roots are obviously growing into the sports field, lifting the sidewalk, and causing hardscape damage on the property. The remaining five trees consist of four Monterey pines (*Pinus radiata*) and one Peruvian pepper (*Schinus molle*).



Figure 2. Twenty Monterey cypresses (#1-5 above) line Oddstad Blvd. Their continuous canopies create screening, while their roots are wrecking damage on hardscape.

The proposed project will construct new workforce housing on the school & sports field portions of the property. The existing parking lot will largely remain as parking. Unfortunately, the Monterey cypresses have a multitude of characteristics that render them highly vulnerable to construction impacts: some are declining and/or stressed; the species is intolerant of disturbance; the trees are large and reaching the over-mature phase of their lives.

I provided input to the design team on reducing encroachment on the cypresses, but it is not possible to move the proposed improvements far enough from the trees that survival can be guaranteed. However, a significant effort was made to provide up to 10'-20' of additional clearance. I consider the trees worthy of all possible efforts of protection throughout and beyond construction. Exceptional caution will be necessary to minimize encroachment to the greatest extent possible.

It is my opinion that a total of seven (7) trees will need to be removed to accommodate the proposed project, including one dying Monterey cypress (Figure 3). The remaining twenty (20) trees can be retained in a structurally stable state given that the protection measures within this report are followed. However, due to the species sensitivity and age of the seventeen (17) Monterey cypresses, they cannot be guaranteed to thrive post-construction.

Assumptions & Limitations

This report is based on my site visit on 2/27/20 and the following plans:

- Proposed site plan, dated 3/17/20 (for internal coordination).
- Plan package, dated 5/3/19 (in particular: landscaping, grading & utility plans).
- Survey by BKF, dated 7/17/08.

It was assumed that the trees and the proposed improvements were accurately surveyed. A few trees were not surveyed, so I approximately located them for the tree protection plan. I did not review grading and utility plans that may have been updated after 5/3/19.

The health and structure of the trees were assessed visually from ground level. No drilling, root excavation, or aerial inspections were performed. Internal or non-detectable defects may exist and could lead to part or whole tree failures. Due to the dynamic nature of trees and their environment, it is not possible for arborists to guarantee that trees will not fail in the future.



Figure 3. Tree #15 is in severe decline and is likely to die soon regardless of construction. It should be removed.

Tree Inventory & Assessment Table
#s: Each tree was given a square metal tag with numbers ranging from #1-27. Their locations are provided in the tree protection plan.
Size: Trunk diameters in inches were measured at 24" above average grade with a diameter tape. The majority of the Monterey cypresses branched at a low height, which prevented measurement at exactly 24" without disproportionately increasing the trunk sizes. Deviations in the height measurement were performed in accordance with recommended practices and are noted under the "Comments" column.

Health & Structural Condition Rating
Dead: Dead or declining past chance of recovery.
Poor (P): Stunted or declining canopy, poor foliar color, possible disease or insect issues. Severe structural defects that may or may not be correctable. Usually not a reliable specimen for preservation.
Fair (F): Fair to moderate vigor. Minor structural defects that can be corrected. More susceptible to construction impacts than a tree in good condition.
Good (G): Good vigor and color, with no obvious problems or defects. Generally more resilient to impacts.
Very Good (VG): Exceptional specimen with excellent vigor and structure. Unusually nice.

Dripline: Canopy radius was visually estimated in each cardinal direction.

Age
Young (Y): Within the first 20% of expected life span. High resiliency to encroachment.
Mature (M): Between 20% - 80% of expected life span. Moderate resiliency to encroachment.
Overmature (OM): In >80% of expected life span. Low resiliency to encroachment.

DE: Dripline Encroachment (X indicates encroachment)
CI: Anticipated Construction Impact (L = Low, M = Moderate, H = High)

Specific Recommendations: Specific recommendations for each tree, as applicable, in addition to the general recommendations which apply to all trees.

Tree Encroachment Summary
- Trees that will need to be removed: 13-15, 21-24 (7 trees)
    - Tree #24 appears to be off-site; its removal will require approval by the property owner.
- Trees to be saved that will be subjected to high encroachment: 1-12, 16-20 (17 trees; all Monterey cypresses)
- Trees to be saved that will be subjected to low to moderate encroachment: 25-27 (3 trees)

#	Species	Size	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Specific Recommendations
1	Monterey cypress (*Hesperocyparis macrocarpa*)	49.5	G-F	G-F	15	18	18	20	M-OM	X	H	Large roots to SE visible to 25' from trunk (3"-4" at 10'). Sidewalk replaced (large roots towards sidewalk). Minor 1" deadwood. 21' from proposed patio; 29' from proposed building.	Carefully remove existing fence footings by hand.
2	Monterey cypress	39	F	F	12	20	15	18	M	X	H	Large roots to SE, 3" diameter at 20' from trunk. Slightly sparse canopy, dead lower branches, moderate small deadwood. Co-dominant stems at 4'. Sidewalk ground down with 1 panel replaced. 21' from proposed patio; 26' from proposed building.	Carefully remove existing fence footings by hand.
3	Monterey cypress	41	P	F	15	25	20	25	OM	X	H	Multiple stems at 1' (diameter measured at 6"). Two low scaffolds leaning/laying on chain-link fence (requires minimum 7"-8" pruning cut, up to 12"-15" at attachment). Sparse canopy & stunted growth; lots of deadwood on S side of trunk; almost half dead; remaining foliage off color and stunted. Sidewalk ground down. 31' & 35' from proposed buildings.	Carefully remove existing fence footings by hand.
4	Monterey cypress	38, 21	P	F	8	15	18	10	OM	X	H	Multiple stems at 2'. Small amounts of woody roots visible to 18' from trunk. Lower 3/4 of tree mostly dead with stunted shoots at ends/top. Some sidewalk grinding.	Carefully remove existing fence footings by hand.
5	Monterey cypress	42.5	P	F	6	8	20	10	OM	X	H	Woody roots visible to 18' to SE (2" at 10' and 3" at 6' from trunk). Multiple stems at 2' (diameter measured at 1'). Moderate sidewalk grinding. NE side of canopy nearly all dead, SW lower canopy dead with remaining foliage stunted.	Carefully remove existing fence footings by hand. Hand dig boardwalk footings & adjust to save large roots.
6	Monterey cypress	36	F-P	F	25	20	20	20	M	X	H	1"-2" roots visible at 15' to SE. Diameter measured at 6" above grade. Lifting concrete, not yet ground. Sparse canopy.	Carefully remove existing fence footings by hand. Hand dig boardwalk footings & adjust to save large roots.
7	Monterey cypress	31	F/F-P	F	25	25	25	25	M	X	H	Multi-stemmed at 3'. Minor/moderate sidewalk grinding. Moderately dense canopy. South side sparser. Moderate amount of 2"-3" woody roots visible at 10' to SE.	Carefully remove existing fence footings by hand. Hand dig boardwalk footings & adjust to save large roots.

#	Species	Size	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Specific Recommendations
8	Monterey cypress	38	F	F	20	20	20	25	M-OM	X	H	Multiple stems at 4'. Slightly sparse canopy. Moderate amount of 3" diameter roots visible at 18' to SE. Significant sidewalk grinding.	Carefully remove existing fence footings by hand. Hand dig boardwalk footings & adjust to save large roots.
9	Monterey cypress	32	F-P	F	18	15	15	15	M-OM	X	H	Diameter measured at 1'. Moderately sparse canopy; relatively compact (not spreading). Moderate sidewalk grinding. Minor small diameter surface roots to SE.	Carefully remove existing fence footings by hand. Arborist on site during excavation for driveway.
10	Monterey cypress	43.5	F-P	F	25	20	20	20	M-OM	X	H	Co-dominant trunks split at 3.5' above grade. Sparse canopy with slightly yellowed & stunted growth. Significant hardscape damage. Large woody roots to SE (2"-3" at 12'; 3" at 10').	Carefully remove existing fence footings by hand.
11	Monterey cypress	40	F-P	F	18	15	15	15	M-OM	X	M-H/H	Diameter measured at 6"; multiple stems at 1'. Slightly sparse canopy with yellowing and minor dieback. Heaving asphalt next to fence (3" root at 6' and 2" root at 15' from trunk). Minor sidewalk lift.	Carefully remove existing fence footings by hand. Demolish asphalt by hand starting around obvious root damaged areas. Apply 6" deep layer of mulch.
12	Monterey cypress	35	G-F	F	18	15	18	18	M	X	M-H/H	Moderate lifting of sidewalk; previously ground down. Lower canopy sparse but top good. No asphalt damage.	Carefully remove existing fence footings by hand.
13	Monterey cypress	37	G-F	F	20	20	18	25	M	X	H	Moderate sidewalk lifting. Multiple stems at 5'; main stem splits into co-dominant stems at 10'. Root-shaped lift in asphalt at 5' from trunk. 25' from proposed driveway; conflicting with proposed grading.	Remove.
14	Monterey cypress	50	G-F	F	20	18	20	20	M-OM	X	H	Diameter measured at 6". Large low scaffold to S. Lifting concrete drain; no asphalt damage. Lower canopy chlorotic and slightly sparse. 6' from proposed driveway.	Remove.
15	Monterey cypress	51.5	VP	F	15	12	15		OM	X	H	Very sparse canopy. Minor lifting of sidewalk; previously replaced with 3"-4" cut roots. Only a few green branches on lower NW canopy. 30' from proposed office; 25' from proposed walkway; 35' from proposed driveway.	Remove due to very poor health.
16	Monterey cypress	42	G	F	15	20	20	20	M-OM	X	M-H	Minor sidewalk damage. Center stems vertical with little branching. Elongated branches to E. 28' from proposed seating area; 32' from proposed office.	

#	Species	Size	Health	Structure	Dripline N	Dripline E	Dripline S	Dripline W	Age	DE	CI	Comments	Specific Recommendations
17	Monterey cypress	37	F-P	F-P	0	20	5	20 W	M	X	M-H	Co-dominant stems at 3', narrow canopy with low interior branching due to competition from adjacent trees. Sparse canopy with healthy foliage only at very top of trunks. 27' from proposed seating area.	
18	Monterey cypress	54	F	F	20	25	20	25	M-OM	X	M-H/H	Chlorotic foliage. Parking lot damaged at 25' to SE and 18' to S (obvious root). Massive surface roots towards street; no sidewalk damage due to recent replacement. Proposed walkway 30' to S; proposed seating area 35' to E. Proposed water utility within existing driveway.	Start hardscape demolition by hand near obvious root damaged areas. Minimize fill under dripline; compact by hand. Arborist on-site during utility excavation.
19	Monterey cypress	55	G-F	F	20	20	15	20	M-OM	X	H	Major concrete lift 18' to SE. Sidewalk ground down; massive roots towards street. 15' from proposed building (in existing asphalt); 5' from proposed boardwalk (may be elevated).	Dig boardwalk footings by hand.
20	Monterey cypress	45.5	F/F-P	F-P	0	0	15 SE	15	M-OM	X	H	Declining tree; half of canopy removed (likely from dieback). Co-dominant stems at 3'. Massive woody roots. 17' from proposed building (in existing asphalt); 5' from proposed boardwalk (may be elevated).	Dig boardwalk footings by hand.
21	Monterey cypress	46	G-F	F	15	12	18	18	M-OM	X	H	Windswept-appearing canopy to W. Large woody surface root visible on bank. 9' from proposed building; in proposed walkway.	Remove.
22	Monterey cypress	64.5	F-P	G-F	30	20	20	20	M-OM	X	H	Well attached branches. Exposed woody woots on bank to S. Roots visible to 30' E (2"-3" diameter). Canopy chlorotic and sparse. 10' from proposed building; in proposed walkway.	Remove.
23	Peruvian pepper (*Schinus molle*)	10.5, 13	F-P	G-F	12	10	6	6	M	X	H	South canopy sparse; canopy dieback. In proposed grading.	Remove.
24	Monterey pine (*Pinus radiata*)	26	F-P/P	F-P	15	8	0	8	M	X	H	**Off site tree?** Elongated sparse scaffold branches. Several dead up to 5" diameter. Moderate hardscape damage; surface roots. Tree likely to continue decline regardless of construction. 5' from proposed storm drain.	Remove. **Requires owner approval if off-site.**
25	Monterey pine	26	F	F	20	15	10	20	M	X	L	Not surveyed. Diameter estimated due to poison oak. 20' from proposed storm drain; 15' from limit of grading.	Install temporary fencing.
26	Monterey pine	28	G-F	F	25	25	25	25	M		L	Not surveyed, diameter estimated. Within dense brush. 25' from proposed limit of grading.	None.
27	Monterey pine	22	G	G	15	15	15	15	M	X	L-M	Not surveyed; 15' above canal on slope. 9' from proposed limit of grading & 11' from proposed concrete ditch.	Install temporary fencing.

Discussion

Construction impact on trees is generally evaluated based on the following information:

- What is the current health, structure, and age of the trees? Are they likely to live for a long time, during which they will continue to provide benefits to the subject property and the surrounding areas?
- Is the tree species sensitive or tolerant of construction?
- What improvements are proposed around the trees, and how much will they impact tree health & stability?

Since the Monterey cypresses are the dominant & most crucial trees, this discussion primarily focuses on them.

Existing tree condition & species variation

The majority of the trees on the property consist of large, aging Monterey cypresses, with a wide range of tree health (good to very poor, Figure 3). Monterey cypresses require moderate amounts of water for optimal health. I suspect that the on-site trees are drought-stressed, especially if they were accustomed to regular irrigation when the school was still in operation. The structure of the trees is similar, consisting of multiple crowded stems that split at different heights above grade (Figure 4). Crowded stems are considered structural defects – as the diameter of each stem increases, it puts pressure on its neighbors, and eventually the stem with the weakest attachment breaks. This structure is typical of the species and cannot be corrected at this age.



Figure 4. Trees #3-5 (center) are in poor health with dying lower canopies. The deadwood may be maintained as screening. Note multiple crowded stems on every tree.

As trees age, their growth rate slows, and they are less able to adapt to or recover from environmental changes. I consider the majority of the cypresses to be in the mature to over-mature age range, which means they have peaked in their vitality – the next phase of their life is senescence & decline.

Additionally, different tree species have different tolerances to construction-related impacts like soil compaction, root loss, and pruning. The tolerance may be related to a tree's ability to compartmentalize around damage, regenerate roots or shoots, etc. Per Trees & Development by Nelda Matheny and Jim Clark, Monterey cypresses have poor tolerance to construction. The ideal "tree protection zone" where no disturbance shall occur is 1.25' per 1" trunk diameter for over-mature trees with poor tolerance, which comes out to 39' to 81' for the on-site cypresses.

Construction's impact on trees

Construction practices such as grading, excavation and compaction can affect both the structural stability and general health of trees. Structural stability may be compromised when grading or excavation occurs within a tree's structural root plate (SRP), or the area adjacent to

the trunk where the majority of the large-diameter supportive roots are found. This area can be generically estimated as 5 times the trunk diameter, assuming that the root system is perfectly radial. This SRP estimate is best used as a guideline to inform design, since sub-surface conditions and previous development can redirect and alter root growth in unknown ways. Regardless, excessive removal of roots within the SRP may increase the likelihood that the entire tree will fail.

Construction occurring beyond the structural roots will impact smaller absorption roots. These roots tend to be concentrated in the upper 4"-6" of soil where oxygen and water is readily available. Excavation removes existing roots, while compaction decreases available soil space for air, water and root growth. Additionally, fill – even if un-compacted - affects trees by increasing the depth of soil through which water and air must travel before they reach. Installation of utilities and foundations typically require excavation or compaction through the entire depth (3') of a tree's root system. Hardscape may also have an unexpectedly high impact, especially if >90% compaction is required (Figure 4). Extensive construction disturbance essentially decreases a tree's ability to obtain enough water or air to survive.

To assist re-design efforts, I provided three "tiers" of clearances to the team.

(1) The SRP (5 times, or 0.42 x trunk diameter) was the minimum limit to guarantee that the trees would remain stable after construction.
(2) In my opinion, an acceptable clearance for maintaining tree health would be 1' per 1" trunk diameter, assuming that appropriate tree protection measures are followed during construction.
(3) The upper limit is the ideal tree protection zone from Matheny & Clark, or 1.25' per 1" trunk diameter.

In some cases, an additional 10'-20' of clearance was provided, but even this was not enough to maintain the acceptable or ideal clearances. To do so would eliminate the use of 1/3 of the total width of the property. Regardless, the proposed buildings, walkways, and landscape improvements were moved as far from the trees as possible. Some of the walkways were replaced with boardwalks, which will be supported above grade with footings. Although the footings still affect tree roots, they are limited to a small area and do not require compaction of existing grade.

Typically, I would recommend removing the majority of the cypresses along Oddstad Blvd since their long-term survival cannot be guaranteed. However, the design has been significantly modified to accommodate the trees, and I do consider it worthwhile to continue the preservation efforts into construction - even if the cypresses cannot be guaranteed to thrive in the same condition in the years to come. The recommendations provided in this report are intended to increase the cypresses' resilience & to reduce construction damage. Still, individual trees may need to be replaced if they decline.

Mitigating construction encroachment

The key to maximizing a tree's tolerance of disturbance lies in maintaining good health leading up to, during, and after construction. Water stress that occurs from root loss or soil compaction can be partially mitigated with supplemental irrigation. Ideally, this would begin months in advance, and should be applied with soaker hoses. Water drips out slowly from the surface of the soaker hoses, along their entire length. The slow flow rate allows water to infiltrate into soil – especially in clay – without running off the surface. The irrigation should target the roots close to the dripline, since the roots by the trunk are primarily structural. Furthermore, the hoses can also be moved to target other areas of the root system. The only drawback to using soaker

hoses is that they require a garden hose or hosebib, which can be difficult to find on construction sites. Permanent irrigation may be installed to the trees as long as their construction does not damage tree roots.

Applying a thick layer of wood chips will conserve soil moisture and reduce soil compaction from equipment & foot traffic. Mulch can also be used to protect roots in areas where temporary fencing would hinder construction access. Any type of mulch will reduce evaporation, but the best type of mulch can be obtained (for free!) from tree services. Tree service wood chips contain a shredded mix of leaves, needles, branches & wood, which break down at different rates. As the wood chips break down, organic matter is added to improve the existing soil. The mulch shall be left in place during & after construction to extend its benefits. If the mulch does not stay in place on the slope next to the sidewalk, friction can be increased by staking down jute netting over the soil before applying mulch.



Figure 5. The existing driveway shall be demolished by hand by tree #18, especially where hardscape damage by roots is obvious.

Construction procedures shall aim to minimize excessive root damage, such as demolition by hand where roots are obviously responsible for damage (Figure 5). Hand digging during boardwalk construction will allow the contractor to adjust footings around large roots. Grading in the direction towards the trees, instead of in parallel to Oddstad Blvd, may allow the operator to see roots when they are smaller so that excavation can be performed more carefully as their diameters increase. Roots would not be accidentally fractured; instead they can be pruned with a sharp tool. Canopy pruning should be limited to the minimum required for construction clearance. Other practices may be prudent shall be discussed with the project arborist prior to the start of each phase of construction.

Non-cypress trees

The prior discussion primarily focused on Monterey cypresses, but there are also four Monterey pines and one Peruvian pepper. The pepper (tree #23) is located in proposed grading and will need to be removed. Also, the Monterey pine (tree #24, Figure 6) at the southwest corner of the existing parking lot is only 5' from the proposed storm drain. It is presently in decline, with several stubs indicating past branch failures. Monterey pines are fairly short-lived and are highly susceptible to pine pitch canker and red turpentine beetles, particularly once they are drought stressed like this tree. I recommend removing it due to high encroachment. The remaining three pines (#25-27) along the east property line can be easily saved with minor impact.

Tree Protection Recommendations for Monterey pines (trees #25-27 along east property line)

- Prior to construction or grading, contractor shall install 6' chain-link fencing to construct a temporary Tree Protection Zone (TPZ) around trees #25 & 27 as indicated on the tree protection plan. TPZ fencing shall remain in an upright sturdy manner from the start of grading until the completion of construction. Fencing shall not be adjusted or removed without consulting the project arborist.
- If roots ≥ 2" in diameter are encountered during the construction of the concrete ditch by tree #27, they shall be cleanly pruned with a handsaw or sawzall, immediately covered, and kept moist till backfilled.
- If needed, pruning shall be performed by personnel certified by the International Society of Arboriculture (ISA). All pruning shall adhere to ISA and American National Standards Institute (ANSI) Standards and Best Management Practices.



Figure 6. Monterey pine #24 is declining with a history of branch failures. It will need to be removed to construct the proposed storm drain.

Tree Protection Recommendations for Monterey cypresses (trees #1-12, 16-20 along Oddstad Blvd)

Pre-Construction Phase

- Starting at least 3 months before construction, begin monthly supplemental irrigation. Irrigation shall be provided with soaker hoses, laid as close to the trees' driplines as possible. Use the lowest water pressure that allows water to bead out of the entire length of the hose, and leave on for a minimum of 8 hours.
- At any time, apply a 4"-6" thick layer of mulch beneath the trees' driplines within the existing landscape planters, keeping at least 12" away from the trunks. The ideal type of mulch can be obtained from tree services, and consists of a mix of shredded leaves, twigs, branches and wood. The mulch shall remain in place throughout and beyond construction.
- If the slope along the sidewalk is too steep to retain mulch, jute netting shall be laid over the soil and staked down to provide friction. The mulch shall be placed on top of the netting as close to 4"-6" depth as possible.

Demolition Phase

- Prior to the start of demolition, the contractor shall discuss recommended tree protection measures with the project arborist.
- Prior to the start of demolition, the contractor shall install 6' chain-link fencing to construct a temporary Tree Protection Zone (TPZ) around each grove of trees as indicated on the tree protection plan. Fencing shall be securely attached to steel posts driven into the ground. Fencing will need to be extended to encompass a greater TPZ once demolition is completed.
- Remove trees #13-15 & 21-24 (7 trees). Tree #24 appears to be off-site; its removal will require approval by the property owner. Wood chips from tree removals shall be kept on-site for additional tree protection.

- Demolition of existing hardscape shall occur by hand within the driplines of trees #11, 12 & 18-20, especially next to areas of obvious root damage. Heavy equipment may be used to remove hardscape fragments & debris only if the roots and soil remains undisturbed.
- Existing fence footings by trees #1-12 shall be carefully removed by hand to minimize injury to tree roots.
- Once demolition is completed, the wood chips from the tree removals shall be spread out over the newly exposed soil within the TPZ, and the TPZ fencing shall be extended as noted on the plan.
- TPZ fencing shall remain in an upright sturdy manner from the start of grading until the completion of construction. Fencing shall not be adjusted or removed without consulting the project arborist.

<u>Foundation, Grading, and Construction Phase</u>

- Prior to the start of work, each contractor (e.g. grading, utility) shall discuss recommended tree protection measures with the project arborist.
- If feasible (i.e. on-site water is still available), maintain monthly supplemental irrigation using soaker hoses. The soaker hoses shall be laid just inside the Tree Protection Zone (TPZ) fencing. Use the lowest water pressure that allows water to bead out of the entire length of the hose, and leave on for a minimum of 8 hours.
- Minimize grading outside the proposed driveway & building pads to the greatest extent possible.
- Minimize proposed fill within tree driplines, especially by tree #18. Fill shall remain un-compacted or minimally compacted by hand.
- If possible, as the contractors approach the trees, grading or excavation should proceed in a perpendicular direction to Oddstad Blvd to minimize fracturing of roots close to the trunk. Caution shall be exercised once roots 2”-3” in diameter are visible.
- The project arborist shall be on-site during grading within tree driplines, as well as utility work within the dripline of tree #18. The arborist shall provide monitoring & root pruning services, if appropriate, and the observations shall be used to inform future construction procedure and tree protection measures. If needed, roots shall be cleanly pruned with a handsaw or sawzall, immediately covered, and kept moist till backfilled.
- Pruning shall be minimized to maintain as much live foliage as possible on all the trees. Deadwood may also be left in place to maintain screening, especially in declining trees where the majority of the lower canopy is dead. If needed, pruning shall performed by personnel certified by the International Society of Arboriculture (ISA). All pruning shall adhere to ISA and American National Standards Institute (ANSI) Standards and Best Management Practices. The size of pruning cuts shall be minimized, and branches shall be reduced back to live foliage wherever possible.
- Should Tree Protection Zone (TPZ) encroachment be necessary, the contractor shall contact the project for approval and recommendations.
- Contractor shall keep TPZs free of all construction-related materials, debris, fill soil, equipment, etc. The only acceptable material is mulch spread out beneath the trees.
- Should any damage to the trees occur, the contractor shall promptly notify the project arborist to appropriately mitigate the damage.

Landscaping Phase

- The Tree Protection Zone (TPZ) fencing shall remain in place with the same restrictions until landscape contractor notifies and meets with the project arborist.
- Footings for the proposed boardwalks by trees #5-8 & 19-20 shall be dug by hand for the upper 3' of soil. If large roots ≥ 2" diameter are encountered, the footings shall be adjusted to save them. If other large roots are encountered, consult the project arborist for recommendations. If needed, roots shall be cleanly pruned with a handsaw or sawzall, immediately covered, and kept moist till backfilled.
- In general, avoid all fill work, grade changes, and trenching within driplines unless it is performed by hand.
- Proposed irrigation lines shall be installed as far from the trunks of the trees as possible. Trenching shall be performed by hand within tree driplines. Pipes shall be threaded through large roots (≥ 2" diameter) without damaging them.
- The mulch applied for tree protection shall remain in place throughout and beyond landscape construction. If processed mulch is desired for aesthetics, it shall be spread over the wood chip mulch.
- Once water is available via hosebibs, resume monthly supplemental irrigation using soaker hoses. The soaker hoses shall be laid just inside the Tree Protection Zone (TPZ) fencing. Use the lowest water pressure that allows water to bead out of the entire length of the hose, and leave on for a minimum of 8 hours.
- Alternatively, permanent irrigation may be installed for the trees as long as it does not require significant trenching or root pruning. The type of irrigation shall match soaker hoses as much as possible (e.g. slow & deep watering across significant area).

Thank you for the opportunity to provide this report, and please do not hesitate to contact me if there are any questions or concerns.

Sincerely,



Jennifer Tso
Certified Arborist #WE-10270A
Tree Risk Assessor Qualified

APPENDIX 4.1-A: ARBORIST REPORT, PREPARED TRAVERSO TREE SERVICE, MARCH 18, 2020

See Appendix 3-C

APPENDIX 4.1-B: TREE REPLACEMENT RECOMMENDATION MEMORANDUM, TRAVERSO TREE SERVICE, JUNE 17, 2020

TRAVERSO TREE SERVICE
WHEN IT HAS TO BE DONE RIGHT

June 17, 2020

Kenneth R. Klebanoff
Brookwood Advisors
50 California Street, Suite 1500
San Francisco, CA 94111
415-956-5056 | kklebanoff@brookwoodgroup.com

Re: Planning comments re: replacement trees for 930 Oddstad Blvd, Pacifica

Dear Kenneth,

This letter addresses the Planning Department's tree-related comments from the letter dated May 15, 2020. To paraphrase, Comment #4A requests suitable replacement species, recommended planting size, and time needed to recreate the existing screening.

Species selection
I recall that Monterey cypress was specified as the replacement species in one of the proposed landscape plans. Although the aesthetic continuity would be maintained, the existing issues will recur, such as significant hardscape damage, multiple competing stems, and sensitivity to root disturbance. Instead, I recommend using at least two replacement species. Species diversity creates a buffer against future issues that could devastate a single species. If visual cohesiveness is the priority, a single species could be used, with the understanding that the entire row could be lost if a serious pest or disease were introduced.

I briefly referenced the "Trees For Pacifica" Tree Selection and Planting Guide by Roy Leggitt. The Guide separates the city into three zones based on environmental differences, with this property located in Zone 3. Zone 3 comprises upland areas and ridges, which have lower wind and salt spray exposure. In my opinion, any of the species in the Guide would be suitable for Zone 3. The salt-spray and wind tolerant species recommended for Zones 1 & 2 would grow better in the absence of those stresses.

The trees in the table below are (1) moderate-fast growing, (2) have dense evergreen & spreading canopies, and (3) have low-moderate root damage potential. Additional bonuses include California natives (though not necessarily native to the region), low water use, and lack of serious issues. All trees have drawbacks especially in developed areas, and the drawbacks must be weighed against their benefits. Additionally, even trees rated to have "low root damage potential" can cause damage when planted close to hardscape. The majority of the information in the table is collected from SelecTree, a tree database created by Cal Poly San Luis Obispo.

Species	Common name	Height	Spread	Growth rate	CA native	Positives	Drawbacks
*Cedrus deodara**	Deodar cedar	60'	30'	36" per year		Tall	Moderate root damage potential; cones fall apart
Cryptomeria japonica	Japanese cryptomeria	65'	20'	36" per year		Smog tolerant. **In Trees for Pacifica.**	Moderate root damage potential; moist soil

Species	Common name	Height	Spread	Growth rate	CA native	Positives	Drawbacks
Lagunaria patersonia	Primrose tree	50'	20'	36" per year		Low water, pink flowers	Fruit has small hairs
Laurus nobilis	Sweet bay/Grecian laurel	40'	30'	12"-24" per year		Screen/dense. **In Trees for Pacifica.**	Moderate root damage potential
Lophostemon confertus	Brisbane box	50'	30'	24"-36" per year		Drought tolerant when established. **In Trees for Pacifica.**	Moderate root damage potential
Metrosideros excelsa	New Zealand Christmas tree	35'	35'	24"		Attractive red flowers. **In Trees for Pacifica.**	Moderate root damage potential
Pittosporum eugenioides	Lemonwood tree	40'	15'	24" per year		Screen/dense. **In Trees for Pacifica.**	Dry fruits
Podocarpus macrophyllus	Yew pine	50'	20'	24" per year		Screen/dense. **In Trees for Pacifica.**	Dry "fruits"
*Quercus agrifolia**	Coast live oak	70'	70'	24" per year	X	Spreading dense canopy - can plant fewer trees. **In Trees for Pacifica.**	Size - plant further from street. Better suited for parks. Susceptible to SOD (usually if bays are around)
Quercus chrysolepis	Canyon oak	70'	30'	24" per year	X	Spreading canopy. **In Trees for Pacifica.**	Moderate root damage potential
*Sequoia sempervirens**	Coast redwood	≥100'	20'-30'	36"+ per year (Average 18"-24")	X	Low root damage potential (but still possible right next to sidewalk); few issues	High water use (fog may mitigate)

* indicates most suitable species

Coast redwood (*Sequoia sempervirens*) seems to be the most suitable replacement species, on account of its rapid growth, dense canopy, and lack of significant pests and diseases. The primary issue is its high water use, but the climate is relatively mild and the trees may receive part of their water from coastal fog. Pacifica is not in the redwood's native range, but the species is found in similar environments.

Coast live oak (*Coast live oak*) is native to the region; there is another coast live oak on the hillside above the southeast property line. My main concern is its susceptibility to sudden oak death, cases of which has been confirmed in the parks south of the city. The proximity of affected California bay laurel (*Umbellularia californica*) is the strongest indicator that oaks will be infected; there are currently no bay trees near the proposed planting locations.

Deodar cedar (*Cedrus deodara*) is another suitable species, though its canopy is not as dense as that of redwood or coast live oak.

Planting size

Smaller trees establish faster after planting, so 15-gallon container stock is best. For a more immediate effect, 24" boxes may be used – anything larger is not recommended. The longer a tree stays in a pot, the more it struggles to establish in the landscape. As a rule of thumb, one year is needed for every 1" of trunk diameter. Only after establishment do new trees start growing to their full potential. After 5-10 years, smaller trees will have outgrown larger trees.

I recommend replacing the cypresses at a 1:1 ratio, with the new tree planted in the exact same location. Any of the replacement species are capable of filling the space at maturity, so additional trees will either restrict one another or need to be thinned out in the future. Stump grinding should remove the entire trunk buttress/root flare, or clear a minimum 5'x5' area, to provide space for root growth.

Alternatively, the new trees could be planted further from the sidewalk, ideally 12'-15'. More clearance will reduce the likelihood of sidewalk damage, though it must be balanced with the clearance to the proposed patios. (The patios are more likely to be lifted by roots.) If the new trees are planted southeast of the cypresses, the existing trees could all be saved to maintain screening. Individual trees can be removed as they fully decline. By then, the new trees will have established and gotten a head start on recreating the screen.

When designing irrigation, the irrigation mainlines and trenching shall be located as far from the cypresses as possible. Excavation for the planting holes and irrigation installation will encroach upon existing tree roots, but the disturbance is inevitable if the cypresses are to be phased out slowly.

Estimation of replacement time
The cypress canopies average 20' radius, with approximately half of that overlapping with another tree. If a cypress is replaced in place, the new tree's canopy would need to extend at least 10' radius from the trunk to close the gap.

Coast redwood will be used for the purposes of discussion. To be conservative, it has an average growth rate of 24" per year. A 24" box tree may be up to 10' tall with a 2' radius canopy. Accounting for 1 year establishment time, the 10' gap will be closed in 5-6 years, with an estimated height of 18'-20'. A solid screen should be completed in 10 years. The other species do not grow as quickly or as densely as redwoods, and may take at least double the time to achieve similar results.

Please let me know if you have any questions.

Sincerely,



Jennifer Tso
Certified Arborist #WE-10270A
ISA Tree Risk Assessor Qualified

APPENDIX 4.2-A: PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING CONSTRUCTION COMMUNITY RISK ASSESSMENT, PREPARED BY ILLINGWORTH & RODKIN, NOVEMBER 17, 2021.

PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING CONSTRUCTION COMMUNITY RISK ASSESSMENT

Pacifica, California

November 17, 2021

Prepared for:

Krystle Rizzi
Senior Planner
M-Group
499 Humboldt Street,
Santa Rosa, CA 95404

Prepared by:

Casey Divine
James A. Reyff

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

429 East Cotati Avenue
Cotati, CA 94931
(707) 794-0400

I&R Project#: 21-138

Introduction

The purpose of this report is to address the potential community risk impacts associated with the construction of the proposed Pacifica School District Workforce Housing project located at 930 Oddstad Boulevard in Pacifica, California. The air quality impacts from this project would be associated with demolition of the existing uses and construction of the new buildings. Air pollutant emissions associated with construction of the project were predicted using appropriate computer models. In addition, the potential project construction health risk impacts and the impact of existing toxic air contaminant (TAC) sources affecting the nearby and proposed sensitive receptors were evaluated. The analysis was conducted following guidance provided by the Bay Area Air Quality Management District (BAAQMD).[1]

Project Description

The 7.5-acre project site is currently occupied by the former Oddstad Elementary School, with most of the existing buildings currently vacant. The project would demolish the existing school buildings and construct seven, two-story condo-style residential buildings totaling 70 units and six additional one-story buildings for storage and amenities. The project would provide 142 parking lot spaces. The residential units would be used by teachers and staff employed by the Pacifica School District.

Setting

The project is located in San Mateo County, which is in the San Francisco Bay Area Air Basin. Ambient air quality standards have been established at both the State and federal level. The Bay Area meets all ambient air quality standards with the exception of ground-level ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$).

Air Pollutants of Concern

High ozone levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_X). These precursor pollutants react under certain meteorological conditions to form high ozone levels. Controlling the emissions of these precursor pollutants is the focus of the Bay Area's attempts to reduce ozone levels. The highest ozone levels in the Bay Area occur in the eastern and southern inland valleys that are downwind of air pollutant sources. High ozone levels aggravate respiratory and cardiovascular diseases, reduced lung function, and increase coughing and chest discomfort.

Particulate matter is another problematic air pollutant of the Bay Area. Particulate matter is assessed and measured in terms of respirable particulate matter or particles that have a diameter of 10 micrometers or less (PM_{10}) and fine particulate matter where particles have a diameter of 2.5 micrometers or less ($PM_{2.5}$). Elevated concentrations of PM_{10} and $PM_{2.5}$ are the result of both region-wide (or cumulative) emissions and localized emissions. High particulate matter levels aggravate respiratory and cardiovascular diseases, reduce lung function, increase mortality (e.g., lung cancer), and result in reduced lung function growth in children.

[1] Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

Toxic Air Contaminants

Toxic air contaminants (TAC) are a broad class of compounds known to cause morbidity or mortality (usually because they cause cancer) and include, but are not limited to, the criteria air pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Because chronic exposure can result in adverse health effects, TACs are regulated at the regional, State, and federal level.

Diesel exhaust is the predominant TAC in urban air and is estimated to represent about three-quarters of the cancer risk from TACs (based on the Bay Area average). According to the California Air Resources Board (CARB), diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB, and are listed as carcinogens either under the State's Proposition 65 or under the Federal Hazardous Air Pollutants programs.

Sensitive Receptors

There are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, and elementary schools. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing TACs. Residential locations are assumed to include infants and small children. The closest sensitive receptors to the project site are in the single-family residences to the north and west of the project site. There are additional residences at further distances surrounding the site. This project would also introduce new sensitive receptors (i.e., residents) to the area.

Regulatory Setting

Federal Regulations

The United States Environmental Protection Agency (EPA) sets nationwide emission standards for mobile sources, which include on-road (highway) motor vehicles such trucks, buses, and automobiles, and non-road (off-road) vehicles and equipment used in construction, agricultural, industrial, and mining activities (such as bulldozers and loaders). The EPA also sets nationwide fuel standards. California also has the ability to set motor vehicle emission standards and standards for fuel used in California, as long as they are the same or more stringent than the federal standards.

In the past decade the EPA has established a number of emission standards for on- and non-road heavy-duty diesel engines used in trucks and other equipment. This was done in part because diesel

engines are a significant source of NO_X and particulate matter (PM_{10} and $PM_{2.5}$) and because the EPA has identified DPM as a probable carcinogen. Implementation of the heavy-duty diesel on-road vehicle standards and the non-road diesel engine standards are estimated to reduce particulate matter and NO_X emissions from diesel engines up to 95 percent in 2030 when the heavy-duty vehicle fleet is completely replaced with newer heavy-duty vehicles that comply with these emission standards.[2]

In concert with the diesel engine emission standards, the EPA has also substantially reduced the amount of sulfur allowed in diesel fuels. The sulfur contained in diesel fuel is a significant contributor to the formation of particulate matter in diesel-fueled engine exhaust. The new standards reduced the amount of sulfur allowed by 97 percent for highway diesel fuel (from 500 parts per million by weight [ppmw] to 15 ppmw), and by 99 percent for off-highway diesel fuel (from about 3,000 ppmw to 15 ppmw). The low sulfur highway fuel (15 ppmw sulfur), also called ultra-low sulfur diesel (ULSD), is currently required for use by all vehicles in the U.S.

All of the above federal diesel engine and diesel fuel requirements have been adopted by California, in some cases with modifications making the requirements more stringent or the implementation dates sooner.

State Regulations

To address the issue of diesel emissions in the state, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.[3] In addition to requiring more stringent emission standards for new on-road and off-road mobile sources and stationary diesel-fueled engines to reduce particulate matter emissions by 90 percent, a significant component of the plan involves application of emission control strategies to existing diesel vehicles and equipment. Many of the measures of the Diesel Risk Reduction Plan have been approved and adopted, including the federal on-road and non-road diesel engine emission standards for new engines, as well as adoption of regulations for low sulfur fuel in California.

CARB has adopted and implemented a number of regulations for stationary and mobile sources to reduce emissions of DPM. Several of these regulatory programs affect medium and heavy-duty diesel trucks that represent the bulk of DPM emissions from California highways. CARB regulations require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet 2010 or later engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation will substantially reduce these emissions between 2013 and 2023. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads sooner.

[2] USEPA, 2000. *Regulatory Announcement, Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements*. EPA420-F-00-057. December.

[3] California Air Resources Board, 2000. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. October.

CARB has also adopted and implemented regulations to reduce DPM and NO_X emissions from in-use (existing) and new off-road heavy-duty diesel vehicles (e.g., loaders, tractors, bulldozers, backhoes, off-highway trucks, etc.). The regulations apply to diesel-powered off-road vehicles with engines 25 horsepower (hp) or greater. The regulations are intended to reduce particulate matter and NO_X exhaust emissions by requiring owners to turn over their fleet (replace older equipment with newer equipment) or retrofit existing equipment in order to achieve specified fleet-averaged emission rates. Implementation of this regulation, in conjunction with stringent federal off-road equipment engine emission limits for new vehicles, will significantly reduce emissions of DPM and NO_X.

Bay Area Air Quality Management District (BAAQMD)

BAAQMD has jurisdiction over an approximately 5,600-square mile area, commonly referred to as the San Francisco Bay Area (Bay Area). The District's boundary encompasses the nine San Francisco Bay Area counties, including Alameda County, Contra Costa County, Marin County, San Francisco County, San Mateo County, Santa Clara County, Napa County, southwestern Solano County, and southern Sonoma County.

BAAQMD is the lead agency in developing plans to address attainment and maintenance of the National Ambient Air Quality Standards and California Ambient Air Quality Standards. The District also has permit authority over most types of stationary equipment utilized for the proposed project. The BAAQMD is responsible for permitting and inspection of stationary sources; enforcement of regulations, including setting fees, levying fines, and enforcement actions; and ensuring that public nuisances are minimized.

BAAQMD's Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area.[4] The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that includes an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TAC, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and high density of sensitive populations. Risk reduction activities associated with the CARE program are focused on the most at-risk communities in the Bay Area. Overburdened communities are areas located (i) within a census tract identified by the California Communities Environmental Health Screening Tool (CalEnviroScreen), Version 4.0 implemented by OEHHA, as having an overall CalEnviroScreen score at or above the 70th percentile, or (ii) within 1,000 feet of any such census tract.[5] The BAAQMD has identified six communities as impacted: Concord, Richmond/San Pablo, Western

[4] See BAAQMD: https://www.baaqmd.gov/community-health/community-health-protection-program/community-air-risk-evaluation-care-program , accessed 2/18/2021.
[5] See BAAQMD: https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-2-permits/2021-amendments/documents/20210722_01_appendixd_mapsofoverburdenedcommunities-pdf.pdf?la=en , accessed 10/1/2021.

Alameda County, San José, Redwood City/East Palo Alto, and Eastern San Francisco. The project site is not within the CARE area and not within a BAAQMD overburdened area as identified by CalEnviroScreen.

The BAAQMD California Environmental Quality Act (*CEQA) Air Quality Guidelines*[6] were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process consistent with CEQA requirements including thresholds of significance, mitigation measures, and background air quality information. They also include assessment methodologies for air toxics, odors, and greenhouse gas emissions. *Attachment 1* includes detailed community risk modeling methodology.

City of Pacifica – General Plan

The City of Pacifica still maintains their 1980 General Plan.[7] An update to the plan was drafted in March of 2014 but has not yet been adopted. The general plan includes goals, policies, and actions to reduce air pollutants and exposure to toxic air containments. The following goals, policies, and actions are applicable to the proposed project and this assessment:

Conservation Element Policies

3 Protect significant trees of neighborhood or area importance and encourage planting of appropriate trees and vegetation.

6 Develop policies and ordinances directed to energy conservation.

Conservation Element Action Programs

Short Term

6 Amend the Uniform Building Code to include appropriate energy-saving building requirements.

8 Develop a tree planting plan and a practical tree ordinance which preserves the forested character of the neighborhoods now planted, identifies moderate height species, and encourages forestation. Provide City assistance where possible.

Long Term

2 Evaluate the overall energy-saving effectiveness of the existing City programs, particularly those identified in the Conservation Element. Decrease energy consumption where possible.

[6] Bay Area Air Quality Management District, 2017. *CEQA Air Quality Guidelines*. May.
[7] City of Pacifica, 19802014. *City of Pacifica – General Plan*. Web: https://www.cityofpacifica.org/civicax/filebank/blobdload.aspx?t=75298.48&blobid=15615

Significance Thresholds

In June 2010, BAAQMD adopted thresholds of significance to assist in the review of projects under CEQA and these significance thresholds were contained in the District's 2011 CEQA Air Quality Guidelines. These thresholds were designed to establish the level at which BAAQMD believed air pollution emissions would cause significant environmental impacts under CEQA. The thresholds were challenged through a series of court challenges and were mostly upheld. BAAQMD updated the CEQA Air Quality Guidelines in 2017 to include the latest significance thresholds, which were used in this analysis and are summarized in Table 1. Impacts above these thresholds are considered potentially significant.

Table 1. BAAQMD CEQA Significance Thresholds

Health Risks and Hazards	Single Sources Within ¼-Mile Zone of Influence	Combined Sources (Cumulative from all sources within ¼-Mile zone of influence)
Excess Cancer Risk	10.0 per one million	100 per one million
Hazard Index	1.0	10.0
Incremental annual $PM_{2.5}$	0.3 µg/m^3	0.8 µg/m^3
Note: PM_{10} = course particulate matter or particulates with an aerodynamic diameter of 10 micrometers (µm) or less, $PM_{2.5}$ = fine particulate matter or particulates with an aerodynamic diameter of 2.5µm or less.		

Construction Community Risk Impacts and Mitigation Measures

Project impacts related to increased community risk can occur either by generating emissions of TACs and air pollutants and by introducing a new sensitive receptor in proximity to an existing source of TACs. Temporary project construction activity would generate emissions of DPM from equipment and trucks and also generate dust on a temporary basis that could affect nearby sensitive receptors. A construction community health risk assessment was prepared to address project construction impacts on the surrounding off-site sensitive receptors.

Additionally, the project could introduce new residents that are sensitive receptors, who would be exposed to existing sources of TACs and localized air pollutants in the vicinity of the project. Therefore, the impact of the existing sources of TAC upon the existing sensitive receptors and new incoming sensitive receptors was assessed.

Community risk impacts are addressed by predicting increased lifetime cancer risk, the increase in annual $PM_{2.5}$ concentrations, and computing the Hazard Index (HI) for non-cancer health risks. Construction equipment and associated heavy-duty truck traffic generates diesel exhaust, which is a known TAC. These exhaust emissions pose health risks for sensitive receptors such as surrounding residents. The primary community risk impact issues associated with construction emissions are cancer risk and exposure to $PM_{2.5}$. A health risk assessment of the project construction activities was conducted that evaluated potential health effects to nearby sensitive receptors from construction emissions of DPM and $PM_{2.5}$.[8] This assessment included dispersion modeling to predict the offsite concentrations resulting from project construction, so that lifetime

[8] DPM is identified by California as a toxic air contaminant due to the potential to cause cancer.

cancer risks and non-cancer health effects could be evaluated. The methodology for computing community risks impacts is contained in *Attachment 1*.

Construction Period Emissions

The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 was used to estimate emissions from on-site construction activity, construction vehicle trips, and evaporative emissions. The project land use types and size, and anticipated construction schedule were input to CalEEMod. The CARB EMission FACtors 2021 (EMFAC2021) model was used to predict emissions from construction traffic, which includes worker travel, vendor trucks, and haul trucks.[9] The CalEEMod model output along with construction inputs are included in *Attachment 2* and EMFAC2021 vehicle emissions modeling outputs are included in *Attachment 3*.

CalEEMod Modeling

Land Use Inputs

The proposed project land uses were entered into CalEEMod as described in Table 2.

Table 2. Summary of Project Land Use Inputs

Project Land Uses	Size	Units	Square Feet (sf)	Acreage
Condo/Townhouse	70	Dwelling Unit	82,369	7.5
Parking Lot	142	Parking Space	56,800	
Other Non-Asphalt Surfaces*	88.28	1,000-sf	88,283	
* Used to account for Outdoor Green Space				

Construction Inputs

CalEEMod computes annual emissions for construction that are based on the project type, size, and acreage. The model provides emission estimates for both on-site and off-site construction activities. On-site activities are primarily made up of construction equipment emissions, while off-site activity includes worker, hauling, and vendor traffic. The construction build-out scenario for both phases, including equipment list and schedule, were based on information provided by the project applicant.

The construction equipment worksheet provided by the applicant included the schedule for each phase. Within each phase, the quantity of equipment to be used along with the average hours per day and total number of workdays was provided. Since different equipment would have different estimates of the working days per phase, the hours per day for each phase was computed by dividing the total number of hours that the equipment would be used by the total number of days in that phase. The construction schedule assumed that the earliest possible start date would be January 2022 and would be built out over a period of approximately 19 months, or 430 construction workdays. The earliest year of full operation was assumed to be 2024.

[9] See CARB's EMFAC2021 Emissions Inventory at https://arb.ca.gov/emfac/emissions-inventory.

Construction Truck Traffic Emissions

Construction would produce traffic in the form of worker trips and truck traffic. The traffic-related emissions are based on worker and vendor trip estimates produced by CalEEMod and haul trips that were computed based on the estimate of demolition material to be exported, soil material imported and/or exported to the site, and the estimate of cement and asphalt truck trips. CalEEMod provides daily estimates of worker and vendor trips for each applicable phase. The total trips for those were computed by multiplying the daily trip rate by the number of days in that phase. Haul trips for demolition and grading were estimated from the provided demolition and grading volumes by assuming each truck could carry 10 tons per load. The number of concrete and asphalt total round haul trips were provided for the project and converted to total one-way trips, assuming two trips per delivery.

The latest version of the CalEEMod model is based on the older version of the CARB EMFAC2017 motor vehicle emission factor model. This model has been superseded by the EMFAC2021 model; however, CalEEMod has not been updated to include EMFAC2021. Therefore, the construction traffic information was combined with EMFAC2021 motor vehicle emissions factors. EMFAC2021 provides aggregate emission rates in grams per mile for each vehicle type. The vehicle mix for this study was based on CalEEMod default assumptions, where worker trips are assumed to be comprised of light-duty autos (EMFAC category LDA) and light duty trucks (EMFAC category LDT1and LDT2). Vendor trips are comprised of delivery and large trucks (EMFAC category MHDT and HHDT) and haul trips, including cement trucks, are comprised of large trucks (EMFAC category HHDT). Travel distances are based on CalEEMod default lengths, which are 10.8 miles for worker travel, 7.3 miles for vendor trips and 20 miles for hauling (soil import/export). Since CalEEMod does not address cement trucks, these were treated as vendor travel distances. Each trip was assumed to include an idle time of 5 minutes. Emissions associated with vehicle starts were also included. On road emissions in San Mateo County for the years 2022-2023 were used in these calculations. Table 3 provides the traffic inputs that were combined with the EMFAC2021 emission database to compute vehicle emissions.

Table 3. Construction Traffic Data Used for EMFAC2021 Model Runs

CalEEMod Run/Land Uses and Construction Phase	Trips by Trip Type			Notes
	Total Worker[1]	Total Vendor[1]	Total Haul[2]	
Vehicle mix[1]	50% LDA 25% LDT1 25% LDT2	50% MHDT 50% HHDT	100% HHDT	
Trip Length (miles)	10.8	7.3	20.0	CalEEMod default distance with 5-min truck idle time.
Demolition	150	-	385	41,085-sf existing building, 66,050-sf AC pavement, and 23,000-sf concrete pavement demolition. CalEEMod default worker trips.
Site Preparation	180	-	-	CalEEMod default worker trips.
Grading	600	-	92	740-cy soil export. CalEEMod default worker trips.
Trenching	150	-	-	CalEEMod default worker trips.
Building Construction	33,300	9,300	-	CalEEMod default worker and vendor trips.
Architectural Coating	440	-	-	CalEEMod default worker trips
Paving	300	-	250	1,042-cy asphalt. CalEEMod default worker trips.

Notes: [1] Based on 2022-2023 EMFAC2021 light-duty vehicle fleet mix for San Mateo County.
[2] Includes demolition and grading trips estimated by CalEEMod based on amount of material to be removed. Cement and asphalt trips estimated based on data provided by the applicant.

Summary of Computed Construction Period Emissions

The CalEEMod model and EMFAC2021 emissions provided total annual PM_{10} exhaust emissions (assumed to be DPM) for the off-road construction equipment and for exhaust emissions from on-road vehicles, with total emissions from all construction stages as 0.16 tons (325 pounds). The on-road emissions are a result of haul truck travel during grading activities, worker travel, and vendor deliveries during construction. A trip length of half a mile was used to represent vehicle travel while at or near the construction site. It was assumed that these emissions from on-road vehicles traveling at or near the site would occur at the construction site. Fugitive $PM_{2.5}$ dust emissions were calculated by CalEEMod as 0.11 tons (219 pounds) for the overall construction period.

Community Health Risk from Project Construction

Dispersion Modeling

The U.S. EPA AERMOD dispersion model was used to predict concentrations of DPM and $PM_{2.5}$ concentrations at sensitive receptors in the vicinity of the project construction area. The AERMOD dispersion model is a BAAQMD-recommended model for use in modeling analysis of these types of emission activities for CEQA projects.[10] Emission sources for the construction site were grouped into two categories: exhaust emissions of DPM and fugitive $PM_{2.5}$ dust emissions.

[10] Bay Area Air Quality Management District (BAAQMD), 2012, *Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0.* May.

Construction Sources

Combustion equipment DPM exhaust emissions were modeled as a series of point sources with a nine-foot release height (construction equipment exhaust stack height) placed at 33 feet (10 meter) intervals throughout the construction site. This resulted in 177 individual point sources being used to represent mobile equipment DPM exhaust emissions in the respective construction area, with DPM emissions occurring throughout the project construction site. In addition, the following stack parameters were used: a vertical release, a stack diameter of 2.5 inches, an exhaust temperature of 918˚F, and an exit velocity of 309 feet per second. Since these are point sources plume rise is calculated by the AERMOD dispersion model. Emissions from vehicle travel on- and off-site were also distributed among the point sources throughout the site. The locations of the point sources used for the modeling are identified in Figure 1.

For modeling fugitive $PM_{2.5}$ emissions, a near-ground level release height of 7 feet (2 meters) was used for the area source. Fugitive dust emissions at construction sites come from a variety of sources, including truck and equipment travel, grading activities, truck loading (with loaders) and unloading (rear or bottom dumping), loaders and excavators moving and transferring soil and other materials, etc. All of these activities result in fugitive dust emissions at various heights at the point(s) of generation. Once generated, the dust plume will tend to rise as it moves downwind across the site and exit the site at a higher elevation than when it was generated. For all these reasons, a 7-foot release height was used as the average release height across the construction site. Emissions from the construction equipment and on-road vehicle travel were distributed throughout the modeled area sources.

AERMOD Inputs and Meteorological Data

The modeling used a three-year data set (2010, 2012 - 2013) of hourly meteorological data from the Fort Funston prepared for use with the AERMOD model by BAAQMD. Construction emissions were modeled as occurring daily between 7:30 a.m. to 6:00 p.m., when the majority of construction activity is expected to occur as provided by the applicant. Annual DPM and $PM_{2.5}$ concentrations from construction activities during the 2022-2023 period were calculated using the model. DPM and $PM_{2.5}$ concentrations were calculated at nearby sensitive receptors. Construction source and receptor elevations were based on USGS National Elevation Data (NED) with a 30-meter resolution. Receptor heights of 5 feet (1.5 meters) were used to represent the breathing height on the first floor of nearby single-family residences.[11]

Construction Community Risk Impacts

The maximum increased cancer risks were calculated using the modeled TAC concentrations combined with the Office of Environmental Health Hazard Assessment (OEHHA) guidance for age sensitivity factors and exposure parameters as recommended by BAAQMD (see *Attachment 1)*. Non-cancer health hazards and maximum $PM_{2.5}$ concentrations were also calculated and identified. Age-sensitivity factors reflect the greater sensitivity of infants and small children to

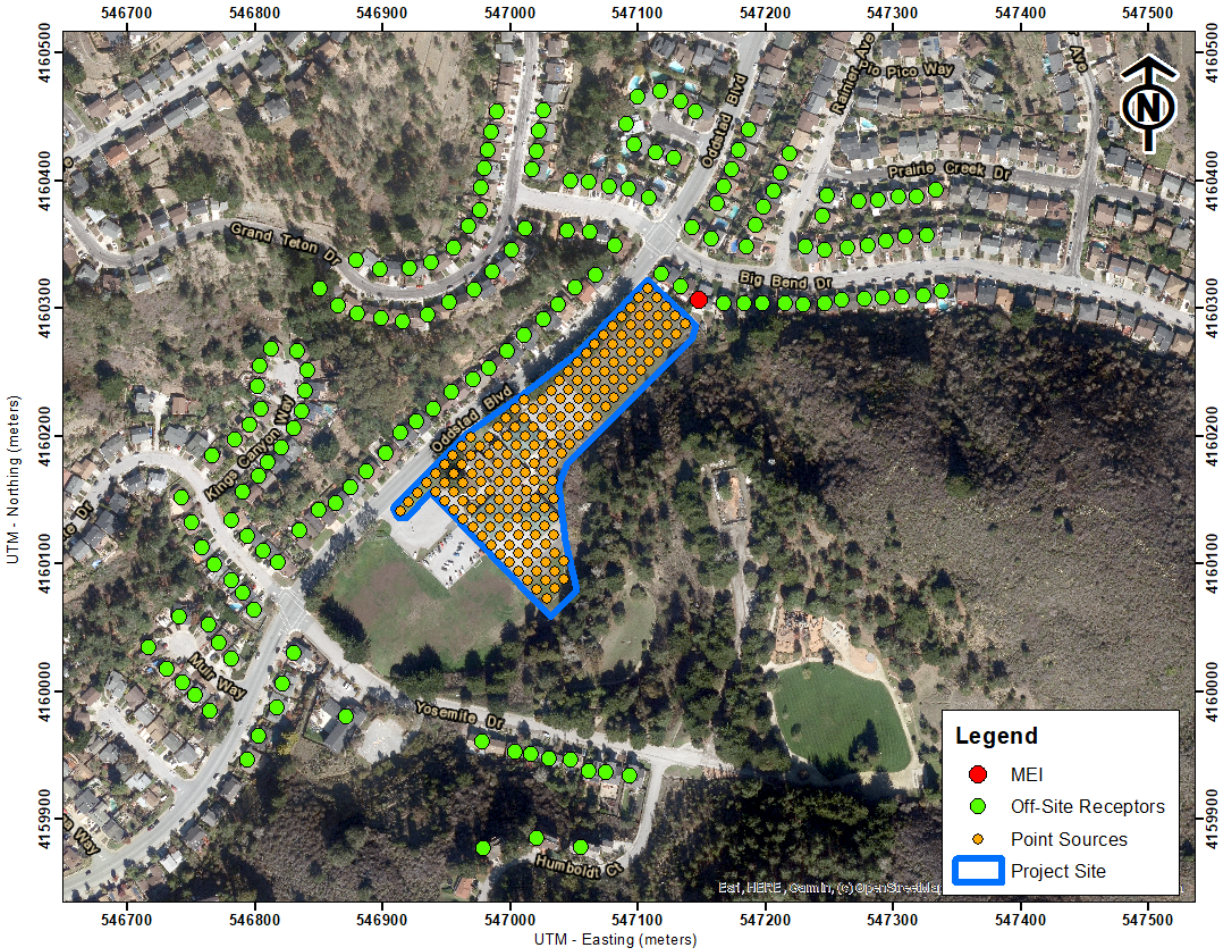
[11] Bay Area Air Quality Management District, 2012, Recommended Methods for Screening and Modeling Local Risks and Hazards, Version 3.0. May. Web: https://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/risk-modeling-approach-may-2012.pdf?la=en

cancer causing TACs. Third trimester, infant, child, and adult exposures were assumed to occur at all residences during the entire construction period.

The maximum modeled annual $PM_{2.5}$ concentration was calculated based on combined exhaust and fugitive concentrations. The maximum computed HI value was based on the ratio of the maximum DPM concentration modeled and the chronic inhalation refence exposure level of 5 $\mu g/m^3$.

The maximum modeled annual DPM and $PM_{2.5}$ concentrations, which includes both the DPM and fugitive $PM_{2.5}$ concentrations, were identified at nearby sensitive receptors (as shown in Figure 1) to find the maximally exposed individuals (MEI). Results of this assessment indicated that the construction MEI was located on the first floor (5 feet above ground) of an adjacent single-family home to the northeast of the project site. Table 4 summarizes the maximum cancer risks, $PM_{2.5}$ concentrations, and health hazard indexes for project related construction activities affecting the construction MEI. *Attachment 4* to this report includes the emission calculations used for the construction area source modeling and the cancer risk calculations.

Figure 1. Locations of Project Construction Site, Point Sources, Off-Site Sensitive Receptors, and Maximum TAC Impact

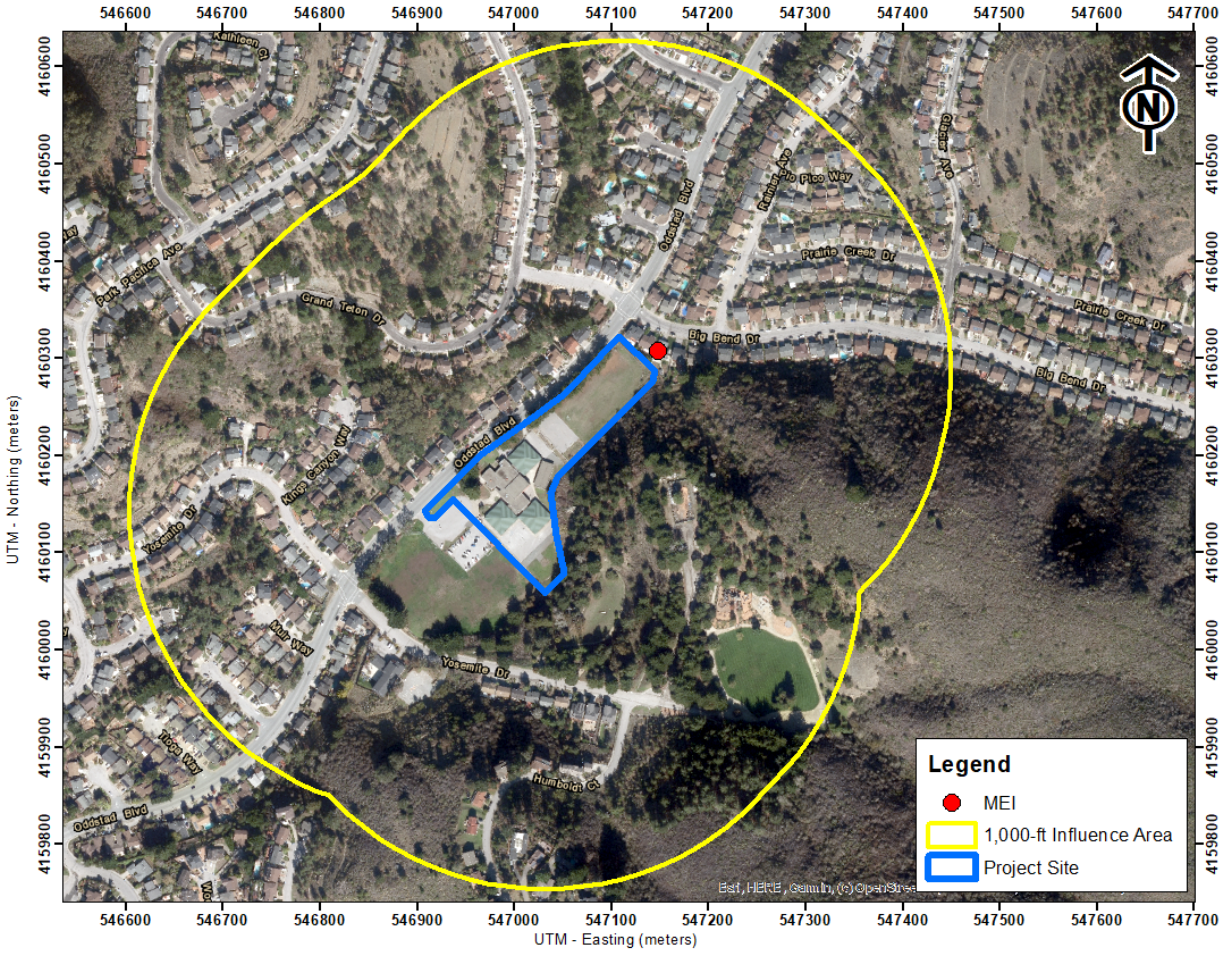


Cumulative Community Risks of all TAC Sources at the Offsite Project MEI

Community health risk assessments typically look at all substantial sources of TACs that can affect sensitive receptors that are located within 1,000 feet of a project site (i.e., influence area). These sources include rail lines, highways, busy surface streets, and stationary sources identified by BAAQMD.

A review of the project area and based on provided traffic information indicated that no roadways within the influence area would have traffic exceeding 10,000 vehicles per day. A review of BAAQMD's Permitted Stationary Sources 2018 geographic information systems (GIS) map tool[12] identified no stationary sources with the potential to affect the project site and MEI. Figure 2 shows the project area included within the influence area and the location of the MEI. Details of the modeling and community risk calculations are included in *Attachment 5*.

Figure 2. Project Site and Nearby TAC and $PM_{2.5}$ Sources



[12] BAAQMD, https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=2387ae674013413f987b1071715daa65

Summary of Health Risk Impacts

Table 4 reports both the project and cumulative community risk impacts at the sensitive receptors most affected by construction (i.e., the MEI). The project would have an exceedance with respect to community risk caused by project construction activities, since the maximum unmitigated cancer risk and annual $PM_{2.5}$ concentrations exceed their respective BAAQMD single-source thresholds. With the implementation of *Mitigation Measure AQ-1 and AQ-2*, the project's cancer risk and $PM_{2.5}$ concentrations would be lowered to a level below the single-source thresholds. The unmitigated HI does not exceed its single-source threshold and the maximum unmitigated cancer risk, annual $PM_{2.5}$ concentration, and HI do not exceed their respective cumulative-source thresholds.

Table 4. Impacts from Combined Sources at Project MEI

Source		Cancer Risk (per million)	Annual $PM_{2.5}$ ($\mu g/m^3$)	Hazard Index
Project Impacts				
Project Construction	Unmitigated	**24.50 (infant)**	**0.34**	0.02
	Mitigated*	2.48 (infant)	0.12	<0.01
BAAQMD Single-Source Threshold		***10***	***0.3***	***1.0***
Exceed Threshold?	Unmitigated	***Yes***	***Yes***	*No*
	Mitigated*	*No*	*No*	*No*
BAAQMD Cumulative Source Threshold		***100***	***0.8***	***10.0***
Exceed Threshold?	Unmitigated	*No*	*No*	*No*
	Mitigated*	*No*	*No*	*No*

* Construction equipment with Tier 4 interim engines and Best Management Practices as Mitigation.

Construction activities, particularly during site preparation and grading, would temporarily generate fugitive dust in the form of PM_{10} and $PM_{2.5}$. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit mud on local streets, which could be an additional source of airborne dust after it dries. The BAAQMD CEQA Air Quality Guidelines consider these impacts to be less-than-significant if best management practices are implemented to reduce these emissions. *Recommended Measure AQ-1 would implement BAAQMD-recommended enhanced best management practices*.

Mitigation Measure AQ-1: Include measures to control dust and exhaust during construction.

During any construction period ground disturbance, the applicant shall ensure that the project contractor implement measures to control dust and exhaust. Implementation of the measures recommended by BAAQMD and listed below would reduce the air quality impacts associated with grading and new construction to a less-than-significant level. Additional measures are identified to reduce construction equipment exhaust emissions. The contractor shall implement the following best management practices that are required of all projects:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Effectiveness of Recommended Measure AQ-1

The measures above are consistent with BAAQMD-recommended basic control measures for reducing fugitive particulate matter that are contained in the BAAQMD CEQA Air Quality Guidelines.

Mitigation Measure AQ-2: Use construction equipment that has low diesel particulate matter exhaust emissions.

A feasible plan to reduce diesel particulate matter emissions by 60 percent, so that increased cancer risk from construction would be reduced below significance levels is as follows:

1. All construction equipment larger than 50 horsepower used at the site for more than two continuous days or 20 hours total shall meet U.S. EPA Tier 4 emission standards for particulate matter (PM_{10} and $PM_{2.5}$), if feasible, otherwise,

    a. If use of Tier 4 equipment is not available, alternatively use equipment that meets U.S. EPA emission standards for Tier 2 or 3 engines and include particulate matter emissions control equivalent to CARB Level 3 verifiable diesel emission control

devices that altogether achieve a 60 percent or greater reduction in particulate matter exhaust in comparison to uncontrolled equipment.

b. Use of alternatively fueled or electric equipment.

2. Alternatively, the applicant may develop a construction operations plan demonstrating that the construction equipment used on-site would achieve a reduction in construction diesel particulate matter emissions by 60 percent or greater. Elements of the plan could include a combination of some of the following measures:
    - Implementation of No. 1 above to use Tier 4 or alternatively fueled equipment,
    - Installation of electric power lines during early construction phases to avoid use of diesel generators and compressors,
    - Use of electrically-powered equipment,
    - Forklifts and aerial lifts used for exterior and interior building construction shall be electric or propane/natural gas powered,
    - Change in construction build-out plans to lengthen phases, and
    - Implementation of different building techniques that result in less diesel equipment usage.

    Such a construction operations plan would be subject to review by an air quality expert and approved by the City prior to construction.

Effectiveness of Mitigation Measure AQ-1 and AQ-2

CalEEMod was used to compute emissions associated with this mitigation measure assuming that all equipment met U.S. EPA Tier 4 interim engines standards and BAAQMD best management practices for construction were included. With these implemented, the project's construction cancer risk impact, assuming infant exposure, would be reduced by 90 percent to 2.48 per million and the project's annual $PM_{2.5}$ concentrations would be reduced by 65 percent to 0.12 $\mu g/m^3$. A plan that reduces DPM emissions by 60 percent would reduce cancer risk to about 9.7 chances per million and a plan that reduces total $PM_{2.5}$ emissions by 15 percent would reduce $PM_{2.5}$ concentrations to about 0.29 $\mu g/m^3$. As a result, the project's construction cancer risk and $PM_{2.5}$ concentrations would be reduced below the BAAQMD single-source thresholds.

On-Site Community Health Risk Impacts – New Project Residents

A health risk assessment would have been completed to assess the impact existing TAC sources would have on the new proposed sensitive receptors (residents) that that project would introduce. However, there are no existing TAC sources (i.e., roadways with over 10,000 daily vehicles or permitted BAAQMD stationary sources) within 1,000 feet of the project site. Therefore, an on-site community health risk impact was not conducted.

Supporting Documentation

Attachment 1 is the methodology used to compute community risk impacts, including the methods to compute lifetime cancer risk from exposure to project emissions.

Attachment 2 includes the CalEEMod output for project construction emissions. Also included are any modeling assumptions.

Attachment 3 includes the EMFAC2021 emissions modeling. The input files for these calculations are voluminous and are available upon request in digital format.

Attachment 4 is the construction health risk assessment. This includes the summary of the dispersion modeling and the cancer risk calculations for construction. AERMOD dispersion modeling files for this assessment, which are quite voluminous, are available upon request and would be provided in digital format

Attachment 5 includes the cumulative community risk calculations, modeling results, and health risk calculations from sources affecting the construction MEI and project site receptors.

Attachment 1: Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminates (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[13] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[14] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[15] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs is calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of

[13] OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
[14] CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
[15] BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults, a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors is allowed by the BAAQMD if there are no schools in the project vicinity have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*
* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.					

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Attachment 2: CalEEMod Modeling Inputs and Outputs

Air Quality/Noise Construction Information Data Request

Project Name: All - Pacifica School District Workforce Housing

See Equipment Type TAB for type, horsepower and load factor

Complete ALL Portions in Yellow

Project Size 70 Condo/Townhome Units; 7.5 total project acres disturbed

82,369 s.f. residential — Phase 1

s.f. residential

s.f. office/commercial

88,283 s.f. Outdoor Green Space:

s.f. parking garage — spaces

s.f. parking lot — 142 spaces

Construction Hours 7:30 am to 6:00 pm

Pile Driving? Y/N? N

Project include on-site GENERATOR OR FIRE PUMP during project OPERATION? Y/N? N

IF YES (if BOTH separate values) -->

Kilowatts/Horsepower: _____

Fuel Type: _____

Location in project (Plans Desired if Available):

DO NOT MULTIPLY EQUIPMENT HOURS/DAY BY THE QUANTITY OF EQUIPMENT

Quantity	Description	HP	Load Factor	Hours/day	Total Work Days	Avg. Hours per day	HP Annual Hours	Comments
	Demolition	**Start Date:**	**1/3/2022**	**Total phase:**	**10**			**Overall Import/Export Volumes**
		End Date:						
1	Concrete/Industrial Saws	81	0.73	8	10	8	4730	**Demolition Volume**
3	Excavators	158	0.38	8	10	8	14410	Square footage of buildings to be demolished
2	Rubber-Tired Dozers	247	0.4	8	10	8	15808	(*or* total tons to be hauled)
	Tractors/Loaders/Backhoes	97	0.37			0	0	41,085 square feet *or*
	Other Equipment?							? Hauling volume (tons)
								Any pavement demolished and hauled? ? tons (66,050 sf AC paving, 23,000 sf Conc paving)
	Site Preparation	**Start Date:**	**1/29/2022**	**Total phase:**	**10**			
		End Date:						
	Graders	187	0.41			0	0	
3	Rubber Tired Dozers	247	0.4	8	10	8	23712	
4	Tractors/Loaders/Backhoes	97	0.37	8	10	8	11485	
	Other Equipment?							
	Grading / Excavation	**Start Date:**	**2/12/2022**	**Total phase:**	**30**			
		End Date:						**Soil Hauling Volume**
2	Excavators	158	0.38	8	30	8	28819	Export volume = 740 cubic yards?
1	Graders	187	0.41	8	30	8	18401	Import volume = ? cubic yards?
1	Rubber Tired Dozers	247	0.4	8	30	8	23712	
	Concrete/Industrial Saws	81	0.73			0	0	
2	Tractors/Loaders/Backhoes	97	0.37	8	30	8	17227	
2	Scrapers	367	0.48	8	30	8	84557	
	Trenching/Foundation	**Start Date:**	**3/26/2022**	**Total phase:**	**30**			
		End Date:						
1	Tractor/Loader/Backhoe	97	0.37	8	30	8	8614	
1	Excavators	158	0.38	8	30	8	14410	
	Other Equipment?							
	Building - Exterior	**Start Date:**	**5/7/2022**	**Total phase:**	**300**			**Cement Trucks? ? Total Round-Trips**
		End Date:						
1	Cranes	231	0.29	7	300	7	140679	Electric? (Y/N) ___ Otherwise assumed diesel
3	Forklifts	89	0.2	8	300	8	128160	Liquid Propane (LPG)? (Y/N) ___ Otherwise Assumed diesel
1	Generator Sets	84	0.74	8	300	8	149184	Or temporary line power? (Y/N) ___
3	Tractors/Loaders/Backhoes	97	0.37	7	300	7	226107	
1	Welders	46	0.45	8	300	8	49680	
	Other Equipment?							
	Building - Interior/Architectural Coating	**Start Date:**	**7/1/2023**	**Total phase:**	**20**			
		End Date:						
1	Air Compressors	78	0.48	6	20	6	4493	
	Aerial Lift	62	0.31			0	0	
	Other Equipment?							
	Paving	**Start Date:**	**7/29/2023**	**Total phase:**	**20**			
		Start Date:						
	Cement and Mortar Mixers	9	0.56			0	0	
2	Pavers	130	0.42	8	20	8	17472	**Asphalt? 1,042 cubic yards or ____ round trips? (112,500 sf)**
2	Paving Equipment	132	0.36	8	20	8	15206	
2	Rollers	80	0.38	8	20	8	9728	
	Tractors/Loaders/Backhoes	97	0.37			0	0	
	Other Equipment?							
	Additional Phases	**Start Date:**		**Total phase:**				
		Start Date:						
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	
						#DIV/0!	0	

Equipment types listed in "Equipment Types" worksheet tab.

Equipment listed in this sheet is to provide an example of inputs

It is assumed that water trucks would be used during grading

Add or subtract phases and equipment, as appropriate

Modify horsepower or load factor, as appropriate

Complete one sheet for each project component

Construction Criteria Air Pollutants						
Unmitigated	ROG	NOX	PM10 Exhaust	PM2.5 Exhaust	**CO2e**	
Year	Tons				MT	
Construction Equipment						
2022	0.23	2.26	0.11	0.10	325.79	
2023	0.72	1.05	0.05	0.05	174.32	
EMFAC						
2022	0.03	0.19	0.01	0.004	154.88	
2023	0.02	0.11	0.01	0.003	99.25	
Total Construction Emissions by Year						
2022	0.27	2.45	0.12	0.11	480.67	
2023	0.74	1.16	0.06	0.05	273.57	
	Total Construction Emissions					
Tons	1.01	3.61	0.18	0.16	754.23	
Pounds/Workdays	*Average Daily Emissions*				Workdays	
2022	2.06	18.83	0.93	0.83		**260**
2023	8.76	13.62	0.68	0.60		**170**
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		
	Total Construction Emissions					
Pounds	10.82	32.45	1.62	1.43	0.00	
Average	4.71	16.77	0.83	0.74	0.00	430.00
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Operational Criteria Air Pollutants						
Unmitigated	ROG	NOX	Total PM10	Total PM2.5		
Year	Tons					
Total	0.77	0.26	0.47	0.16		
	Existing Use Emissions					
Total						
	Net Annual Operational Emissions					
Tons/year	0.77	0.26	0.47	0.16		
Threshold - Tons/year	**10.0**	**10.0**	**15.0**	**10.0**		
	Average Daily Emissions					
Pounds Per Day	4.23	1.42	2.60	0.87		
Threshold - lbs/day	**54.0**	**54.0**	**82.0**	**54.0**		

Category	**CO2e**			
	Project	Existing	Project 2030	Existing
Area	5.57			
Energy	78.27			
Mobile	364.60			
Waste	16.19			
Water	6.21			
TOTAL	470.84	0.00	0.00	0.00
Net GHG Emissions		470.84		0.00
Service Population	192			
Per Capita Emissions		2.45		0.00

	70	units
CA DOF 2020 =	2.74	pphh

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Pacifica School Dist Workforce Housing - Construction

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	70.00	Dwelling Unit	7.50	82,369.00	200
Parking Lot	142.00	Space	0.00	56,800.00	0
Other Non-Asphalt Surfaces	88.28	1000sqft	0.00	88,283.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2024
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Provided land uses - construction worksheet and plans

Construction Phase - Provided construction schedule

Off-road Equipment - Provided construction equipment & hours

Off-road Equipment -

Off-road Equipment - Provided construction equipment & hours

Off-road Equipment - Provided construction equipment & hours

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

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Grading - grading = 740-cy export

Demolition - existing builfing demo = 41,085-sf

Trips and VMT - 0 Trips for EMFAC2021, demo = 66,050-sf AC pavement demo & 23,000-sf conc pacvng demo, paving = 1,042-cy asphalt

Construction Off-road Equipment Mitigation - BMPs and Tier 4 interim mitigation

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
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	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	10.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstEquipMitigation	Tier	No Change	Tier 4 Interim
tblConstructionPhase	NumDays	230.00	300.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	20.00	30.00
tblConstructionPhase	PhaseEndDate	3/24/2023	7/28/2023
tblConstructionPhase	PhaseEndDate	1/27/2023	6/30/2023
tblConstructionPhase	PhaseEndDate	1/28/2022	1/14/2022
tblConstructionPhase	PhaseEndDate	3/11/2022	3/25/2022
tblConstructionPhase	PhaseEndDate	2/24/2023	8/25/2023
tblConstructionPhase	PhaseStartDate	2/25/2023	7/1/2023
tblConstructionPhase	PhaseStartDate	3/12/2022	5/7/2022
tblConstructionPhase	PhaseStartDate	1/28/2023	7/29/2023
tblGrading	MaterialExported	0.00	740.00
tblLandUse	LandUseSquareFeet	70,000.00	82,369.00
tblLandUse	LotAcreage	4.38	7.50
tblLandUse	LotAcreage	1.28	0.00
tblLandUse	LotAcreage	2.03	0.00
tblOffRoadEquipment	LoadFactor	0.48	0.48
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	OffRoadEquipmentType		Scrapers
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblTripsAndVMT	HaulingTripNumber	187.00	0.00
tblTripsAndVMT	HaulingTripNumber	93.00	0.00
tblTripsAndVMT	VendorTripNumber	31.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	18.00	0.00
tblTripsAndVMT	WorkerTripNumber	20.00	0.00
tblTripsAndVMT	WorkerTripNumber	111.00	0.00
tblTripsAndVMT	WorkerTripNumber	15.00	0.00
tblTripsAndVMT	WorkerTripNumber	22.00	0.00
tblTripsAndVMT	WorkerTripNumber	5.00	0.00

2.0 Emissions Summary

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					
2022	0.2341	2.2572	2.1114	3.7300e-003	0.2566	0.1103	0.3669	0.1084	0.1029	0.2113	0.0000	323.6039	323.6039	0.0874	0.0000	325.7895
2023	0.7246	1.0500	1.2198	2.0100e-003	0.0000	0.0513	0.0513	0.0000	0.0482	0.0482	0.0000	173.2532	173.2532	0.0425	0.0000	174.3150
Maximum	**0.7246**	**2.2572**	**2.1114**	**3.7300e-003**	**0.2566**	**0.1103**	**0.3669**	**0.1084**	**0.1029**	**0.2113**	**0.0000**	**323.6039**	**323.6039**	**0.0874**	**0.0000**	**325.7895**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
2022	0.0690	1.4004	2.4035	3.7300e-003	0.1155	9.5400e-003	0.1250	0.0488	9.5400e-003	0.0583	0.0000	323.6035	323.6035	0.0874	0.0000	325.7891
2023	0.6487	0.8203	1.3531	2.0100e-003	0.0000	5.9100e-003	5.9100e-003	0.0000	5.9100e-003	5.9100e-003	0.0000	173.2530	173.2530	0.0425	0.0000	174.3148
Maximum	**0.6487**	**1.4004**	**2.4035**	**3.7300e-003**	**0.1155**	**9.5400e-003**	**0.1250**	**0.0488**	**9.5400e-003**	**0.0583**	**0.0000**	**323.6035**	**323.6035**	**0.0874**	**0.0000**	**325.7891**

	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	**25.14**	**32.85**	**-12.77**	**0.00**	**55.00**	**90.44**	**68.69**	**55.01**	**89.78**	**75.25**	**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	**1-3-2022**	**4-2-2022**	0.9522	0.4405
2	**4-3-2022**	**7-2-2022**	0.3990	0.2788
3	**7-3-2022**	**10-2-2022**	0.5691	0.3761
4	**10-3-2022**	**1-2-2023**	0.5682	0.3761
5	**1-3-2023**	**4-2-2023**	0.5129	0.3679
6	**4-3-2023**	**7-2-2023**	0.5519	0.4082
7	**7-3-2023**	**9-30-2023**	0.6926	0.6806
		Highest	0.9522	0.6806

2.2 Overall Operational

Unmitigated Operational

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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					
Area	0.5694	9.7200e-003	0.7441	4.7000e-004		0.0347	0.0347		0.0347	0.0347	3.1913	2.1639	5.3552	5.9500e-003	2.1000e-004	5.5665
Energy	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003	0.0000	77.8075	77.8075	1.4900e-003	1.4300e-003	78.2699
Mobile	0.1952	0.1828	1.8770	3.9000e-003	0.4321	2.5700e-003	0.4346	0.1154	2.3800e-003	0.1178	0.0000	359.2336	359.2336	0.0245	0.0159	364.5975
Waste						0.0000	0.0000		0.0000	0.0000	6.5363	0.0000	6.5363	0.3863	0.0000	16.1934
Water						0.0000	0.0000		0.0000	0.0000	1.4469	0.0000	1.4469	0.1486	3.5100e-003	6.2080
Total	**0.7725**	**0.2597**	**2.6497**	**4.8000e-003**	**0.4321**	**0.0427**	**0.4747**	**0.1154**	**0.0425**	**0.1579**	**11.1745**	**439.2051**	**450.3796**	**0.5668**	**0.0211**	**470.8352**

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	0.5694	9.7200e-003	0.7441	4.7000e-004		0.0347	0.0347		0.0347	0.0347	3.1913	2.1639	5.3552	5.9500e-003	2.1000e-004	5.5665
Energy	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003	0.0000	77.8075	77.8075	1.4900e-003	1.4300e-003	78.2699
Mobile	0.1952	0.1828	1.8770	3.9000e-003	0.4321	2.5700e-003	0.4346	0.1154	2.3800e-003	0.1178	0.0000	359.2336	359.2336	0.0245	0.0159	364.5975
Waste						0.0000	0.0000		0.0000	0.0000	6.5363	0.0000	6.5363	0.3863	0.0000	16.1934
Water						0.0000	0.0000		0.0000	0.0000	1.4469	0.0000	1.4469	0.1486	3.5100e-003	6.2080

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**0.7725**	**0.2597**	**2.6497**	**4.8000e-003**	**0.4321**	**0.0427**	**0.4747**	**0.1154**	**0.0425**	**0.1579**	**11.1745**	**439.2051**	**450.3796**	**0.5668**	**0.0211**	**470.8352**

	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	Demolition	Demolition	1/3/2022	1/14/2022	5	10	
2	Site Preparation	Site Preparation	1/29/2022	2/11/2022	5	10	
3	Grading	Grading	2/12/2022	3/25/2022	5	30	
4	Trenching	Trenching	3/26/2022	5/6/2022	5	30	
5	Building Construction	Building Construction	5/7/2022	6/30/2023	5	300	
6	Architectural Coating	Architectural Coating	7/1/2023	7/28/2023	5	20	
7	Paving	Paving	7/29/2023	8/25/2023	5	20	

Acres of Grading (Site Preparation Phase): 15

Acres of Grading (Grading Phase): 90

Acres of Paving: 0

Residential Indoor: 166,797; Residential Outdoor: 55,599; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 8,705

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73

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Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
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
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Grading	Scrapers	2	8.00	367	0.48
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Trenching	Excavators	1	8.00	158	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
Demolition	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

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Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	2	0.00	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

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2022

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					0.0202	0.0000	0.0202	3.0600e-003	0.0000	3.0600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1286	0.1030	1.9000e-004		6.2100e-003	6.2100e-003		5.7800e-003	5.7800e-003	0.0000	16.9951	16.9951	4.7700e-003	0.0000	17.1145
Total	**0.0132**	**0.1286**	**0.1030**	**1.9000e-004**	**0.0202**	**6.2100e-003**	**0.0264**	**3.0600e-003**	**5.7800e-003**	**8.8400e-003**	**0.0000**	**16.9951**	**16.9951**	**4.7700e-003**	**0.0000**	**17.1145**

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					

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					9.1000e-003	0.0000	9.1000e-003	1.3800e-003	0.0000	1.3800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.9200e-003	0.0678	0.1234	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	16.9951	16.9951	4.7700e-003	0.0000	17.1144
Total	**2.9200e-003**	**0.0678**	**0.1234**	**1.9000e-004**	**9.1000e-003**	**3.1000e-004**	**9.4100e-003**	**1.3800e-003**	**3.1000e-004**	**1.6900e-003**	**0.0000**	**16.9951**	**16.9951**	**4.7700e-003**	**0.0000**	**17.1144**

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					

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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**

3.3 Site Preparation - 2022

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	0.0159	0.1654	0.0985	1.9000e-004		8.0600e-003	8.0600e-003		7.4200e-003	7.4200e-003	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**0.0159**	**0.1654**	**0.0985**	**1.9000e-004**	**0.0983**	**8.0600e-003**	**0.1064**	**0.0505**	**7.4200e-003**	**0.0579**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

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					

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					0.0442	0.0000	0.0442	0.0227	0.0000	0.0227	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4800e-003	0.0608	0.1148	1.9000e-004		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	16.7197	16.7197	5.4100e-003	0.0000	16.8549
Total	**3.4800e-003**	**0.0608**	**0.1148**	**1.9000e-004**	**0.0442**	**3.1000e-004**	**0.0445**	**0.0227**	**3.1000e-004**	**0.0230**	**0.0000**	**16.7197**	**16.7197**	**5.4100e-003**	**0.0000**	**16.8549**

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					

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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**

3.4 Grading - 2022

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					0.1381	0.0000	0.1381	0.0548	0.0000	0.0548	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0545	0.5840	0.4366	9.3000e-004		0.0246	0.0246		0.0226	0.0226	0.0000	82.0020	82.0020	0.0265	0.0000	82.6650
Total	**0.0545**	**0.5840**	**0.4366**	**9.3000e-004**	**0.1381**	**0.0246**	**0.1627**	**0.0548**	**0.0226**	**0.0774**	**0.0000**	**82.0020**	**82.0020**	**0.0265**	**0.0000**	**82.6650**

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					

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					0.0621	0.0000	0.0621	0.0247	0.0000	0.0247	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0152	0.2897	0.5521	9.3000e-004		1.5300e-003	1.5300e-003		1.5300e-003	1.5300e-003	0.0000	82.0019	82.0019	0.0265	0.0000	82.6649
Total	**0.0152**	**0.2897**	**0.5521**	**9.3000e-004**	**0.0621**	**1.5300e-003**	**0.0637**	**0.0247**	**1.5300e-003**	**0.0262**	**0.0000**	**82.0019**	**82.0019**	**0.0265**	**0.0000**	**82.6649**

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					

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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**

3.5 Trenching - 2022

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	5.5100e-003	0.0518	0.0825	1.2000e-004		2.6400e-003	2.6400e-003		2.4300e-003	2.4300e-003	0.0000	10.9207	10.9207	3.5300e-003	0.0000	11.0090
Total	**5.5100e-003**	**0.0518**	**0.0825**	**1.2000e-004**		**2.6400e-003**	**2.6400e-003**		**2.4300e-003**	**2.4300e-003**	**0.0000**	**10.9207**	**10.9207**	**3.5300e-003**	**0.0000**	**11.0090**

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

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Off-Road	2.0000e-003	0.0546	0.0941	1.2000e-004		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	10.9207	10.9207	3.5300e-003	0.0000	11.0090
Total	**2.0000e-003**	**0.0546**	**0.0941**	**1.2000e-004**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**10.9207**	**10.9207**	**3.5300e-003**	**0.0000**	**11.0090**

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

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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**

3.6 Building Construction - 2022

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	0.1450	1.3273	1.3909	2.2900e-003		0.0688	0.0688		0.0647	0.0647	0.0000	196.9665	196.9665	0.0472	0.0000	198.1462
Total	**0.1450**	**1.3273**	**1.3909**	**2.2900e-003**		**0.0688**	**0.0688**		**0.0647**	**0.0647**	**0.0000**	**196.9665**	**196.9665**	**0.0472**	**0.0000**	**198.1462**

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

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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					
Off-Road	0.0454	0.9275	1.5193	2.2900e-003		7.1900e-003	7.1900e-003		7.1900e-003	7.1900e-003	0.0000	196.9662	196.9662	0.0472	0.0000	198.1459
Total	**0.0454**	**0.9275**	**1.5193**	**2.2900e-003**		**7.1900e-003**	**7.1900e-003**		**7.1900e-003**	**7.1900e-003**	**0.0000**	**196.9662**	**196.9662**	**0.0472**	**0.0000**	**198.1459**

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**

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Building Construction - 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					
Off-Road	0.1022	0.9350	1.0559	1.7500e-003		0.0455	0.0455		0.0428	0.0428	0.0000	150.6731	150.6731	0.0358	0.0000	151.5692
Total	**0.1022**	**0.9350**	**1.0559**	**1.7500e-003**		**0.0455**	**0.0455**		**0.0428**	**0.0428**	**0.0000**	**150.6731**	**150.6731**	**0.0358**	**0.0000**	**151.5692**

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**

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0347	0.7093	1.1618	1.7500e-003		5.5000e-003	5.5000e-003		5.5000e-003	5.5000e-003	0.0000	150.6729	150.6729	0.0358	0.0000	151.5690
Total	**0.0347**	**0.7093**	**1.1618**	**1.7500e-003**		**5.5000e-003**	**5.5000e-003**		**5.5000e-003**	**5.5000e-003**	**0.0000**	**150.6729**	**150.6729**	**0.0358**	**0.0000**	**151.5690**

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**

3.7 Architectural Coating - 2023

Unmitigated Construction On-Site

Date: 11/11/2021 10:26 AM

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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					
Archit. Coating	0.6101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.9200e-003	0.0130	0.0181	3.0000e-005		7.1000e-004	7.1000e-004		7.1000e-004	7.1000e-004	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.6120**	**0.0130**	**0.0181**	**3.0000e-005**		**7.1000e-004**	**7.1000e-004**		**7.1000e-004**	**7.1000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

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

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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					
Archit. Coating	0.6101					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4000e-004	0.0106	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.5000e-004	0.0000	2.5571
Total	**0.6106**	**0.0106**	**0.0183**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.5533**	**2.5533**	**1.5000e-004**	**0.0000**	**2.5571**

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**

3.8 Paving - 2023

Unmitigated Construction On-Site

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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					
Off-Road	0.0103	0.1019	0.1458	2.3000e-004		5.1000e-003	5.1000e-003		4.6900e-003	4.6900e-003	0.0000	20.0269	20.0269	6.4800e-003	0.0000	20.1888
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0103**	**0.1019**	**0.1458**	**2.3000e-004**		**5.1000e-003**	**5.1000e-003**		**4.6900e-003**	**4.6900e-003**	**0.0000**	**20.0269**	**20.0269**	**6.4800e-003**	**0.0000**	**20.1888**

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

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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					
Off-Road	3.3400e-003	0.1004	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0268	20.0268	6.4800e-003	0.0000	20.1888
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.3400e-003**	**0.1004**	**0.1730**	**2.3000e-004**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**20.0268**	**20.0268**	**6.4800e-003**	**0.0000**	**20.1888**

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**

4.0 Operational Detail - Mobile

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.1952	0.1828	1.8770	3.9000e-003	0.4321	2.5700e-003	0.4346	0.1154	2.3800e-003	0.1178	0.0000	359.2336	359.2336	0.0245	0.0159	364.5975
Unmitigated	0.1952	0.1828	1.8770	3.9000e-003	0.4321	2.5700e-003	0.4346	0.1154	2.3800e-003	0.1178	0.0000	359.2336	359.2336	0.0245	0.0159	364.5975

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	512.40	569.80	439.60	1,178,362	1,178,362
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	512.40	569.80	439.60	1,178,362	1,178,362

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	4.80	5.70	31.00	15.00	54.00	86	11	3
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Condo/Townhouse	0.473689	0.072335	0.232457	0.144246	0.025248	0.006233	0.010124	0.002125	0.001469	0.000591	0.028445	0.000434	0.002601
Other Non-Asphalt Surfaces	0.473689	0.072335	0.232457	0.144246	0.025248	0.006233	0.010124	0.002125	0.001469	0.000591	0.028445	0.000434	0.002601
Parking Lot	0.473689	0.072335	0.232457	0.144246	0.025248	0.006233	0.010124	0.002125	0.001469	0.000591	0.028445	0.000434	0.002601

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	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003	0.0000	77.8075	77.8075	1.4900e-003	1.4300e-003	78.2699
NaturalGas Unmitigated	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003	0.0000	77.8075	77.8075	1.4900e-003	1.4300e-003	78.2699

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

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	1.45806e+006	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003	0.0000	77.8075	77.8075	1.4900e-003	1.4300e-003	78.2699
Other Non-Asphalt Surfaces	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		**7.8600e-003**	**0.0672**	**0.0286**	**4.3000e-004**		**5.4300e-003**	**5.4300e-003**		**5.4300e-003**	**5.4300e-003**	**0.0000**	**77.8075**	**77.8075**	**1.4900e-003**	**1.4300e-003**	**78.2699**

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	1.45806e+006	7.8600e-003	0.0672	0.0286	4.3000e-004		5.4300e-003	5.4300e-003		5.4300e-003	5.4300e-003	0.0000	77.8075	77.8075	1.4900e-003	1.4300e-003	78.2699
Other Non-Asphalt Surfaces	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		**7.8600e-003**	**0.0672**	**0.0286**	**4.3000e-004**		**5.4300e-003**	**5.4300e-003**		**5.4300e-003**	**5.4300e-003**	**0.0000**	**77.8075**	**77.8075**	**1.4900e-003**	**1.4300e-003**	**78.2699**

5.3 Energy by Land Use - Electricity

Unmitigated

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	338734	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	19880	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			
Condo/Townhouse	338734	0.0000	0.0000	0.0000	0.0000
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	19880	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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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	0.5694	9.7200e-003	0.7441	4.7000e-004		0.0347	0.0347		0.0347	0.0347	3.1913	2.1639	5.3552	5.9500e-003	2.1000e-004	5.5665
Unmitigated	0.5694	9.7200e-003	0.7441	4.7000e-004		0.0347	0.0347		0.0347	0.0347	3.1913	2.1639	5.3552	5.9500e-003	2.1000e-004	5.5665

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	0.0610					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1615	3.7200e-003	0.2224	4.4000e-004		0.0318	0.0318		0.0318	0.0318	3.1913	1.3108	4.5021	5.1300e-003	2.1000e-004	4.6927
Landscaping	0.0158	6.0100e-003	0.5217	3.0000e-005		2.8900e-003	2.8900e-003		2.8900e-003	2.8900e-003	0.0000	0.8531	0.8531	8.3000e-004	0.0000	0.8738
Total	**0.5694**	**9.7300e-003**	**0.7441**	**4.7000e-004**		**0.0347**	**0.0347**		**0.0347**	**0.0347**	**3.1913**	**2.1639**	**5.3552**	**5.9600e-003**	**2.1000e-004**	**5.5664**

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

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	0.0610					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3311					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1615	3.7200e-003	0.2224	4.4000e-004		0.0318	0.0318		0.0318	0.0318	3.1913	1.3108	4.5021	5.1300e-003	2.1000e-004	4.6927
Landscaping	0.0158	6.0100e-003	0.5217	3.0000e-005		2.8900e-003	2.8900e-003		2.8900e-003	2.8900e-003	0.0000	0.8531	0.8531	8.3000e-004	0.0000	0.8738
Total	**0.5694**	**9.7300e-003**	**0.7441**	**4.7000e-004**		**0.0347**	**0.0347**		**0.0347**	**0.0347**	**3.1913**	**2.1639**	**5.3552**	**5.9600e-003**	**2.1000e-004**	**5.5664**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.4469	0.1486	3.5100e-003	6.2080
Unmitigated	1.4469	0.1486	3.5100e-003	6.2080

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	4.56078 / 2.87528	1.4469	0.1486	3.5100e-003	6.2080
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.4469**	**0.1486**	**3.5100e-003**	**6.2080**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	4.56078 / 2.87528	1.4469	0.1486	3.5100e-003	6.2080
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**1.4469**	**0.1486**	**3.5100e-003**	**6.2080**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.5363	0.3863	0.0000	16.1934
Unmitigated	6.5363	0.3863	0.0000	16.1934

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	32.2	6.5363	0.3863	0.0000	16.1934
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.5363**	**0.3863**	**0.0000**	**16.1934**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	32.2	6.5363	0.3863	0.0000	16.1934
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**6.5363**	**0.3863**	**0.0000**	**16.1934**

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

Pacifica School Dist Workforce Housing - Construction - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Attachment 3: EMFAC2021 Calculations

CalEEMod Construction Inputs

Phase	CalEEMod WORKER TRIPS	CalEEMod VENDOR TRIPS	Total Worker Trips	Total Vendor Trips	CalEEMod HAULING TRIPS	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class	*Worker VMT*	*Vendor VMT*	*Hauling VMT*
Demolition	15	0	150	0	385	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1620	0	7700
Site Preparation	18	0	180	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1944	0	0
Grading	20	0	600	0	92	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	6480	0	1840
Trenching	5	0	150	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	1620	0	0
Building Construction	111	31	33300	9300	0	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	359640	67890	0
Architectural Coating	22	0	440	0	0	10.8	7.3	20	LD_Mix	HDT_Mix	HHDT	4752	0	0
Paving	15	0	300	0	250	10.8	7.3	7.3	LD_Mix	HDT_Mix	HHDT	3240	0	1825

Number of Days Per Year					
2022	1/3/22	12/31/22	363	260	
2023	1/1/23	8/25/23	237	170	
2024					
			600	**430**	***Total Workdays***

Phase	Start Date	End Date	Days/Week	Workdays
Demolition	1/3/2022	1/14/2022	5	10
Site Preparation	1/29/2022	2/11/2022	5	10
Grading	2/12/2022	3/25/2022	5	30
Trenching	3/26/2022	5/6/2022	5	30
Building Construction	5/7/2022	6/30/2023	5	300
Architectural Coating	7/1/2023	7/28/2023	5	20
Paving	7/29/2023	8/25/2023	5	20

Summary of Construction Traffic Emissions (EMFAC2021)

Pollutants YEAR	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	NBio- CO2	CH4	N2O	CO2e
					Tons							*Metric Tons*		
Criteria Pollutants														
2022	0.0339	0.1908	0.3977	0.0016	0.0914	0.0108	0.1022	0.0138	0.0044	0.0182	150.4619	0.0114	0.0139	154.8764
2023	0.0200	0.1080	0.2405	0.0010	0.0597	0.0069	0.0666	0.0090	0.0028	0.0118	96.4417	0.0072	0.0088	99.2513
Toxic Air Contaminants (0.5 Mile Trip Length)														
2022	0.0276	0.0476	0.1302	0.0001	0.0045	0.0007	0.0052	0.0007	0.0003	0.0010	12.7765	0.0032	0.0020	13.4547
2023	0.0168	0.0296	0.0799	0.0001	0.0029	0.0004	0.0034	0.0004	0.0002	0.0006	8.1675	0.0020	0.0013	8.5969

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_STR	PM2.5_PM	PM2.5_RUN	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNEX	CO2_IDLEX	CO2_STREX	CH4_RUNEX	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNEX	ROG_IDLEX	ROG_STREX	ROG_HOTSO	ROG_RUNL	ROG_DIUR	TOG_RUNEX	TOG_IDLEX	TOG_STREX	TOG_HOTSO	TOG_RUNL	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2022	HHDT	Aggregate	Aggregate	Gasoline	4.26179	607.5295	607.5295	0	85.26989	0	4.217209	0	0.00281	0.00146	0	0.000935	0.005	0.031258	0.001588	0	0.001017	0.02	0.089308	2276.876	0	54.98009	0.116906	0	0.000119	0.151563	0	0.000135	0.60109	0	0.000644	0.048478	0.400153	3.469663	0.877108	0	0.000705	0.048478	0.400153	3.469663	0.045	33.53367	0	6.080621	0.022509	0	0.000544
San Mateo	2022	HHDT	Aggregate	Aggregate	Diesel	1289.917	118758.5	118758.5	0	13886.59	0	3.367467	50.13908	2.567805	0.026697	0.041054	0	0.00861	0.031515	0.027904	0.04291	0	0.03444	0.090042	1868.7	8522.619	0	0.001942	0.155104	0	0.294414	1.342742	0	0.041821	1.339355	0	0	0	0	0.04761	3.801601	0	0	0	0	0.186789	0.159005	43.82276	0	0.017695	0.080704	0
San Mateo	2022	HHDT	Aggregate	Aggregate	Natural Ga	144.1612	9768.638	9768.638	0	950.7524	0	1.845139	10.30429	0	0.002051	0.011217	0	0.009	0.058943	0.00223	0.012199	0	0.036	0.168408	1557.751	8370.006	0	3.666383	25.60841	0	0.317558	1.706281	0	0.087249	0.429393	0	0	0	0	3.781534	26.2076	0	0	0	0	0.734123	18.35301	67.58246	0	0	0	0
San Mateo	2022	LDA	Aggregate	Aggregate	Gasoline	240666.4	7995565	7995565	0	1130997	0	0.047702	0	0.275282	0.001241	0	0.002105	0.002	0.002347	0.00135	0	0.002289	0.008	0.006707	282.9533	0	72.26541	0.002546	0	0.077367	0.004869	0	0.033486	0.010142	0	0.368004	0.090257	0.23026	1.365279	0.014797	0	0.402916	0.090257	0.23026	1.365279	0.034582	0.726065	0	3.617602	0.002797	0	0.000714
San Mateo	2022	LDA	Aggregate	Aggregate	Diesel	888.5395	22501.88	22501.88	0	3790.786	0	0.240012	0	0	0.015881	0	0	0.002	0.002391	0.016599	0	0	0.008	0.006831	236.6875	0	0	0.001267	0	0	0.03729	0	0	0.02727	0	0	0	0	0	0.031045	0	0	0	0	0	0.0031	0.330004	0	0	0.002243	0	0
San Mateo	2022	LDA	Aggregate	Aggregate	Electricity	14591.4	568258.7	0	568258.7	72996.66	219394.7	0	0	0	0	0	0	0.002	0.001529	0	0	0	0.008	0.004368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	LDA	Aggregate	Aggregate	Plug-in Hyb	6271.758	249381.9	127562.4	121819.5	25933.72	36793.12	0.003286	0	0.117199	0.000663	0	0.002168	0.002	0.001311	0.000722	0	0.002358	0.008	0.003747	137.9916	0	66.6249	0.00043	0	0.042806	0.00058	0	0.020671	0.001381	0	0.176635	0.036142	0.032302	0.39726	0.002015	0	0.193393	0.036142	0.032302	0.39726	0.020013	0.205923	0	1.37819	0.001364	0	0.000659
San Mateo	2022	LDT1	Aggregate	Aggregate	Gasoline	24136.47	736196.1	736196.1	0	109571	0	0.134919	0	0.395074	0.001791	0	0.002798	0.002	0.002838	0.001948	0	0.003043	0.008	0.008107	332.0233	0	88.05436	0.00631	0	0.109218	0.009543	0	0.038745	0.028415	0	0.569782	0.157522	0.456069	2.467901	0.036499	1.368916	0	5.624448	0.003282	0	0.000871
San Mateo	2022	LDT1	Aggregate	Aggregate	Diesel	8.510916	119.4982	119.4982	0	25.11455	0	1.690269	0	0	0.241464	0	0	0.002	0.00334	0.252382	0	0	0.008	0.009543	418.5155	0	0	0.014886	0	0	0.065937	0	0	0.320488	0	0	0	0	0	0.364855	0	0	0	0	0	0.0031	1.709562	0	0	0.003966	0	0
San Mateo	2022	LDT1	Aggregate	Aggregate	Electricity	61.93893	2054.9	0	2054.9	294.187	793.3611	0	0	0	0	0	0	0.002	0.001538	0	0	0	0.008	0.004394	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	LDT1	Aggregate	Aggregate	Plug-in Hyb	19.40692	849.1339	406.2744	442.8594	80.24761	133.7567	0.003074	0	0.117199	0.000413	0	0.001456	0.002	0.001322	0.000449	0	0.001583	0.008	0.003777	129.0739	0	73.49717	0.000404	0	0.042967	0.000546	0	0.02082	0.001292	0	0.176635	0.024905	0.022892	0.287748	0.001885	0	0.193393	0.024905	0.022892	0.287748	0.020095	0.192615	0	1.37819	0.001276	0	0.000727
San Mateo	2022	LDT2	Aggregate	Aggregate	Gasoline	128775.8	4489208	4489208	0	617258.5	0	0.062575	0	0.324659	0.001272	0	0.002033	0.002	0.002716	0.001384	0	0.002212	0.008	0.007761	346.2249	0	88.33688	0.002639	0	0.081429	0.005428	0	0.036476	0.010335	0	0.378106	0.068121	0.172205	1.07279	0.015078	0	0.413978	0.068121	0.172205	1.07279	0.03686	0.748119	0	3.725451	0.003423	0	0.000873
San Mateo	2022	LDT2	Aggregate	Aggregate	Diesel	498.9179	17455.1	17455.1	0	2406.111	0	0.047726	0	0	0.005147	0	0	0.002	0.002738	0.00538	0	0	0.008	0.007822	319.776	0	0	0.000624	0	0	0.050381	0	0	0.013436	0	0	0	0	0	0.015295	0	0	0	0	0	0.0031	0.124515	0	0	0.00303	0	0
San Mateo	2022	LDT2	Aggregate	Aggregate	Electricity	502.691	16536.35	0	16536.35	2591.33	6384.394	0	0	0	0	0	0	0.002	0.001523	0	0	0	0.008	0.004353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	LDT2	Aggregate	Aggregate	Plug-in Hyb	938.5352	39780.13	19647.25	20132.88	3880.843	6080.728	0.003173	0	0.117199	0.000533	0	0.001824	0.002	0.001316	0.00058	0	0.001984	0.008	0.003761	133.2387	0	79.72461	0.000417	0	0.042967	0.000564	0	0.02082	0.001334	0	0.176635	0.026237	0.024762	0.312901	0.001946	0	0.193393	0.026237	0.024762	0.312901	0.020712	0.18883	0	1.37819	0.001317	0	0.000788
San Mateo	2022	LHDT1	Aggregate	Aggregate	Gasoline	10003.64	379521.5	379521.5	0	149039.3	0	0.147855	0.036625	0.627998	0.001475	0	0.00028	0.002	0.0273	0.001604	0	0.000304	0.008	0.078	873.9961	119.3318	27.2104	0.00734	0.115266	0.0324	0.008388	0.003078	0.051835	0.036131	0.419759	0.159081	0.039876	0.21247	2.143205	0.052722	0.612512	0.174174	0.039876	0.21247	2.143205	0.044922	1.060707	3.758503	3.2802	0.00864	0.00118	0.000269
San Mateo	2022	LHDT1	Aggregate	Aggregate	Diesel	4125.911	163656.9	163656.9	0	51898.77	0	1.504213	1.931831	0	0.031512	0.027157	0	0.003	0.0273	0.032937	0.028385	0	0.012	0.078	637.8215	131.7515	0	0.007485	0.005098	0	0.100489	0.020757	0	0.161141	0.10976	0	0	0	0	0.183448	0.124954	0	0	0	0	0.175401	0.431298	0.909745	0	0.006044	0.001248	0
San Mateo	2022	LHDT2	Aggregate	Aggregate	Gasoline	1166.848	41928.69	41928.69	0	17384.3	0	0.172444	0.036335	0.63879	0.001438	0	0.000256	0.002	0.03185	0.001563	0	0.000279	0.008	0.091	987.4952	138.4793	25.88997	0.006917	0.113246	0.032524	0.010039	0.002938	0.050567	0.032554	0.416435	0.161154	0.042451	0.223651	2.256912	0.047503	0.60766	0.176444	0.042451	0.223651	2.256912	0.044984	0.96909	3.758162	3.27211	0.009762	0.001369	0.000256
San Mateo	2022	LHDT2	Aggregate	Aggregate	Diesel	1718.365	70077.77	70077.77	0	21614.87	0	1.063364	1.845339	0	0.026451	0.026962	0	0.003	0.03185	0.027647	0.028181	0	0.012	0.091	760.4369	209.0317	0	0.0066	0.005098	0	0.119807	0.032933	0	0.142091	0.10976	0	0	0	0	0.161761	0.124954	0	0	0	0	0.190222	0.33883	0.909745	0	0.007206	0.001981	0
San Mateo	2022	MCY	Aggregate	Aggregate	Gasoline	11775.11	70029.62	70029.62	0	23550.22	0	0.563376	0	0.148145	0.00188	0	0.003836	0.001	0.0042	0.002007	0	0.00407	0.004	0.012	188.692	0	50.07102	0.159449	0	0.191389	0.038859	0	0.008671	1.054922	0	1.43267	3.559039	3.722371	3.591267	1.259821	0	1.557156	3.559039	3.722371	3.591267	0.008767	12.33015	0	7.963377	0.001865	0	0.000495
San Mateo	2022	MDV	Aggregate	Aggregate	Gasoline	72399.54	2561532	2561532	0	344969.9	0	0.082284	0	0.405736	0.001302	0	0.002201	0.002	0.002736	0.001416	0	0.002394	0.008	0.007817	417.1287	0	107.0056	0.003285	0	0.097944	0.006421	0	0.03969	0.013708	0	0.489899	0.078175	0.208676	1.264413	0.019977	0	0.536373	0.078175	0.208676	1.264413	0.037279	0.822259	0	4.057961	0.004124	0	0.001058
San Mateo	2022	MDV	Aggregate	Aggregate	Diesel	1048.144	37479.46	37479.46	0	5036.896	0	0.047538	0	0	0.004777	0	0	0.002	0.002777	0.004993	0	0	0.008	0.007934	415.9683	0	0	0.000486	0	0	0.065536	0	0	0.010456	0	0	0	0	0	0.011904	0	0	0	0	0	0.0031	0.180998	0	0	0.003942	0	0
San Mateo	2022	MDV	Aggregate	Aggregate	Electricity	497.8274	16375.41	0	16375.41	2565.598	6322.26	0	0	0	0	0	0	0.002	0.001523	0	0	0	0.008	0.004351	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	MDV	Aggregate	Aggregate	Plug-in Hyb	517.8537	21966.08	11106.12	10859.96	2141.325	3280.032	0.003248	0	0.117199	0.000662	0	0.002216	0.002	0.001313	0.00072	0	0.00241	0.008	0.003752	136.3969	0	99.02064	0.000428	0	0.043094	0.000581	0	0.020938	0.001365	0	0.176635	0.028658	0.027868	0.344841	0.001992	0	0.193393	0.028658	0.027868	0.344841	0.021235	0.203543	0	1.37819	0.001348	0	0.000979
San Mateo	2022	MH	Aggregate	Aggregate	Gasoline	751.6488	7043.926	7043.926	0	75.19494	0	0.465552	0	0.403779	0.001863	0	0.00047	0.003	0.015756	0.002026	0	0.000512	0.012	0.045017	1948.174	0	32.24518	0.017921	0	0.039048	0.027477	0	0.041219	0.080748	0	0.17064	12.70927	0.296989	4.339134	0.117828	0	0.186829	12.70927	0.296989	4.339134	0.044744	2.072946	0	3.847624	0.01926	0	0.000319
San Mateo	2022	MH	Aggregate	Aggregate	Diesel	300.3894	3250.689	3250.689	0	30.03894	0	3.401996	0	0	0.063019	0	0	0.004	0.015675	0.065868	0	0	0.016	0.044785	1084.767	0	0	0.00458	0	0	0.170906	0	0	0.09861	0	0	0	0	0	0.112261	0	0	0	0	0	0.179676	0.315592	0	0	0.010279	0	0
San Mateo	2022	MHDT	Aggregate	Aggregate	Gasoline	756.5401	44483.7	44483.7	0	15136.85	0	0.604094	0.088245	0.46581	0.00141	0	0.000575	0.003	0.015756	0.001534	0	0.000625	0.012	0.045017	1795.462	537.4412	47.64422	0.019663	0.256996	0.051354	0.028235	0.007106	0.034029	0.098372	1.009116	0.288081	0.038151	0.314095	2.937981	0.143545	1.4725	0.315413	0.038151	0.314095	2.937981	0.044954	2.080066	15.07471	6.396341	0.01775	0.005313	0.000471
San Mateo	2022	MHDT	Aggregate	Aggregate	Diesel	4156.051	174304	174304	0	49995.69	0	1.853334	15.89701	1.436117	0.023182	0.047988	0	0.003	0.015983	0.02423	0.050158	0	0.012	0.045666	1163.775	2327.752	0	0.002813	0.013999	0	0.183353	0.366738	0	0.060556	0.301404	0	0	0	0	0.068939	0.343126	0	0	0	0	0.193605	0.190383	7.265304	0	0.01102	0.022042	0
San Mateo	2022	MHDT	Aggregate	Aggregate	Natural Ga	40.6324	1873.257	1873.257	0	381.7521	0	0.153851	6.514328	0	0.001104	0.016957	0	0.003	0.016076	0.001201	0.018442	0	0.012	0.045932	1016.708	5323.016	0	0.747144	17.79445	0	0.207263	1.085132	0	0.010675	0.254248	0	0	0	0	0.762515	18.16055	0	0	0	0	1.06	3.046292	32.12184	0	0	0	0
San Mateo	2022	OBUS	Aggregate	Aggregate	Gasoline	256.1924	15869.04	15869.04	0	5125.898	0	0.334451	0.065049	0.372974	0.000967	0	0.000281	0.003	0.01568	0.001052	0	0.000306	0.012	0.044799	1762.688	376.5742	30.5752	0.010394	0.20597	0.033776	0.01844	0.005899	0.032179	0.049248	0.746076	0.166832	0.02655	0.111811	1.875172	0.071862	1.088672	0.18266	0.02655	0.111811	1.875172	0.044917	1.077968	5.773479	3.517583	0.017426	0.003723	0.000302
San Mateo	2022	OBUS	Aggregate	Aggregate	Diesel	1024.18	74221.67	74221.67	0	10035.19	0	1.072703	6.342591	1.429669	0.010592	0.00365	0	0.003	0.01742	0.011071	0.003815	0	0.012	0.04977	1257.365	1266.668	0	0.001405	0.014292	0	0.198098	0.199564	0	0.030244	0.307698	0	0	0	0	0.03443	0.350291	0	0	0	0	0.210134	0.116655	5.413261	0	0.011906	0.011995	0
San Mateo	2022	OBUS	Aggregate	Aggregate	Natural Ga	11.96887	654.3713	654.3713	0	106.5229	0	0.293719	1.58105	0	0.000566	0.002858	0	0.003	0.016148	0.000615	0.003109	0	0.012	0.046137	1069.812	1202.184	0	0.733013	4.775652	0	0.218088	0.245073	0	0.010473	0.068235	0	0	0	0	0.748094	4.873903	0	0	0	0	1.06	3.101343	5.006328	0	0	0	0
San Mateo	2022	SBUS	Aggregate	Aggregate	Gasoline	57.57285	3267.931	3267.931	0	230.2914	0	0.981493	0.921357	0.655387	0.001299	0	0.000777	0.002	0.015721	0.001412	0	0.000845	0.008	0.044917	807.8108	2570.697	63.52492	0.024786	2.43655	0.092559	0.045477	0.081943	0.056213	0.121107	10.56494	0.538292	0.15493	0.449507	2.231691	0.17672	15.41634	0.589362	0.15493	0.449507	2.231691	0.045	3.134679	81.77802	13.70908	0.007986	0.025414	0.000628
San Mateo	2022	SBUS	Aggregate	Aggregate	Diesel	168.1521	3799.171	3799.171	0	2434.843	0	5.308039	24.50088	0.415745	0.025509	0.027927	0	0.003	0.015721	0.026662	0.02919	0	0.012	0.044917	1155.182	2256.975	0	0.003351	0.008427	0	0.181999	0.355587	0	0.072141	0.18143	0	0	0	0	0.082127	0.206545	0	0	0	0	0.128799	0.214547	4.164591	0	0.010939	0.021372	0
San Mateo	2022	SBUS	Aggregate	Aggregate	Natural Ga	5.747464	147.755	147.755	0	83.22328	0	0.580038	5.278861	0	0.003378	0.011167	0	0.003	0.015721	0.003674	0.012145	0	0.012	0.044917	1270.028	4071.06	0	3.473989	15.35501	0	0.258904	0.829912	0	0.049636	0.219393	0	0	0	0	3.545461	15.67091	0	0	0	0	1.06	11.82462	20.31851	0	0	0	0
San Mateo	2022	UBUS	Aggregate	Aggregate	Gasoline	61.08139	4153.342	4153.342	0	244.3256	0	0.052732	0	0.593554	0.000924	0	0.000101	0.002	0.002073	0.032333	0.001005	0	0.00011	0.00829	0.092379	1026.004	0	41.36564	0.002283	0	0.05585	0.006009	0	0.07764	0.006738	0	0.216361	0.059157	0.09606	0.592841	0.009832	0	0.236888	0.059157	0.09606	0.592841	0.045	0.562776	0	5.939286	0.010143	0	0.000409
San Mateo	2022	UBUS	Aggregate	Aggregate	Diesel	341.0475	28477.87	28477.87	0	1364.19	0	2.903167	0	0	0.007622	0	0	0.007913	0.0385	0.007966	0	0	0.031652	0.11	1452.079	0	0	0.00732	0	0	0.228776	0	0	0.157595	0	0	0	0	0	0.179409	0	0	0	0	0	0.12243	0.193248	0	0	0.013759	0	0
San Mateo	2022	UBUS	Aggregate	Aggregate	Electricity	2.018703	15.3193	0	15.3193	8.074811	26.70528	0	0	0	0	0	0	0.009	0.01925	0	0	0	0.036	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2022	UBUS	Aggregate	Aggregate	Natural Ga	34.62042	1174.257	1174.257	0	138.4817	0	0.063543	0	0	0.000296	0	0	0.008807	0.0385	0.000331	0	0	0.035229	0.11	1350.881	0	0	4.451808	0	0	0.275386	0	0	0.063608	0	0	0	0	0	4.543397	0	0	0	0	0	0.97	52.64109	0	0	0	0	0

Source: EMFAC2021 (v1.0.1) Emission Rates
Region Type: County
Region: San Mateo
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for CVMT and EVMT, trips/day for Trips, kWh/day for Energy Consumption, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HOTSOAK and RUNLOSS, g/vehicle/day for IDLEX and DIURN

Region	Calendar Y	Vehicle Cat	Model Yea	Speed	Fuel	Population	Total VMT	CVMT	EVMT	Trips	Energy Con	NOx_RUNEX	NOx_IDLEX	NOx_STREX	PM2.5_RU	PM2.5_IDL	PM2.5_ST	PM2.5_PM	PM2.5_PM	PM10_RUN	PM10_IDLE	PM10_STR	PM10_PM	PM10_PMI	CO2_RUNE	CO2_IDLEX	CO2_STREX	CH4_RUNE	CH4_IDLEX	CH4_STREX	N2O_RUNEX	N2O_IDLEX	N2O_STREX	ROG_RUNI	ROG_IDLEX	ROG_STREX	ROG_HOTS	ROG_RUNI	ROG_DIUR	TOG_RUNE	TOG_IDLEX	TOG_STREX	TOG_HOTS	TOG_RUNI	TOG_DIUR	NH3_RUNEX	CO_RUNEX	CO_IDLEX	CO_STREX	SOx_RUNE	SOx_IDLEX	SOx_STREX
San Mateo	2023	HHDT	Aggregate	Aggregate	Gasoline	4.303891	593.3265	593.3265	0	0	86.11225	0	4.056089	0	0.0028	0.00142	0	0.000834	0.005	0.031149	0.001544	0	0.000907	0.02	0.088996	2258.184	0	54.48492	0.114491	0	0.000118	0.150249	0	0.000135	0.581376	0	0.000638	0.041838	0.335524	2.939257	0.848342	0	0.000699	0.041838	0.335524	2.939257	0.845	33.28789	0	6.069294	0.022324	0	0.000539
San Mateo	2023	HHDT	Aggregate	Aggregate	Diesel	1295.72	119079.6	119079.6	0	0	14027.66	0	2.889862	47.02809	2.876808	0.025432	0.037858	0	0.008609	0.030943	0.026582	0.03957	0	0.034434	0.08841	1843.774	8291.615	0	0.001322	0.156217	0	0.290487	1.306347	0	0.028463	3.363316	0	0	0	0	0.032403	3.828879	0	0	0	0	0.197741	0.123869	46.58006	0	0.017459	0.078517	0
San Mateo	2023	HHDT	Aggregate	Aggregate	Electricity	0.738781	40.81187	0	40.81187	9.636589	75.42902	0	0	0	0	0	0	0	0.008666	0.01378	0	0	0	0.034663	0.039372	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	HHDT	Aggregate	Aggregate	Natural Ga	157.5655	10602.72	10602.72	0	0	1067.368	0	1.650268	10.1232	0	0.001897	0.012167	0	0.009	0.058575	0.002063	0.013232	0	0.036	0.167357	1522.593	8490.533	0	3.343054	25.56751	0	0.310391	1.730851	0	0.076973	0.418135	0	0	0	0	3.445109	26.1537	0	0	0	0	0.73711	17.41229	66.41256	0	0	0	0
San Mateo	2023	LDA	Aggregate	Aggregate	Gasoline	240378.8	7727537	7727537	0	0	1126355	0	0.042338	0	0.260506	0.001198	0	0.002031	0.002	0.002348	0.001303	0	0.002208	0.008	0.006708	278.3785	0	70.81713	0.002267	0	0.072534	0.004517	0	0.032351	0.008874	0	0.341649	0.087062	0.222247	1.324707	0.012948	0	0.374061	0.087062	0.222247	1.324707	0.035408	0.677749	0	0.395649	0.002752	0	0.0007
San Mateo	2023	LDA	Aggregate	Aggregate	Diesel	833.7612	19906.52	19906.52	0	0	3528.191	0	0.213764	0	0	0.014362	0	0	0	0.002	0.002398	0.015012	0	0	0.008	0.006851	234.8149	0	0	0.001164	0	0	0	0	0	0.036995	0	0	0	0.02507	0	0	0	0	0	0.02854	0	0	0	0.00231	0.317118	0	0	0.002225	0	0
San Mateo	2023	LDA	Aggregate	Aggregate	Electricity	16299	630419.6	0	630419.6	81240.99	243394	0	0	0	0	0	0	0	0.002	0.001529	0	0	0	0.008	0.00437	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	LDA	Aggregate	Aggregate	Plug-in Hyb	6930.414	264587.6	131767.9	132819.8	28657.26	40115.53	0.003199	0	0.117199	0.000615	0	0.002065	0.002	0.001318	0.000669	0	0.002246	0.008	0.003766	134.3501	0	65.86248	0.000415	0	0.042451	0.000556	0	0.02034	0.001345	0	0.176635	0.03705	0.032896	0.392427	0.019696	0.200492	0	1.37819	0.001328	0	0.000651
San Mateo	2023	LDT1	Aggregate	Aggregate	Gasoline	24557.61	732297.8	732297.8	0	0	111855.3	0	0.11638	0	0.364578	0.001649	0	0.002601	0.002	0.002829	0.001794	0	0.002828	0.008	0.008082	326.1114	0	85.73673	0.005448	0	0.099842	0.008499	0	0.037022	0.024289	0	0.513929	0.14557	0.416379	2.294434	0.035435	0	0.562687	0.14557	0.416379	2.294434	0.037022	1.217988	0	5.093009	0.003224	0	0.000848
San Mateo	2023	LDT1	Aggregate	Aggregate	Diesel	7.655601	101.9185	101.9185	0	0	22.20173	0	1.676086	0	0	0.239368	0	0	0	0.002	0.003332	0.250191	0	0	0.008	0.00952	418.3389	0	0	0.014739	0	0	0.065909	0	0	0.317327	0	0	0	0	0	0	0.361255	0	0	0	0	0.0031	1.688168	0	0.003964	0	0	0
San Mateo	2023	LDT1	Aggregate	Aggregate	Electricity	74.62331	2574.77	0	2574.77	357.9526	994.0736	0	0	0	0	0	0	0	0.002	0.001535	0	0	0	0.008	0.004386	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	LDT1	Aggregate	Aggregate	Plug-in Hyb	34.67073	1451.31	668.3078	783.0024	143.3635	236.4901	0.002958	0	0.117199	0.000383	0	0.001401	0.002	0.001331	0.000416	0	0.001524	0.008	0.003802	124.2265	0	72.42832	0.000385	0	0.042531	0.000515	0	0.020414	0.001243	0	0.176635	0.024383	0.02158	0.274849	0.001814	0	0.193393	0.024383	0.02158	0.274849	0.01934	0.185385	0	1.37819	0.001228	0	0.000716
San Mateo	2023	LDT2	Aggregate	Aggregate	Gasoline	139222.3	4716888	4716888	0	0	668266.1	0	0.05408	0	0.29713	0.001207	0	0.001949	0.002	0.002716	0.001313	0	0.002119	0.008	0.007759	339.1094	0	86.14007	0.00237	0	0.075845	0.004959	0	0.034716	0.009113	0	0.347984	0.063629	0.160781	1.007437	0.013297	0	0.380999	0.063629	0.160781	1.007437	0.037748	0.693563	0	3.480515	0.003352	0	0.000852
San Mateo	2023	LDT2	Aggregate	Aggregate	Diesel	541.6894	18280.98	18280.98	0	0	2609.031	0	0.042759	0	0	0.004694	0	0	0	0.002	0.002739	0.004906	0	0	0.008	0.007825	314.2391	0	0	0.000594	0	0	0.049508	0	0	0.012791	0	0	0	0.014562	0	0	0	0	0	0.0031	0.121058	0	0	0.002978	0	0
San Mateo	2023	LDT2	Aggregate	Aggregate	Electricity	855.0521	26877.43	0	26877.43	4389.934	10376.91	0	0	0	0	0	0	0	0.002	0.001524	0	0	0	0.008	0.004355	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	LDT2	Aggregate	Aggregate	Plug-in Hyb	1293.229	52235.96	24959.1	27276.86	5347.502	8238.424	0.00307	0	0.117199	0.000478	0	0.001688	0.002	0.001325	0.00052	0	0.001836	0.008	0.003785	128.9014	0	78.74622	0.000399	0	0.042537	0.000535	0	0.02042	0.00129	0	0.176635	0.025663	0.02377	0.299211	0.001883	0	0.193393	0.025663	0.02377	0.299211	0.020047	0.192361	0	1.37819	0.001274	0	0.000778
San Mateo	2023	LHDT1	Aggregate	Aggregate	Gasoline	10572.08	392533.1	392533.1	0	0	157508.2	0	0.12528	0.035112	0.59784	0.00142	0	0.000253	0.002	0.0273	0.001545	0	0.000275	0.008	0.078	853.4932	117.883	26.97693	0.006321	0.111177	0.030421	0.00715	0.002997	0.050012	0.03091	0.4025	0.148384	0.036924	0.198922	2.014404	0.045104	0.587327	0.162462	0.036924	0.198922	2.014404	0.044937	0.986439	3.761565	3.318076	0.008438	0.001165	0.000267
San Mateo	2023	LHDT1	Aggregate	Aggregate	Diesel	4577.109	179686.5	179686.5	0	0	57574.27	0	1.224717	1.76206	0	0.0273	0.026942	0	0.003	0.0273	0.028534	0.02816	0	0.012	0.078	630.6192	129.0392	0	0.006697	0.005098	0	0.099354	0.02033	0	0.144187	0.10976	0	0	0	0	0.164147	0.124954	0	0	0	0	0.184546	0.371953	0.909745	0	0.005975	0.001223	0
San Mateo	2023	LHDT2	Aggregate	Aggregate	Gasoline	1231.236	43549.94	43549.94	0	0	18343.59	0	0.144	0.03443	0.605262	0.001368	0	0.000226	0.002	0.03185	0.001487	0	0.000246	0.008	0.091	963.6905	136.6851	25.60031	0.005686	0.108022	0.030291	0.008533	0.002829	0.048554	0.026382	0.394722	0.148891	0.038757	0.204501	2.085419	0.038496	0.575977	0.163017	0.038757	0.204501	2.085419	0.044989	0.878989	3.762499	3.300689	0.009527	0.001351	0.000253
San Mateo	2023	LHDT2	Aggregate	Aggregate	Diesel	1952.709	77798.97	77798.97	0	0	24562.62	0	0.883685	1.679482	0	0.023677	0.026872	0	0.003	0.03185	0.024747	0.028087	0	0.012	0.091	747.9998	204.9987	0	0.006098	0.005098	0	0.117848	0.032298	0	0.131288	0.10976	0	0	0	0	0.149463	0.124954	0	0	0	0	0.196309	0.303972	0.909745	0	0.007088	0.001942	0
San Mateo	2023	MCY	Aggregate	Aggregate	Gasoline	12536.77	73820.04	73820.04	0	0	25073.54	0	0.537143	0	0.136291	0.001883	0	0.003663	0.001	0.0042	0.002012	0	0.003894	0.004	0.012	187.6396	0	47.90752	0.151085	0	0.181429	0.037735	0	0.008068	0.98245	0	1.347169	3.555217	3.717102	3.435381	1.181139	0	1.464498	3.555217	3.717102	3.435381	0.008844	11.57445	0	7.838613	0.001855	0	0.000474
San Mateo	2023	MDV	Aggregate	Aggregate	Gasoline	78398.02	2704273	2704273	0	0	374408	0	0.068743	0	0.362909	0.001222	0	0.002069	0.002	0.002734	0.001329	0	0.002251	0.008	0.00781	408.872	0	104.3819	0.002844	0	0.089064	0.005703	0	0.037349	0.01161	0	0.437746	0.072395	0.194625	1.190411	0.016926	0	0.479274	0.072395	0.194625	1.190411	0.038092	0.747341	0	3.739188	0.004042	0	0.001032
San Mateo	2023	MDV	Aggregate	Aggregate	Diesel	1107.903	37908.13	37908.13	0	0	5305.818	0	0.04176	0	0	0.004328	0	0	0	0.002	0.002788	0.004524	0	0	0.008	0.007965	410.1053	0	0	0.000449	0	0	0.066412	0	0	0.009665	0	0	0	0.011002	0	0	0	0	0	0.0031	0.175602	0	0	0.003886	0	0
San Mateo	2023	MDV	Aggregate	Aggregate	Electricity	906.5115	28548.82	0	28548.82	4657.021	11022.2	0	0	0	0	0	0	0	0.002	0.001524	0	0	0	0.008	0.004354	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	MDV	Aggregate	Aggregate	Plug-in Hyb	678.1174	27547.88	13448.47	14099.41	2804.015	4258.442	0.003136	0	0.117199	0.000578	0	0.002002	0.002	0.001322	0.000628	0	0.002177	0.008	0.003776	131.6991	0	97.50736	0.000409	0	0.04268	0.00055	0	0.020553	0.001318	0	0.176635	0.027976	0.026258	0.325091	0.001923	0	0.193393	0.027976	0.026258	0.325091	0.020504	0.196536	0	1.37819	0.001302	0	0.000964
San Mateo	2023	MH	Aggregate	Aggregate	Gasoline	774.8115	7442.976	7442.976	0	0	77.51215	0	0.375927	0	0.404893	0.001719	0	0.000436	0.003	0.015756	0.001869	0	0.000474	0.012	0.045017	1947.17	0	31.89355	0.01417	0	0.038105	0.023764	0	0.042528	0.061382	0	0.162444	11.11371	0.261936	3.902966	0.089569	0	0.177852	11.11371	0.261936	3.902966	0.044861	1.492455	0	3.64337	0.01925	0	0.000315
San Mateo	2023	MH	Aggregate	Aggregate	Diesel	328.5822	3487.262	3487.262	0	0	32.85822	0	3.229197	0	0	0.055455	0	0	0	0.004	0.015675	0.057962	0	0	0.016	0.044785	1085.349	0	0	0.004377	0	0	0.170997	0	0	0.094242	0	0	0	0.107288	0	0	0	0	0	0	0	0	0	0.185977	0.297993	0	0	0.010284	0	0
San Mateo	2023	MHDT	Aggregate	Aggregate	Gasoline	780.1924	45998.29	45998.29	0	0	15610.09	0	0.48063	0.088485	0.45368	0.001377	0	0.000542	0.003	0.015756	0.001498	0	0.00059	0.012	0.045017	1763.945	530.3326	46.39494	0.015519	0.261469	0.049092	0.023565	0.00737	0.034436	0.076573	1.012695	0.270574	0.033571	0.274671	2.598982	0.111736	1.477722	0.296245	0.033571	0.274671	2.598982	0.044979	1.599932	15.11623	5.97113	0.017438	0.005243	0.000459
San Mateo	2023	MHDT	Aggregate	Aggregate	Diesel	4189.443	175901.2	175901.2	0	0	50462.49	0	1.42648	14.09475	1.586053	0.018782	0.040011	0	0.003	0.015983	0.019631	0.041821	0	0.012	0.045665	1155.919	2264.351	0	0.002009	0.012779	0	0.182115	0.356749	0	0.043248	0.275121	0	0	0	0	0.049234	0.313205	0	0	0	0	0.206918	0.148734	7.579195	0	0.010946	0.021442	0
San Mateo	2023	MHDT	Aggregate	Aggregate	Electricity	2.059294	44.11104	0	44.11104	25.56596	47.28311	0	0	0	0	0	0	0	0.003	0.007991	0	0	0	0.012	0.022833	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	MHDT	Aggregate	Aggregate	Natural Ga	38.13508	1832.77	1832.77	0	0	342.2075	0	0.132951	6.609544	0	0.001228	0.018659	0	0.003	0.016094	0.001336	0.020293	0	0.012	0.045982	1008.408	5458.884	0	0.769477	17.52611	0	0.20557	1.112829	0	0.010994	0.250414	0	0	0	0	0.785307	17.88668	0	0	0	0	1.06	3.064735	35.81803	0	0	0	0
San Mateo	2023	OBUS	Aggregate	Aggregate	Gasoline	256.5607	15177.04	15177.04	0	0	5133.267	0	0.308106	0.065063	0.369453	0.001	0	0.000287	0.003	0.01568	0.001088	0	0.000312	0.012	0.044799	1742.276	373.6354	30.27704	0.009595	0.205564	0.033157	0.017281	0.005903	0.031894	0.045405	0.746279	0.163878	0.026481	0.113352	1.902307	0.066255	1.088969	0.179425	0.026481	0.113352	1.902307	0.044919	0.985887	5.774707	3.460301	0.017224	0.003694	0.000299
San Mateo	2023	OBUS	Aggregate	Aggregate	Diesel	1051.799	74746.95	74746.95	0	0	10288.18	0	0.843686	5.779548	1.508936	0.009565	0.003378	0	0.003	0.017376	0.009998	0.003531	0	0.012	0.049647	1250.895	1225.784	0	0.000947	0.013995	0	0.197079	0.193123	0	0.020398	0.301313	0	0	0	0	0.023222	0.343022	0	0	0	0	0.217631	0.094166	5.629794	0	0.011845	0.011607	0
San Mateo	2023	OBUS	Aggregate	Aggregate	Natural Ga	6.660994	415.1452	415.1452	0	0	59.28285	0	0.232948	1.556882	0	0.000856	0.003435	0	0.003	0.016148	0.000931	0.003736	0	0.012	0.046137	1029.36	1194.248	0	0.766347	4.477255	0	0.209842	0.243455	0	0.01095	0.063971	0	0	0	0	0.782113	4.569367	0	0	0	0	1.06	3.19115	6.306096	0	0	0	0
San Mateo	2023	SBUS	Aggregate	Aggregate	Gasoline	62.11288	3411.923	3411.923	0	0	248.4515	0	0.897656	0.923288	0.643317	0.001164	0	0.000721	0.002	0.015721	0.001266	0	0.000784	0.008	0.044917	797.3184	2541.99	62.30631	0.021738	2.445799	0.089765	0.041731	0.084017	0.05658	0.106456	10.59413	0.521132	0.139121	0.406864	2.094566	0.15534	15.45893	0.570574	0.139121	0.406864	2.094566	0.045	2.707181	81.95312	13.2835	0.007882	0.02513	0.000616
San Mateo	2023	SBUS	Aggregate	Aggregate	Diesel	168.8118	3793.041	3793.041	0	0	2444.395	0	5.00314	23.87172	0.437587	0.023953	0.025817	0	0.003	0.015721	0.025036	0.026985	0	0.012	0.044917	1149.738	2246.853	0	0.003233	0.008312	0	0.181142	0.353993	0	0.069615	0.178964	0	0	0	0	0.079252	0.203737	0	0	0	0	0.134019	0.208594	4.289616	0	0.010887	0.021276	0
San Mateo	2023	SBUS	Aggregate	Aggregate	Electricity	0.041475	0.481131	0	0.481131	0.600564	0.50685	0	0	0	0	0	0	0	0.003	0.00786	0	0	0	0.012	0.022459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	SBUS	Aggregate	Aggregate	Natural Ga	6.023036	153.4041	153.4041	0	0	87.21356	0	0.556332	5.264261	0	0.003378	0.011516	0	0.003	0.015721	0.003674	0.012524	0	0.012	0.044917	1258.036	4080.42	0	3.408583	15.17474	0	0.256459	0.83182	0	0.048702	0.216817	0	0	0	0	3.478709	15.48694	0	0	0	0	1.06	11.51682	21.10371	0	0	0	0
San Mateo	2023	UBUS	Aggregate	Aggregate	Gasoline	61.26278	4165.676	4165.676	0	0	245.0511	0	0.037017	0	0.578233	0.000989	0	0.000127	0.002	0.002073	0.032333	0.001076	0	0.000139	0.00829	0.092379	1025.682	0	41.23868	0.002259	0	0.053565	0.004956	0	0.077039	0.006631	0	0.206281	0.070589	0.114555	0.693653	0.009677	0	0.225852	0.070589	0.114555	0.693653	0.045	0.556154	0	5.887541	0.01014	0	0.000408
San Mateo	2023	UBUS	Aggregate	Aggregate	Diesel	341.8463	28540.62	28540.62	0	0	1367.385	0	2.897593	0	0	0.007619	0	0	0	0.007913	0.0385	0.007964	0	0	0.031652	0.11	1451.453	0	0	0.007311	0	0	0.228677	0	0	0.157395	0	0	0	0.179182	0	0	0	0	0	0.122644	0.192989	0	0	0.013753	0	0
San Mateo	2023	UBUS	Aggregate	Aggregate	Electricity	2.018703	15.3193	0	15.3193	8.074811	26.70528	0	0	0	0	0	0	0	0.009	0.01925	0	0	0	0.036	0.055	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Mateo	2023	UBUS	Aggregate	Aggregate	Natural Ga	34.94319	1199.611	1199.611	0	0	139.7728	0	0.063405	0	0	0.000296	0	0	0	0.008789	0.0385	0.000309	0	0	0.035157	0.11	1349.38	0	0	4.445831	0	0	0.27508	0	0	0.063522	0	0	0	4.537297	0	0	0	0	0	0.97	52.53671	0	0	0	0	0

Attachment 4: Project Construction Emissions and Health Risk Calculations

Pacifica School District Workforce Housing, Pacifica, CA

Year	Unmitigated DPM	DPM EMFAC2021	Unmitigated Emissions	Unmitigated Fug PM2.5	Fug PM2.5 EMFAC2021	Unmitigated Emissions
2022	0.1103	0.0007	0.1110	0.1084	0.0007	0.1091
2023	0.0513	0.0004	0.0517	0.0000	0.0004	0.0004

Year	Mitigated DPM	DPM EMFAC2021	Mitigated Emissions	Mitigated Fug PM2.5	Fug PM2.5 EMFAC2021	Mitigated Emissions
2022	0.0095	0.0007	0.0102	0.0488	0.0007	0.0495
2023	0.0059	0.0004	0.0063	0.0000	0.0004	0.0004

Pacifica School District Workforce Housing, Pacifica, CA
- Construction Health Impact Modeling
Source Parameters for Point Sources Used in Construction Modeling

Source	Stack Height (ft)	Stack Diam (in)	Exhaust Temp (F)	Volume Flow (acfm)	Velocity (ft/min)	Velocity (ft/sec)
Construction Equipment	9.0	2.5	918	632	18540	309.0

Source	Stack Height (m)	Stack Diam (m)	Exhaust Temp (K)			Velocity (ft/sec)
Construction Equipment	2.74	0.064	765.37			94.2

Pacifica School District Workforce Housing, Pacifica, CA

DPM Construction Emissions and Modeling Emission Rates

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Emissions per Point Source (g/s)
2022	Construction	0.1110	Point	177	221.9	0.05528	6.97E-03	3.94E-05
2023	Construction	0.0517	Point	177	103.5	0.02577	3.25E-03	1.83E-05
Total		***0.1627***			***325.4***	***0.0810***	***0.0102***	

Emissions assumed to be evenly distributed over each construction areas

hr/day = 11 (7am - 6pm)
days/yr = 365
hours/year = 4015

DPM Construction Emissions and Modeling Emission Rates - With Mitigation

Construction Year	Activity	DPM (ton/year)	Source Type	No. Sources	DPM Emissions (lb/yr)	(lb/hr)	(g/s)	Emissions per Point Source (g/s)
2022	Construction	0.0102	Point	177	20.4	0.00509	6.41E-04	3.62E-06
2023	Construction	0.0063	Point	177	12.7	0.00316	3.98E-04	2.25E-06
Total		***0.0166***			***33.1***	***0.0082***	***0.0010***	

Emissions assumed to be evenly distributed over each construction areas

hr/day = 11 (7am - 6pm)
days/yr = 365
hours/year = 4015

Pacifica School District Workforce Housing, Pacifica, CA

PM2.5 Fugitive Dust Construction Emissions for Modeling

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2022	Construction	CON_FUG	0.1091	218.2	0.05433	6.85E-03	19541	3.50E-07
2023	Construction	CON_FUG	0.0004	0.9	0.00022	2.78E-05	19541	1.42E-09
Total			***0.1095***	***219.0***	***0.0546***	***0.0069***		

Emissions assumed to be evenly distributed over each construction areas

hr/day = 11 (7am - 6pm)

days/yr = 365

hours/year = 4015

PM2.5 Fugitive Dust Construction Emissions for Modeling - With Mitigation

Construction Year	Activity	Area Source	PM2.5 Emissions (ton/year)	PM2.5 Emissions (lb/yr)	PM2.5 Emissions (lb/hr)	PM2.5 Emissions (g/s)	Modeled Area (m^2)	DPM Emission Rate $g/s/m^2$
2022	Construction	CON_FUG	0.0495	99.0	0.02465	3.11E-03	19541	1.59E-07
2023	Construction	CON_FUG	0.0004	0.9	0.00022	2.78E-05	19541	1.42E-09
Total			***0.0499***	***99.8***	***0.0249***	***0.0031***		

Emissions assumed to be evenly distributed over each construction areas

hr/day = 11 (7am - 6pm)

days/yr = 365

hours/year = 4015

Pacifica School District Workforce Housing, Pacifica, CA - Construction Health Impact Summ

Maximum Impacts at Residential MEI Location - Without Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2022	0.0963	0.2494	17.13	0.28	0.02	0.34
2023	0.0449	0.0010	7.37	0.13	0.01	0.05
Total	-	-	**24.50**	**0.41**	-	-
Maximum	0.0963	0.2494	**-**	**-**	**0.02**	**0.34**

Maximum Impacts at Residential MEI Location - With Mitigation

Emissions Year	Maximum Concentrations: Exhaust PM10/DPM ($\mu g/m^3$)	Maximum Concentrations: Fugitive PM2.5 ($\mu g/m^3$)	Cancer Risk (per million): Infant/Child	Cancer Risk (per million): Adult	Hazard Index (-)	Maximum Annual PM2.5 Concentration ($\mu g/m^3$)
2022	0.0089	0.1133	1.58	0.03	0.002	0.12
2023	0.0055	0.0010	0.90	0.02	0.001	0.01
Total	-	-	**2.48**	**0.04**	-	-
Maximum	0.0089	0.1133	**-**	**-**	**0.002**	**0.12**

- Tier 4 Interim Engines and BMP Mitigation

Pacifica School District Workforce Housing, Pacifica, CA - Construction Impacts - Without Mitigation
Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2022	0.0963	10	1.31	2022	0.0963	-	-			
1	1	0 - 1	2022	0.0963	10	15.82	2022	0.0963	1	0.28	0.02	0.25	0.34
2	1	1 - 2	2023	0.0449	10	7.37	2023	0.0449	1	0.13	0.01	0.00	0.05
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**24.50**				**0.41**			

* Third trimester of pregnancy

Maximum DPM Cancer Risk and PM2.5 Calculations From Construction
Impacts at Off-Site MEI Location - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	3rd Trimester	0 - 2	2 - 16	16 - 30
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

			Infant/Child - Exposure Information				Adult - Exposure Information				Maximum		
			DPM Conc (ug/m3)		Age	Infant/Child	Modeled DPM Conc (ug/m3)		Age	Adult			
Exposure Year	Exposure Duration (years)	Age	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Year	Annual	Sensitivity Factor	Cancer Risk (per million)	Hazard Index	Fugitive PM2.5	Total PM2.5
0	0.25	-0.25 - 0*	2022	0.0089	10	0.12	2022	0.0089	-	-			
1	1	0 - 1	2022	0.0089	10	1.46	2022	0.0089	1	0.03	0.002	0.11	0.12
2	1	1 - 2	2023	0.0055	10	0.90	2023	0.0055	1	0.02	0.001	0.00	0.01
3	1	2 - 3		0.0000	3	0.00		0.0000	1	0.00			
4	1	3 - 4		0.0000	3	0.00		0.0000	1	0.00			
5	1	4 - 5		0.0000	3	0.00		0.0000	1	0.00			
6	1	5 - 6		0.0000	3	0.00		0.0000	1	0.00			
7	1	6 - 7		0.0000	3	0.00		0.0000	1	0.00			
8	1	7 - 8		0.0000	3	0.00		0.0000	1	0.00			
9	1	8 - 9		0.0000	3	0.00		0.0000	1	0.00			
10	1	9 - 10		0.0000	3	0.00		0.0000	1	0.00			
11	1	10 - 11		0.0000	3	0.00		0.0000	1	0.00			
12	1	11 - 12		0.0000	3	0.00		0.0000	1	0.00			
13	1	12 - 13		0.0000	3	0.00		0.0000	1	0.00			
14	1	13 - 14		0.0000	3	0.00		0.0000	1	0.00			
15	1	14 - 15		0.0000	3	0.00		0.0000	1	0.00			
16	1	15 - 16		0.0000	3	0.00		0.0000	1	0.00			
17	1	16-17		0.0000	1	0.00		0.0000	1	0.00			
18	1	17-18		0.0000	1	0.00		0.0000	1	0.00			
19	1	18-19		0.0000	1	0.00		0.0000	1	0.00			
20	1	19-20		0.0000	1	0.00		0.0000	1	0.00			
21	1	20-21		0.0000	1	0.00		0.0000	1	0.00			
22	1	21-22		0.0000	1	0.00		0.0000	1	0.00			
23	1	22-23		0.0000	1	0.00		0.0000	1	0.00			
24	1	23-24		0.0000	1	0.00		0.0000	1	0.00			
25	1	24-25		0.0000	1	0.00		0.0000	1	0.00			
26	1	25-26		0.0000	1	0.00		0.0000	1	0.00			
27	1	26-27		0.0000	1	0.00		0.0000	1	0.00			
28	1	27-28		0.0000	1	0.00		0.0000	1	0.00			
29	1	28-29		0.0000	1	0.00		0.0000	1	0.00			
30	1	29-30		0.0000	1	0.00		0.0000	1	0.00			
Total Increased Cancer Risk						**2.48**				**0.04**			

* Third trimester of pregnancy

Attachment 5: Community Risk Modeling Information and Calculations

Stationary Source Risk & Hazards Screening Report

Area of Interest (AOI) Information

Area : 5,686,575.43 ft²

Oct 21 2021 14:26:34 Pacific Daylight Time



Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Facilities 2018	0	N/A	N/A

Note: The estimated risk and hazard impacts from these sources would be expected to be substantially lower when site specific Health Risk Screening Assessments are conducted.

The screening level map is not recommended for evaluating sensitive land uses such as schools, senior centers, day cares, and health facilities.

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APPENDIX 4.3-A: BIOLOGICAL RESOURCES ASSESSMENT, PREPARED BY COAST RIDGE ECOLOGY, NOVEMBER 2021

BIOLOGICAL RESOURCE ASSESSMENT

PACIFICA WORKFORCE PROJECT

930 ODDSTAD BLVD., PACIFICA
SAN MATEO COUNTY, CALIFORNIA

PREPARED FOR:

City of Pacifica
930 Oddstad Blvd.
Pacifica, CA 94044

PREPARED BY:

Coast Ridge Ecology
1410 31st Avenue
San Francisco, CA 94122

November 2021

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I. SUMMARY

This report provides a biological resource assessment for a housing development project at 930 Oddstad Boulevard, Pacifica, California. The property is approximately 12.6 acres (548,856 square feet) in size and currently consists of an old school complex with two sports fields, which will be removed during development. Vegetated slopes are present on the eastern side of the property, however these slopes are outside of the project footprint.

The proposed project will replace an existing school building and associated sports fields with multifamily housing units. 70 multifamily units will be constructed on the property, along with parking areas and two landscaped courtyards. The project will primarily impact previously developed areas of the property, and project plans indicate minimal disturbance to vegetated slopes on the eastern side of the property

The project area was surveyed for biological resources in October 2021 by Coast Ridge Ecology biologists Patrick Kobernus and Greg Pfau. The California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDB) was consulted for known occurrences of sensitive plant, animal, and natural plant communities of concern found within five miles of the project site (CNDDB, 2021).

The project will primarily impact previously developed areas of the property, with minimal impacts to natural habitats on the eastern slopes. The vegetated eastern slopes of the property, which would not be impacted by the proposed project, were found to have several San Francisco dusky-footed woodrat (SFDFW) (*Neotoma annectens fuscipes*) middens (nests) within the brush. One active SFDFW midden near the base of the slope would be impacted by the project (Figure 6). Any future brush clearing of the eastern slopes for fire hazard reduction or other purposes could also impact this species.

Specific Mitigation Measures are as follows:

BIO-1: Prior to the start of construction, a pre-construction survey shall be conducted by a qualified biologist to identify occupied San Francisco dusky-footed woodrat middens onsite. Where feasible, occupied middens shall be avoided and a minimum five (5) foot non-disturbance buffer, or as otherwise recommended by a qualified biologist, shall be established, maintained, and monitored throughout project construction. Additionally, a minimum five (5) foot non-disturbance buffer, or as otherwise recommended by a qualified biologist, shall be established between the eastern limit of proposed development activities and the densely vegetated, impenetrable hazelnut scrub habitat.

BIO-2: To address potential impacts to San Francisco dusky-footed woodrats, a Relocation Plan prepared by a qualified biologist, shall be prepared and submitted to the City of Pacifica and the California Department of Fish and Wildlife for review and approval. At a minimum, the Relocation Plan shall include, but is not limited to, the following:

- Nests requiring relocation shall be dismantled by a qualified biologist, with assistance as needed from the construction crew to relocate nest material to a suitable location.
- Each member of the construction crew shall receive an environmental awareness training regarding San Francisco dusky-footed woodrat ecology and specifics of the Relocation Plan.
- All material removed during nest dismantling shall be moved into the Relocation Area, as determined by the qualified biologist, and constructed into piles suitable for habitation or use as refugia.
- If an active nest requires removal, the following phased dismantling protocol shall be implemented:
- Remove at least 50-100% of the existing canopy cover and begin dismantling.
- After partially dismantling the nest, leave nest alone for two to four days to allow woodrats to disperse on their own. After two to four days, continue to disassemble nest by hand. Plan to completely dismantle in two to three sessions.
- If young are present, the construction crew and qualified biologist shall cease dismantling of the nest for 48 hours to allow the adult to move the young. If the young have been moved and the nest is vacant, nest removal may resume.
- If an inactive nest (as determined by a qualified biologist) needs to be removed, it may be removed completely in one day. If woodrats are observed within or fleeing from the nest, the nest will be considered active and relocated using a phased approach.

BIO-3: To offset the loss or disturbance of foraging habitat (native forbs and shrubs) for the special-status obscure bumble bee (*Bombus caliginosus*), native shrubs and herbaceous (forb) species known to benefit native bees shall be identified in a revised landscaping plan and introduced onsite. Plants known to benefit native bees shall be selected and may include but are not limited to coyote brush (*Baccharis pilularis*), sage *(Salvia spp*.), lupines (*Lupinus spp*.), various species of Lotus and Acmispon, gumplant (*Grindelia spp*.), and *Phacelia spp*. As part of the update to the landscaping plans, selected bee-friendly species and planting locations shall be confirmed by a qualified biologist in consultation with the City of Pacifica.

BIO-4: In the event the construction commences during the rainy season, a qualified biologist shall conduct a pre-construction survey for California red-legged frog no more than five days prior to commencement of ground disturbing activities and provide recommendations for installation of exclusion fencing, as warranted. Results of the survey and recommendations for exclusion fencing shall be submitted to the City of Pacifica.

At the recommendation of a qualified biologists and based on factors including the migration window for red-legged frog, rainfall, and inundation, exclusion fencing shall be installed along the eastern, southern and northern boundaries of the site (excluding the west side along Oddstad boulevard). Exclusion fencing shall be buried 6 inches deep and extend 3 feet above ground level. The fence location shall be inspected by a qualified biologist prior to installation, and the fence shall be maintained under the supervision of a qualified biologist.

BIO-5: To avoid potential impacts to special-status bats, a qualified biologist shall conduct a pre-construction survey of all structures and trees that would be impacted by the project, no more than 15 days prior to demolition, tree removal, or commencement

of ground disturbing activities. Results of the preconstruction survey shall be documented by a qualified biologist and provided to the City of Pacifica. If special-status bat species are found roosting in building or trees proposed to be removed, the biologist shall determine if there are young present (i.e., the biologist should determine if there are maternal roosts). If young are found roosting in any tree or building proposed for removal, such impacts shall be avoided until the young are flying and feeding on their own. A non-disturbance buffer installed with orange construction fencing shall be established around maternity site. The size of the buffer zone will be determined by a qualified bat biologist at the time of detection. If adults are found roosting in a tree or building on the project site but no maternal sites are found, then the adult bats can be flushed, or a one-way eviction door can be placed over the tree cavity for a 48-hour period prior to the tree removal or building demolition. If bats or evidence of bats are detected during the pre-construction surveys, the applicant shall notify the City of Pacifica and the CDFW regarding bat eviction protocol and submit a plan for review and acceptance by the City of Pacifica and the CDFW.

BIO-6: Should construction activities commence during the bird nesting season (February 1 to August 31), a pre-construction nesting bird survey shall be conducted by a qualified biologist no more than 14 days prior to the start of construction activities. Areas within 300 to 500 feet of construction shall be surveyed for active nests. Should active nests be identified, a disturbance-free buffer shall be established based on the needs of the species as set forth by CDFW and shall be maintained until a qualified biologist verifies that the nestlings have fledged, or the nest has failed. Should construction activities cease for 14 consecutive days or more within the nesting season, an additional nesting bird survey shall be required prior to resuming construction. Results of the pre-construction nesting bird survey shall be submitted to the City of Pacifica.

BIO-7: Indirect impacts to the seasonal wetlands and jurisdictional drainage feature shall be avoided through implementation of best management practices (BMPs) prior to earthwork. Construction exclusion zones shall be established by installing appropriate construction fencing, silt fencing, wildlife friendly hay wattles (no monofilament netting), gravel wattles, and other protective measures between project activities and the seasonal wetlands and drainage feature.

All non-native, invasive vegetation removed shall be discarded offsite and away from wetland areas to prevent reseeding.

Prior to implementation of the construction project, a biological monitor shall inspect installation of BMPs to ensure proper protection of the seasonal wetlands and jurisdictional drainage feature areas are in place. BMPs shall thereafter be routinely inspected by the construction manager to ensure BMPs remain in place for the duration of construction activities. Upon completion of project construction all exclusion fencing shall be removed along with any temporary BMPs.

II. PROJECT LOCATION

The property (APN 023-672-600) is located at 930 Oddstad Boulevard in the Park Pacifica neighborhood of Pacifica, California (Figure 1). The property is bordered by single-family residential areas to the north, west, and south, Frontierland Park to the southeast, and protected open space within the Crystal Springs watershed to the northeast. The property is approximately 12.6 acres (548,856 square feet) in size and currently consists of an old school complex with two sports/athletic fields. Vegetated slopes are present on the eastern side of the property, however these slopes are outside of the project footprint.

III. PROJECT DESCRIPTION

The proposed project will replace an existing school building and associated sports fields with multifamily housing units. 70 multifamily units will be constructed on the property, along with parking areas and two landscaped courtyards. The project will primarily impact previously developed areas of the property, and project plans indicate minimal disturbance to vegetated slopes on the eastern side of the property (Brookwood Advisors, 2021).

IV. METHODS

Coast Ridge Ecology biologists Patrick Kobernus and Greg Pfau surveyed the project site and the surrounding areas for biological resources on September 8, October 5, and October 11, 2021. All plant and animal species observed were documented and plant communities and habitats were assessed for their potential to support special status species.

The California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDB) was consulted for known occurrences of sensitive plant, animal, and natural plant communities of concern found within five miles of the project site (CNDDB, 2021). Data from CNDDB, California Native Plant Society (CNPS) On-Line Inventory of Rare, Threatened, and Endangered Plants of California (CNPS, 2021), academic research publications, knowledge of regional biota within the watershed, and observations made during the field surveys were used to evaluate on-site habitat suitability for special status plant and wildlife species within the project site.



Figure 1: Project Location Map
930 Oddstad Boulevard, Pacifica, CA

Service Layer Credits: USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National

V. EXISTING SETTING

The project area is located on the grounds of an old school complex (Oddstad Elementary, closed in 2005) in the residential neighborhood of Park Pacifica, Pacifica, California. Developed areas of the property are mostly flat, while the undeveloped eastern portion of the property is composed of steep slopes that transition into Frontierland Park, and further east into open space areas of Crystal Springs Watershed. The elevation of the property is approximately 241 feet in the lower, developed areas and approximately 360 feet at the top of the undeveloped eastern slope.

Soils

Five soil units were mapped as occurring within the project site by the National Resources Conservation Service (NRCS). The five soil types mapped within the project site are:

- Barnabe-Candlestick complex, 30 to 75 percent slopes
- Orthents, cut and fill, 0 to 15 percent slopes
- Orthents, cut and fill, 15 to 75 percent slopes
- Orthents, cut and fill-Urban land complex, 0 to 5 percent slopes
- Orthents, cut and fill-Urban land complex, 5 to 75 percent slopes

Orthents soils are present in areas of recent erosion or development, where any former soils have been removed and no diagnostic horizons are present (NRCS, 2021). They are generally composed of fine loamy soils with abundant rock fragments, although material is heavily mixed due to mechanical alteration for residential and other urban uses. Various earthy material, rock fragments, plant matter, and debris may make up portions of the fill.

Candlestick-Barnabe complex soils consist of gravelly sandy loam to sandy clay loam soils with sandstone bedrock parent material (NRCS, 2021).

The property does not contain serpentine, calcareous, or siliceous soils that could support any special status plant species that predominately utilize these soil types (NRCS, 2021).

Hydrology

The project site consists of a flat, graded site that is developed with school buildings, basketball courts, and athletic fields, and also includes steep graded and natural slopes to the east. No natural drainage features are present on site. A concrete drainage ditch is located around the perimeter of the school site, and is approximately 2 feet wide by 1 foot deep. This drainage empties into the city's underground stormwater drainage system at two locations on the southern corner of the site along Yosemite Drive. A natural seep on the southeast corner of the property, in combination with leaking irrigation areas under the athletic field, support a narrow band of seasonal wetland on the southeast corner of the site (Figure 2). See wetland delineation report for 930 Oddstad Blvd., Pacifica CA for additional details (CRE, 2021).

Jurisdictional Waters and Wetlands

To meet the US Army Corps of Engineers (USACE) definition of wetland, an area must demonstrate three critical characteristics: wetland vegetation, wetland hydrology, and wetland soils (Federal Interagency Committee for Wetland Delineation, 1989). Additionally, to fall under jurisdiction of the USACE, a wetland must have some evident hydrological connection to other wetlands and/or waters of the United States. The US Fish and Wildlife Service definition of wetland is similar: at least periodically, the land must support predominantly hydrophytes; the substrate must be predominantly undrained hydric soil; or the substrate is non-soil that is saturated with water or covered by shallow water at some time during the growing season of the year (Cowardin, et al., 1979).

The State defines wetlands more broadly than the federal wetlands program by recognizing that wetlands may have evidence of only one of the three federal parameters: (1) at least periodically, the land supports hydrophytes, (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year" (Cowardin, 1979).

US jurisdictional waters are essentially defined as “all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters.[1] The (State) Water Code defines “waters of the state” broadly to include “any surface water or groundwater, including saline waters, within the boundaries of the state.” “Waters of the state” includes all “waters of the U.S.” [2]

Seasonal wetlands were mapped on the southeast corner of the site (Figure 2), and the US Army Corps of Engineers will be consulted to determine if these features are jurisdictional. See wetland delineation report for 930 Oddstad Blvd., Pacifica CA for additional details (CRE, 2021).

[1] https://www.epa.gov/nwpr/about-waters-united-states

[2] (Procedures for Discharges of Dredged or Fill Material to Waters of the State, 2019) https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf



Figure 2: Hydrology and Wetland Map
930 Oddstad Blvd, Pacifica, CA
Service Layer Credits: Golden Gate National Parks Conservancy and San Mateo County

VI. PLANT COMMUNITIES AND HABITAT TYPES

Vegetation Communities

Eleven (11) vegetation communities were documented within the project site, based on the classification system used in the California Native Plant Society (CNPS) Manual of California Vegetation (Figure 3) (CNPS 2021a). Most of these vegetation communities, including all communities dominated by native plant species, are found on the undeveloped slopes on the eastern side of the property. Habitats located within the project footprint are primarily dominated by ornamental, non-native, and invasive plant species. In total, the project would impact approximately 5.6 acres of developed, planted, or non-native habitats and 0.13 acres of natural habitat (coastal scrub) supporting native plant species. Descriptions of all plant communities documented within the project site are provided below. A list of all plant species documented within the project site is provided in Table 1**.**

Wild Oats and Annual Brome Grassland

This habitat is primarily located within the northern athletic field, and is dominated by non-native grass species, including wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), rattail fescue (*Festuca myuros*), and foxtail barley (*Hordeum murinum*). Generally, areas of this habitat were previously maintained as lawns but have degraded over time due to lack of watering and maintenance. Depending on location, fennel (*Foeniculum* vulgare) or coastal tarweed (*Madia sativa*) are also present at a lower abundance.

Needle Grass Grassland

Needle grass grassland is an example of a native perennial grassland, dominated by native perennial bunch grasses. Within the site, this plant community is dominated by purple needlegrass (*Stipa pulchra*), California melic (*Melica californica*) and California fescue (*Festuca californica*). Other native forb species such as yarrow (*Achillea millefolium*) and soap plant (*Chlorogalum pomeridianum*) are also present. The needle grass grassland community can be found in the vicinity of a large rock outcrop located on the eastern hillside.

Creeping Bentgrass Meadow

The creeping bentgrass meadow habitat is dominated by non-native perennial grasses including creeping bentgrass (*Agrostis stolonifera*), common velvetgrass (*Holcus lanatus*), and tall fescue (*Festuca arundinacea*), all of which prefer somewhat moist environments. Within the project site, this plant community is only found along the southern boundary of the southern athletic field in the vicinity of several seasonal wetlands **(**Figures 2 & 3)**.** Isolated stands of hydrophytic vegetation such as tall flatsedge (*Cyperus eragrostis*) can be found in wetter portions of this area.

Fennel Patch

A patch of invasive plants heavily dominated by fennel (*Foeniculum vulgare*) is present along the eastern edge of the school buildings located between the southern and northern athletic fields. This invasive species appears to have crowded out nearly all other plant species within the mapped area, forming a dense stand contributing nearly 100 percent of the vegetative cover.

Hazelnut Scrub

This native shrub-dominated habitat covers most of the hillside in the northeast portion of the site. Beaked hazelnut (*Corylus cornuta*) is the dominant plant species, along with other natives including ocean spray (*Holodiscus discolor*), osoberry (*Oemleria cerasiformis*), California blackberry (*Rubus ursinus*), and poison oak (*Toxicodendron diversilobum*). Other native shrub species also occurring in this community include elderberry (*Sambucus spp.*), coffeeberry (*Frangula californica*), and coyote brush (*Baccharis pilularis*).The dense shrub canopy is nearly impenetrable, and results in little or no herbaceous groundcover.

Coyote Brush Scrub

A few patches of more open scrub habitat dominated by coyote brush (*Baccharis pilularis*) are present within the project site. The understory is typically dominated by non-native annual grasses such as wild oats and brome (*Bromus spp.*). These areas are generally on the edges of other scrub habitats, where coyote brush is the most abundant or only woody shrub species present. Notably, some of these areas appear to have been previously dominated by French broom (*Genista monspessulana*) and/or scotch broom (*Cytisus scoparius*) until recent invasive control efforts, as evidenced by many dead specimens. It is possible that coyote brush was simply able to colonize these areas more quickly than other species once the invasive shrubs were removed.

Poison Oak Scrub

A small area of scrub habitat surrounding the large eastern rock outcrop is distinctly different than other scrub areas within the project site. This thin-soiled rocky area is dominated by poison oak, but a variety of other native shrub species including California sagebrush (*Artemisia californica*), osoberry, orange bush monkeyflower (*Diplacus aurantiacus*), and oceanspray are also present in some abundance. Where not composed of bare rock, the understory is dominated by soap plant, western bracken fern (*Pteridium aquilinum*), and California beeplant (*Scrophularia californica*).



Figure 3: Plant Community Map
930 Oddstad Blvd, Pacifica, CA
Service Layer Credits: Golden Gate National Parks Conservancy and San Mateo County

Legend

- Site Parcel Boundary

Plant Communities

- Acacia grove
- Coast live oak woodland
- Coyote brush scrub
- Creeping bentgrass meadow
- Developed
- Fennel patch
- Hazelnut scrub
- Monterey cypress - Monterey pine stand
- Needle grass grassland
- Poison oak scrub
- Urban landscaping - lawn
- Urban landscaping - Monterey pine/cypress
- Wild oats and annual brome grassland

Monterey Cypress – Monterey Pine Stand

Monterey cypress (*Hesperocyperis macrocarpa*) and Monterey pine (*Pinus radiata*) trees are not native to the San Francisco Bay Area, but were widely planted and form semi-natural stands throughout California. This plant community is present on the southeastern hillside within the project area, where the sparse understory primarily consists of scattered shrubs such as French broom and oceanspray.

Acacia Grove

A few stands of invasive blackwood acacia (*Acacia melanoxylon*) can be found within the project site on the eastern hillside. Understory vegetation is nearly nonexistent in these areas, due to the dense canopy formed by the acacia.

Coast Live Oak Woodland

A small patch of coast live oak woodland is located just north of the rock outcrop on the eastern hillside. Coast live oak (*Quercus agrifolia*) is the dominant tree species in this area, while the understory is primarily dominated by herbaceous species such as California blackberry, western bracken fern, wood fern (*Dryopteris arguta*) and common pacific pea (*Lathyrus vestitus*).

Urban Landscaping

Urban landscaping areas are plant communities formed by ornamental plants purposefully planted and maintained by humans. Two distinct landscaped habitats are present within the project site: the southern athletic field and associated smaller grassy areas maintained as lawns, and the cypress trees planted along the western and southern perimeters of the project area.

Lawn

The southern athletic field and adjacent grassy areas are dominated by species typical of maintained lawns. Dominant species include Dallis grass (*Paspalum dilatatum*), Kentucky bluegrass (*Poa pratensis*), perennial fescue (*Festuca perennis*), white clover (*Trifolium repens*), strawberry clover (*Trifolium fragiferum*), and English lawn daisy (*Bellis perennis*). No native plant species were recorded within these areas.

Monterey Cypress Trees

Ornamental Monterey cypress trees are planted along the roadside on the southern and western borders of the property. These areas are distinct from semi-natural stands in that there is no understory vegetation, presumably due to vegetation management.

Table 1: Plant Species Observed During Site Surveys

Common Name	Scientific Name	Status
Blackwood acacia	*Acacia melanoxylon*	NNI
Yarrow	*Achillea millefolium*	N
Creeping bentgrass	*Agrostis stolonifera*	NNI
Silvery hairgrass	*Aira caryophylela*	NN
Belladonna lily	*Amaryllis belladonna*	NN
Pacific madrone	*Arbutus menziesii*	N
California sagebrush	*Artemisia californica*	N
California mugwort	*Artemisia douglasiana*	N
Wild oat	*Avena fatua*	NNI
Coyote brush	*Baccharis pilularis*	N
English lawn daisy	*Bellis perennis*	NN
False brome	*Brachypodium distachyon*	NNI
Rattlesnake grass	*Briza maxima*	NNI
Ripgut brome	*Bromus diandrus*	NNI
Soft chess	*Bromus hordeaceus*	NNI
Foxtail brome	*Bromus madritensis*	NN
Pacific false bindweed	*Calystegia purpurata*	N
Italian thistle	*Carduus pycnocephalus*	NNI
Soap plant	*Chlorogalum pomeridianum*	N
Bull thistle	*Cirsium vulgare*	NNI
Poison hemlock	*Conium maculatum*	NNI
Pampas grass	*Cortaderia sp.*	NNI
Beaked hazelnut	*Corylus cornuta*	N
Silverleaf cotoneaster	*Cotoneaster pannosus*	NNI
Bermuda grass	*Cynodon dactylon*	NNI
Bristly dogtail grass	*Cynosurus echinatus*	NNI
Tall flatsedge	*Cyperus eragrostis*	N
Scotch broom	*Cytisus scoparius*	NNI
Carrot	*Daucus carota*	NN
Cape ivy	*Delairea odorata*	NNI
Coast larkspur	*Delphinium californicum*	N
Orange bush monkeyflower	*Diplacus aurantiacus*	N
Wood fern	*Dryopteris arguta*	N
Blue wildrye	*Elymus glaucus*	N
Willow herb	*Epilobium brachycarpum*	N
Coast buckwheat	*Eriogonum latifolium*	N
Lizard tail	*Eriophyllum staechadifolium*	N
California poppy	*Eschscholzia californica*	N
Tall fescue	*Festuca arundinacea*	NNI
Brome fescue	*Festuca bromoides*	NN
California fescue	*Festuca californica*	N
Rattail fescue	*Festuca myuros*	NNI
Perennial ryegrass	*Festuca perennis*	NNI

Common Name	Scientific Name	Status
Fennel	*Foeniculum vulgare*	NNI
California coffeeberry	*Frangula californica*	N
French broom	*Genista monspessulana*	NNI
English ivy	*Hedera helix*	NNI
Bristly ox-tongue	*Helminthotheca echioides*	NNI
Monterey cypress	*Hesperocyparis macrocarpa*	NN
Toyon	*Heteromeles arbutifolia*	N
Shortpod mustard	*Hirschfeldia incana*	NNI
Common velvetgrass	*Holcus lanatus*	NNI
Oceanspray	*Holodiscus discolor*	N
Foxtail barley	*Hordeum murinum*	NNI
Smooth cats ear	*Hypochaeris glabra*	NNI
Hairy cats ear	*Hypochaeris radicata*	NNI
Douglas Iris	*Iris douglasiana*	N
Spreading rush	*Juncus patens*	N
Common pacific pea	*Lathyrus vestitus*	N
Lesser swine cress	*Lepidium didymum*	NN
Bird's-foot trefoil	*Lotus corniculatus*	NN
Pacific starflower	*Lysimachia latifolia*	N
Coastal tarweed	*Madia sativa*	N
Mallow	*Malva sp.*	NN
Bur clover	*Medicago polymorpha*	NNI
California melic	*Melica californica*	N
Coyote mint	*Monardella villosa*	N
Ngaio	*Myoporum sp.*	NNI
Oso berry	*Oemleria cerasiformis*	N
Dallis grass	*Paspalum dilatatum*	NN
Kikuyu grass	*Pennisetum clandestinum*	NNI
California phacelia	*Phacelia californica*	N
Harding grass	*Phalaris aquatica*	NNI
Italian stone pine	*Pinus pinea*	NN
Monterey pine	*Pinus radiata*	NN
Cheesewood	*Pittosporum sp.*	NN
Cut leaf plantain	*Plantago coronopus*	NN
Ribwort	*Plantago lanceolata*	NNI
Kentucky blue grass	*Poa pratensis*	NNI
Western sword fern	*Polystichum munitum*	N
Cherry plum	*Prunus cerasifera*	NNI
Ladies' tobacco	*Pseudognaphalium californicum*	N
Jersey cudweed	*Pseudognaphalium luteoalbum*	NN
Western bracken fern	*Pteridium aquilinum*	N

Common Name	Scientific Name	Status
Firethorn	*Pyracantha sp.*	NNI
Coast live oak	*Quercus agrifolia*	N
Wild radish	*Raphanus sativus*	NNI
Rosemary	*Rosmarinus officinalis*	NN
Himalayan blackberry	*Rubus armeniacus*	NNI
California blackberry	*Rubus ursinus*	N
Curly dock	*Rumex crispus*	NNI
Fiddleleaf dock	*Rumex pulcher*	NN
Arroyo willow	*Salix lasiolepis*	N
Blue elderberry	*Sambucus nigra ssp. caerulea*	N
Red elderberry	*Sambucus racemosa*	N
California bee plant	*Scrophularia californica*	N
Coast redwood	*Sequoia sempervirens*	N
Forked nightshade	*Solanum furcatum*	NN
Blue witch nightshade	*Solanum umbelliferum*	N
Spiny sowthistle	*Sonchus asper*	NN
Hedgenettle	*Stachys sp.*	N
Purple needlegrass	*Stipa pulchra*	N
Creeping snowberry	*Symphoricarpos mollis*	N
Pacific aster	*Symphyotrichum chilense*	N
Common dandelion	*Taraxacum officinale*	NN
Poison oak	*Toxicodendron diversilobum*	N
Strawberry clover	*Trifolium fragiferum*	NN
Rose clover	*Trifolium hirtum*	NNI
White clover	*Trifolium repens*	NN
Ithuriel's spear	*Triteleia laxa*	N

Status Codes: Native (N), Non-Native (NN), Non-Native Invasive (NNI)

Wildlife

A list of all wildlife observed during site surveys is shown below in **Table 2**.

Table 2: Wildlife Species Observed During Site Surveys

Common Name	Scientific Name
Birds	
American crow	*Corvus brachyrhynchos*
American robin	*Turdus migratorius*
Anna's hummingbird	*Calypte anna*
Bewick's wren	*Thryomanes bewickii*
Bushtit	*Psaltriparus minimus*
California scrub-jay	*Aphelocoma californica*
Chestnut-backed chickadee	*Poecile rufescens*
Common raven	*Corvus corax*
Dark-eyed junco	*Junco hyemalis*
Hermit/Swainson's thrush	*Catharus sp.*
Lesser goldfinch	*Spinus psaltria*
Red-shouldered hawk	*Buteo lineatus*
Spotted towhee	*Pipilo maculatus*
Wrentit	*Chamaea fasciata*
Mammals	
Botta's pocket gopher (burrows)	*Thomomys bottae*
Brush rabbit	*Sylvilagus bachmani*
San Francisco dusky-footed woodrat (middens)	*Neotoma fuscipes annectens*
Reptiles	
Western fence lizard	*Sceloporus occidentalis*

Developed portions of the project site, including both athletic fields, do not provide significant habitat for wildlife species due to the lack of cover and food resources. However, the vegetated eastern hillside on the property does provide habitat for a variety of wildlife species. Several species of birds were observed during site surveys foraging within the scrub and forested areas on the hillside, and it is likely that some species use the dense vegetation as nesting sites during the breeding season. Birds and bats could also use the large trees present on the hillside as nesting and roosting locations, respectively.

The abundance of fruit producing plant species within the hazelnut scrub provides excellent foraging opportunities for mammals in addition to birds. Small mammals and rodents likely reside within the scrub habitats on the property, where the dense cover provides protection from predators. It is likely that small carnivores such as grey fox (*Urocyon cinereoargenteus*) and bobcat (*Lynx rufus*) are frequent visitors to the property to hunt these and other small prey animals. Grey fox, raccoons (*Procyon lotor*) and other omnivores likely forage on the abundant berries as well.

Middens (nests) of the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), a California Species of Special Concern, were recorded in both forested and scrub habitats on the eastern hillside. It is likely that additional middens are present deep within the hazelnut scrub, which was mostly impenetrable to biologists. One San Francisco dusky-footed woodrat midden is located within the project footprint (Figure 6).

Wildlife Movement Corridors

Wildlife corridors are important for conservation of wildlife in the region. Linkages between habitat types can extend for miles between primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in discrete areas and populations located within larger habitat areas. Even where patches of pristine habitat are fragmented, as commonly occurs with riparian vegetation, wildlife movement between populations is facilitated through habitat linkages, migration corridors and movement corridors. Wildlife movement includes migration (i.e., usually one direction per season), inter-population movement (i.e., long-term genetic exchange) and small travel pathways (i.e., daily movement within an animal's home range).

Species utilize movement corridors in several ways. "Passage species" are those species that use corridors as thru-ways between outlying habitats. The habitat requirements for passage species are generally less than those for corridor dwellers. Passage species use corridors for brief durations, such as for seasonal migrations or movement within a home range. As such, movement corridors do not necessarily have to meet any of the habitat requirements necessary for a passage species' everyday survival. Large herbivores, such as deer and elk, and medium-to-large carnivores, such as coyotes, bobcats and mountain lions, are typically passage species. "Corridor dwellers" are those species that have limited dispersal capabilities – a category that includes most plants, insects, reptiles, amphibians, small mammals, and birds – and use corridors for a greater length of time. As such, wildlife movement corridors must fulfill key habitat components specific to a species' life history requirements in order for them to survive. In general, however, the suitability and/or utility of the landscape – specifically, of the landscape as corridor habitat – is best evaluated on a species-specific level.

The project site is bordered by open space to the east and suburban development to the west and south. These suburban areas have undeveloped corridors running between and behind adjacent properties. It is likely that wildlife cross through the property moving between these suburban corridors and the larger open space habitats to the east. While the project would remove the northern athletic field, the southern athletic field would remain intact. Theoretically, any wildlife seeking to cross through the property should still be able to do so without significant issue.

VII. SPECIAL STATUS PLANTS, ANIMALS, AND NATURAL COMMUNITIES

The California Department of Fish and Wildlife (CDFW) Natural Diversity Data Base (CNDDB) maintains records of reported occurrences of sensitive plant, animal and natural plant communities of concern. CNDDB records provide useful information about what species have been found in a given project area, and what species may be expected in similar habitat types. An area that has not been surveyed or visited may support sensitive species that have not been discovered and reported and in addition, may require site-specific surveys to rule out special status species occurrences. The U. S. Fish and Wildlife Service (USFWS), Sacramento, also maintains lists of listed species and other species of concern that may occur in or be affected by projects in a given USGS topographic quadrangle. Information on special status plant species was obtained from the CNPS On-line Inventory of Rare, Threatened, and Endangered Plants of California.

The CNDDB records within a five mile radius of the project site were reviewed for sensitive element occurrences (CNDDB, 2021). The potential for the presence of these special status species based on proximity to the site, or similar habitat utilization is provided in Appendix A.

Reported occurrences of special-status species within five (5) miles of the project site are shown in Figures 4 & 5. The project does not provide suitable habitat to support most special status species documented within a 5-mile radius of the site. Special-status species that have some probability for occurrence onsite, based on habitat types and/or recorded observations are discussed in greater detail below.

One special-status species, the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), was observed during site surveys and is confirmed to be present on the property. Three special-status species were not observed, but were assessed as having a moderate potential for occurrence onsite. These include one special-status bat species, one invertebrate species, and one plant species. While California red-legged frog (*Rana draytonii*) has a low potential for occurrence, it is also discussed as this species is widespread in the surrounding area and could potentially move through the project site on rare occasions during the rainy season.

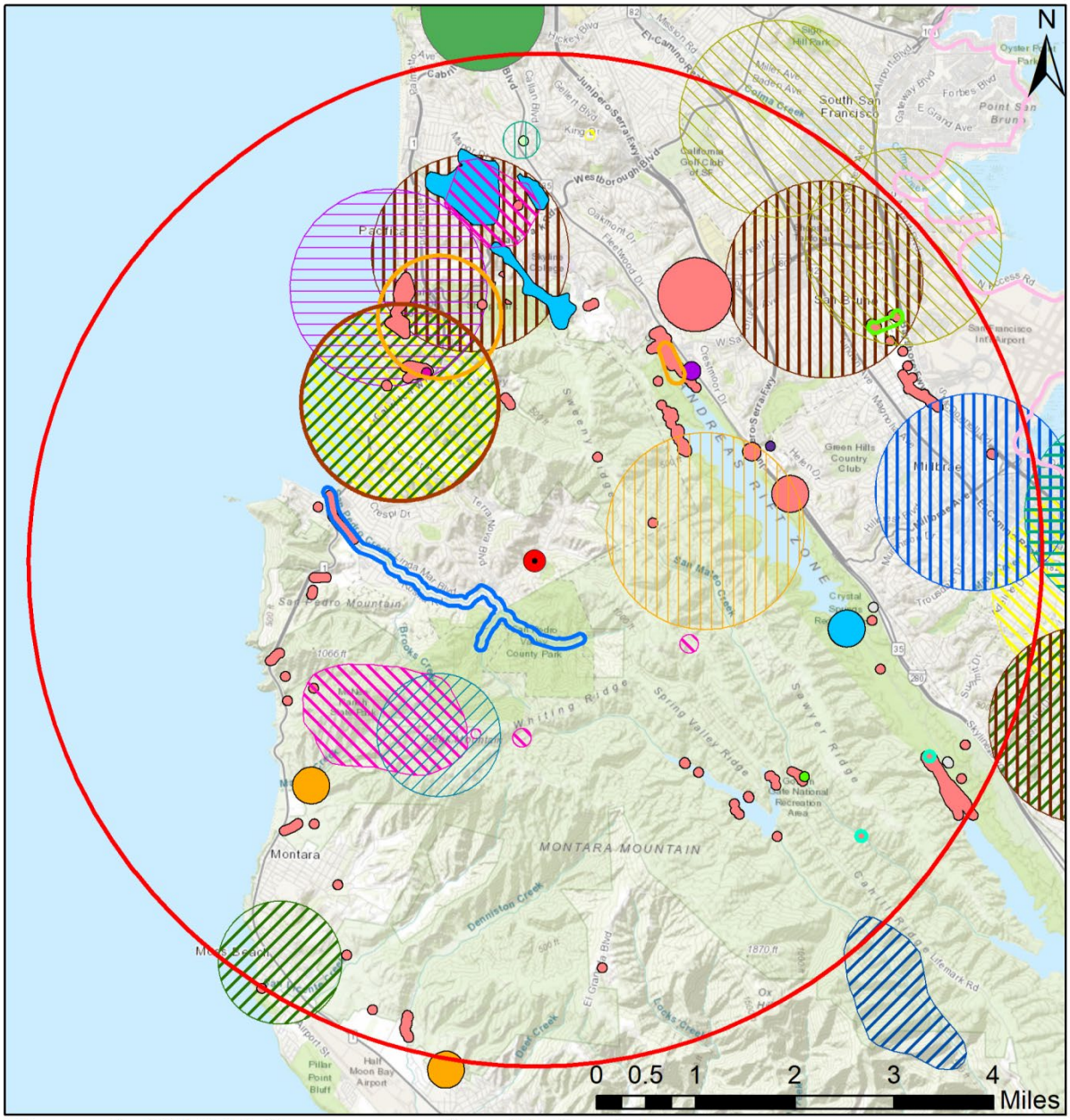


Figure 4: CNDDB Occurrence Map (Animals)

930 Oddstad Blvd, Pacifica, CA

Source: CNDDB 9/21

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Legend

- Project Location
- 5 mile buffer

Occurrence Records

- Alameda song sparrow
- American badger
- American peregrine falcon*
- California Ridgway's rail
- California giant salamander
- California red-legged frog
- Leech's skyline diving beetle
- Mission blue butterfly
- Myrtle's silverspot butterfly
- North American porcupine
- San Bruno elfin butterfly
- San Francisco dusky-footed woodrat
- San Francisco forktail damselfly
- San Francisco gartersnake*
- Tomales isopod
- Townsend's big-eared bat
- big free-tailed bat
- bumblebee scarab beetle
- foothill yellow-legged frog
- fringed myotis
- hoary bat
- longfin smelt
- marbled murrelet
- merlin
- monarch (overwintering)
- obscure bumble bee
- pallid bat
- saltmarsh common yellowthroat
- steelhead (CCC)
- western bumble bee
- western pond turtle

*Species with protected records not shown on map

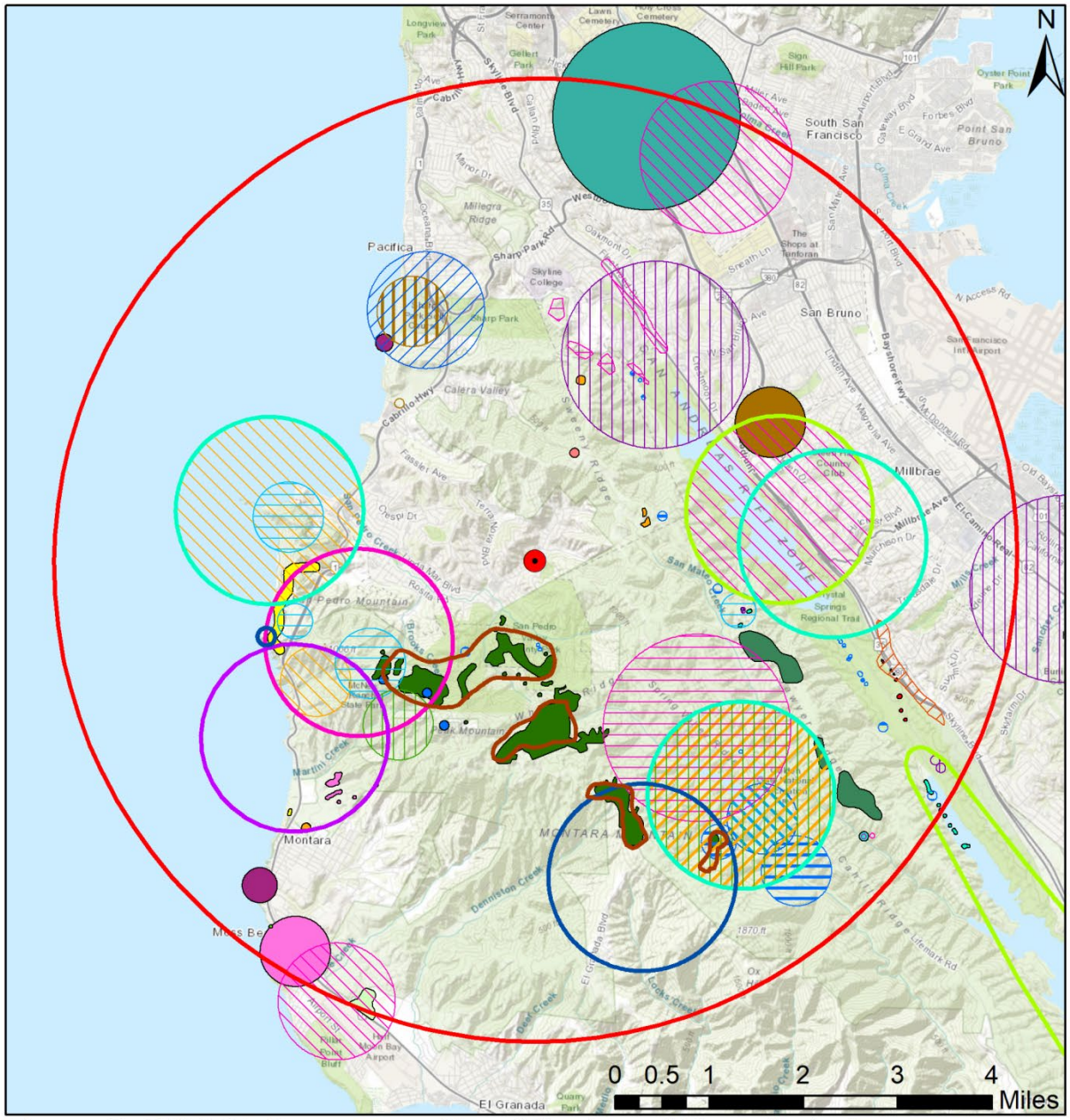


Figure 5: CNDDB Occurrence Map (Plants and Bryophytes)

930 Oddstad Blvd, Pacifica, CA

Source: CNDDB 9/21

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

Legend

Project Location
5 mile buffer

Occurrence Records

- Blasdale's bent grass
- Choris' popcornflower
- Crystal Springs lessingia
- Franciscan onion
- Franciscan thistle
- Hickman's cinquefoil
- Hillsborough chocolate lily*
- Kellogg's horkelia
- Kings Mountain manzanita
- Montara manzanita
- Northern Maritime Chaparral
- Oregon polemonium
- Orndduff's meadowfoam
- Point Reyes horkelia
- San Francisco Bay spineflower
- San Francisco campion
- San Francisco collinsia
- San Francisco gumplant
- San Francisco owl's-clover
- San Mateo woolly sunflower
- Scouler's catchfly
- Serpentine Bunchgrass
- Valley Needlegrass Grassland
- arcuate bush-mallow
- coast yellow leptosiphon
- coastal triquetrella
- congested-headed hayfield tarplant
- fragrant fritillary
- island tube lichen
- pappose tarplant
- perennial goldfields
- rose leptosiphon
- western leatherwood
- white-rayed pentachaeta
- woodland woollythreads

*Species with protected records not shown on map

A. California red-legged frog (Rana draytonii)

The California red-legged frog is a federally Threatened species and California State Species of Special Concern. Habitat for this species consists of ponds, slow moving streams, with emergent wetland and/or riparian vegetation for cover and adjacent upland habitats for dispersion. The project site is located approximately 0.2 miles west of designated critical habitat for this species (USFWS 2021). However, due to a lack of suitable breeding and foraging habitat within and around the project area, California red-legged frogs are unlikely to be encountered within the project site. While it is possible that individual frogs enter or cross through the property on rare occasions during the rainy season, there are no suitable aquatic habitats (such as breeding ponds or streams) in or around the project site which could serve as attractants to California red-legged frogs. Wildlife exclusion fencing installed along the eastern, northern and southern boundaries of the site would prevent California red-legged frogs from entering the construction site from open space areas to the east.

B. San Francisco Dusky-footed Woodrat (Neotoma fuscipes annectens)

The San Francisco dusky-footed woodrat is a California Species of Special Concern. This large rodent is found in woodland and scrub habitats throughout the San Francisco Peninsula, where it builds large nest structures composed of sticks and woody debris (middens). Several of these middens were observed on the vegetated hillside during site surveys (Figure 6). Most of the observed middens are well outside of the primary project footprint, however one midden (located in a large wood debris pile) would likely be disturbed by project activities. Additionally, several middens are located around the perimeter of the project footprint, and would be disturbed if any brush clearing or fence installation are to occur beyond the primary construction footprint shown in project plans (Brookwood Advisors, 2021). There is also a high potential for additional middens to be present within the impenetrable hazelnut scrub in the northeast portion of the project site, portions of which were too dense to be accessed by surveyors (Figure 6).

C. Obscure bumblebee (Bombus caliginosus)

Bumble bees have experienced dramatic population declines in recent decades. The once-widespread western bumblebee (*Bombus occidentalis*), for example, has not been observed on the San Francisco Peninsula since approximately 1994 and may be extirpated from the area (CNDDB, 2021). The obscure bumblebee (*Bombus caliginosus*) is a closely related species found only in coastal grassland habitats, and is considered an Invertebrate of Conservation Concern in California. Like other native bumblebees, the obscure bumblebee nests underground in rodent burrows. The open fields and grasslands present within the project site could potentially provide nesting habitat for this species, where rodent burrows are present. In addition, the obscure bumblebee nectars on a variety of native and non-native flowering plant species, and could potentially forage within weedy areas around the margins of the project site. As site surveys were performed outside of the primary active season for bumblebees (generally spring-early summer), it is not possible to conclusively determine the presence or absence of this species. However, the site is largely deficient of suitable habitat for this species due to the existing structures and athletic fields on site, and

therefore the obscure bumblebee was assessed as having a low potential for occurrence. Incorporating native nectar plants for this species into the landscaping plan would benefit this species and reduce any potential impacts from the project.

D. Special Status Bats

During the biological field surveys, the buildings on site were inspected visually for sign of bats. This included eaves, roof areas, walls and ground areas below potential roost sites. Based on the size of some of the gaps between the gutter and fascia (over ¼ inch in width) there is some potential for small crevice roosting bats (*Myotis spp.*) to utilize these gaps as roost sites. However no sign of bats, such as guano or urine staining, was observed on the site. Based on this, it is not expected that any bats, including special status bat species, are utilizing the structures on site at this time. As the buildings lie vacant, however bats could colonize the buildings in the future.

Large conifer trees (Monterey cypress, Monterey pine) that are found on the eastern slopes and western perimeter of the project site could potentially provide habitat for tree roosting bats such as the hoary bat (*Lasiurus cinereus*). This solitary bat species is not known to form breeding colonies in the San Francisco Bay Area, but individual bats could sporadically roost within the foliage of larger trees.

E. Special Status Plants

Most of the special-status plant species recorded within the general vicinity of the project site are found only in specific habitats such as coastal prairie, chaparral, saline/alkaline wetlands, coastal sand dunes or serpentine outcrops, none of which are present within the project area. In addition, construction of the school within the main project site likely extirpated any rare plants that may have previously been present. None of the perennial rare plant species known to occur in the area were observed, however there is a moderate potential for one annual species to occur onsite.

Choris' popcornflower (*Plagiobothrys chorisianus var. chorisianus*) is a rare annual herb found in a variety of habitats, including coastal scrub, woodland, and wet meadows. It is ranked 1B.2 (fairly endangered in California) by the California Native Plant Society. This species blooms from March to June and likely would not have been visible during site surveys (September). While this species is unlikely to occur within the project impact area proper, there is a moderate potential that it could be present within appropriate undisturbed habitat on the eastern slopes of the project site. A rare plant survey during the bloom period for this species would be necessary to determine whether this species is present.

F. Nesting birds

Developed and landscaped lawn areas of the project site provided very limited habitat for nesting birds. However, significant nesting habitat is present on the vegetated hillside and within the numerous trees present on the project site. It is likely that a variety of bird species nest within the trees and shrubs present on the project site, which will necessitate targeted nesting bird surveys to avoid disturbance if work is performed during the bird nesting season (approximately February 1 to- August 31).



Figure 6: Project Impacts and Protected Resources

930 Oddstad Blvd, Pacifica, CA

Service Layer Credits: Golden Gate National Parks Conservancy and San Mateo County

Legend

- Site Parcel Boundary
- Project Impact Footprint (Approximate)
- San Francisco Dusky-footed Woodrat Midden
- Inaccesible dense scrub - High potential for additional woodrat middens

Plant Communities

- Acacia grove
- Coast live oak woodland
- Coyote brush scrub
- Creeping bentgrass meadow
- Developed
- Fennel patch
- Hazelnut scrub
- Monterey cypress - Monterey pine stand
- Needle grass grassland
- Poison oak scrub
- Urban landscaping - lawn
- Urban landscaping - Monterey pine/cypress
- Wild oats and annual brome grassland

VIII. REGULATORY CONSIDERATIONS

Federal and state-listed species (endangered, threatened, and CA fully-protected) receive various levels of legal protection under the federal and state endangered species acts and the California Fish and Wildlife Code. The federal Migratory Bird Treaty Act of 1918 and Section 3500 of the California Fish and Wildlife Code protect active nests of migratory and other birds, and provide criminal penalties for take of hawks, owls, and take or disturbance of all bird nests or eggs. Potential impacts to other special status or otherwise sensitive species must be disclosed and evaluated pursuant to the California Environmental Quality Act (CEQA). Additional protections for species and habitats that are applicable to the project site are designated in the Coastal Commission under the Local Coastal Program and stormwater control requirements through the EPA.

A. Federal and State Endangered Species Acts

The United States Endangered Species Act (ESA) is administered by the United States Fish and Wildlife Service (USFWS). The California Endangered Species Act (CESA), the Native Plant Protection Act (NPPA), and CEQA afford protection to species of concern included on State-maintained lists. The California Department of Fish and Wildlife (CDFW) has statutory responsibility for the protection of State listed species and is a trustee agency under CEQA.

Both the Federal and State endangered species acts provide protection for listed species. In particular, the Federal act prohibits “take.” “Take” is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect a federally listed, endangered species of wildlife, or to attempt to engage in any such conduct." Take not specifically allowed by Federal permit under Section 10(a)(1)(B) of the ESA is subject to enforcement through civil or criminal proceedings under Section 9 of the ESA.

While "take" is easily understood in the sense of deliberately capturing or killing individual animals, Federal regulations also define take to include the incidental destruction of animals in the course of an otherwise lawful activity, such as habitat loss due to development. Under those rules the definition of take includes significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR Section 17.3).

Section 10(a) of the ESA permits the incidental take of an endangered or threatened species. Similarly, Section 2081 of the CDFW Code or use of the CESA allows the Department to enter into management agreements that make lawful activities which may otherwise result in habitat loss or take of individuals of a state listed species.

B. California Fully Protected Species

Under California Fish and Game Code Sections 3511, 4700, 5050 and 5515, 37 wildlife species are designated as fully protected in California. This provides additional protections for species that are rare or at risk of extinction. Most of the species are also listed as threatened or endangered under CESA. Fully protected species may not be taken at any time and no permits any be issued for their take.

C. Species of Special Concern

The California Department of Fish and Wildlife has designated certain animal species as "Species of Special Concern" due to concerns about declining population levels, limited ranges, and continuing threats that have made these species vulnerable to extinction. The goal of this designation is to bring attention to these species in the hope that their population decline will be halted through mitigation or project redesign to avoid impact. Species of special concern are protected only through environmental review of projects under CEQA. The California Department of Fish and Wildlife is a trustee agency and is solicited for its comments during the CEQA process.

D. Nesting Birds

Nesting birds, including raptors, are protected by the California Department of Fish and Wildlife Code 3503, which reads, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Passerines and non-passerine landbirds are further protected under the Federal Migratory Bird Treaty Act. Any disturbance that causes direct injury, death, nest abandonment, or forced fledging of migratory birds, is restricted under the MBTA. Any removal of active nests during the breeding season or any disturbance that results in the abandonment of nestlings is considered a 'take' of the species under federal law. As such, the CDFW typically recommends pre-construction surveys for potentially suitable nesting habitat that will be directly (actual removal of trees/vegetation) or indirectly (noise disturbance) impacted by construction-related activities.

E. California Native Plant Society and CEQA

The California Native Plant Society (CNPS) has developed a rating system for the state's rare, threatened and endangered plants. Plants rated by CNPS are subject to protection under CEQA and may also be protected by state and federal endangered species laws if they are listed by the state or federal government. One CNPS rated plant, Choris' popcornflower, was identified as having a moderate potential for occurrence based on habitat types present on the vegetated hillside (Appendix A). However, this species would be most likely found outside of the project footprint and is not expected to be impacted by project activities if present.

F. City of Pacifica Municipal Code: Heritage Tree Ordinance

Chapter 12 of the Pacifica Municipal Code (Preservation of Heritage Trees) stipulates regulations designed to preserve and protect heritage trees on private or city-owned property. In general, heritage trees are defined as any trees within the City of Pacifica, exclusive of eucalyptus, which have a trunk with a circumference of fifty (50") inches (approximately sixteen (16") inches in diameter) or more, measured at twenty-four (24") inches above the natural grade. Sections 4-12.02 and 4-12.03 of the Pacifica Municipal Code provide a complete definition of a heritage tree. It is often necessary to obtain a permit when performing work on or engaging in construction around heritage trees.

Tree protection plans are required when engaging in new construction within the drip-line of a heritage tree. The plan must be prepared by a qualified arborist, horticulturist, landscape architect or other qualified person. See sections 4-12.07 and 4-12.08 of the Pacifica Municipal Code for specific rules regarding tree protection plans and building permits.

Several of the large Monterey cypress trees planted around the perimeter of the site may require permitting approval prior to removal. A separate arborist's report was prepared for the project and provides additional information on which trees are proposed for removal.

IX. CONCLUSIONS AND MITIGATION MEASURES

The project will primarily impact previously developed areas of the property, with minimal impacts to surrounding natural habitats. To reduce impacts to biological resources on the site and the adjacent slopes to the east, the following recommendations are provided.

BIO-1: Prior to the start of construction, a pre-construction survey shall be conducted by a qualified biologist to identify occupied San Francisco dusky-footed woodrat middens onsite. Where feasible, occupied middens shall be avoided and a minimum five (5) foot non-disturbance buffer, or as otherwise recommended by a qualified biologist, shall be established, maintained, and monitored throughout project construction. Additionally, a minimum five (5) foot non-disturbance buffer, or as otherwise recommended by a qualified biologist, shall be established between the eastern limit of proposed development activities and the densely vegetated, impenetrable hazelnut scrub habitat.

BIO-2: To address potential impacts to San Francisco dusky-footed woodrats, a Relocation Plan prepared by a qualified biologist, shall be prepared and submitted to the City of Pacifica and the California Department of Fish and Wildlife for review and approval. At a minimum, the Relocation Plan shall include, but is not limited to, the following:

- Nests requiring relocation shall be dismantled by a qualified biologist, with assistance as needed from the construction crew to relocate nest material to a suitable location.
- Each member of the construction crew shall receive an environmental awareness training regarding San Francisco dusky-footed woodrat ecology and specifics of the Relocation Plan.
- All material removed during nest dismantling shall be moved into the Relocation Area, as determined by the qualified biologist, and constructed into piles suitable for habitation or use as refugia.
- If an active nest requires removal, the following phased dismantling protocol shall be implemented:
- Remove at least 50-100% of the existing canopy cover and begin dismantling.
- After partially dismantling the nest, leave nest alone for two to four days to allow woodrats to disperse on their own. After two to four days, continue to disassemble nest by hand. Plan to completely dismantle in two to three sessions.
- If young are present, the construction crew and qualified biologist shall cease dismantling of the nest for 48 hours to allow the adult to move the young. If the young have been moved and the nest is vacant, nest removal may resume.
- If an inactive nest (as determined by a qualified biologist) needs to be removed, it may be removed completely in one day. If woodrats are observed within or fleeing from the nest, the nest will be considered active and relocated using a phased approach.

BIO-3: To offset the loss or disturbance of foraging habitat (native forbs and shrubs) for the special-status obscure bumble bee (*Bombus caliginosus*), native shrubs and herbaceous (forb) species known to benefit native bees shall be identified in a revised landscaping plan and introduced onsite. Plants known to benefit native bees shall be selected and may include but are not limited to coyote brush (*Baccharis pilularis*), sage *(Salvia spp*.), lupines (*Lupinus spp*.), various species of Lotus and Acmispon, gumplant

(*Grindelia spp*.), and *Phacelia spp*. As part of the update to the landscaping plans, selected bee-friendly species and planting locations shall be confirmed by a qualified biologist in consultation with the City of Pacifica.

BIO-4: In the event the construction commences during the rainy season, a qualified biologist shall conduct a pre-construction survey for California red-legged frog no more than five days prior to commencement of ground disturbing activities and provide recommendations for installation of exclusion fencing, as warranted. Results of the survey and recommendations for exclusion fencing shall be submitted to the City of Pacifica.

At the recommendation of a qualified biologists and based on factors including the migration window for red-legged frog, rainfall, and inundation, exclusion fencing shall be installed along the eastern, southern and northern boundaries of the site (excluding the west side along Oddstad boulevard). Exclusion fencing shall be buried 6 inches deep and extend 3 feet above ground level. The fence location shall be inspected by a qualified biologist prior to installation, and the fence shall be maintained under the supervision of a qualified biologist.

BIO-5: To avoid potential impacts to special-status bats, a qualified biologist shall conduct a pre-construction survey of all structures and trees that would be impacted by the project, no more than 15 days prior to demolition, tree removal, or commencement of ground disturbing activities. Results of the preconstruction survey shall be documented by a qualified biologist and provided to the City of Pacifica. If special-status bat species are found roosting in building or trees proposed to be removed, the biologist shall determine if there are young present (i.e., the biologist should determine if there are maternal roosts). If young are found roosting in any tree or building proposed for removal, such impacts shall be avoided until the young are flying and feeding on their own. A non-disturbance buffer installed with orange construction fencing shall be established around maternity site. The size of the buffer zone will be determined by a qualified bat biologist at the time of detection. If adults are found roosting in a tree or building on the project site but no maternal sites are found, then the adult bats can be flushed, or a one-way eviction door can be placed over the tree cavity for a 48-hour period prior to the tree removal or building demolition. If bats or evidence of bats are detected during the pre-construction surveys, the applicant shall notify the City of Pacifica and the CDFW regarding bat eviction protocol and submit a plan for review and acceptance by the City of Pacifica and the CDFW.

BIO-6: Should construction activities commence during the bird nesting season (February 1 to August 31), a pre-construction nesting bird survey shall be conducted by a qualified biologist no more than 14 days prior to the start of construction activities. Areas within 300 to 500 feet of construction shall be surveyed for active nests. Should active nests be identified, a disturbance-free buffer shall be established based on the needs of the species as set forth by CDFW and shall be maintained until a qualified biologist verifies that the nestlings have fledged, or the nest has failed. Should construction activities cease for 14 consecutive days or more within the nesting season, an additional nesting bird survey shall be required prior to resuming construction. Results of the pre-construction nesting bird survey shall be submitted to the City of Pacifica.

BIO-7: Indirect impacts to the seasonal wetlands and jurisdictional drainage feature shall be avoided through implementation of best management practices (BMPs) prior to earthwork. Construction exclusion zones shall be established by installing appropriate construction fencing, silt fencing, wildlife friendly hay wattles (no monofilament netting), gravel wattles, and other protective measures between project activities and the seasonal wetlands and drainage feature.

All non-native, invasive vegetation removed shall be discarded offsite and away from wetland areas to prevent reseeding.

Prior to implementation of the construction project, a biological monitor shall inspect installation of BMPs to ensure proper protection of the seasonal wetlands and jurisdictional drainage feature areas are in place. BMPs shall thereafter be routinely inspected by the construction manager to ensure BMPs remain in place for the duration of construction activities. Upon completion of project construction all exclusion fencing shall be removed along with any temporary BMPs.

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APPENDIX A: Special status species occurrence records

Table A-1: Special status plant and animal species recorded within five miles of the project site and their potential for occurrence.

Species Name	Status	Habitat[3]	Potential to Occur Onsite
MAMMALS			
American badger *Taxidea taxus*	**SSC** G5 S3	Most abundant in drier open stages of shrub, forest, and herbaceous habitats, with friable soils.	**No potential** Suitable habitat not present, no burrows observed
Big free-tailed bat *Nyctinomops macrotis*	**SSC** WBWG:MH G5 S3	Low-lying arid areas; roosts in high cliffs and rocky outcrops.	**No potential** No suitable roosting habitat present
Fringed myotis *Myotis thysanodes*	WBWG:H G4 S3	Found in a wide variety of habitats, but prefers dry hardwood woodlands. Roosts in rock crevices, bridges, buildings and tree hollows.	**Low potential** Foraging habitat present, but no indications of active roosts within buildings.
Hoary bat *Lasiurus cinereus*	WBWG:M G3G4 S4	Roosts in dense foliage of deciduous and evergreen trees, forages over streams and ponds. Prefers habitat edges for feeding.	**Moderate potential** Roosting habitat present (large trees). Does not breed in Bay Area.
North American porcupine *Erethizon dorsatum*	G5 S3	Inhabits a wide variety of coniferous and mixed woodland habitat in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges.	**No potential** Suitable habitat not present
Pallid bat *Antrozous pallidus*	**SSC** WBWG: H G4 S3	Generally found in dry, open habitats including deserts, grasslands, shrublands, woodlands and forests. Roosts in protected structures and rocky outcrops.	**Low potential** Marginal foraging habitat present, no roosting habitat present.
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	**SSC** G5T2T3 S2S3	Forests with moderate canopies and moderate to dense understory.	**Present.** Middens observed during site survey

Species Name	Status	Habitat[3]	Potential to Occur Onsite
Townsend's big-eared bat Corynorhinus townsendii	**SSC** WBWG:H G4 S2	Occurs throughout California in a wide variety of habitats. Most common in mesic sites and roosts in man-made structures (e.g. barns) along California coast.	**Low potential** Suitable foraging habitat present. No indications of current roosts within structures and no currently accessible structures.
BIRDS			
Alameda song sparrow *Melospiza melodia pusillula*	**SSC** G5T2? S2S3	Salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* marshes and nests in *Grindelia* bushes.	**No potential** Suitable habitat not present.
American peregrine falcon *Falco peregrinus anatum*	**FD, CD, CFP** G4T4 S3S4	Hunts on beaches, mudflats and near water features including wetlands, lakes and rivers. Nests on ledges in cliffs or buildings.	**No potential** Marginal foraging habitat present, but no roosting habitat present.
California Ridgway's rail *Rallus obsoletus obsoletus*	**FE, CE, CFP** G3T1 S1	Salt-water and brackish marshes in the San Francisco Bay. Associated with pickleweed.	**No potential** Suitable habitat not present.
Marbled murrelet *Brachyramphus marmoratus*	**FT, CE** G3 S2	Nests in old growth coniferous forest and old growth Redwood forest.	**No potential** Suitable habitat not present.
Merlin *Falco columbarius*	WL G5 S3S4	Seacoast, tidal estuaries, open woodlands, savannahs, grassland and desert edges, farms and ranches. Roosts in trees, nests in northern Canada and Alaska.	**Low potential** Marginal foraging habitat present, no nesting habitat present and does not breed in Bay Area
Saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	**SSC** G5T3 S3	Marshy, brushy vegetation in or near water or wet meadow/ scrub habitat. Requires thick continuous cover for foraging. Nests in willow, tall grasses, scrub and tule patches.	**Low potential**. Potential foraging habitat present, but no suitable nesting habitat present.
AMPHIBIANS AND REPTILES			

Species Name	Status	Habitat[3]	Potential to Occur Onsite
California giant salamander *Dicamptodon ensatus*	**SSC** G3 S2S3	Occurs in wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages.	**No potential** No suitable perennial aquatic breeding or foraging habitat present.
California red-legged frog *Rana draytonii*	**FT, SSC** G2G3 S2S3	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	**Low potential**. No suitable breeding habitat on site, but could occur on site during upland migratory movements or dispersal events. Several occurrences within 5 miles of project site.
Foothill yellow-legged frog (West/Central Coast Clade) *Rana boylii*	**CE, SSC** Sensitive G3 S3	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	**No potential** Suitable habitat not present**.**
San Francisco garter snake *Thamnophis sirtalis tetrataenia*	**FE, CE, CFP** G5T2Q S2	Near freshwater marshes, ponds, and slow moving streams. Prefers dense cover and water depths of at least one foot. Also found in upland habitats adjacent to water sources. Prefers south or west facing slopes with open habitats with occasional shrubs for cover.	**Low potential** Suitable aquatic foraging habitat not present. Some potential for species to utilize site when traveling between upland/ foraging habitats.
Western pond turtle *Emys marmorata*	**SSC** G3G4 S3	Ponds, creeks in woodland, grassland. Species requires deep water ponds, streams, or marshes with sunny, emergent basking sites and sunny upland habitat for nesting.	**No potential.** Suitable aquatic habitat not present.

FISH			
Longfin smelt *Spirinchus thaleichthys*	**FC, CT** G5 S1	Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	**No potential.** Suitable brackish aquatic habitat not present.
Steelhead- central California coast DPS *Oncorhynchus mykiss irideus*	**FT** G5T2T3Q S2S3	Well oxygenated, moderate to fast flowing streams with woody debris, deep pools, riffles, and gravels.	**No potential** Suitable aquatic habitat not present.
INVERTEBRATES			
Bumblebee scarab beetle *Lichnanthe ursina*	ICP G2 S2	Coastal sand dunes from Sonoma county south to San Mateo county. Usually stays close to sand surface.	**No potential** Suitable habitat not present.
Leech's skyline diving beetle *Hydroporus leechi*	ICP G1? S1?	Sag ponds associated with perennial springs. Only known from one location	**No potential** Suitable habitat not present.
Mission blue butterfly *Plebejus icarioides missionensis*	**FE** G5T1 S1	Occurs in grasslands within the coastal fogbelt in southern Marin, San Francisco, and San Mateo counties; requires one or all three of its larvae foodplants (*Lupinus albifrons, L. formosus, and L. variicolor*).	**No potential** No suitable habitat or host plants present.
Monarch Butterfly (overwintering) *Danaus plexippus*	**FC** G4T2T3 S2S3	Roosts located in wind protected tree groves (eucalyptus, Monterey pine, Monterey cypress) with nectar sources and water nearby.	**Low potential** Potential winter roosting habitat (large pine/cypress trees) present. Site is not a known wintering location.
Myrtle's silverspot *Speyeria zerene myrtleae*	**FE** G5T1 S1	Coastal habitats with *Viola adunca.* Restricted to foggy dunes and hills of the Point Reyes peninsula.	**No potential** Suitable habitat and host plants not present. Local population(s) extirpated.

Obscure bumble bee *Bombus caliginosus*	ICP G4? S1S2	Coastal areas from Santa Barbara county to north to Washington state. Grassy coastal prairies and meadows. Nectar and pollen plants include: *Ceanothus, Cirsium, Clarkia, Keckiella, Lathyrus, Lotus, Lupinus, Rhododendron, Rubus, Trifolium,* and *Vaccinium*	**Low potential** Some potential nectar plants (*Rubus, Trifolium, Cirsium, Lathyrus)* present on margins of site. Nesting habitat potentially present in annual grassland areas.
San Bruno elfin butterfly *Callophrys mossii bayensis*	**FE** G4T1 S3	Coastal mountains with grassy ground cover, mainly near San Bruno mountain. Host plant is *Sedum spathulifolium*.	**No potential** No suitable habitat or host plants present.
San Francisco fork-tailed damselfly *Ischnura gemina*	ICP G2 S2	Freshwater marshes and creeks with emergent and floating aquatic vegetation.	**No potential** Suitable habitat not present
Tomales isopod *Caecidotea tomalensis*	ICP G2 S2S3	Aquatic. Inhabits localized freshwater ponds or streams with still or near-still water.	**No potential** No suitable perennial aquatic habitat present.
Western bumble bee *Bombus occidentalis*	**CC** G2G3 S1	Open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. Nests underground. Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	**Low potential** Potential foraging and nesting habitat present. Not recorded in vicinity since 1996.
PLANTS			
Arcuate bush-mallow *Malacothamnus arcuatus*	CNPS 1B.2 G2Q S2	Gravelly alluvium in chaparral, cismontane woodland. Elevation: 15 - 355 meters. Perennial shrub.	**No potential** Not observed during site survey.
Blasdale's bent grass *Agrostis blasdalei*	CNPS 1B.2 G2 S2	Coastal bluff scrub, coastal dunes, and coastal prairie. Sandy or gravelly soil close to rocks; often in nutrient-poor soil with sparse vegetation. 0-150 meters. Bloom period: May-July. Perennial.	**Low potential** Marginal suitable habitat potentially present around rock outcrop. Not observed during site survey.
Choris popcornflower *Plagiobothrys chorisianus* var. *chorisianus*	CNPS 1B.2 G3T1Q S1	Mesic sites in chaparral, coastal prairie, and coastal scrub. Elevation: 5 - 705 meters. Blooming period: Mar-June. Annual.	**Moderate potential** Suitable habitat potentially present on vegetated hillside.

Coast yellow leptosiphon *Leptosiphon croceus*	**CE** CNPS 1B.1 G1 S1	Coastal bluff scrub, coastal prairie. Elevation: 10 - 150 meters. Blooming period: Apr.-May. Annual	**No potential** Suitable habitat not present.
Congested-headed hayfield tarplant *Hemizonia congesta ssp. congesta*	CNPS 1B.2 G5T2 S2	Grasslands. Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 5-520 m. Bloom period Apr-Nov. Annual.	**Low potential** Marginal suitable present. Not observed during site survey
Crystal Springs lessingia *Lessingia arachnoidea*	CNPS 1B.2 G2 S2	Cismontane woodland, coastal scrub, valley and foothill grassland. Strong affinity to serpentine soil. Elevation: 90 - 200 meters. Blooming period: July- Oct. Annual.	**No Potential** No suitable soils present.
Fragrant fritillary *Fritillaria liliacea*	CNPS 1B.2 G2 S2	On clay or serpentine soils in coastal scrub, cismontane woodland, coastal prairie, or valley and foothill grassland. Elevation: 3 - 410 meters. Blooming period: Feb.-Apr. Perennial (bulb).	**No Potential** No suitable soils present.
Franciscan onion *Allium peninsulare var. franciscanum*	CNPS 1B.2 G5T2 S2	Cismontane woodland, valley and foothill grassland. Clay soils, often on serpentine or volcanics. Dry hillsides. Elevation: 5-320 m. Blooming: period: May-June. Perennial (bulb).	**No Potential** No suitable soils present.
Franciscan thistle *Cirsium andrewsii*	CNPS 1B.2 G3 S3	Ultramafic soils and serpentine seeps in coastal scrub, broadleafed upland forest, coastal bluff scrub, coastal prairie. Elevation: 0-295 meters. Blooming period: Mar. - July. Perennial.	**No Potential** No suitable soils present. Not observed during site survey.
Hickman's cinquefoil *Potentilla hickmanii*	**FE, CE** CNPS 1B.1 G1 S1	Freshwater marshes, seeps, and small streams in open or forested areas along the coast. 5-125 m. Blooming period: Apr.-Aug. Perennial.	**No Potential** Suitable habitat not present. Not observed during site survey. Local population extirpated ca. 1930. Only known from one other location in San Mateo County.
Hillsborough chocolate lily *Fritillaria biflora* var. *ineziana*	CNPS 1B.1 G3G4T1 S1	Serpentine areas in cismontane woodland and grasslands. 90-170m. Blooming period: Mar. – Apr. Perennial (bulb).	**No Potential** No suitable soils or habitat present.

Kellogg's horkelia *Horkelia cuneata ssp. sericea*	CNPS 1B.1 G4T1? S1?	Old dunes, coastal sandhills. Openings with sandy or gravelly soils in closed-cone coniferous forest, coastal scrub, chaparral. 5-430m. Blooming period: Apr. – Sept. Perennial.	**Low Potential** Potential suitable habitat present in hillside scrub habitats. Not observed during site survey.
Kings Mountain manzanita *Arctostaphylos regismontana*	CNPS 1B.2 G2 S2	Granitic or sandstone outcrops in broadleaved upland forest, chaparral, and north coast coniferous forest. Elevation: 240 - 705 meters. Bloom period Jan-Apr. Shrub.	**No Potential** Not observed during site survey.
Montara manzanita *Arctostaphylos montaraensis*	CNPS 1B.2	Slopes and ridges. Chaparral and coastal scrub. 270-460m. Bloom period Jan-Mar. Shrub.	**No Potential** Not observed during site survey.
Oregon polemonium *Polemonium carneum*	CNPS 2B.2 G3G4 S2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation: 15 - 1525 meters. Blooming period: Apr. – Sept. Perennial.	**Low Potential** Suitable habitat present, but not observed during site survey.
Ornduff's meadowfoam *Limnanthes douglasii ssp. ornduffii*	CNPS 1B.1 G4T1 S1	Meadows and seeps, agricultural fields. Elevation: 5 - 15 meters. Blooming period: Nov-May. Annual.	**No Potential** No suitable habitat present.
Pappose tarplant *Centromadia parryi ssp. parryi*	CNPS 1B.2 G3T2 S2	Vernally mesic alkaline sites in chaparral, coastal prairie, and grassland. Alkaline marshes, swamps, meadows, and seeps. Elevation: 1 - 500 meters. Blooming period: May- Nov. Annual.	**No Potential** No suitable habitat present.
Perennial goldfields *Lasthenia californica ssp. macrantha*	CNPS 1B.2 G3T2 S2	Coastal bluff scrub, coastal dunes, coastal scrub. Elevation: 5 - 520 meters. Blooming period: Jan.- Nov. Perennial.	**No Potential** Not observed during site survey.
Point Reyes horkelia *Horkelia marinensis*	CNPS 1B.2 G2 S2	Sandy soils in coastal dunes, coastal prairie, and coastal scrub. Elevation: 5 - 755 meters. Blooming period: May-Sept. Perennial.	**No Potential** Not observed during site survey.
Rose leptosiphon *Leptosiphon rosaceus*	CNPS 1B.1 G1 S1	Coastal bluff scrub. Elevation: 10 - 140 meters. Blooming period: Apr.-July. Annual.	**No Potential** No suitable habitat present.

San Francisco Bay spineflower *Chorizanthe cuspidata var. cuspidata*	CNPS 1B.2 G2T1 S1	Open sandy soils in coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Elevation: 3 - 215 meters. Blooming period: Apr. - July. Annual.	**No Potential** No suitable habitat present.
San Francisco campion *Silene verecunda ssp. verecunda*	CNPS 1B.2 G5T1 S1	Mudstone, shale, or serpentine soils in chaparral, coastal bluff scrub, coastal prairie, coastal scrub, and grassland. Elevation: 30 - 645 meters. Blooming period: Mar. - Aug. Perennial.	**No Potential** No suitable soils present. Not observed during site survey.
San Francisco collinsia *Collinsia multicolor*	CNPS 1B.2 G2 S2	On decomposed shale (mudstone) mixed with humus in closed cone coniferous forest and coastal scrub. Sometimes on serpentine. 10-275 m Blooming period: Mar.-May. Annual.	**No Potential** No suitable soils present.
San Francisco gumplant *Grindelia hirsutula* var. *maritima*	CNPS 3.2 G5T1Q S1	Sandy or serpentine slopes and sea bluffs. Coastal bluff, coastal scrub, grasslands. Elevation: 15 - 400 meters. Blooming period: June- Sept. Perennial.	**No Potential** No suitable habitat present. Not observed during site survey.
San Francisco's owls'-clover *Triphysaria floribunda*	CNPS 1B.2 G2? S2?	Coastal prairie, coastal scrub, valley and foothill grassland. Often on serpentine. Elevation: 10 - 160 meters. Blooming period: Apr.-June. Annual.	**No Potential** No suitable soils present.
San Mateo woolly sunflower *Eriophyllum latilobum*	**FE, CE** CNPS 1B.1 G1 S1	Cismontane woodland, coastal scrub, lower montane coniferous forest. Tolerates serpentine. Often on roadcuts. Elevation: 45 - 150 meters. Blooming period: May- June. Perennial.	**No Potential** No suitable soils present. Not observed during site survey.
Scouler's catchfly *Silene scouleri ssp. scouleri*	CNPS 2B.2 G5T4T5 S2S3	Coastal bluff scrub, coastal prairie, and grassland. 5-315m. Perennial.	**No potential** No suitable habitat present. Not observed during site survey.

Western leatherwood *Dirca occidentalis*	CNPS 1B.2 G2 S2	Moist ravines, riparian thickets on slopes, Broad leafed upland forest, Closed-cone coniferous forest, Chaparral, Cismontane woodland, North Coast coniferous forest. Elevation: 25 - 425 meters. Bloom period Jan-Mar. Perennial shrub.	**Low Potential**. Suitable habitat present on vegetated hillside. Not observed during site survey.
White-rayed pentachaeta *Pentachaeta bellidiflora*	**FE, CE** CNPS 1B.1 G1 S1	Ultramafic grassland. Open dry rocky slopes and grassy areas. Often on soils derived from serpentine bedrock. Elevation: 35 - 620 meters. Blooming period: Mar-May. Annual.	**No Potential** No suitable soils or habitat present.
Woodland woollythreads *Monolopia gracilens*	CNPS 1B.2 G3 S3	Grasslands or openings in chaparral, cismontane woodland, broadleafed upland forest, and north coast coniferous forest; sandy to rocky soils. Often seen on serpentine after burns. 120-975 m. Blooming period: Mar.-July. Annual.	**No Potential** No suitable habitat present.
MOSSES AND LICHENS			
Coastal triquetrella *Triquetrella californica*	CNPS 1B.2 G2 S2	Grows within 30m from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. 20-1175 m.	**Low Potential** Marginal potential habitat present on vegetated hillside and around rock outcrop. Not observed during site survey.
Island tube lichen *Hypogymnia schizidiata*	CNPS 1B.3 G2G3 S2	Chaparral, closed-cone coniferous forest. On bark and wood of hardwoods and conifers. 255-545 m.	**Low Potential** Suitable host trees (*Quercus, Pinus*) present. Not observed during site survey.

State and Federal Listing Codes
(FE) Endangered = Federally listed as Endangered.
(FT) Threatened = Federal list, likely to become endangered in the foreseeable future.
(FP) Proposed = Species or Critical Habitat proposed for official Federal listing.
(FC) Candidate = Federal candidate to become a Proposed species.
(FD) Delisted from Federal List. Status to be monitored for 5 years.
(FSC) Federal Species of Concern = May be endangered or threatened, but not enough biological information to list.
(CE, CT, CR, SCT) State Listed = Listed as endangered, threatened, rare or candidate by California.
(CSC) California Species of Concern = CDFW concern for population trends.
(CFP) California Fully Protected = Fish and Wildlife Code prohibits take of individuals.
(CFGC) = California Department of Fish and Wildlife Code: §3503 prohibits the taking, possession or needless destruction of the nest or eggs of any bird; §3503.5 prohibits the taking, possession or destruction of any bird in the order Falconiformes or Strigiformes (birds-of-prey) or the taking, possession or destruction of the nest or eggs of any such bird; §3511 outlines protection for fully protected birds; and §3513 prohibits the taking or possession of any migratory non-game bird as designated in the Migratory Bird Treaty Act.

(AFS) = American Fisheries Society identifies marine, estuarine and diadromous fish species that are at risk of extinction in North America. The AFS has designated the following four classifications in order of conservation importance E – Endangered, T – Threatened, V – Vulnerable, and CD – Conservation Dependent.
(BCC) U.S. Fish and Wildlife Service Birds of Conservation Concern.

(CNPS 1B) = California Native Plant Society: rare or endangered in CA or elsewhere.
0.1: Seriously endangered in California
0.2: Fairly endangered in California
(CNPS 2) = California Native Plant Society: rare or endangered in CA but more common elsewhere.
(CNPS 3) = California Native Plant Society: more information is needed to determine degree of sensitivity.
(CNPS 4) = California Native Plant Society: plant of limited distribution.
CNPS Threat Ranks
0.1 = Seriously threatened in California
0.2 = Fairly threatened in California
0.3 = Not very threatened in California
(MBTA) = Migratory Bird Treaty Act. Species of migratory birds protected by the Migratory Bird Treaty Act (16 U.S.C. 703-711) and subject to the regulations on migratory birds contained in this subchapter B of title 50 CFR.
(Sensitive) = CA Dept. of Forestry classification; deserves special consideration during timber harvest operations.
(WBWG:M) = Western Bat Working Group: Medium Priority
(WBWG:H) = Western Bat Working Group: High Priority
(WL) Watch List California Department of Fish and Wildlife
(Xerces) = Xerces Society for Invertebrate Conservation. Red List identifies endangered, threatened or at-risk pollinator species. PE – Possibly Extinct indicates species only known from historical occurrences; CI – Critically Imperiled indicates species at very high risk of extinction; I – Imperiled indicates species at high risk of extinction; V – Vulnerable indicates species at moderate risk of extinction; DD – Data Deficient indicates lack of information to sufficiently assess status.

NatureServe Conservation Status Rankings
(G1) = Globally Critically Imperiled. At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
(G2) = Globally Imperiled. At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
(G3) = Globally Vulnerable. At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
(G4) = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.
(G5) = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.
(S1) = State Critically Imperiled. At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
(S2) = State Imperiled. At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
(S3) = State Vulnerable. At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

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(Sensitive) = CA Dept. of Forestry classification; deserves special consideration during timber harvest operations.
(WBWG:M) = Western Bat Working Group: Medium Priority
(WBWG:H) = Western Bat Working Group: High Priority
(WL) Watch List California Department of Fish and Wildlife

(Xerces) = Xerces Society for Invertebrate Conservation. Red List identifies endangered, threatened or at-risk pollinator species. PE – Possibly Extinct indicates species only known from historical occurrences; CI – Critically Imperiled indicates species at very high risk of extinction; I – Imperiled indicates species at high risk of extinction; V – Vulnerable indicates species at moderate risk of extinction; DD – Data Deficient indicates lack of information to sufficiently assess status.

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(S1) = State Critically Imperiled. At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
(S2) = State Imperiled. At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
(S3) = State Vulnerable. At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.

APPENDIX B: Representative Photos of Project Site



Photo B-1. View of southern athletic field and school buildings.
(Photo date: 11/27/2021)



Photo B-2. View of blacktop and parking area. (Photo date: 11/27/2021)



Photo B-3. View of eastern hillside (right side) and school grounds (left side). (Photo date: 10/5/2021)



Photo B-4. View of eastern hillside and adjacent athletic field. (Photo date: 9/8/2021)



Photo B-5. View of project area from the rocky outcrop, looking northwest over poison oak scrub (Photo date: 9/8/2021)



Photo B-6. Dense hazelnut scrub present on northeastern slope of property. (Photo date: 9/8/2021)



Photo B-7. View of project area and hillside from parking lot, looking east. Large fennel patch (yellow flowers) visible in center-left. (Photo date: 9/8/2021)

APPENDIX 4.3-B: WETLAND DELINEATION, PREPARED BY COAST RIDGE ECOLOGY, NOVEMBER 2021

DRAFT WETLAND DELINEATION FOR THE PACIFICA WORK FORCE PROJECT

930 ODDSTAD BLVD PACIFICA, CA

DRAFT

PREPARED FOR:

City of Pacifica

PREPARED BY:

Coast Ridge Ecology, LLC
1410 31st Avenue
San Francisco, CA 94122

November 2021

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DRAFT

1. SUMMARY

This report presents the results of a formal delineation of waters of the United States, including wetlands, at a developed property (Oddstad Elementary) located at 930 Oddstad Boulevard, Pacifica, California ('study area"). The purpose of the delineation is to assist the City of Pacifica in identifying the type and extent of any wetlands and/or waters subject to federal and state jurisdiction and to inform potential impacts from future development of the property.

The site is 12.49 acres in size and is located in the Park Pacifica neighborhood of the City of Pacifica (APN 023-672-600). The proposed project is to demolish the existing, non-operational elementary school buildings and construct 70 residential units, 11 of which will be below market rate affordable housing units pursuant to the City of Pacifica Municipal Code, as well as community amenities, and other site improvements such as landscaping and parking. The study area is outside of the coastal zone, and the City's Local Coastal Land Use Plan (LCLUP) is not applicable.

Fieldwork was performed by Coast Ridge Ecology staff biologists in October 2021 using the routine determination method described in the *1987 US Army Corps of Engineers (USACE) Wetland Delineation Manual,* in incorporation with the USACE 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0*). Wetland vegetation types were mapped in the field using a Trimble GeoExplorer unit on October 5 and October 11, 2021.

Field data was analyzed to determine a wetland boundary. Appendix A provides completed data sheets for the study area. Appendix B provides representative photographs, and Appendix C provides a soils report for the area.

Wetland areas (0.063 acres) identified within the study area consist of seasonal wetlands dominated by invasive nonnative grasses (facultative species), such as creeping bentgrass (*Agrostis stolonifera*), velvet grass (*Holcus lanatus*) and reed fescue (*Festuca arundinacea*). These wetlands are all located along the southeast margin of an athletic field and adjacent to a small 2-foot wide concrete drainage ditch. Poor drainage, leaking irrigation lines/sprinklers, a restrictive layer of rock/concrete rubble located between 10 – 20" below the soil surface, and a small seep are contributing factors in creating these seasonal wetlands. In addition 141 linear feet of Waters of the US were mapped within the drainage ditch.

Based on the proposed project footprint, which is over 100 feet from the mapped wetlands, the project would not likely present a source of physical, chemical or biological disturbance to the potential jurisdictional seasonal wetland habitat. Additional measures to ensure the wetland and waters are not impacted by construction activities would include installation of appropriate erosion/ sediment controls such as silt fencing

and fiber rolls, between construction areas and the wetlands and Waters of the US. These measures would be suitable to protect the resource.

These conclusions should be regarded as preliminary and subject to verification by the U.S. Army Corps of Engineers and the California Regional Water Quality Control Board.

2. SETTING

2.1 SITE DESCRIPTION

The site is 12.49 acres in size and is located in the Park Pacifica neighborhood of the City of Pacifica located at 930 Oddstad Boulevard (APN 023-672-600), ("study area"). The site is bounded by Big Bend Drive to the north, Yosemite Drive to the south, Oddstad Boulevard to the west, and a portion of the Santa Cruz mountains and Frontierland Park to the east (Figure 1: Regional Location). The site is currently developed with a single-story school buildings, recreational fields and courts, parking areas, and landscaping. The site is currently unoccupied and is the former site of Oddstad public elementary school, originally constructed in 1964 and owned by the Pacifica School District. The school buildings have been vacant since 2005. Surrounding land uses include single-family residences and a City-owned and operated public park (Frontierland Park).

2.2 PROJECT DESCRIPTION

The proposed project is to demolish the existing, non-operational elementary school buildings and construct 70 residential units, 11 of which will be below market rate affordable housing units pursuant to the City of Pacifica Municipal Code, as well as community amenities, and other site improvements such as landscaping and parking.

Figure 1 shows the project boundaries and location. Photographs of the study area can be found in Appendix B.



Figure 1: Project Location Map
930 Oddstad Boulevard, Pacifica, CA

0 0.225 0.45 0.9 1.35 Miles

Project Site Boundary

Service Layer Credits: USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National

2.3 VEGETATION

Vegetation Communities

Eleven (11) vegetation communities were documented on the property, based on the classification system used in the California Native Plant Society (CNPS) Manual of California Vegetation (CNPS 2021). Most of these vegetation communities, including all communities dominated by native plant species, are found on the undeveloped upland slopes on the eastern side of the property. Habitats located within the project footprint are primarily dominated by ornamental, non-native, and invasive plant species associated with the school grounds. In total, the project would impact approximately 5.6 acres of developed, planted, or non-native habitats and 0.13 acres of native coastal scrub (upland) habitat. Descriptions of all plant communities documented within the study area are provided below. A list of all plant species documented within the study area is provided in Table 1**.**

Due to the developed nature of the study area, vegetation types in this analysis are based upon, but do not strictly follow, species alliances described by the California Native Plant Society (CNPS) Manual of California Vegetation.

2.3.1 Athletic Fields

The athletic fields consist of nonnative grasses that are routinely mowed and irrigated. This is not natural community and areas within the field where there are leaking sprinklers and possible underground seeps, have created wetland soil conditions in isolated areas.

2.3.2 Seasonal Wetland/ Creeping Bentgrass Meadow

A narrow seasonal wetland feature, Creeping Bentgrass meadow (0.063 acres) is located along the southeastern boundary of the athletic fields near Yosemite Avenue. This area is underlain by a restrictive layer of rock/concrete that is 14-20” below the surface, and irrigation (including leaking sprinklers), poor drainage and seepage from the adjacent hillside to the east has combined to create wetland hydrology and soils that support seasonal wetland vegetation (primarily facultative non-native grass species).

2.3.3 Upland Plant Communities

Wild Oats and Annual Brome Grassland

This habitat is primarily located within the northern athletic field, and is dominated by non-native grass species, including wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), rattail fescue (*Festuca myuros*), and foxtail barley (*Hordeum murinum*). Generally, areas of this habitat were previously maintained as lawns but have degraded over time due to lack of watering and

maintenance. Depending on location, fennel (*Foeniculum* vulgare) or coastal tarweed (*Madia sativa*) are also present at a lower abundance.

Needle Grass Grassland

Needle grass grassland is an example of a native perennial grassland, dominated by native perennial bunch grasses. Within the site, this plant community is dominated by purple needlegrass (*Stipa pulchra*), California melic (*Melica californica*) and California fescue (*Festuca californica*). Other native forb species such as yarrow (*Achillea millefolium*) and soap plant (*Chlorogalum pomeridianum*) are also present. The needle grass grassland community can be found in the vicinity of a large rock outcrop located on the eastern hillside.

Creeping Bentgrass Meadow

The creeping bentgrass meadow habitat is dominated by non-native perennial grasses including creeping bentgrass (*Agrostis stolonifera*), common velvetgrass (*Holcus lanatus*), and tall fescue (*Festuca arundinacea*), all of which prefer somewhat moist environments. Within the study area, this plant community is only found along the southern boundary of the southern athletic field in the vicinity of several seasonal wetlands **(**Figures 2 & 3**).** Isolated stands of hydrophytic vegetation such as tall flatsedge (*Cyperus eragrostis*) can be found in wetter portions of this area.

Fennel Patch

A patch of invasive plants heavily dominated by fennel (*Foeniculum vulgare*) is present along the eastern edge of the school buildings located between the southern and northern athletic fields. This invasive species appears to have crowded out nearly all other plant species within the mapped area, forming a dense stand contributing nearly 100 percent of the vegetative cover.

Hazelnut Scrub

This native shrub-dominated habitat covers most of the hillside in the northeast portion of the site. Beaked hazelnut (*Corylus cornuta*) is the dominant plant species, along with other natives including ocean spray (*Holodiscus discolor*), osoberry (*Oemleria cerasiformis*), California blackberry (*Rubus ursinus*), and poison oak (*Toxicodendron diversilobum*). Other native shrub species also occurring in this community include elderberry (*Sambucus spp.*), coffeeberry (*Frangula californica*), and coyote brush (*Baccharis pilularis*).The dense shrub canopy is nearly impenetrable, and results in little or no herbaceous groundcover.

Coyote Brush Scrub

A few patches of more open scrub habitat dominated by coyote brush (*Baccharis pilularis*) are present within the study area. The understory is typically dominated by

non-native annual grasses such as wild oats and brome (*Bromus spp.*). These areas are generally on the edges of other scrub habitats, where coyote brush is the most abundant or only woody shrub species present. Notably, some of these areas appear to have been previously dominated by French broom (*Genista monspessulana*) and/or scotch broom (*Cytisus scoparius*) until recent invasive control efforts, as evidenced by many dead specimens. It is possible that coyote brush was simply able to colonize these areas more quickly than other species once the invasive shrubs were removed.

Poison Oak Scrub

A small area of scrub habitat surrounding the large eastern rock outcrop is distinctly different than other scrub areas within the study area. This thin-soiled rocky area is dominated by poison oak, but a variety of other native shrub species including California sagebrush (*Artemisia californica*), osoberry, orange bush monkeyflower (*Diplacus aurantiacus*), and oceanspray are also present in some abundance. Where not composed of bare rock, the understory is dominated by soap plant, western bracken fern (*Pteridium aquilinum*), and California beeplant (*Scrophularia californica*).

Monterey Cypress – Monterey Pine Stand

Monterey cypress (*Hesperocyperis macrocarpa*) and Monterey pine (*Pinus radiata*) trees are not native to the San Francisco Bay Area, but were widely planted and form semi-natural stands throughout California. This plant community is present on the southeastern hillside within the project area, where the sparse understory primarily consists of scattered shrubs such as French broom and oceanspray.

Acacia Grove

A few stands of invasive blackwood acacia (*Acacia melanoxylon*) can be found within the study area on the eastern hillside. Understory vegetation is nearly nonexistent in these areas, due to the dense canopy formed by the acacia.

Coast Live Oak Woodland

A small patch of coast live oak woodland is located just north of the rock outcrop on the eastern hillside. Coast live oak (*Quercus agrifolia*) is the dominant tree species in this area, while the understory is primarily dominated by herbaceous species such as California blackberry, western bracken fern, wood fern (*Dryopteris arguta*) and common pacific pea (*Lathyrus vestitus*).

Urban Landscaping

Urban landscaping areas are plant communities formed by ornamental plants purposefully planted and maintained by humans. Two distinct landscaped habitats are present within the study area: the southern athletic field and associated smaller grassy areas maintained as lawns, and the cypress trees planted along the western and southern perimeters of the project area.

Lawn

The southern athletic field and adjacent grassy areas are dominated by species typical of maintained lawns. Dominant species include Dallis grass (*Paspalum dilatatum*), Kentucky bluegrass (*Poa pratensis*), perennial fescue (*Festuca perennis*), white clover (*Trifolium repens*), strawberry clover (*Trifolium fragiferum*), and English lawn daisy (*Bellis perennis*). No native plant species were recorded within these areas.

Monterey Cypress Trees

Ornamental Monterey cypress trees are planted along the roadside on the southern and western borders of the property. These areas are distinct from semi-natural stands in that there is no understory vegetation, presumably due to vegetation management.

2.4 SOILS

Three urban soil types are present within the study area: Orthents cut and fill, Urban land complex 0-5% Slopes, Orthents cut and fill, 0-15% slopes, and Orthents cut and fill, 15 to 75 % slopes. The entire project area (terraces and slopes) were previously graded as part of development of Oddstad Elementary and Frontierland Park to the east. These urban soil types are defined by the USDA NRCS as areas where 85% or more of the ground surface is covered by asphalt, concrete, buildings, and other structures (USDA SCS 1991). A soils map of the study area is shown in Appendix C.

2.5 HYDROLOGY

The study area consists of a flat, graded site that is developed with school buildings, basketball courts, and athletic fields, and also includes steep slopes to the east. No natural drainage features are present on site. The entire site drains from north to south (BKF, 2021). A 2-foot wide by 1-foot deep concrete drainage ditch that encircles the school grounds captures this runoff and empties into the city's underground stormwater system at two locations on the southern corner of the site along Yosemite Drive.
One intermittent drainage is located off site to the northeast of the property (NWI, 2021), and this swale feature does not have a defined channel and does not appear to have any surface flow.

3. METHODOLOGY

This wetland delineation was conducted in accordance with the USACE 1987 Corps of Engineers Wetlands Delineation Manual along with the USACE 2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region. A Level 3 Determination (i.e., a combination of onsite inspection and aerial review) was conducted as defined in the Wetland Delineation Manual.

The location of the study area is within the boundary zone between the Arid West Region and the Western Mountains, Valleys, and Coast Region. The climatic conditions and vegetation in Pacifica overlaps with what is described in both supplements. Both regional supplements include coastal areas, and a reasonable justification could be made to support the use of either supplement. The Western Mountains regional supplement was chosen as the appropriate manual based on vegetation and climate; including the following:

Arid West: Generally hot and dry with long summer dry season. Average annual precipitation mostly <15", except along the coast. Most precipitation falls as rain.

Western Mountains, Valleys and Coast: Cooler and more humid with a shorter dry season. Average annual precipitation mostly >20" except near the coast. Much of the annual precipitation falls as snow, particularly at higher elevations.

Average annual precipitation in Pacifica is approximately 32"[1]. Due to heavy fog during the summertime especially, the amount of water available to vegetation is much greater due to fog drip.

3.1 DEFINITION OF TERMS

The following section provides key definitions of terms used in this report that are relevant to the delineation of wetlands and other waters of the US.

Waters of the United States: Title 33, Chapter II, Part 328.3 of the Code of Federal Regulations defines waters of the United States as: All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; All interstate waters including interstate wetlands; All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mud flats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters: which are or could be used by interstate or foreign travelers for recreational or other purposes; or from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or which are used or could be used for industrial

[1] https://www.ncdc.noaa.gov/cdo-web/datatools/normals

purposes by industries in interstate commerce; All impoundments of waters otherwise defined as waters of the United States under the definition; Tributaries of waters identified in paragraphs (1) through (4); Territorial seas; and Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6).

Federal Definition of Wetlands: In Title 33, Chapter II, Part 328.4 of the Code of Federal Regulations, wetlands are defined as: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." For the purposes of a USACE wetland delineation, an area must meet three diagnostic environmental characteristics in order to be considered a wetland. These three characteristics include the presence of hydrophytic vegetation, hydric soils, and wetland hydrology.

Hydrophytic Vegetation: The USACE 1987 *Wetland Delineation Manual* describes hydrophytic vegetation as "sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present. The vegetation occurring in a wetland may consist of more than one plant community (species association). Emphasis is placed on the assemblage of plant species that exert a controlling influence on the character of the plant community, rather than on indicator species."

Hydric Soil: Defined by the USACE *Western Mountains Supplement* as "a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Most hydric soils exhibit characteristic morphologies that result from repeated periods of saturation or inundation for more than a few days…These processes result in distinctive characteristics that persist in the soil during both wet and dry periods."

Wetland Hydrology: The USACE 1987 *Wetland Delineation Manual* describes wetland hydrology as "all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively."

Navigable Waters of the United States: Title 33, Chapter II, Part 329.4 of the Code of Federal Regulations defines navigable waters of the U.S. as "those waters subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for us to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable

capacity." For the purposes of a USACE jurisdictional determination, navigable waters of the United States are considered Traditionally Navigable Waters.

Ordinary High Water Mark (OHWM): Title 33, Chapter II, Part 328.3 of the Code of Federal Regulations defines the OHWM as "that line on the shore established by the fluctuations of water and indicated by physical characteristics, such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter or debris, or other appropriate means that consider the characteristics of the surrounding area."

Mean High Water (MHW): Section 10 of the Rivers and Harbors Act (RHA), which regulates certain activities in navigable waters of the U.S., defines the landward limit of Section 10 jurisdiction as the Mean High Water (MHW) mark. The MHW mark, with respect to ocean and coastal waters, is defined as: "The line on the shore established by the average of all high tides. It is established by survey based on available tidal data (preferably averaged over a period of 18.6 years because of the variations in tide). In the absence of such data, less precise methods to determine the mean high water mark are used, such as physical markings, lines of vegetation or comparison of the area in question with an area having similar physical characteristics for which tidal data are readily available." In the case of non-tidal waters regulated by the RHA, the MHW mark is defined as the Ordinary High Water Mark (OHWM).

3.2 REGULATORY SETTING

3.2.1 U.S Army Corps of Engineers

The US Army Corps of Engineers (USACE) regulates activities that result in the discharge of dredged or fill materials into waters of the U.S. including wetlands, under Section 404 of the Clean Water Act. USACE also regulates dredging, filling, and construction activities in navigable waters under Section 10 of the Rivers and Harbors Act. Activities involving dredged or filled materials require a Section 404 permit, and/or a Section 10 permit, issued by the USACE. Section 404 projects may be authorized under general permits, also known as nationwide permits, or may require individual permits in the case of more complex projects that exceed the threshold for impacts under the nationwide permits.

The Environmental Protection Agency and U.S. Army Corps of Engineers are interpreting "waters of the United States" consistent with the pre-2015 regulatory regime until further notice (EPA, 2021).

3.2.2 California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) regulates projects that will: substantially divert or obstruct the natural flow of any river, stream or lake; substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake;

or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. (Section 1602, California Fish and Game Code)

To complete projects which will affect these characteristics of any river, stream, or lake, within the state of California, projects must apply for a Lake or Streambed Alteration Agreement (Section 1600 Series Permit). The jurisdictional boundary of the CDFW typically follows the top-of-bank or the outermost edge of riparian vegetation adjacent to the regulated stream, river, or lake. The study area does not have any rivers, streams or lakes.

3.2.3 Regional Water Quality Control Board

The Regional Water Quality Control Board (RWQCB) has authority over projects that could result in negative impacts to waters of the State and wetlands. The RWQCB, defines “waters of the State” as any surface water or groundwater, including saline waters within the boundaries of the State of California (Cal. Water Quality Control, Division 7, January 2011). In addition, it defines “water quality control” as the regulation of any activity that may affect the quality of the waters of the State, and includes the prevention and correction of water pollution and nuisance.

Under the Porter-Cologne Water Quality Control Act, the RWQCB is authorized to regulate the discharge of waste that could affect the quality of State waters. Regulated discharges include any substances associated with human habitation that are harmful to the aquatic environment, including stormwater runoff associated with construction projects and other activities that could discharge soil, pollutants, or other materials into waters of the State. Projects that could produce pollutants or discharge into waters of the state must apply for a Section 401 Certification from the California Regional Water Quality Control Board to ensure that any discharges will be in compliance with California’s water quality standards.

The State Water Resources Control Board (State Water Board) adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities.

On April 6, 2021, the State Water Resources Control Board adopted a resolution to confirm that the “State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State” is in effect as state policy for water quality control.

The Water Boards define an area as wetland as follows:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation[2]*.*

3.2.4 California Coastal Commission

The California Coastal Commission (CCC) exercises jurisdiction over development activities within the coastal zone. In the city of Pacifica, construction projects within the coastal zone are regulated through the City's Local Coastal Land Use Plan (LCLUP). The City regulates construction projects through the LCLUP, to bring projects into conformance with the California Coastal Act of 1976. The study area is not located within the coastal zone, and therefore the LCLUP does not apply to this site.

3.3 DELINEATION METHODS

This wetland delineation was conducted through the analysis of aerial photography, historical records, and other relevant data sources, as well as an onsite survey to characterize vegetation, soils, and hydrology.

3.4 LITERATURE REVIEW

Prior to the field survey, aerial photographs were reviewed for current and historical data on hydrology and vegetation. Soil types were assessed using the online *USDA Natural Resource Conservation Science Web Soil Survey* (NRCS 2021). Historical and current land use data was accessed from various sources, including historical aerial photographs (UCSB 2021), and National Wetlands Inventory (NWI 2021).

3.5 FIELD SURVEY

The field delineation for the study area was conducted by Patrick Kobernus and Greg Pfau of Coast Ridge Ecology on October 5th and 11th, 2021. Weather conditions at the time of the field visits included clear skies, temperatures in the high 60's to 70's (ºF), and no wind and/or precipitation. The onsite inspection evaluated the three parameters that identify and delineate the boundaries of jurisdictional wetlands, including (1) the dominance of wetland vegetation; (2) the presence of hydric soils; and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding.

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[2] *State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, https://www.waterboards.ca.gov/press_room/press_releases/2021/procedures.pdf*

Survey methods follow the protocol outlined in the 1987 USACE *Wetland Delineation Manual for Areas Less Than Five Acres in Size*. GPS coordinates of each sample location were recorded in the field with a Trimble GeoExplorer 6000 series unit. Vegetation, soils and hydrology data were taken at each of these points. The completed *Wetland Determination Data Forms for the Western Mountains Region* are located in Appendix A**.**

3.5.1 Vegetation Data Collection

Vegetation data was collected at each sample point taken during the field survey. As per the 1987 *Wetland Delineation Manual* and the 2010 *Western Mountains, Valleys and Coast* Regional Supplement*,* plants in the tree stratum are defined as woody plants with a diameter three inches or more at breast height (DBH). Saplings/shrubs are defined as woody plants with a diameter of less than three inches DBH, and herbs are defined as non-woody plants regardless of size. Species type and percent dominance of each species was recording at each sample point. The USACE *National Wetland Plant List* was used to determine the wetland indicator status of plants observed in the study area. Wetland indicator status refers to the probability that a plant will occur within a wetland or upland area. The indicator status categories are defined as follows:

Obligate (OBL): almost always occurs in wetlands
Facultative wetland (FACW): usually occurs in wetlands, sometimes may occur in uplands
Facultative (FAC): equally likely to occur in wetlands or nonwetlands
Facultative upland (FACU): usually occurs in uplands but may occasionally occur in wetlands
Obligate upland (UPL): almost never occurs in wetlands
No indicator (NI)/ No status (NS): no indicator or status assigned due to lack of information

The presence of hydrophytic vegetation data was then determined using the dominance test and prevalence index described in the USACE *Wetland Delineation Manual* and *Western Mountains* Regional Supplement.

3.5.2 Soils

Soil pits were taken at each of the seven sample point sites. Soil pits were excavated to the maximum depth possible and soil color and texture was assessed and recorded onto the Western Mountains data sheets. Soil color was determined by matching samples to Munsell Soils Color Charts (Munsell Colors 2000). Soils were then assessed for hydric features described in the *Western Mountains* Regional Supplement, such as the presence of redoxomorphic concentrations, mucky soils or hydrogen sulfide odor.

3.5.3 Hydrology

Hydrology at each of the sample points was assessed based upon the USACE *Western Mountains, Valleys, And Coast Region* hydrology guidelines. Positive hydrological indicators include the presence of a visible water table, saturation and/or muck, water marks or drift deposits.

3.6 FEDERAL WETLAND BOUNDARY DETERMINATION

A preliminary wetland boundary line, based on the 3-parameter wetland definition was determined based on data points and vegetation mapping. Based upon the location of wetland versus non-wetland sample points, the wetland boundary was determined to correspond to specific discrete locations (Figure 2).

3.6.1 Acreage Calculations

The area for each individual vegetation polygon within the wetland boundary was calculated in ArcMAP 10.2. All vegetation areas were then added to obtain a total area for wetlands within the study area.



Figure 2: Wetland Delineation Map
930 Oddstad Blvd, Pacifica, CA
Service Layer Credits: Golden Gate National Parks Conservancy and San Mateo County

Legend

- Site Parcel Boundary
- 1m Saturated Area
- Wetland Delineation Sample Point
- Storm Drain
- 4' high brick retaining wall

Non-Jurisdictional Waters

- Concrete Drainage Ditch
- Earthen Drainage Ditch

US Jurisdictional Waters

- Concrete Drainage Ditch

Wetlands and Saturated Areas

- Saturated
- Saturated (irrigation leak)
- Seasonal Wetland

4. RESULTS

The project area is located on flat ground, that gradually slopes southward and was previously graded for construction of Oddstad Elementary School. The National Wetlands Inventory does not show any wetlands or hydrologic features on the site. The results of the wetland delineations field survey are presented below.

4.1 FEDERAL AND STATE WETLANDS

A total of 0.063 acres of potential federal and state jurisdictional wetlands occur within the delineation study area. Potential jurisdictional seasonal wetland areas included one small seep and two patches of creeping bentgrass meadow located along the drainage ditch that borders the athletic fields on the southeastern portion of the property (Figure 2). These wetland features are located outside of the project footprint.

Table 1 provides the calculations for the total acreage for wetland areas within the study area, and Waters of the US in linear feet. Wetland areas are represented by sample points 1A, 2A, and 4A within the study area. Appendix B provides representative photographs of the sample points and study area.

TABLE 1. WETLANDS AND WATERS OF THE US WITHIN THE STUDY AREA

Federal and State Wetlands	**Area (acres)**	**Area (sq ft)**
Seep		
1A	0.003	130.68
Seasonal Wetland (Creeping Bentgrass Meadow)		
2A	0.049	2134.44
4A	0.011	479.16
Subtotal	0.060	2,613.60
Wetland Total	**0.063**	**2,744.28**
Waters of the US	**Linear feet (ft)**	
Waters of the US	**141**	



Figure 3: Wetland Impacts Map
930 Oddstad Blvd, Pacifica, CA
Service Layer Credits: Golden Gate National Parks Conservancy and San Mateo County

Legend

- Site Parcel Boundary
- Site Plan Overlay (approximate)
- 1m Saturated Area
- Wetland Delineation Sample Point
- Storm Drain

Wetlands and Saturated Areas

- Saturated
- Saturated (irrigation leak)
- Seasonal Wetland
- 4' high brick retaining wall

Non-Jurisdictional Waters

- Concrete Drainage Ditch
- Earthen Drainage Ditch

US Jurisdictional Waters

- Concrete Drainage Ditch

4.1.1 Vegetation

Vegetation within the potential jurisdiction wetlands consist of a combination of native and nonnative grasses, including species commonly found in lawns. Dominant species include *Festuca arundinacea, Holcus lanatus, Paspalum dilatatum, and Agrostis stolonifera*. Within the seasonal wetland areas, all dominant species were facultative (FAC) plant species, which is consistent with seasonal wetlands which are dry for most of the year and the lack of saturation allows for a combination of upland and facultative species to co-occur. Obligate (OBL) wetland plant species were not present, and no areas were found to have a dominance of facultative wetland (FACW) plant species.

4.1.2 Soils

Within the wetland sample points, soils tended to be dark brown and homogenous with a color matrix of 7.5YR 3/1, 4/1, or 10YR 3/1 in the upper 5 - 8 inches below the root zone at sample points 1A, 2A and 4A. This is similar to the upper soil horizon within upland areas (sample points 1B and 5A). Loamy gleyed matrix (GLY1 6/5, GLY 2.5/5 PB) soils and redox features (5YR 4/4, 2.5YR 4/2) were present within wetland sample points 1A and 4A (10 – 20” depth).

Soil texture ranged from sandy loam (sample points 1B, 5A) to clay loam/ sandy clay loam at Sample points 1A, 2A, 3A and 4A. Soils determined to be wetland soils based on gleyed matrix , depleted dark surface or redox depressions. Development of wetland soils on site are likely due to drainage from the adjacent hillside and the athletic field converging along the eastern/southeastern boundary of the athletic field, near Yosemite Drive. Leaking irrigation lines/ sprinkler heads within the athletic field were observed with wetland vegetation and hydric soils were observed (sample point 4A). A restrictive layer of rock/rubble, likely created when the school was built (1980), was located below all sample points at a depth of 14 – 20 inches.

4.1.3 Hydrology

Wetland hydrology indicators at wetland sample points 1A, 2A, and 4A included oxidized rhizospheres and dry season water table. The presence of these indicators satisfied the wetland hydrology parameter at these sites.

Sample points 2A and 4A are located within seasonal wetlands (nonnative grassland) which appear to be ‘perched’ above a restrictive layer of rock/rubble (that was likely created during grading of the site as part of construction of the school grounds in 1980). This restrictive layer is also present at sample point 1A at a depth of 20 inches. Sample point 1A appears to be saturated due the presence of a small seep (approximately 10 sq. ft. in size adjacent to the drainage ditch).

No other hydrology indicators (such as drainage patterns, sediment deposits, etc.) were present in part due the highly modified topography (playground/athletic field) on site.

Based on aerial photography from 1956 (UCSB, 2021), prior to the grading of the school grounds, Oddstad Boulevard and Yosemite Drive, a small creek was at one time present and drained a small canyon that is now Yosemite Avenue. This creek is no longer present, likely buried under the graded slopes. Subterranean flow augmented by rainfall and watering of lawns/yards of properties upslope, including Frontierland Park, and leaking irrigation lines and sprinklers on site may be contributing to saturation conditions along the boundary of the southern athletic field and the cut slopes to the east.

4.2 WATERS OF THE US (WOTUS)

The study area consists of a flat, graded site that is developed with school buildings, basketball courts, and athletic fields, and also includes steep slopes to the east. No natural drainage features are present on site. A concrete drainage ditch is located around the perimeter of the school site, and is approximately 2 feet wide by 1 foot deep. One earthen section of the drainage ditch is located between the basketball courts and the southern athletic field. The drainage ditch empties into the city's underground stormwater drainage system at two locations on the southern corner of the site along Yosemite Drive.

An Ordinary High Water Mark (OHWM) was estimated within the channel on the southeast section of the study area (based on water staining within the drainage) at approximately 4" in depth (Photo 12, Appendix B). This portion of the drainage channel (141 linear feet) appears to drain into the stormwater drains on the southeast corner of the property. The remaining portions of the drainage ditch (827 linear feet) do not appear to transport water (even during high rainfall events) and were not mapped as Waters of the US jurisdictional features (Figure 2). The US Army Corps of Engineers will need to make a determination on whether some or all of the drainage ditch feature on the property meets the definition of Waters of the U.S.

CONCLUSIONS

Wetland areas (0.063 acres) identified within the study area consist of seasonal wetlands dominated by invasive nonnative grasses (facultative species), such as creeping bentgrass (*Agrostis stolonifera*), velvet grass (*Holcus lanatus*) and reed fescue (*Festuca arundinacea*). These wetlands are all located along the southeast margin of an athletic field and adjacent to a small 2-foot wide concrete drainage ditch. Poor drainage, leaking irrigation lines/sprinklers, a restrictive layer of rock/concrete rubble located between 10 – 20" below the soil surface, and a small seep are contributing factors in

creating these seasonal wetlands. In addition 141 linear feet of Waters of the US were mapped within the drainage ditch.

Based on the proposed project footprint, which is over 100 feet from the mapped wetlands, the project would not likely present a source of physical, chemical or biological disturbance to the potential jurisdictional seasonal wetland habitat. Additional measures to ensure the wetland and waters are not impacted by construction activities would include installation of appropriate erosion/ sediment controls such as silt fencing and fiber rolls, between construction areas and the wetlands and Waters of the US. These measures would be suitable to protect the resource.

These conclusions should be regarded as preliminary and subject to verification by the U.S. Army Corps of Engineers and the California Regional Water Quality Control Board.

5. REPORT PREPARATION AND REFERENCES

5.1 REPORT PREPARATION

Coast Ridge Ecology, LLC
1410 31st Ave
San Francisco, CA 94122
(415) 404-6757

Field work and report preparation were completed by Patrick Kobernus (Principal Biologist) and Greg Pfau (Associate Biologist).

5.2 REFERENCES

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APPENDIX A

Wetland determination data forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 930 ODDSTAD BLVD. City/County: PACIFICA / SMC Sampling Date: 10/5/21

Applicant/Owner: PACIFICA SCHOOL DISTRICT State: CA Sampling Point: 1A

Investigator(s): P. KOBERNUS, G. PFAU Section, Township, Range:

Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): NONE Slope (%):

Subregion (LRR): Lat: 37.585963 Long: -122.468951 Datum:

Soil Map Unit Name: ORTHENTS CUT AND FILL 0-15% SLOPES NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No X (If no, explain in Remarks.)

Are Vegetation ____, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: SEVERE DROUGHT YEAR. AREA IS ADJACENT TO PLAYGROUND, AND RECEIVES IRRIGATION.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30' RADIUS)	Absolute % Cover	Dominant Species?	Indicator Status
1. PINUS PINEA	5	N	—
2.			
3.			
4.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5' RADIUS)			
1. GENISTA MONSPESSULANA	37.5	Y	—
2. SEQUOIA SEPERVIRONS	5		—
3. RUBUS URSINUS	7		FACU
4.			
5.			
	49.5	= Total Cover	
Herb Stratum (Plot size: ____)			
1. CIRSIUM VULGARE	14		FACU
2. CYPERUS ERAGROSTIS	8		FACW
3. DAUCUS CAROTA	3		FACU
4. HOLCUS LANATUS	20	Y	FAC
5. HELMINTHOTHECA ECHIOIDES	20	Y	FAC
6. RUMEX PULCHER	1		FAC
7. FESTUCA PERENNIS	1		FAC
8. HYPOCHAERUS RADICATA	1		FACU
9. PASPALUM DILATATUM	25	Y	FAC
10. FESTUCA ARUNDINACEA	5		—
11. PLANTAGO CORONOPUS	1		FAC
12. PLANTAGO LANCEOLATA	1		FACU
	111 / 100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 8	x 2 = 16
FAC species 66	x 3 = 198
FACU species 19	x 4 = 76
UPL species ____	x 5 = ____
Column Totals: 93 (A)	290 (B)

Prevalence Index = B/A = 3.12

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ____ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: VEGETATION PASSES DOMINANCE TEST.

10/5/21

SOIL

Sampling Point: 1A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 3/1	100					CLAY LOAM	
8-10	4104	2	GLY1-6/5G	2	D	M	SANDY CLAY LOAM	
"	—	90	2.5YR 4/2	10	C	M	"	
10-20	4104	98	GLY1-6/5G	1	D	M	SANDY CLAY LOAM	
"	"	2	2.5YR 4/2	2	C	M	"	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- X Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: *

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

* THERE IS LIKELY A RESTRICTIVE LAYER BELOW 20". PLAYGROUND AREA CONSISTS OF CUT+FILL SOILS. RESTRICTIVE LAYER FOUND IN OTHER SAMPLE SITES @ 10-14".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- X Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 10"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: IRRIGATION OF PLAYGROUND AND LACK OF SLOPE/PROPER DRAINAGE AND SEEP IN CUTSLOPE ALL LIKELY CONTRIBUTE TO SOIL SATURATION OBSERVED.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 930 ODDSTAD BLVD. City/County: PACIFICA/SMC Sampling Date: 10/5/21

Applicant/Owner: PACIFICA SCHOOL DISTRICT State: CA Sampling Point: 1B

Investigator(s): P. KOBERNUS, G. FAU Section, Township, Range: _____

Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): NONE Slope (%): _____

Subregion (LRR): _____ Lat: 37.585993 Long: -122.468753 Datum: _____

Soil Map Unit Name: ORTHENTS CUT+FILL 0-15% SLOPES NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	
Hydric Soil Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:
EXTREME DROUGHT THIS YEAR. AREA IS A SCHOOL ATHLETIC FIELD.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' RADIUS)			
1. HYPOCHAERIS GLABRA	2		—
2. PLANTAGO COLONOPUS	.5		FAC
3. DAUCUS CAROTA	.5		FACU
4. POA PRATENSIS	7	Y	FAC
5. THATCH	90		—
6.			
7.			
8.			
9.			
10.			
11.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓*

Remarks:
AREA IS DRIED GRASS, SECTION OF ATHLETIC FIELD.
* AREA IS A LAWN.

10/5/21

SOIL

Sampling Point: 1B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR3/2	100					SANDY LOAM	ROOT ZONE
4-10	7.5YR3/2	100					SANDY LOAM	
4-10								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks: ROCK RESTRICTIVE LAYER BELOW 10". NO REDOX FEATURES.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 930 ODDSTAD City/County: PACIFICA / SMC Sampling Date: 10/5/21

Applicant/Owner: PACIFICA SCHOOL DISTRICT State: CA Sampling Point: 2A

Investigator(s): P. KOBERNUS, G. RAU Section, Township, Range:

Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): NONE Slope (%):

Subregion (LRR): Lat: 37.585995 Long: -122.468531 Datum:

Soil Map Unit Name: ORTHENTS CUT+FILL NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.) (*)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No ✓

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: STRIP OF VEGETATION AT BASE OF SLOPE ~5-25' WIDE THAT IS NOT MOWED AS FREQUENTLY AND IS VEGETATIVELY DIFFERENT THAN FIELD.
(*) SEVERE DROUGHT YEAR (2020/2021)

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' RADIUS)			
1. HESPEROCYPERIS MACROCARPA	80		
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5' RADIUS)			
1. FESTUCA PERENNIS	6		FAC
2. BELLIS PERENNIS	7		—
3. HOLCUS LANATUS	45	Y	FAC
4. AGROSTIS STOLONIFERA	25	Y	FAC
5. TARAXACUM OFFICIANALY	1		FACU
6. FESTUCA ARUNDINACEA	16		—
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 2A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5 YR 4/1	100					SILTY CLAY LOAM	
4-6	7.5YR 4/1	70	7.5 YR 5/6	30	C	M	SANDY LOAM - HIGH REDOX LAYER	
6-12	7.5 YR 4/1	40	7.5 YR 5/6	10	C	M	SANDY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ROCK

Depth (inches): 12"

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: RESTRICTIVE LAYER CREATING HYDRIC SOILS RESULT OF POOR DRAINAGE.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 930 ODDSTAD BLVD. City/County: PACIFICA / SMC Sampling Date: 10/11/21

Applicant/Owner: PACIFICA SCHOOL DISTRICT State: CA Sampling Point: 3A

Investigator(s): P. KOBERNUS, G. PEAU Section, Township, Range: _____

Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): NONE Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: DR THENTS CUT & FILL 0-15% SLOPES NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: SEVERE DROUGHT YEAR, SITE IS IN MIDDLE OF ATHLETIC FIELD – 10' FROM SPRINKLER.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' RADIUS)			
1. PASPALUM DILATATUM	30	✓	FAC
2. TRIFOLIUM REPENS	50	✓	FAC
3. POA PRATENSIS	17		FAC
4. ERODIUM BOTRYS	4		FACU
5. BELLIS PERENNIS	1		—
6. LEPIDIUM DIDYMUM	4		—
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: SITE IS A LAWN.

10/11/21

SOIL

Sampling Point: 3A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7"	10YR 3/1	98	5YR 6/6	2	C	PL	CLAY LOAM	
7-14"	10YR 3/1	93	5YR 6/6	7	C	PL	SANDY CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ROCK

Depth (inches): 14"

Hydric Soil Present? Yes ✓ No ___

Remarks: SITE IS WITHIN "GREEN" PATCH OF GRASS (250 SQ FT.) SURROUNDED BY DEAD GRASS.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 930 ODDSTAD BLVD. City/County: PACIFICA/SMC Sampling Date: 10/11/21

Applicant/Owner: PACIFICA SCHOOL DISTRICT State: CA Sampling Point: 4A

Investigator(s): P. KOBERNUS, G. PFAU Section, Township, Range: _____

Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): NONE Slope (%): _____

Subregion (LRR): _____ Lat: 37.586169 Long: -122.467827 Datum: _____

Soil Map Unit Name: OLYTHENTS CUT + FILL 0-15% SLOPES NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.) ⊗

Are Vegetation ✓, Soil ✓, or Hydrology ✓ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No ✓

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:
⊗ SEVERE DROUGHT YEAR (2020/2021)

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' RADIUS)			
1. PASPALUM DILATATUM	25	Y	FAC
2. FESTUCA ARUNDINACEA	35	Y	–
3. HOLCUS LANATUS	15	Y	FAC
4. RUMEX PULCHER	8		FAC
5. CYNODON DACTYLON	3		FACU
6. AGROSTIS STOLONIFERA	10		FAC
7.			
8.			
9.			
10.			
11.			
	96 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	58	x 3 =	174
FACU species	3	x 4 =	12
UPL species	_____	x 5 =	_____
Column Totals:	61 (A)		186 (B)

Prevalence Index = B/A = 3.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:
⊗ SITE DID NOT PASS PREVALENCE TEST, HOWEVER SITE PASSED DOMINANCE TEST, AND SOILS AND HYDROLOGY PASSED WETLAND TEST.

10/11/21

SOIL

Sampling Point: 4A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5"	10YR 3/1	99	5YR 4/4	1	C	M	SANDY CLAY LOAM	- ROOT ZONE
5-6"	5YR 4/4	85	GLEY 2 2.5/5PB	15	D	PL	SANDY CLAY LOAM	
6-15"	5YR 4/4	95	GLEY 2 2.5/5PB	5	D	PL	SANDY CLAY LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ✓ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ROCK

Depth (inches): 15"

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 930 ODDSTAD BLVD. City/County: PACIFICA / SMC Sampling Date: 10/11/21

Applicant/Owner: PACIFICA SCHOOL DISTRICT State: CA Sampling Point: 5A

Investigator(s): P. KOBERNUS, G. PRAJ Section, Township, Range: _____

Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): NONE Slope (%): _____

Subregion (LRR): _____ Lat: 37.586093 Long: -122.467932 Datum: _____

Soil Map Unit Name: ORTHENTS CUT+FILL 0-15% SLOPES NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.) (*)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: SEVERE DROUGHT YEAR (2020/2021).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' RADIUS)			
1. HOLCUS LANATUS	40	Y	FAC
2. FESTUCA ARUNDINACEA	5		
3. BROMUS HORDEACEUS	25	Y	FACU
4. (*) AGROSTIS STOLONIFERA	15		FAC
5. PLANTAGO LANCEOLATA	1		FACU
6. PASPALUM DILATATUM	1		FAC
7. FESTUCA PERENNIS	1		FAC
8.			
9.			
10.			
11.			
	88 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	57	x 3 =	171
FACU species	26	x 4 =	104
UPL species	_____	x 5 =	_____
Column Totals:	83 (A)		275 (B)

Prevalence Index = B/A = 3.3

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

(*) AGROSTIS STOLONIFERA IS A COMMON LAWN SPECIES NOT INCLUDED IN DOMINANCE TEST. PREVALENCE TEST STILL FAILS WHEN INCLUDING A. STOLONIFERA.

SOIL

Sampling Point: 5A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 3/2	100					SANDY LOAM	Root zone
6-12"	10YR 3/1	76	5YR 4/4	20	C	M	Sandy loam	
			5YR 5/6	4	C	PL/mosses		soft mosses

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock / very rocky

Depth (inches): 12"

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B

Representative Photographs



Photo 1. View of Oddstad School, and athletic field (view looking from south). Photo date: 10/27/2021.



Photo 2. View of Oddstad School, and athletic field (view looking from south). Photo date: 10/27/2021.



Photo 3. View of sample points 1A and 1B. Yosemite Drive in background. (view looking from northwest). Photo date: 10/27/2021.



Photo 4. View of sample point 1B, within dry athletic field. Photo date: 10/11/21.



Photo 5. Sample point 1A (right side of photo) adjacent to concrete drainage Ditch and seep. Photo date: 10/11/2021.



Photo 6. Sample point 2A. Photo date: 10/11/2021.



Photo 7. Sample Point 2A. Photo date: 10/11/2021.



Photo 8. Sample point 2A soil pit. Photo date: 10/11/2021.



Photo 9. Soil sample from sample point 1A. Photo date: 10/11/2021.



Photo 10. Site 3A (middle of athletic field). Photo date: 10/11/2021.



Photo 11. Soil sample from sample site 3A. Photo date: 10/11/2021.



Photo 12. Concrete drainage channel and sprinkler head in athletic field (north of sample point 4A). Photo date: 10/11/2021.

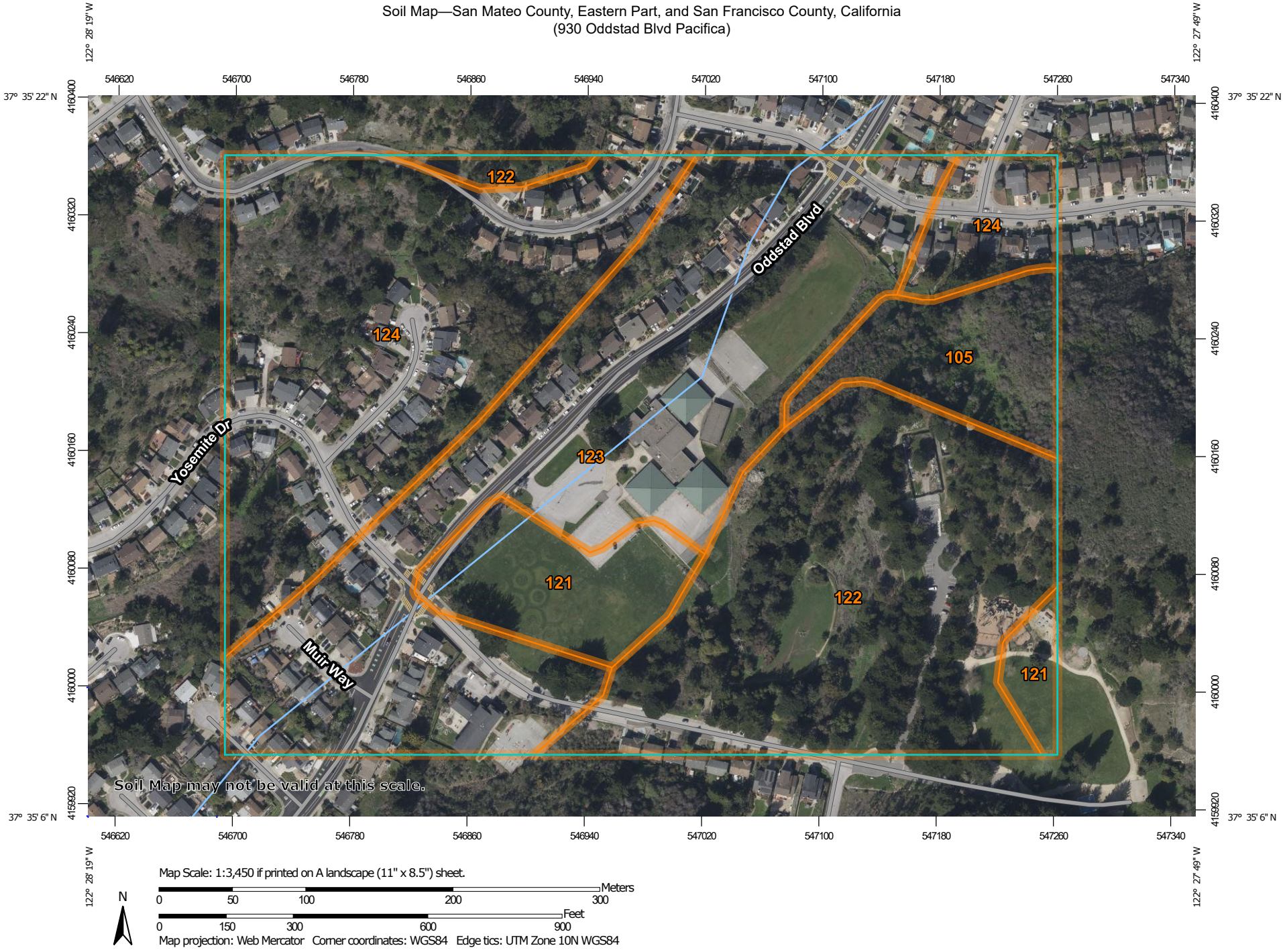


Photo 13. North boundary of site. Photo date: 10/11/2021.

APPENDIX C

Soil Survey Map

Soil Map—San Mateo County, Eastern Part, and San Francisco County, California
(930 Oddstad Blvd Pacifica)



Map Scale: 1:3,450 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

Soil Map—San Mateo County, Eastern Part, and San Francisco County, California
(930 Oddstad Blvd Pacifica)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

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 Mateo County, Eastern Part, and San Francisco County, California
Survey Area Data: Version 17, Sep 9, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 4, 2021—Mar 21, 2021

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
105	Barnabe-Candlestick complex, 30 to 75 percent slopes	3.3	5.7%
121	Orthents, cut and fill, 0 to 15 percent slopes	4.1	7.1%
122	Orthents, cut and fill, 15 to 75 percent slopes	14.7	25.7%
123	Orthents, cut and fill-Urban land complex, 0 to 5 percent slopes	19.1	33.2%
124	Orthents, cut and fill-Urban land complex, 5 to 75 percent slopes	16.3	28.3%
Totals for Area of Interest		**57.4**	**100.0%**

APPENDIX 4.3-C: ARBORIST REPORT, PREPARED BY TRAVERSO TREE SERVICE, MARCH 18, 2020

See Appendix 3-C

APPENDIX 4.3-D: RARE PLANT SURVEY, PREPARED BY COAST RIDGE ECOLOGY, MAY 31, 2022

COAST RIDGE ECOLOGY LLC
BIOLOGICAL SURVEYS • MONITORING • PERMITTING • RESEARCH

May 31, 2022

Krystle Rizzi
Senior Planner
M-Group
707.540.0723 x208

Subject: *Results of Follow-up Rare Plant Survey for the Pacifica Work Force Housing Project, 930 Oddstad Blvd., Pacifica, CA*

Dear Ms. Rizzi:

The following letter report documents the results of a follow-up rare plant survey at 930 Oddstad Blvd. Pacifica, CA. This report serves as an addendum to a more detailed Biological Resources Assessment (BRA) prepared by CRE for the project in November 2021.

I. BACKGROUND

The property is approximately 12.6 acres in size and currently consists of an old school complex with two sports fields. The proposed Pacifica Work Force Housing Project includes construction of 70 multifamily units on the property, along with parking areas and two landscaped courtyards. The project will primarily impact previously developed areas of the property, and project plans indicate minimal disturbance to vegetated slopes on the eastern side of the property.

The project area was surveyed for biological resources in October 2021 by Coast Ridge Ecology biologists Patrick Kobernus and Greg Pfau. The California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDB) was consulted for known occurrences of sensitive plant, animal, and natural plant communities of concern found within five miles of the project site (CNDDB, 2021). A recommendation for a follow up rare plant survey was included in the BRA as follows:

5) If any future activities are proposed that could disturb the vegetation on the eastern slopes located outside the project footprint, (e.g., brush control for fire hazard reduction, fence construction, etc.), preconstruction surveys for San Francisco dusky-footed woodrat, bats and rare plants should be conducted by a qualified biologist, and if impacts are unavoidable, the California Department of Fish and Wildlife should be consulted.

Choris' popcornflower (Plagiobothrys chorisianus var. chorisianus) is a rare annual herb found in a variety of habitats, including coastal scrub, woodland, and wet meadows. It is ranked 1B.2 (fairly endangered in California) by the California Native Plant Society. This species blooms from March to June and likely would not have been visible during site surveys (September/October). While this species is unlikely to occur within the project impact area proper, there is a moderate potential that it could be present within appropriate undisturbed habitat on the eastern slopes of the project site.

II. METHODS

Coast Ridge Ecology biologist Patrick Kobernus surveyed the parcel and adjacent vegetated slopes east of the project area on May 3, 2022. The survey was conducted by walking and inspecting all vegetation growing on the property and on the eastern slopes adjacent to the property. The survey was focused on locating any rare plants, including Choris' popcornflower (*Plagiobothrys chorisianus var. chorisianus).* On the previous day, (May 2, 2022), a known colony of Choris' popcornflower in Montara, California was inspected, and it was verified that the species was flowering and highly visible at the time of this survey.

III. RESULTS

No rare plants were observed on the property or on the adjacent vegetated slopes.

If you have any additional questions, please do not hesitate to contact me.

Sincerely,



Patrick Kobernus
Principal Biologist

APPENDIX 4.4-A: HISTORIC RESOURCE EVALUATION FOR THE PROPOSED PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING PROJECT, PREPARED BY EVANS & DE SHAZO, DECEMBER 30, 2021.

EVANS & DE SHAZO
ARCHAEOLOGY HISTORIC PRESERVATION

A HISTORIC RESOURCE EVALUATION FOR THE PROPOSED PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING PROJECT AT 930 ODDSTAD BOULEVARD, PACIFICA, SAN MATEO COUNTY, CALIFORNIA

SUBMITTED TO:

David Hogan, AICP
Principal Planner
M-Group
dhogan@m-group.us

SUBMITTED BY:

Stacey De Shazo, M.A.
Principal Architectural Historian
stacey@evans-deshazo.com
and
Bee Thao, M.A.
Researcher

December 30, 2021

Evans & De Shazo, Inc
1141 Gravenstein Highway South,
Sebastopol, CA 95472
707-823-7400
www.evans-deshazo.com

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ATTACHMENTS: Department of Parks and Recreation (DPR) 523 forms (Appendix A)

INTRODUCTION

Evans & De Shazo, Inc. (EDS) completed a Historic Resource Evaluation (HRE) for the Proposed Pacifica School District Workforce Housing Project at 930 Oddstad Boulevard, Pacifica, San Mateo County, California within the 11.38-acre Assessor Parcel Number (APN) 023-672-600 (Project Area). The proposed project (Project) includes the demolition of a 1968 school building, 1972 shed building, and associated landscape and the construction of seven craftsman style two-story residential buildings, built in two phases: phase 1 consists of the construction of four buildings with 45 units and phase 2 consists of the construction of three buildings with 25 units, as well as the construction of four additional one-story buildings that will serve as a site office, bike storage area, and trash staging enclosures, and two one-story buildings that will serve as a community amenity building with access from an adjoining parcel. The proposed Project also includes associated infrastructure and landscaping. The HRE was completed to determine if the Project Area contains built environment historical resources that could be impacted by the Project in accordance with the California Environmental Quality Act (CEQA), and to provide recommendations if needed.

The HRE is based on specific guidelines and evaluation criteria of the California Register of Historical Resources (CRHR) (14 CCR §15064.5 and PRC§ 21084.1). The following HRE was completed by EDS Principal Architectural Historian Stacey De Shazo, M.A., who exceeds the Secretary of the Interior's qualification standards in Architectural History and History and researcher, Bee Thao, M.A. The results of the HRE are presented herein.

PROJECT AREA LOCATION

The 11.38-acre (APN 023-672-600) Project Area is located at 930 Oddstad Boulevard, Pacifica, San Mateo County, approximately 2.8 miles southeast of Highway 1 (aka Cabrillo Highway and the Pacific Coast Highway) (Figure 1). The Project Area is bounded on the northwest by Oddstad Boulevard and on the southwest by Yosemite Drive.

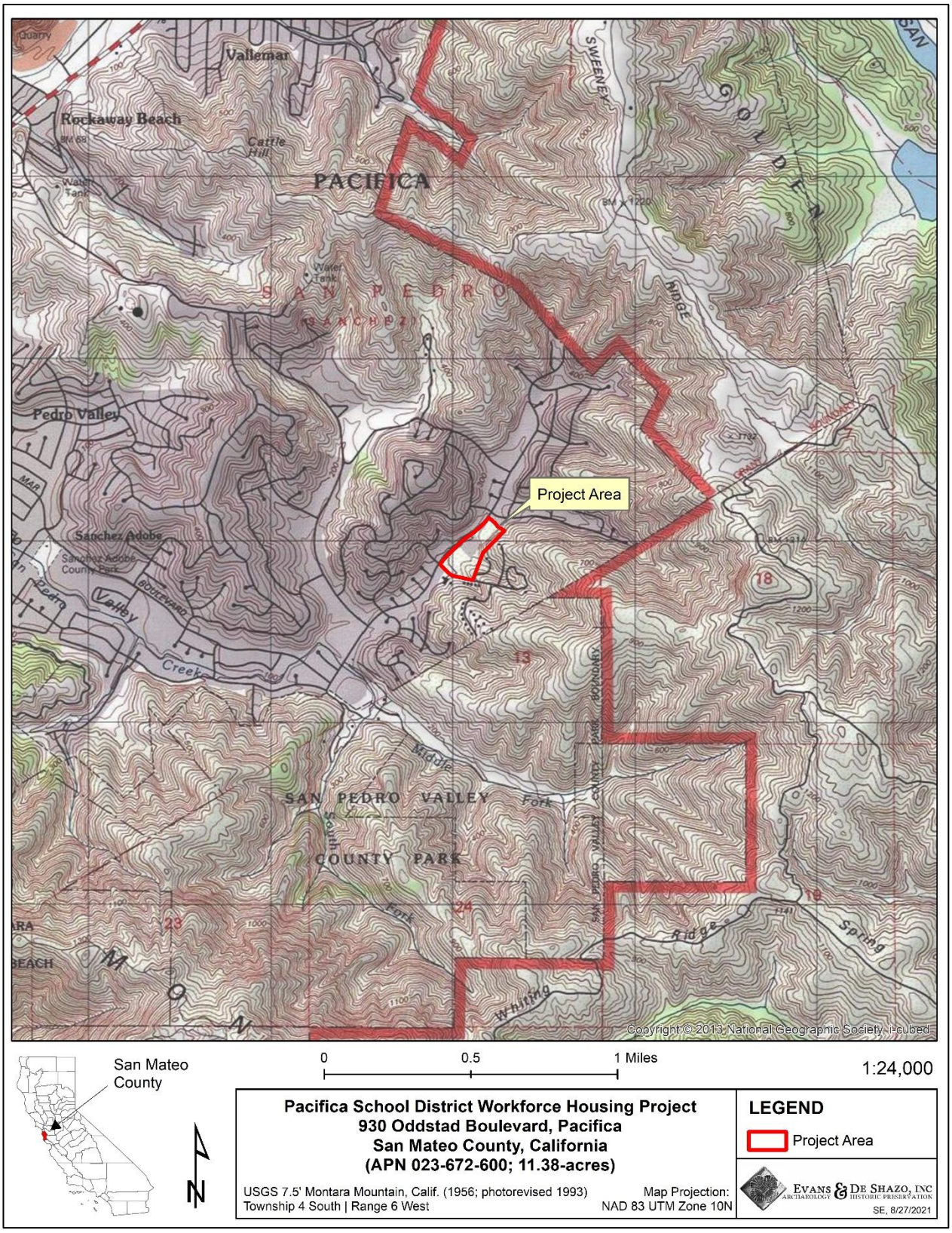


Figure 1. Project Area location map.

REGULATORY SETTING

The CEQA regulations, as they pertain to cultural resources are outlined below.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA and the Guidelines for Implementing CEQA (State CEQA Guidelines § 15064.5) give direction and guidance for evaluating properties, and the preparation of Initial Studies, Categorical Exemptions, Negative Declarations, and Environmental Impact Reports. Pursuant to California State law, the City of Pacifica is legally responsible and accountable for determining the environmental impact of any land use proposal it approves. Cultural resources are aspects of the environment that require identification and assessment for potential significance under CEQA (14 CCR § 15064.5 and PRC § 21084.1).

There are five classes of cultural resources defined by the State OHP. These are:

- **Building**: A structure created principally to shelter or assist in carrying out any form of human activity. A "building" may also be used to refer to a historically and functionally related unit, such as a courthouse and jail or a house and barn.
- **Structure**: A construction made for a functional purpose rather than creating human shelter. Examples include mines, bridges, and tunnels.
- **Object**: Construction is primarily artistic in nature or relatively small in scale and simply constructed. It may be movable by nature or design or made for a specific setting or environment. Objects should be in a setting appropriate to their significant historic use or character. Examples include fountains, monuments, maritime resources, sculptures, and boundary markers.
- **Site**: The location of a significant event. A prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing building, structure, or object. A site need not be marked by physical remains if it is the location of a prehistoric or historic event and if no buildings, structures, or objects marked it at that time. Examples include trails, designed landscapes, battlefields, habitation sites, Native American ceremonial areas, petroglyphs, and pictographs.
- **Historic District**: Unified geographic entities which contain a concentration of historic buildings, structures, or sites united historically, culturally, or architecturally.

According to CCR § 15064.5, cultural resources are historically significant if they are:

(1) A resource listed in or determined to be eligible by the State Historical Resources Commission for listing in the California Register of Historical Resources (PRC §5024.1, 14 CCR § 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in PRC § 5020.1(k) or identified as significant in a historical resource survey meeting the requirements PRC § 5024.1(g), shall be presumed to be historically or culturally significant. Public agencies must treat any such

resource as significant unless the preponderance of the evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (PRC § 5024.1, 14 CCR § 4852), including the following:

(A) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(B) Is associated with the lives of persons important in our past;

(C) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(D) Has yielded, or may be likely to yield, information important in prehistory or history.

(4) The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources pursuant to PRC § 5020.1(k) or identified in a historical resources survey meeting the criteria in PRC § 5024.1(g) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC § 5020.1(j) or § 5024.1.

METHODS

The methods used to complete the HRE include a review of a record search completed by the Northwest Information enter (NWIC) of the California Historical Information Systems (CHRIS) (NWIC File #21-0417) to determine if the Project Area has been previously documented and to obtain reports and resource records pertaining to the Project Area. EDS also conducted research with the San Mateo County Assessor-Recorder Office and the Pacifica Historical Society, as well various other online resources detailed in the section below. EDS also reviewed digital documents on file with EDS, such as historical maps, historical aerial photographs, and other primary source documents. The purpose of the record search and literature review was to understand the Project Area's history to assist in developing a historical context to evaluate the historical significance of the built environment resources within the Project Area. EDS Principal Architectural Historian Stacey De Shazo, M.A. also completed a historic architectural survey of the Project Areato identify the age, architectural style, character-defining features, materials, and alterations of the built environment resources within the Project Area. Department of Parks and Recreation (DPR) 523 forms were completed and are attached to this report as Appendix A.

Cultural Resource Inventories

As part of the record search, the following inventories were reviewed:

- National Register of Historic Places (NRHP)
- California Register of Historical Resources (CRHR)
- California Historical Landmarks (CHL)
- California Points of Historical Interest (CPHI)
- California OHP BERD for San Mateo County (2020)
- City of Pacifica Historical Landmarks

Online Research

Online research utilized the following sources:

- www.newspapers.com
- www.ancestry.com
- www.calisphere.com (University of California)
- http://www.library.ca.gov/ (California State Library)
- https://cdnc.ucr.edu/ California Digital Newspaper Collection
- http://pcad.lib.washington.edu/ (Pacific Coast Architecture Database [PCAD])
- https://aiahistoricaldirectory.atlassian.net (AIA Historical Directory of American Architects)

The local and online research results are within the Historical Setting section below.

HISTORICAL SETTING

The following historical setting includes a brief history of San Mateo County, the City of Pacifica, and the surrounding area and the Project Area's specific history. The historical setting provides the context within which the 1968 school building, 1972 shed building, and associated landscape within the Project Area were assessed for historical significance.

MEXICAN PERIOD (1821 – 1846)

In 1821, Mexico gained its independence from Spain and took possession of "Alta California",[1] marking the end of the Spanish period (1769 – 1821) and the beginning of the Mexican period, also referred to as the "rancho" period in Alta California. During this time, present-day Pacifica was part of the 8,929-acre Rancho San Pedro granted to Francisco María Sánchez in 1839 by Juan B. Alvarado (Figure 2 and Figure 3).[2] Francisco was born in 1805 in San Jose to Jose Antonio Sanchez II and Maria Ana Josefa Soto. During his youth, Francisco

[1] Alta California was a polity of New Spain founded in 1769 and became a territory of Mexico after the Mexican War of Independence in 1821.

[2] Philip W. Alexander and Charles P. Hamm, "History of San Mateo County" From the Earliest Times with a Description of its Resources and Advantages and the Biographies of its Representative Men", Burlingame, California, 1916.

received military training under his father, who was Commandant of the San Francisco Presidio.[3] In 1833, Francisco married Maria Florencia Teodora Higuera. Francisco and Teodora had 13 children, including seven sons, four daughters, and two babies who died in infancy. In 1842, Francisco became the Alcalde of San Francisco and Captain of the Port of San Francisco. Francisco built the Sánchez Adobe (extant), as a home for his family, within Rancho San Pedro between 1842-1846 (Figure 4).[4] During Francisco's ownership of the rancho, Sánchez raised cattle for the hide-and-tallow trade; when ships came to California, Francisco would trade his hides for manufactured items. The Sanchez Adobe is currently the second oldest extant building in San Mateo County.[5]

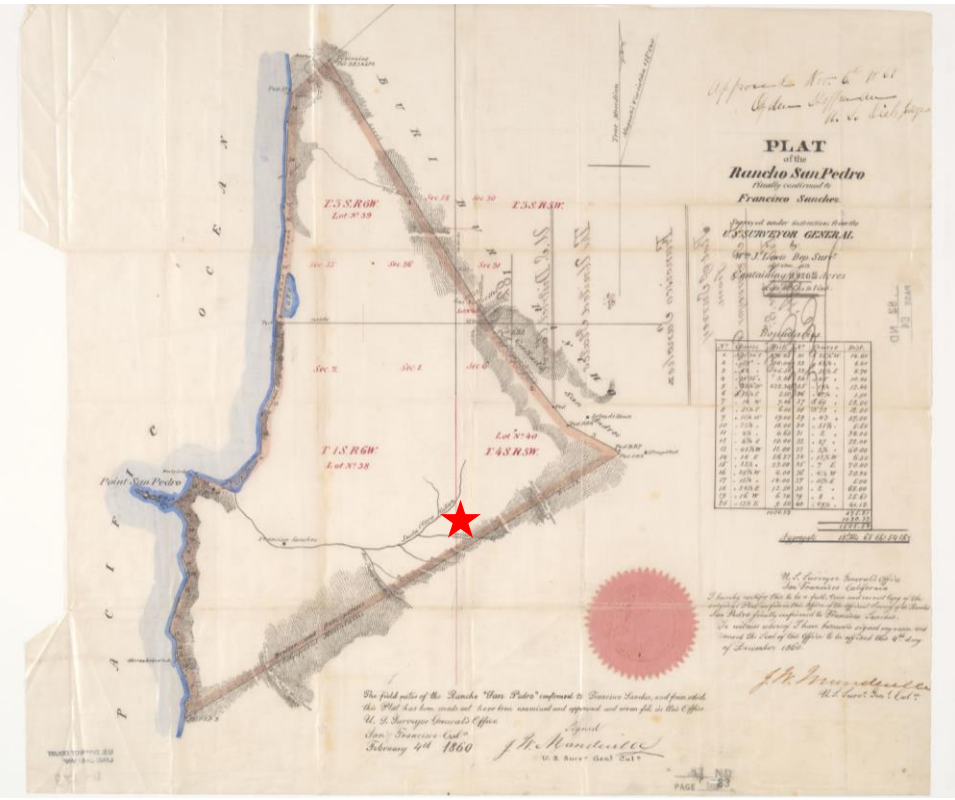


Figure 2. Plat of the 8,929-acre Ranch San Pedro map granted to Francisco María Sánchez, showing the approximately location (red star) of the Project Area (courtesy of Calisphere).

[3] Stephen Dietz, "Pruristac, San Pedro y San Pablo. Francisco Sanchez Adobe", National Register of Historic Places, December 15, 1974.

[4] National Park Service, "Historic Resource Study for Golden Gate National Recreation Area in San Mateo County", San Mateo County Historical Association, 2010.

[5] Ibid.

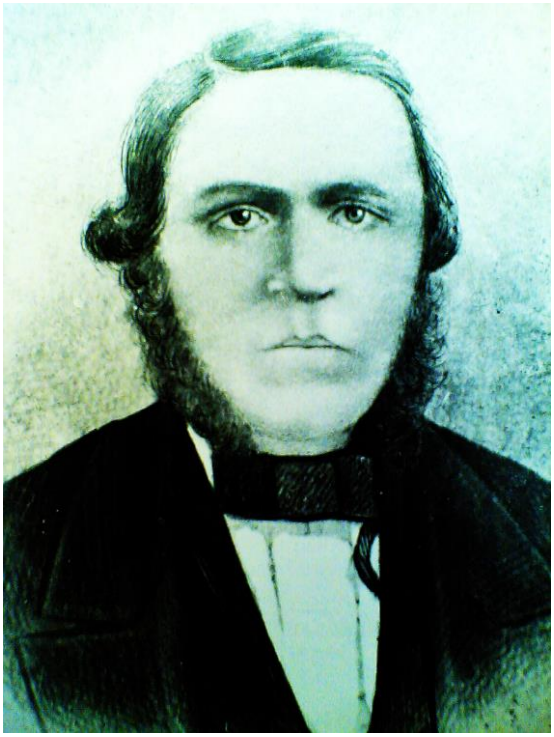


Figure 3. ca. 1845 drawing of Francisco María Sánchez (courtesy of Calisphere).

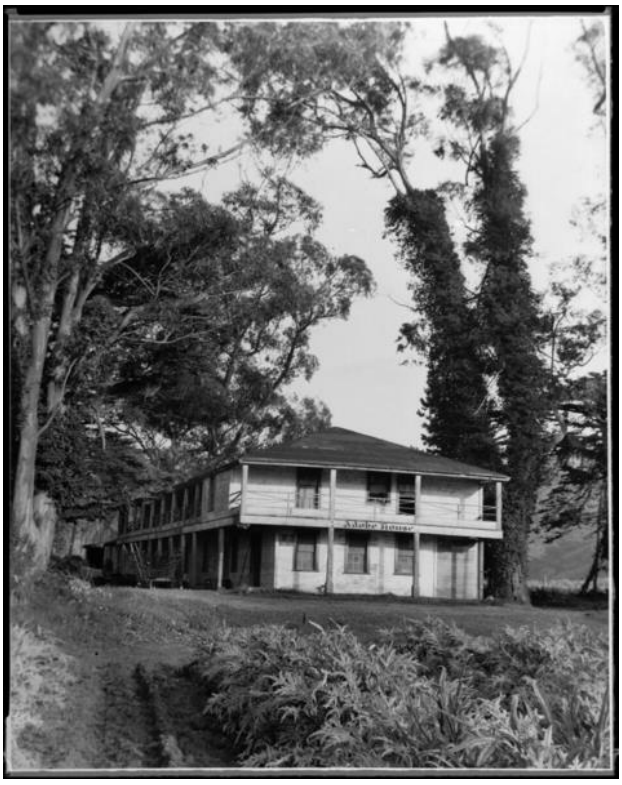


Figure 4. Sanchez Adobe, constructed in 182-1846 (courtesy of Calisphere).

EARLY SETTLEMENT AND DEVELOPMENT IN PACIFICA (1850-1970S)

The beginning of the American Period in California is marked by the end of the Mexican American War (1846-1848), when the United States (U.S.) took possession of Mexican territories, including California, New Mexico, Texas, and Arizona, in the signing of the Treaty of Guadalupe Hidalgo on February 2, 1848. The Treaty of Guadalupe Hidalgo provided resident Mexicans their American citizenship and guaranteed title to ranchos obtained during the Mexican period. However, less than two weeks before the treaty's signing, on January 24, 1848, James Marshall discovered gold at Sutter's Mill, which marked the start of the California Gold Rush (1848 to 1855). Soon, the excitement of the Gold Rush and the promise of fertile and abundant land brought between 150,000 and 200,000 new settlers to California from all over the U.S. and Scotland, Ireland, England, Germany, and France.[6] During this time, many new settlers squatted on land, including Mexican rancho land and unclaimed land. To quickly resolve Mexican rancho land disputes, the U.S. Congress passed the California Land Act of 1851 that established a three-member Public Land Commission (Commission) to determine the validity of prior Spanish and Mexican land grants.[7] The act required landowners who claimed title under the former Mexican government to file a claim with the Commission within two years. Although the Commission eventually confirmed most of the original Mexican land grants, the burden was on landowners to prove their title. The cost of litigation forced many rancho owners to sell off their land to newly arriving settlers, including some who had illegally squatted on their land, as well as land speculators and the lawyers hired to defend their land claims in court.[8]

In 1853, Francisco filed a petition with the Commission for ownership of the 8,929-acre Rancho San Pedro, including the Project Area, which the Commission confirmed in 1857.[9] Francisco died in 1862, and the rancho, including the Sanchez Adobe, was deeded to Teodora. By the late 1860s, Teodora began leasing and selling portions of the rancho to newly arriving settlers. During this time, cattle ranching was prevalent throughout San Mateo County and the San Pedro Valley; however, by the 1870s, cattle ranching gave way to dairy farming as the primary source of income for farmers in the valley. This change was partly due to the reduction in available acreage needed by ranchers to graze cattle and the increasing and unreliable cost of shipping beef and hides, taking two days on a wagon to reach major cities such as San Francisco. As such, the land was mainly developed with small farms.

The early Euro-American settlers of Pacifica and the San Pedro Valley included Irish, Portuguese, Italian, and Chinese immigrants, forging different paths during early settlement. Irish immigrants established farms within the former rancho land, growing cabbages, potatoes, and grains, which flourished in the foggy coastal

[6] Karen Clay, "Property Rights and Institutions: Congress and the California Land Act 1851", The Journal of Economic History, Cambridge University Press, 59(01):122-142, March 1999.

[7] The Spanish government-controlled California land from approximately 1770 to 1821 and the Mexican government-controlled present-day California from 1821 to 1846.

[8] Nancy Olmsted. *Vanished Waters: A History of San Francisco's Mission Bay*, Mission Creek Conservancy, San Francisco, 1986.

[9] National Park Service, *Historic Resource Study for Golden Gate National Recreation Area in San Mateo County*, San Mateo County Historical Association, no date.

climate of the small town. While potatoes grew in surplus along the coast, potato farms in the San Pedro Valley suffered a blight in 1870. Although potatoes farming continued in Pacifica, by 1920, potato farming ceased in the area.[10] Upon arrival in California, Portuguese immigrants, many of which were from the Azores islands off Portugal's coast, established whaling stations along the coast (Figure 5), including the coastline of Pacifica as early as the 1850s.[11,12] However, by the 1870s, whaling was dimensioning, and by 1900, most Portuguese immigrants turned to traditional commercial fishing or farming. As early as the 1850s Chinese immigrants, mainly young men from the Guangdong Province in China, began establishing shrimp fishing businesses along California's west coast, including the coastline within present-day Pacifica. Throughout the 1850s and 1860s, the Chinese fishing industry in San Mateo County was thriving, with the Chinese forming small camps or fish yards along the bay shore of the county and the Pacifica (Figure 6). During this time, Italian immigrants were also establishing fishing businesses along the coast, creating a competitive fish market within the same areas as the Chinese. By the 1870s, the number of Chinese immigrants in California, including within San Mateo County, had increased, as many of them whom had worked on the transcontinental railroad (1863-1869) found work within local farms and ranches and fishing camps. During this time, Chinese-owned shrimp businesses and other commercial fishing businesses expanded in Pacifica. However, the increased number of employed Chinese immigrants, who often worked for less wages, resulted in local discriminatory laws such as a special tax on Chinese fishermen in the area and biased accusations of overfishing and harassment upon the fishermen.

In 1875, California's senators pressured their fellow lawmakers in Washington D.C. to pass the Page Act, which was an act that "prohibited convicted felons, prostitutes, and Asian contract laborers" from entering the U.S. This act resulted in a series of anti-immigrant laws and practices. In 1882, the U.S. Congress passed the Chinese Exclusion Act, the most sweeping "Anti-Chinese" law that banned all Chinese laborers from entering the U.S., except students, merchants, teachers, travelers, and diplomates.[13, 14] These discriminatory laws restricted Chinese employment, resulting in an influx of Italian immigrants who replaced Chinese labor. By the mid-1880s and early 1890s, Italian immigrants had replaced most of the Chinese immigrants as the dominant fishing labor in San Mateo County and Pacifica. During this time, many of the Italian immigrants began purchasing land for farming and soon replaced the failing potato farms with other vegetable crops, including artichokes, brussels sprouts, and flowers such as lavenders and heaths (Figure 7). By the 1890s, Pacifica was known as one of the largest artichoke farming areas in California,[15] with as much as 90 percent

[10] Hynding, Alan, *From Frontier to Suburb: The Story of the San Mateo Peninsula* (Belmont, CA: Star Publishing, 1982).

[11] Joan M. Levy, "Portuguese Immigration to San Mateo County", *La Peninsula*, Vol. xxxviii, no. 1, 2009.

[12] Ibid.

[13] Ibid.

[14] Anti-immigrant laws Congress passed in the late 19th and early twentieth century also included a range of laws barring Chinese from securing business licenses (1872), owning real estate (1872, 1913, 1920), wearing queues (1873), and walking on sidewalks while carrying loads with pole and baskets (1870), prohibition of interracial marriages in California, even women who married Chinese men lost their own U.S. citizenships (1922).

[15] Kathleen Manning and Jerry Crow, *Pacifica* (Charleston, South Carolina: Arcadia Publishing, 2010), page ix.

of the artichokes in the U.S. coming from Pacifica.[16] By 1912, approximately 500-acres of land in the San Pedro Valley and Pacifica was planted in artichokes. In 1917, the Half Moon Bay Coastwide Artichoke Growers Association, and a central packaging and shipping facility at Moss Beach were established.

In 1879, the Half-Moon Bay-Colma Road was created as a single-lane road that followed old historic trails along the coast. However, the drastic elevation changes, such as the 18% grade difference between Green Valley and San Pedro Valley, and its constant damage by landslides resulted in a demand for a new road by the citizens of Pacifica.[17] Eventually, in 1917 the Half-Moon Bay-Colma Road was abandoned. The Ocean Shore Railroad was constructed in 1905 to connect San Francisco to Santa Cruz along San Mateo County coast (Figure 8 and Figure 9). However, the 1906 earthquake created considerable damages, and the line never completed the journey to Santa Cruz; instead, it stopped at Half Moon Bay. One of the intentions of the railroad was to haul farm produces between the coast and larger cities (San Francisco); the other intent was to fuel beachside tourism and residential growth to the coast. As such, several railroad stations such as Tobin, Salada Beach, Vallamar, Brighton, and Rockaway were built along the route, and the land around the stations was subdivided and sold for development (Figure 10 and Figure 11). Rockway Station and the land surrounding the station would eventually turn into Linda Mar and Park Pacifica neighborhood in Pacifica. The Project Area is located within the Park Pacifica neighborhood. However, residential growth in the San Pedro Valley of Pacifica was slow even though the tourist industry was well-paced. Unfortunately, the lack of residential development and land sales throughout Pacifica and the slowing of passenger and freight services were not enough to compensate for the cost and repair of the rail lines damaged by erosions and landslides. In 1920, the rail line was discontinued and paved to make way for Highway 1.

In 1915, Coastside Boulevard (aka as Pedro Mountain Road) was constructed over the eastern slope of Montara Mountain from San Pedro Valley to Pacifica. Although the road was well-traveled, Coastside Boulevard was difficult to navigate with over 250 curves and frequently damaged by landslides, erosion, and floods.[18] By 1920, as the automobile became more affordable, residents of Pacifica demanded road improvements, which drastically changed the landscape of the San Pedro Valley within Pacifica and San Mateo County's coastline. During Prohibition (1920 to 1933), Coastside Boulevard was the main link between rumrunners operating speakeasies in San Francisco. The coastal shores of Pacifica also became an easy port for illegal transportation of alcohol to speakeasies, hotels, and bars. During the 1920s, the construction of Highway 1 began,[19] allowing safer and easier travels along the coast and inland and avoiding the area known as Devils Slide (now a hiking trail; see Figure 9). After Prohibition, the early small coastal communities grew

[16] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 18.

[17] Mitchell P. Postel, San Pedro Point, Devil's Slide and Transportation History of the San Mateo County Coastside, *La Peninsula,* Vol. xli, no.2, 2013.

[18] San Mateo County, "Devil's Slide Trail History", San Mateo County Park Department, https://parks.smcgov.org/devils-slide-trail-history (accessed 12/21/2021).

[19] After 18 years of construction, aided by New Deal funds during the Great Depression, the paved two-lane road was completed and opened on June 17, 1937.

as new economic industries, including tree nurseries and commercial fishing businesses, were established in Pacifica. During the 1920s and 1930s, fishing became a principal source of the local economy, allowing for increased development of the land for housing. During this time, early land developer Ray Higgins of Higgins & Son, began buying land within Pacifica for residential development (Figure 12). In 1929, the U.S. entered the Great Depression (1929 – 1933) growth slowed throughout the U.S.

During early 1941, prior to the U.S. entering into World War II (WWII, 1939-1945), the U.S. constructed defense and military communication centers and towers in San Mateo County, including one along Sweeney Ridge in Pacifica, which the U.S. government-owned from 1941 to 1973 (Figure 13). Prior to the sale of the land to the U.S. government, Sweeney Ridge was owned by a dairy farm known as the Jersey Farm Company.[20,21] After the bombing of Pearl Harbor on December 7, 1941, the U.S. entered WWII, and additional military sites were constructed within San Pedro Valley. The sites included fire control stations for the Harbor Defense of San Francisco along with an area known as Devils Slide in Pacifica (occupied by the U.S. military from 1941 to 1944) and a site along Milagra Ridge, north of Sweeney Ridge within Pacifica, which included coastal defense barracks constructed in 1942.[22] In 1942, President Roosevelt signed Executive Order 9066, ordering the immediate internment of all personnel of Japanese ancestry to internment camps. Executive Order 9066 was passed to imprison Japanese and Japanese Americans in California in internment camps throughout the U.S. During this time, Sharp Park Internment Camp, located in a canyon off Highway 1 in Pacifica, was used by the U.S. military as a detention facility and processing center for enemy aliens (Figure 14). From 1941 to 1946,[23] Sharp Park Internment Camp processed numerous Japanese-Americans and temporarily held a total of 193 Japanese and Japanese-Americans, including *Issei,* first-generation, and *Nisei*, second generation. The 193 Japanese and Japanese-Americans were transferred from the Silver Avenue Immigration and Naturalization Service (INS) detention center and were temporarily placed at Sharp Park Internment Camp before being moved to a different internment camp. The camp, at one point, also held over 2,500 German, Mexican, Italian, Chinese, Canadian Americans, and South America (Figure 15),[24] many of whom were immigrants deemed "dangerous" by President Herbert Hoover (1929-1933). After the war, Sharp Park Internment Camp was converted into a golf course. Only remnants of the original stonework from the internment camp are extant between the area where the rifle and archery range were located.[25]

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[20] Mitchell P. Postel, SF 51: The Nike Missile Areas, *La Peninsula*, Vol. xli no 1, 2009.

[21] In 1993 the County, who owned the former military site since 1973, donated the property to the National Park Service, as part of the Golden Gate National Recreation Area.

[22] Mitchel P. Postel, Armed Forces Presence in San Mateo County During World War II*, La Peninsula*, Vol xliv, no 2, 2016.

[23] Lewis Kawahara, "Sharp Park (detention facility)", Densho Encyclopedia, https://encyclopedia.densho.org/Sharp_Park_(detention_facility)/ (accessed, 12/21/2021).

[24] Camden Swita, Viewfinder: Pacifica's Japanese Internment Camp, *The Patch*, March 17, 2011, https://patch.com/california/pacifica/viewfinder-pacificas-japanese-internment-camp (accessed December 15, 2021).

[25] Lewis Kawahara, "Sharp Park (detention facility)", Densho Encyclopedia, https://encyclopedia.densho.org/Sharp_Park_(detention_facility)/ (accessed December 15, 2021).

In 1945, after WWII ended, the town of Pacifica saw a housing boom to accommodate returning soldiers from the war. In the late 1940s, real estate developers set their sights on the farmlands of Pacifica as areas for new suburban housing (Figure 16 and Figure 17). In the late 1940s, developer Andy Oddstad began buying farms and ranches in the San Pedro Valley and Pacifica for the development of residential housing. During this time, new businesses were established in Pacifica, including John and Mary Gay's Trout Farm, on a 21-acre property on the lower reaches of South Fork San Pedro Creek. The end of WWII also brought a large population of African Americans from the southern U.S. to California. Many were employed by the U.S. military, shipping industry, and various naval yards. However, in San Mateo County, discriminatory practices did not allow for any "person of color" to live west of El Camino Real.[26] By the early to mid-1950s, Pacifica was a growing community with new housing, as well as commercial and industrial businesses, such as the local cable station, the newspaper station, and the *Pacifica Tribune*. In 1959, the city's first Fire Department and the Sharp Park shopping district were established (Figure 18).[27] During this time, the U.S. entered the Cold War era (1947-1989) and from 1954 to 1963, Sweeney Ridge served as a Nike radar site (Figure 19), and Milagra Ridge was a Nike missile site before both were decommissioned in 1973 and 1974, respectively.

The growth of Pacifica in the 1950s and 1960s increased as old roads were improved and new roads were constructed, providing better access to the town, as well as access to the beaches, such as Linda Mar Beach (Figure 20), which was a popular surfing spot. During this time, Oddstad had great success with his early suburban housing developments in Pacifica. In 1952, Oddstad began developing Linda Mar, providing low-cost single-family houses to families commuting to San Francisco. During the early 1960s, Oddstad began developing Park Pacifica (1964), where the Project Area is located. Park Pacifica was designed by Andy to provide "good homes within reach of many".[28] By the late 1950s, the area that once consisted of small enclaves of coastal communities was a growing suburban town. In 1957, the City of Pacifica was established by the joining of the small communities, including Salada Beach and Vallamar to form the new city called Pacifica.[29]

By the 1960s and early 1970s, Pacifica was a thriving suburban town, and as new housing was developed, the agricultural areas of Pacifica were rapidly reduced (Figure 21). During this time, new schools were established, including Terra Nova High School (1961; extant), and in 1966, the construction of the Oddstad School began within the Project Area. During this time, the city's population was 20,995; however, the population was not diverse. According to the 1960 Federal Census record, 98.9% of Pacifica's population consisted of those who identified as white (20,761), and only 1.1% people of color who identified as African

[26] Eve Simister, The African American Great Migration and San Mateo County, *La Peninsula*, Volume xliv, No.1, 2016.

[27] Kathleen Manning and Jerry Crow, *Pacifica* (Charleston, South Carolina: Arcadia Publishing, 2010), page 45.

[28] Newspapers.com, "Andy Oddstad: He Arranged the Invasion of Linda Mar", Pacifica Tribune, February 9, 1961.

[29] The name Pacifica was derived from the 80-foot-tall statues design by Ralph Stackpole for the 1939-1940 Golden Gate International Exposition meant to symbolize the unity of people around the Pacific basin.

Americans (17), South Asian (21), Japanese (47), Chinese (27) and Filipino (64).[30, 31] In 1970, 87% of the City's housing stock was single-family housing. However, the need for apartments and multi-unit buildings was on the rise, and by 1976 single-family housing declined to 79%, as the area became an affordable place to live, providing easy access for commuting to San Francisco for work. By 1976, 37,300 people lived within the 12.2 square miles of Pacifica.



Figure 5. ca. 1890 whaling station near Pescadero.[32]

[30] City of Pacific, 1960 Census Data, *Bay Ara Census,* http://www.bayareacensus.ca.gov/cities/Pacifica60.htm (accessed December 15, 2021).

[31] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002).

[32] Joan M. Levy, "Portuguese Immigration to San Mateo County", *La Peninsula*, Vol. xxxviii, no. 1, 2009, page 5.

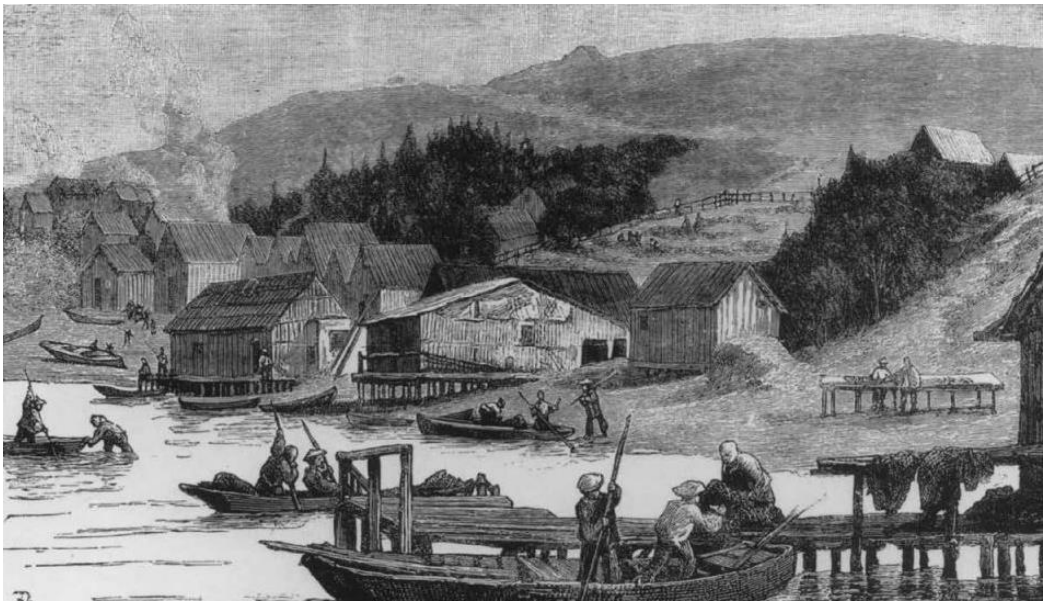


Figure 6. 1880 drawing of Chinese shrimp fishermen and shrimp village in San Mateo County.[33]

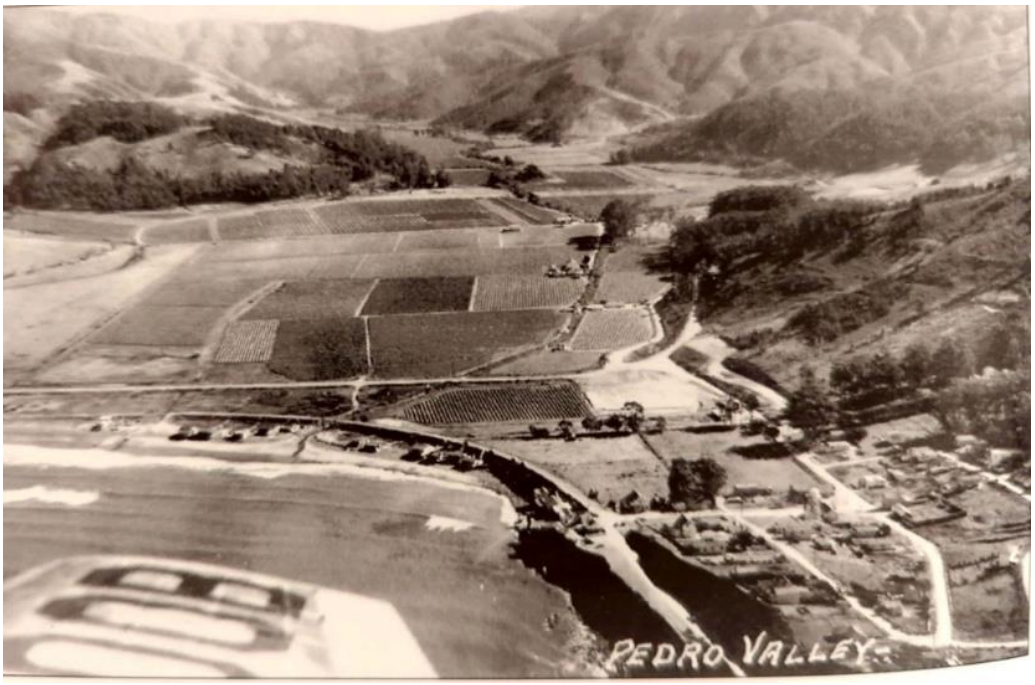


Figure 7. date unknown of San Pedro Valley filled with artichokes lands.[34]

[33] Mitchell P. Postel, "Chinese Shrimp Fisherman in San Mateo County", *La Peninsula*, Vol xliii, no.2, 2003, page 2.

[34] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 24.



Figure 8. Construction of Ocean Shore Railway ca. 1905.[35]

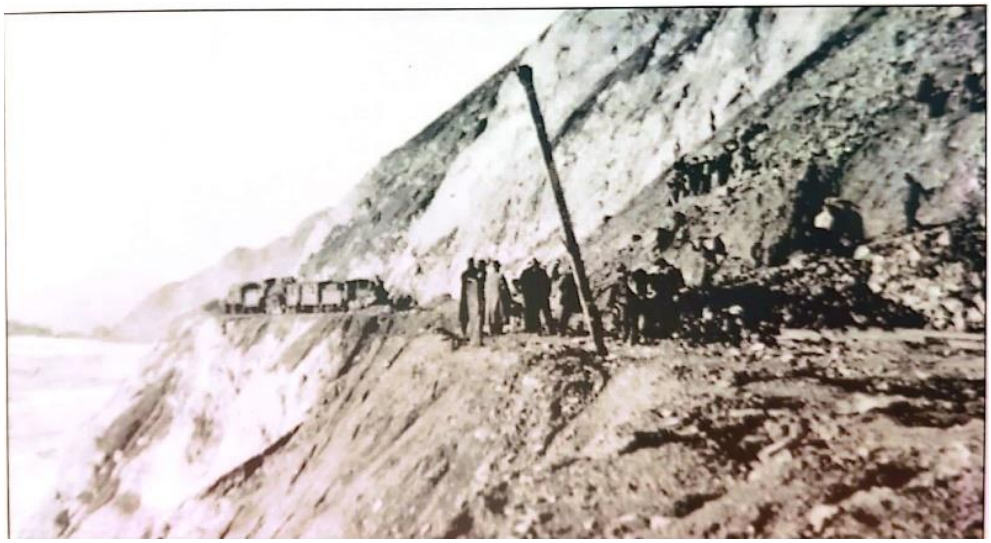


Figure 9. ca. 1920 photograph of a landslide along with Devil's Slide, south of Pacifica.[36]

[35] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 25.

[36] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 29.



Figure 10. Vallamar Station (extant), built by George Rich for the Ocean Shore Railroad within the Rockaway Beach in Pacifica.[37]



Figure 11. 1936 aerial photograph of showing early development of within Pacifica.[38]

[37] Kathleen Manning and Jerry Crow, *Pacifica* (Charleston, South Carolina: Arcadia Publishing, 2010), page 31.

[38] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 49



Figure 12. During the late 1930s, early developer Ray Higgins (Higgins & Son) sold lots within Salada Beach for $275 per lot for residential development.[39]



Figure 13. Panoramic view of Sweeny Ridge during World War II.[40]

[39] Kathleen Manning and Jerry Crow, *Pacifica* (Charleston, South Carolina: Arcadia Publishing, 2010), page 37.

[40] Mitchell P. Postel, "The Nike Missile Areas at Milagra and Sweeney Ridges", *La Peninsula,* Vol.xli, no.1, 2012, page. 19.



Figure 14. Sharp Park Internment Camp was used as an internment camp of Japanese during WWII, as well as, Chinese, German, Mexican, and South American immigrants.[41]

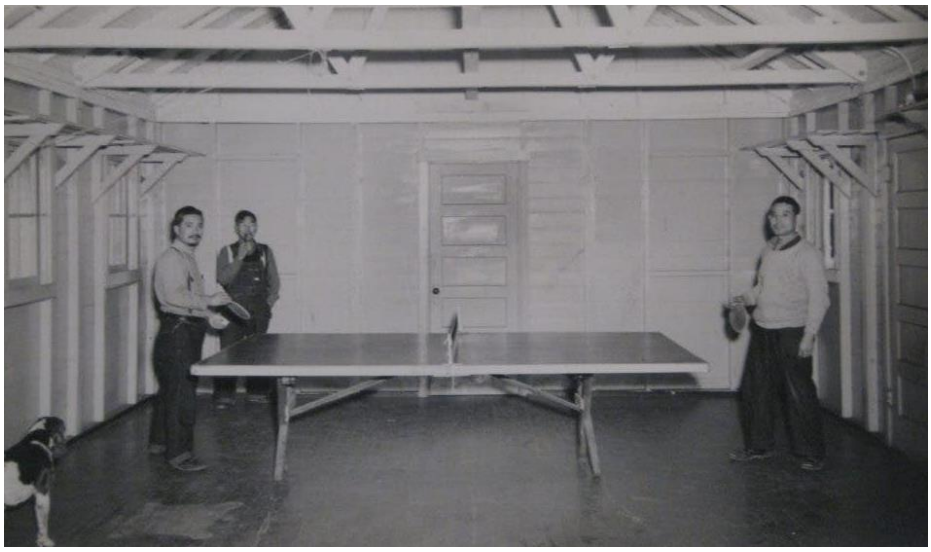


Figure 15. Recreation building within the Sharp Park Internment Camp during World War II.[42]

[41] Camden Swita, Viewfinder: Pacifica's Japanese Internment Camp, *The Patch*, March 17, 2011, https://patch.com/california/pacifica/viewfinder-pacificas-japanese-internment-camp (accessed December 15, 2021).

[42] Camden Swita, Viewfinder: Pacifica's Japanese Internment Camp, *The Patch*, March 17, 2011, https://patch.com/california/pacifica/viewfinder-pacificas-japanese-internment-camp (accessed December 15, 2021).



Figure 16. ca. 1950 photograph from Alma Heights in Pacifica looking south toward Montara Mountain, planted in artichokes, and showing the San Pedro Creek in the foreground and fields of peas, potatoes, and onions.[43]

[43] Kathleen Manning and Jerry Crow, *Pacifica* (Charleston, South Carolina: Arcadia Publishing, 2010), page 77.

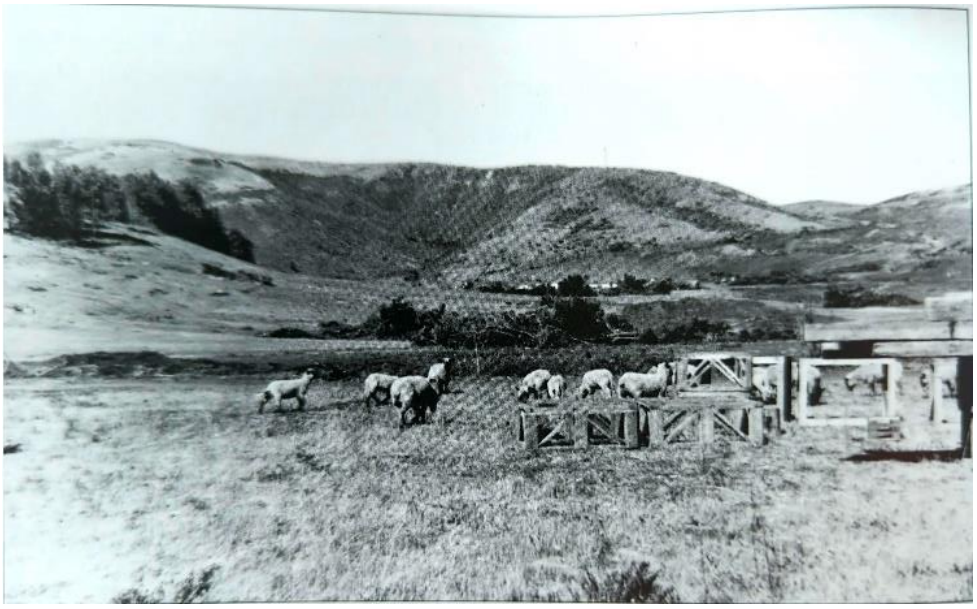


Figure 17. ca. 1950s photograph of sheep grazing on the land where the present-day Terra Nova High School is located, and San Pedro Valley in the background.[44]



Figure 18. 1950s in Pacifica, showing the Sharp Park shopping center.[45]

[44] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 49.

[45] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 59.

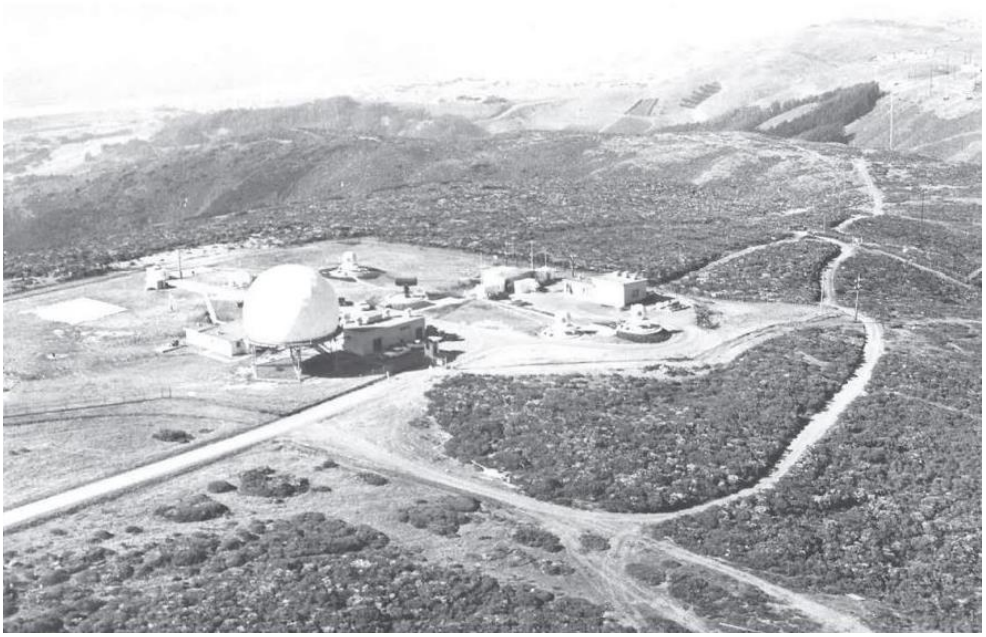


Figure 19. Sweeney Ridge SF 51C with the massive HIPAR[46] radome.[47]



Figure 20. ca. 1950s photograph of Linda Mar Beach in Pacifica.[48]

[46] HIPAR is the abbreviation for High Power Acquisition Radar.

[47] Mitchell P. Postel, "The Nike Missile Areas at Milagra and Sweeney Ridges", *La Peninsula,* Vol.xli, no.1, 2012, page 21.

[48] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 62.

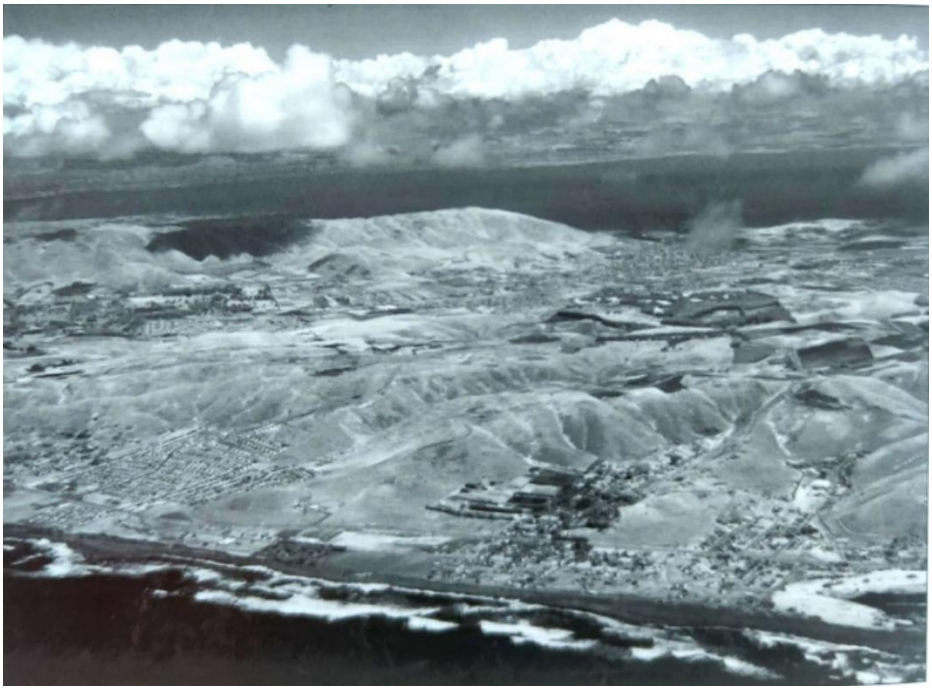


Figure 21. ca. 1960 aerial photograph showing the development within the City of Pacifica.[49]

[49] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 59.



Figure 22. ca. 1961 aerial photograph of the 1952 development within Linda Mar (foreground), and the construction of the Park Pacifica residential community, in the background.[50]

PROJECT AREA HISTORY

Prior to the construction of the 1968 school building, 1972 shed building, and associated landscape within the Project Area, the land was part of the 8,928-acre Rancho San Pedro granted to Francisco María Sánchez in 1839. In 1842-1843, Francisco built the Sanchez Adobe (extant), currently located within Sanchez Adobe Park approximately 1.25 miles southwest of the Project Area. When Francisco died in 1862, the rancho was subdivided between his children and wife as well as other settlers.[51]

In 1927, the Project Area was part of a 61.82-acre property (lot 4) owned by Theresa Stone and a 333.81-acre parcel owned by Frank B. Russi. No information about Theresa was found.

Table 1. Ownership and Occupancy History of the 1968 school building, 1972 shed building, and associated landscape.

Year	Owners/Occupants	Additional Details
1966-2004	Owner: Laguna Salada Union School District (LSUSD)	• In 1964, the Project Area was "set aside" by the Oddstad Development Company for a future school in support of the Park Pacifica residential neighborhood. • Oddstad Development Company was owned by Andy F. Oddstad (previously known as Andres Fjeldsted Oddstad), who was a developer and engineer.[52] In 1966, the property where the current

[50] Chris Hunter, Bill Drake, and the Pacifica Historical Society, *Images of America Pacifica* (Charleston, South Carolina: Arcadia Publishing 2002), page 80.

[52] Newspaper.com, "Crespi School Running Behind; Park Pacific Set for Spring", Pacific Tribune, December 21, 1966.

		1968 school building is located was deeded to the LSUSD for the development of the school. According to a Pacifica Tribune 1966 article, the school district purchased the Project Area for $347,000 and spent approximately half a million dollars for school equipment, repair, and architectural and engineering work.[53] This same year, the architectural plans by Harold Dana Crosby of the architectural firm "Masten, Hurd, and Gwathmey", were submitted for approval to the LSUSD to construct the new school, which at the time was called Park Pacifica (Figure 23). Although the school was located adjacent to the former city dumpsite, the construction was approved in 1966 and began that year. • The 1968 school building was completed. Though initially created to accommodate grades Kindergarten to sixth grade, prior to opening this was changed to K-5th grades.[54] In 1968, after the death Andy Oddstad in 1964, the school's name was changed to Andy F. Oddstad School (aka Oddstad Elementary School and the Andres F. Oddstad School) (Figure 24).[55] This same year, the dumpsite adjacent to the school at the southwest corner of Oddstad Boulevard and Yosemite Drive was turned into an open sports field.[56] • In 1972, the school added three shed buildings, which served as additional classrooms. Currently, only one of the shed buildings (ca. 1972 shed building) is extant within the Project Area.
2004-present	Owner: Pacifica School District	• In 2005, the Oddstad Elementary School closed, and is currently being used as storage.[57] • In 2004, the LSUSD changed its name to Pacifica School District.[58] • The Pacifica School District is made up of eight schools grades kindergarten to 8th grade.

[52] Newspaper.com, "Crespi School Running Behind; Park Pacific Set for Spring", Pacific Tribune, December 21, 1966.

[53] Newspaper.com, "Laguna Board Shows Kids How", Pacifica Tribune, October 19, 1906.

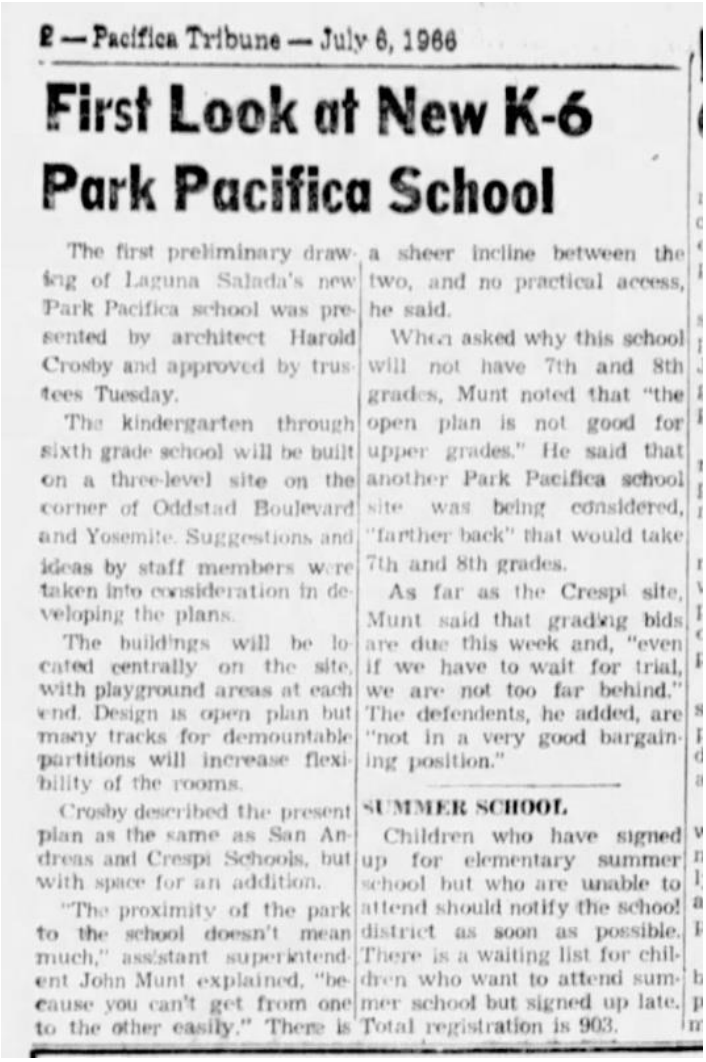
[54] Newspaper.com, "First Look at New K-6 Park Pacifica School", The Pacifica Tribune, July 6, 1966.

[55] Newspaper.com, "Park Pacifica's School Named for Andy Oddstad", Pacifica Tribune, May 22, 1968.

[56] Newspaper.com, "Trif Talks to People on Parks", Pacifica Tribune, March 27, 1968.

[57] Personal communication with Jorge Machado, October 29, 2021.

[58] Newspaper.com, "Laguna Salada changes to 'Pacifica School District' first day of school in September", Pacifica Tribune, June 24, 2003.



2 — Pacifica Tribune — July 6, 1966

First Look at New K-6 Park Pacifica School

The first preliminary drawing of Laguna Salada's new Park Pacifica school was presented by architect Harold Crosby and approved by trustees Tuesday.

The kindergarten through sixth grade school will be built on a three-level site on the corner of Oddstad Boulevard and Yosemite. Suggestions and ideas by staff members were taken into consideration in developing the plans.

The buildings will be located centrally on the site, with playground areas at each end. Design is open plan but many tracks for demountable partitions will increase flexibility of the rooms.

Crosby described the present plan as the same as San Andreas and Crespi Schools, but with space for an addition.

"The proximity of the park to the school doesn't mean much," assistant superintendent John Munt explained, "because you can't get from one to the other easily." There is a sheer incline between the two, and no practical access, he said.

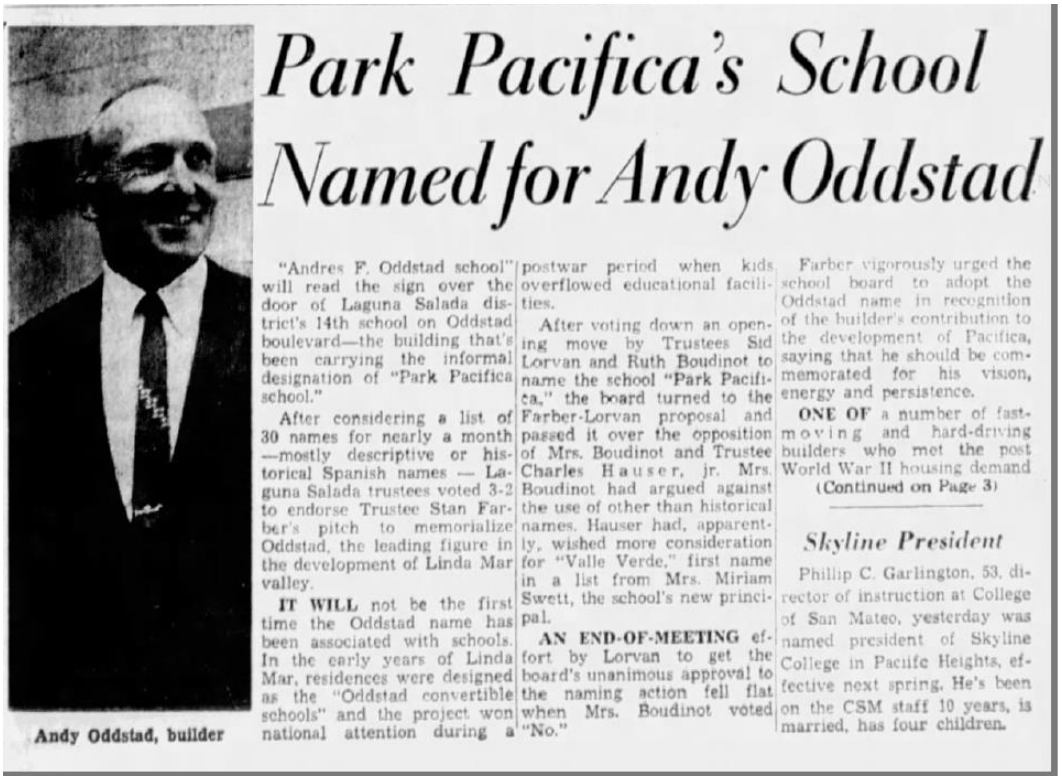
When asked why this school will not have 7th and 8th grades, Munt noted that "the open plan is not good for upper grades." He said that another Park Pacifica school site was being considered, "farther back" that would take 7th and 8th grades.

As far as the Crespi site, Munt said that grading bids are due this week and, "even if we have to wait for trial, we are not too far behind." The defendents, he added, are "not in a very good bargaining position."

SUMMER SCHOOL

Children who have signed up for elementary summer school but who are unable to attend should notify the school district as soon as possible. There is a waiting list for children who want to attend summer school but signed up late. Total registration is 903.

Figure 23. Article in the Pacifica Tribune dated July 6, 1966 (Newspapers.com).



Park Pacifica's School Named for Andy Oddstad

Andy Oddstad, builder

"Andres F. Oddstad school" will read the sign over the door of Laguna Salada district's 14th school on Oddstad boulevard—the building that's been carrying the informal designation of "Park Pacifica school."

After considering a list of 30 names for nearly a month —mostly descriptive or historical Spanish names — Laguna Salada trustees voted 3-2 to endorse Trustee Stan Farber's pitch to memorialize Oddstad, the leading figure in the development of Linda Mar valley.

IT WILL not be the first time the Oddstad name has been associated with schools. In the early years of Linda Mar, residences were designed as the "Oddstad convertible schools" and the project won national attention during a postwar period when kids overflowed educational facilities.

After voting down an opening move by Trustees Sid Lorvan and Ruth Boudinot to name the school "Park Pacifica," the board turned to the Farber-Lorvan proposal and passed it over the opposition of Mrs. Boudinot and Trustee Charles Hauser, jr. Mrs. Boudinot had argued against the use of other than historical names. Hauser had, apparently, wished more consideration for "Valle Verde," first name in a list from Mrs. Miriam Swett, the school's new principal.

AN END-OF-MEETING effort by Lorvan to get the board's unanimous approval to the naming action fell flat when Mrs. Boudinot voted "No."

Farber vigorously urged the school board to adopt the Oddstad name in recognition of the builder's contribution to the development of Pacifica, saying that he should be commemorated for his vision, energy and persistence.

ONE OF a number of fast-moving and hard-driving builders who met the post World War II housing demand

(Continued on Page 3)

Skyline President

Phillip C. Garlington, 53, director of instruction at College of San Mateo, yesterday was named president of Skyline College in Pacific Heights, effective next spring. He's been on the CSM staff 10 years, is married, has four children.

Figure 24. Article in the Pacifica Tribune dated May 22, 1968 (Newspapers.com).

ARCHITECTURAL STYLE

The 1968 school building is associated with the Mid-Century Modern architectural style, briefly described below.

MID-CENTURY MODERN ARCHITECTURE (1930S – 1970S)

The "Modern Era" is broadly defined in the U.S. as the period from 1930 through the 1970s; however, many of the architectural designs that personify this category were spurred by the end of WWII, which brought sweeping changes to the American architectural landscape. During this time, new building materials became readily available and businesses, social, and civic buildings, and particularly tract-house suburbs were built in increasing numbers and the architecture exhibited a much more modern appearance.

"Mid-century Modern" architecture developed around the middle decades of the twentieth century, post-WWII, and was the more "organic" response to the International Style characteristics of Modernism that developed earlier in the century. Mid-Century Modern architecture is generally characterized by a low profile, horizontal composition, the use of modern materials—vast expanses of plate glass—and other stylistic elements such as angular shapes, open floor plans, and stacked masonry veneer such as brick, Roman brick, or stone. The idea behind Mid-century Modern design was to create a new, fresh architecture, which, by its seemingly outlandish details, did not invoke the past. In these mid-century decades, owners of banks, shops, restaurants, theaters, and other commercial businesses throughout California built new buildings or were inspired to update or modernize their existing buildings to give them a "modern" look to attract customers

to retail during the post-war consumerism boom. The Mid-Century Modern movement soon gave rise to several sub-types, including International Style, Formalism, Brutalism, and Expressionism.

ARCHITECT HAROLD CROSBY

Harold Dana Crosby AIA is the architect of the 1968 school building, as well as three additions to the school building completed in 1969.[59]

Harold Dana Crosby, AIA (licensed from 1948 – ca. 1990) was born in Fargo, North Dakota, on May 16, 1922, to Harold D. Crosby and Margaret Campbell. Harold started his study of architecture at North Dakota State College in 1939. He was president of Sigma Alpha Epsilon in 1940. Between 1942 and 1944, he worked for Boeing Aircraft as a tooling engineer. During WWII, he was enlisted in the U.S. Army and served as an engineer stationed in Manila until his honorable discharge in 1946. On his return to the U.S., he finished his studies at North Dakota State College, receiving his B.A. in Architecture in 1948. Upon graduation, he moved to San Francisco, where he began his architectural career at Masten and Hurd (subsequently, Masten, Hurd, and Gwathmey; and Gwathmey, Sellier, and Crosby), where he worked his entire career. During his career, he worked on various building types, including educational, medical, research, transportation, and commercial facilities. Harold died in 2013.

HISTORIC ARCHITECTURAL SURVEY

On October 29, 2021, EDS Principal Architectural Historian Stacey De Shazo, M.A., completed a historic architectural survey of the Project Area, including the 1968 school building, 1972 shed building, and associated landscape. The following section documents the results of the survey.

1968 SCHOOL BUILDING

The 1968 school building is associated with Mid-Century Modern architecture. The building is constructed on a terraced site, with the building complex centrally located within two sports fields on either side of the building. The 1968 school building is an irregular plan with a flat roof and consists of three square-shaped additions constructed in 1969. Two of the three additions are along the primary façade of the original 1968 building form, and one is at the rear of the original building. The building is constructed of concrete and is clad in red brick, stucco, and decorative wood trim. The roof of the 1968 school building is flat and clad in a roofing membrane material, and the roof of the three 1969 additions are clad in contemporary standing seam roofing material, painted green. The building rests on a concrete pad foundation.

Southwest Elevation (Primary Façade)

The southwest elevation (primary façade) is the front entrance to the school (Figure 25). The primary façade of the school is clad in red brick laid out in a running bond pattern (Figure 26). There is a wide roof cornice clad in vertical wood boards. There is a recessed front entry that is accessed via a terraced concrete walkway. The recessed entrance consists of a ribbon of windows with lower fixed transoms that flank each side of two

[59] Newspapers.com, "Park Pacifica School Will Get Three Classrooms", Pacifica Tribune, Wednesday, May 1, 1968.

sets of primary double-entry metal doors (Figure 27). Each sidewall of the recessed entrance is clad in red brick in a running bond pattern and vertical wood boards. The ceiling within the recessed form is clad in wood paneling. There are two single entry metal doors along the primary façade that are flanked on one side with a tall, narrow, fixed window with a fixed transom at the top and bottom of each window. One of the doors has a metal hood above the door, which appears original to the building. There are two square-shaped 1969 additions along this elevation with pyramid-shaped roofs (Figure 28). Each addition is clad in stucco with a wide cornice clad in vertical wood boards set below a narrow roof overhang. The two 1969 additions consist of corners along each side of the form with recessed entrances providing access to two classrooms within each corner. Each of the classroom entrances consists of a single metal door topped by a fixed transom window and flanked on one side with a tall, narrow, fixed window with fixed transoms at the top and bottom of each window.



Figure 25. Southwest elevation (primary façade), facing northeast.



Figure 26. Photograph showing the terraced entry leading to the recessed front entrance of the 1968 school building.



Figure 27. Photograph showing one set of the double-entry doors flanked by fixed windows with wood trim within the recessed front entrance.



Figure 28. Southwest elevation of two of the 1969 additions, facing northeast.

Southeast Elevation

The southeast elevation consists of the two square-shaped 1969 additions with pyramid-shaped roofs (Figure 29). The canted corners with recessed entrances to classrooms are visible along this elevation. Each corner entrance consists of a single-entry metal door topped by a fixed transom and flanked on one side with tall, narrow, fixed windows with fixed transoms at the top and bottom of each window (Figure 30). The southeast elevation of the 1969 rear addition is also visible from this elevation (Figure 31), consisting of canted corners with recessed entrance to two classrooms within each recessed form. Each entry includes a single-entry metal door topped by a fixed transom and flanked on one side with tall, narrow, fixed windows with fixed transoms at the top and bottom of each window.



Figure 29. Southeast elevation, showing the 1969 additions.



Figure 30. Photograph showing the single-entry doors to the classrooms, facing northwest.



Figure 31. Southeast elevation of the rear 1969 addition, facing northwest.

Northeast Elevation

The northeast elevation consists of a portion of the original 1968 building form and rear 1969 addition. The original 1968 form is clad in painted brick in a running bond pattern. Along this section of the building is a canted and recessed entrance consisting of two classroom doors (Figure 32 and Figure 33). Each door is flanked on one side with a tall, narrow, fixed window with a fixed transom at the top and bottom of each window. The canted and recessed entrance consists of a wide cornice clad in vertical wood boards and a ceiling clad in wood paneling. There is a narrow walkway that connects the two primary façades of the 1969 additions (left) with the original 1968 form, facing southwest (Figure 35). The rear 1969 addition is also visible from the northeast elevation. The 1969 addition is clad in stucco with a wide roof cornice clad in vertical wood boards set below a narrow roof overhang. The rear 1969 addition consists of canted corners along each side of the form with recessed entrances providing access to two classrooms within each corner. Each of the classroom entrances consists of a single metal door topped by a fixed transom window and flanked on one side with a tall, narrow, fixed window with fixed transoms at the top and bottom of each window.



Figure 32. Photograph showing the classroom entrances set within the canted and recessed forms, facing southwest.



Figure 33. Photograph showing the canted form, facing northwest.



Figure 34. Northeast elevation, facing southwest.



Figure 35. Narrow walkway that connects the 1969 addition (left) with the original 1968 form, facing southwest.



Figure 36. The rear of the 1969 addition, facing southwest.

Northwest Elevation

The northwest elevation faces Oddstad Boulevard and is situated along a terraced elevation. The northwest elevation consists of the southernmost primary façade 1969 addition (Figure 37), the northeast elevation of the original 1969 form (Figure 38), and the rear 1969 addition. The northwest elevation of the primary façade of the 1969 addition consists of two single entry metal doors topped with a fixed transom and a canted and recessed corner at each end of the form. The 1968 school building is clad in red brick laid out in a running bond pattern and wide cornices clad in vertical wood boards. Two single entry metal doors are flanked on one side with a tall, narrow, fixed window with a fixed transom at the top and bottom of each window along the original form. The cornice along the original 1968 school building consists of lettering that states "ANRES F ODDSTAD School,"[60] which is the original Icelandic spelling of Andy. On the roof of the original 1968 school building is a vertical metal form that appears to have been added in the 2000s and likely houses the building's heating, ventilation, and air conditioning (HVAC) (Figure 39). The rear 1969 addition is also visible along this elevation. It consists of two single entry metal doors topped with a fixed transom and a canted and recessed corner at each end of the form within access to two classrooms, via single entry metal doors flanked on one side with a tall, narrow, fixed window with a fixed transom at the top and bottom of each window (Figure 40).

[60] The first name given to the school in 1968 was the "Andy F. Oddstad School".



Figure 37. Northwest elevation of the southernmost primary façade 1969 addition, facing southeast.



Figure 38. Photograph showing the original 1968 school building, facing northeast.



Figure 39. Northwest elevation, facing northeast.



Figure 40. Photograph showing the rear 1969 addition, facing east.

CA. 1972 SHED BUILDING

The ca. 1972 shed building is not associated with any architectural style or form. The wood-framed rectangular building consists of a wide eave overhang along the primary façade (west elevation) (Figure 41). The building rests on a raised post and pier foundation. The building is clad in vertical wood panels and the roof is clad in a roofing membrane material. There appears to be three classrooms within the building and three entry doors, accessed via wood steps at two classrooms and an accessibility ramp at the third classroom. The classroom doors are metal. There appears to have been transom windows along the primary façade that are painted with a mural covering the entirety of the west elevation. The north and south elevations are void of fenestration (Figure 42). The east elevation consists of transom windows, and mechanical equipment (Figure 43).



Figure 41. Photograph showing the primary façade of the ca. 1972 shed building, facing northeast.



Figure 42. North elevation, facing south.



Figure 43. Photograph showing the south and east elevations, facing north.

ASSOCIATED LANDSCAPE

The associated landscape consists of concrete steps and metal handrails that provide access to the terraced areas throughout the Project Area and decorative brick garden walls (Figure 44), three ca. 1968globe lighting fixtures set on metal posts (Figure 45), front (southernmost) sports field (Figure 46), ca. 1968 concrete drainage (Figure 47), brick and concrete retaining wall (age unknown) (Figure 48), asphalt playground (Figure 49), and rear (northernmost) sports field (Figure 50). Vegetation consists of grasses and various trees.



Figure 44. Photograph showing the concrete steps and brick garden wall along the primary façade of the 1968 school building.



Figure 45. Photograph showing the ca. 1968 globe lighting fixture at the primary façade of the 1968 school building, facing southwest.



Figure 46. Front (southernmost) sports field, facing southwest.



Figure 47. ca. 1968 concrete drainage that runs the perimeter of the Project Area.



Figure 48. Brick and concrete retaining wall (age unknown), near the northeastern corner of the 1968 school building, facing northeast.



Figure 49. Asphalt playground, facing northwest.



Figure 50. Showing the rear (northernmost) sports field northeast of the 1968 school building, facing southwest.

EVALUATION FOR HISTORICAL SIGNIFICANCE

The Project Area includes the 1968 school building, 1972 shed building, and associated landscape that were evaluated as a single resource to determine eligibility for listing on the CRHR. The 1968 school building was also evaluated individually for its association with Mid-Century Modern architecture with a period of significance of 1968, the date the construction of the school was completed.

CALIFORNIA REGISTER OF HISTORICAL RESOURCES

The CRHR is an inventory of significant architectural, archaeological, and historical resources in the State of California. Resources can be listed in the CRHR through several methods. State Historical Landmarks and NRHP listed properties are automatically listed in the CRHR. Properties can also be nominated to the CRHR by local governments, private organizations, or citizens. The CRHR follows *similar* guidelines to those used for the NRHP. One difference is that the CRHR identifies the Criteria for Evaluation numerically instead of alphabetically. Another difference, according to the OHP is that "It is possible that historical resources may not retain sufficient integrity to meet the criteria for listing in the NRHP, but they may still be eligible for listing in the California Register. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register if it maintains the potential to yield significant scientific or historical information or specific data".[61]

To qualify for listing in the CRHR a property must possess significance under one of the four criteria and have historical integrity. The process of determining integrity consists of evaluating seven variables or aspects that include location, design, setting, materials, workmanship, feeling and association. According to the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation*, these seven characteristics are defined as follows:

- **Location** is the place where the historic property was constructed.
- **Design** is the combination of elements that create the form, plans, space, structure, and style of the property.
- **Setting** addresses the physical environment of the historic property inclusive of the landscape and spatial relationships of the building(s).
- **Materials** refer to the physical elements that were combined or deposited during a particular period of time and in a particular pattern of configuration to form the historic property.
- **Workmanship** is the physical evidence of the crafts of a particular culture or people during any given period in history.
- **Feeling** is the property's expression of the aesthetic or historic sense of a particular period of time.
- **Association** is the direct link between an important historic event or person and a historic property.

The following section examines the individual eligibility of the 1968 school building, 1972 shed building, and

[61] California Office of Historic Preservation Technical Assistance Series #6 California Register and National Register: A Comparison (for purposes of determining eligibility for the California Register).

associated landscape for listing on the CRHR.

CRHR EVALUATION

1. **(Event): Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.**

   The Project Area containing the 1968 school building, 1972 shed building, and associated landscape is associated with the suburban residential development of Park Pacifica in the City of Pacifica. The construction of Park Pacifica began in 1962, and as a result of the housing development, the new 1968 school building was constructed within the new residential neighborhood. Although the 1968 school building was built to support the Park Pacifica residential neighborhood, there is no evidence that the development of Park Pacifica or the 1968 school building is associated with a significant event in California history. Instead, the construction of the 1968 school building was dependent on the number of houses sold within Park Pacifica neighborhood, constructed to offer single-family housing to those who could not afford to buy a house in areas such as San Francisco. In addition, the 1968 school building is not associated with the post-war housing boom of the 1940s and 1950s in California.

   Therefore, the 1968 school building, 1972 shed building, and associated landscape is not individually eligible for listing in the CRHR under Criterion 1.

2. **(Person): Is associated with the lives of persons important in our past.**

   The Project Area containing the 1968 school building, 1972 shed building, and associated landscape was thoroughly researched, and it does not appear to be associated with a person important in our past.

   Therefore, the 1968 school building, 1972 shed building, and associated landscape does not appear individually eligible for listing in the CRHR under Criterion 2.

3. **(Construction/Architecture): Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.**

   Architect: The 1968 school building was designed by local San Francisco architect **Harold Dana Crosby, AIA**, of Masten and Hurd, whose architectural work included educational, medical, research, transportation, and commercial facilities during his career. Crosby has not been recognized for greatness in architecture, nor did he complete any work that would distinguish him from other local architects. While he was a prolific (aka productive) architect in the San Francisco Bay Area, Crosby neither developed a style – necessary to establish distinction as a master architect – nor have any of his buildings received recognition through inclusion on local, state, or national registers of historic places. Furthermore, the 1968 school building does not reflect a style of architecture for which Crosby is known, as his works vary in style and form. In addition, Crosby is not a known or prominent architect listed as an important California architect within the PCAD, which was part of the online research completed by EDS. As such, based on Crosby's record as an architect, significance under

Criterion 3 has not been established in accordance with the regulations, which state that *"the property must express a particular phase in the development of the master's career, an aspect of his or her work, or a particular idea or theme in his or her craft".* Therefore, the 1968 school building was not found to be representative of the work of an important creative individual, or possess high artistic values in association with Crosby.

Architecture: The **1968 school building is associated with Mid-Century Modern** architecture with a period of significance of 1968, the date of construction. When designing a school to "fit" into a new neighborhood, architects often utilized the residential designs elements to convey continuity within new suburban communities, such as Park Pacifica. Mid-Century Modern schools are often featured within larger properties with a greater emphasis on landscaping and outdoor recreation and function over design. As such, plans were often irregular. The 1968 school building consists of some elements of Mid-Century Modern design such as a flat roof, and the original 1968 forms are irregular, but the design is restrained and lacks horizontal composition and stylistic elements such as angular shapes found in representative work or expansive ribbons of windows or plate glass. Although the 1968 school building contains Mid-Century Modern architectural details, it is a modest example and was likely restrained in design by budget and function. As such, the 1968 school building is not a representative example of Mid-Century Modern architecture.

The 1972 shed building and associated landscape are not associated with any architectural style, form, or landscape design.

Therefore, the 1968 school building, 1972 shed building, and associated landscape do not appear individually eligible for listing in the CRHR under Criterion 3.

4. **(Information potential): Has yielded, or may be likely to yield, information important in prehistory or history.**

Criterion 4 most commonly applies to resources that contain or are likely to contain information bearing on an important archaeological research question. While most often applied to archaeological sites, Criterion 4 can also apply to buildings that contain important information. For a building to be eligible under Criterion 4, it must be a principal source of important information, such as exhibiting a local variation on a standard design or construction technique can be eligible if a study can yield important information, such as how local availability of materials or construction expertise affected the evolution of local building development.

The 1968 school building does not appear to have the ability to convey information about the history of Mid-Century Modern architecture. *Therefore, the 1968 school building, 1972 shed building, and associated landscape do not appear individually eligible for listing in the CRHR under Criterion 4.*

INTEGRITY

For a property to qualify for listing in the CRHR, it must possess significance under one or more of the above listed criteria and have historic integrity. There are seven variables, or aspects, that are used to judge historic

integrity, including location, design, setting, materials, workmanship, feeling, and association.[62] A resource must possess the aspects of integrity related to the historical theme(s) and period of significance identified for the built-environment resources. National Register Bulletin 15 explains, "only after significance is fully established can you proceed to the issue of integrity."

The Project Area containing the 1968 school building, 1972 shed building, and associated landscape was not found to be eligible under any of the CRHR criteria; therefore, an integrity analysis was not completed.

CONCLUSIONS

EDS completed an HRE of the 1968 school building, 1972 shed building, and associated landscape at 930 Oddstad Boulevard (APN 023-672-600), in the City of Pacifica, San Mateo County, California, to determine if the building is eligible for listing on the CRHR (14 CCR §15064.5 and PRC§ 21084.1). The methods used to complete the HRE included research and an intensive level historic architectural survey completed by EDS Principal Architectural Historian Stacey De Shazo, M.A., who exceeds the Secretary of the Interior's qualification standards in Architectural History and History, and Bee Thao, M.A, who conducted research for the HRE.

The HRE determined that the resource consisting of the 1968 school building, 1972 shed building, and associated landscape does not meet the eligibility requirements for listing on the CRHR and is not currently listed on any national, state, or local register of historic resources; therefore, the resource does not meet the definition of a Historical Resource under CEQA. As such, any future proposed Project will not impact built-environment historical resources within the Project Area.

[62] National Park Service, *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (Washington, D.C.: United States Department of the Interior, 1997).

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U.C. Santa Barbara Library

1941 Aerial photograph of Santa Barbara

1943 Aerial photograph of Santa Barbara

1944 Aerial photograph of Santa Barbara

1952 Aerial photograph of Santa Barbara

1956 Aerial photograph of Santa Barbara

1965 Aerial photograph of Santa Barbara

1993 Aerial photograph of Santa Barbara

Appendix A:

DPR Forms

State of California The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code

Other Listings:
Review Code Reviewer Date

Page 1 **of** 21 ***Resource Name or #:** Oddstad Elementary School
P1. Other Identifier:

***P2. Location:** ☐ **Not for Publication** ☒ **Unrestricted**

***a. County** San Mateo County **and**

***b. USGS 7.5' Quad** Montara Mountain **Date** 1993 **T** 4S ; **R** 6W ; __ ☐ **of** __ ☐ **of Sec** un ; MD **B.M.**

c. Address 930 Oddstad Boulevard City Pacifica Zip 94044

d. UTM: Zone 10 , 578718 mE/ 4137282 mN

e. Other Locational Data: The resource is located within the 11.38-acre Accessor's Parcel Number (APN) 023-672-600 in the City of Pacifica. The Property is bounded by Oddstad Boulevard on the west, Big Bend Drive on the north, Frontierland Park on the east, and Yosemite Drive on the south.

***P3a. Description:** The resource includes a 1968 school building and associated landscape. The 1968 school building is associated with Mid-Century Modern Architecture. The construction of the building began in 1966 and was finished in 1968. The building is constructed on a terraced site, with the building complex centrally located within two sports fields on either side of the building. The 1968 school building is an irregular plan with a flat roof and consists of three square-shaped additions constructed in 1969. (Continued on Continuation Sheet, Page 2)

P5a. Photograph or Drawing



***P3b. Resource Attributes:** HP15. Educational building (1968 school building)

***P4. Resources Present:** ☒ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5b. Description of Photo 1966 school building; looking northeast

***P6. Date Constructed/Age and Source:** ☒ Historic ☐ Prehistoric ☐ Both 1968 school building

***P7. Owner and Address:** Name withheld by Owner

***P8. Recorded by:** Stacey De Shazo, M.A.; Evans & De Shazo, Inc., 1141 Gravenstein Highway S, Sebastopol, CA 95472

***P9. Date Recorded:** 10/29/2021

***P10. Survey Type:** Intensive

***P11. Report Citation:** Stacey De Shazo, M.A. and Bee Thao, M.A. (2021): Historic Resource Evaluation for the Proposed Pacifica School District Workforce Housing Project at 930 Oddstad Boulevard, Pacifica, San Mateo County, California

***Attachments:** ☐NONE ☒Location Map ☒Continuation Sheet ☐Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

(Continue from Primary Record, Page 1)

Two of the three additions are along the primary façade of the original 1968 building form, and one is at the rear of the original building. The building is constructed of concrete and is clad in red brick, stucco, and decorative wood trim. The roof of the 1968 school building is flat and clad in a roofing membrane material, and the roof of the three 1969 additions are clad in contemporary standing seam roofing material, painted green. The building rests on a concrete pad foundation.

Southwest Elevation (Primary Façade)

The southwest elevation (primary façade) is the front entrance to the school (Figure 1). The primary façade of the school is clad in red brick laid out in a running bond pattern (Figure 2). There is a wide roof cornice clad in vertical wood boards. There is a recessed front entry that is accessed via a terraced concrete walkway. The recessed entrance consists of a ribbon of windows with lower fixed transoms that flank each side of two sets of primary double-entry metal doors (Figure 3). Each sidewall of the recessed entrance is clad in red brick in a running bond pattern and vertical wood boards. The ceiling within the recessed form is clad in wood paneling. There are two single entry metal doors along the primary façade that are flanked on one side with a tall, narrow, fixed window with a fixed transom at the top and bottom of each window. One of the doors has a metal hood above the door, which appears original to the building. There are two square-shaped 1969 additions along this elevation with pyramid-shaped roofs (Figure 4). Each addition is clad in stucco with a wide cornice clad in vertical wood boards set below a narrow roof overhang. The two 1969 additions consist of corners along each side of the form with recessed entrances providing access to two classrooms within each corner. Each of the classroom entrances consists of a single metal door topped by a fixed transom window and flanked on one side with a tall, narrow, fixed window with fixed transoms at the top and bottom of each window.



Figure 1. Southwest elevation (primary façade), facing northeast.



Figure 2. Photograph showing the terraced entry leading to the recessed front entrance of the 1968 school building.



Figure 3. Photograph showing one set of the double-entry doors flanked by fixed windows with wood trim within the recessed front entrance.



Figure 4. Southwest elevation of two of the 1969 additions, facing northeast.

Southeast Elevation

The southeast elevation consists of the two square-shaped 1969 additions with pyramid-shaped roofs (Figure 5). The canted corners with recessed entrances to classrooms are visible along this elevation. Each corner entrance consists of a single-entry metal door topped by a fixed transom and flanked on one side with tall, narrow, fixed windows with fixed transoms at the top and bottom of each window (Figure 6). The southeast elevation of the 1969 rear addition is also visible from this elevation (Figure 7), consisting of canted corners with recessed entrance to two classrooms within each recessed form. Each entry includes a single-entry metal door topped by a fixed transom and flanked on one side with tall, narrow, fixed windows with fixed transoms at the top and bottom of each window.



Figure 5. Southeast elevation, showing the 1969 additions.



Figure 6. Photograph showing the single-entry doors to the classrooms, facing northwest.



Figure 7. Southeast elevation of the rear 1969 addition, facing northwest.

Northeast Elevation

The northeast elevation consists of a portion of the original 1968 building form and rear 1969 addition. The

original 1968 form is clad in painted brick in a running bond pattern. Along this section of the building is a canted and recessed entrance consisting of two classroom doors (Figure 8 and Figure 9). Each door is flanked on one side with a tall, narrow, fixed window with a fixed transom at the top and bottom of each window. The canted and recessed entrance consists of a wide cornice clad in vertical wood boards and a ceiling clad in wood paneling. There is a narrow walkway that connects the two primary façades of the 1969 additions (left) with the original 1968 form, facing southwest (Figure 11). The rear 1969 addition is also visible from the northeast elevation. The 1969 addition is clad in stucco with a wide roof cornice clad in vertical wood boards set below a narrow roof overhang. The rear 1969 addition consists of canted corners along each side of the form with recessed entrances providing access to two classrooms within each corner. Each of the classroom entrances consists of a single metal door topped by a fixed transom window and flanked on one side with a tall, narrow, fixed window with fixed transoms at the top and bottom of each window.



Figure 8. Photograph showing the classroom entrances set within the canted and recessed forms, facing southwest.



Figure 9. Photograph showing the canted form, facing northwest.



Figure 10. Northeast elevation, facing southwest.



Figure 11. Narrow walkway that connects the 1969 addition (left) with the original 1968 form, facing southwest.



Figure 12. The rear of the 1969 addition, facing southwest.

Northwest Elevation

The northwest elevation faces Oddstad Boulevard and is situated along a terraced elevation. The northwest elevation consists of the southernmost primary façade 1969 addition (Figure 13), the northeast elevation of the original 1969 form (Figure 14), and the rear 1969 addition. The northwest elevation of the primary façade of the 1969 addition consists of two single entry metal doors topped with a fixed transom and a canted and recessed corner at each end of the form. The 1968 school building is clad in red brick laid out in a running bond pattern and wide cornices clad in vertical wood boards. Two single entry metal doors are flanked on one side with a tall, narrow, fixed window with a fixed transom at the top and bottom of each window along the original form. The cornice along the original 1968 school building consists of lettering that states "ANRES F ODDSTAD School,"[1] which is the original Icelandic spelling of Andy. On the roof of the original 1968 school building is a vertical metal form that appears to have been added in the 2000s and likely houses the building's heating, ventilation, and air conditioning (HVAC) (Figure 15). The rear 1969 addition is also visible along this elevation. It consists of two single entry metal doors topped with a fixed transom and a canted and recessed corner at each end of the form within access to two classrooms, via single entry metal doors flanked on one side with a tall, narrow, fixed window with a fixed transom at the top and bottom of each window (Figure 16).



Figure 13. Northwest elevation of the southernmost primary façade 1969 addition, facing southeast.

[1] The first name given to the school in 1968 was the "Andy F. Oddstad School".



Figure 14. Photograph showing the original 1968 school building, facing northeast.



Figure 15. Northwest elevation, facing northeast.



Figure 16. Photograph showing the rear 1969 addition, facing east.

ca. 1972 Shed Building

The ca. 1972 shed building is not associated with any architectural style or form. The wood-framed rectangular building consists of a wide eave overhang along the primary façade (west elevation) (Figure 17). The building rests on a raised post and pier foundation. The building is clad in vertical wood panels and the roof is clad in a roofing membrane material. There appears to be three classrooms within the building and three entry doors, accessed via wood steps at two classrooms and an accessibility ramp at the third classroom. The classroom doors are metal. There appears to have been transom windows along the primary façade that are painted with a mural covering the entirety of the west elevation. The north and south elevations are void of fenestration (Figure 18). The east elevation consists of transom windows, and mechanical equipment (Figure 19).



Figure 17. Photograph showing the primary façade of the ca. 1972 shed building, facing northeast.



Figure 18. North elevation, facing south.



Figure 19. Photograph showing the south and east elevations, facing north.

Associated Landscape

The associated landscape consists of concrete steps and metal handrails that provide access to the terraced areas throughout the property and decorative brick garden walls (Figure 20), three ca. 1968 globe lighting fixtures set on metal posts (Figure 21), front (southernmost) sports field (Figure 22), ca. 1968 concrete drainage (Figure 23), brick and concrete retaining wall (age unknown) (Figure 24), asphalt playground (Figure 25), and rear (northernmost) sports field (Figure 26). Vegetation consists of grasses and various trees.



Figure 20. Photograph showing the concrete steps and brick garden wall along the primary façade of the 1968 school building.



Figure 21. Photograph showing the ca. 1968 globe lighting fixture at the primary façade of the 1968 school building, facing southwest.



Figure 22. Front (southernmost) sports field, facing southwest.



Figure 23. ca. 1968 concrete drainage that runs the perimeter of the property.



Figure 24. Brick and concrete retaining wall (age unknown), near the northeastern corner of the 1968 school building, facing northeast.



Figure 25. Asphalt playground, facing northwest.



Figure 26. Showing the rear (northernmost) sports field northeast of the 1968 school building, facing southwest.

CRHR Evaluation

1. **(Event): Is associated with events that have made a significant contribution to the broad patterns**

of California's history and cultural heritage.

The property containing the 1968 school building, 1972 shed building, and associated landscape is associated with the suburban residential development of Park Pacifica in the City of Pacifica. The construction of Park Pacifica began in 1962, and as a result of the housing development, the new 1968 school building was constructed within the new residential neighborhood. Although the 1968 school building was built to support the Park Pacifica residential neighborhood, there is no evidence that the development of Park Pacifica or the 1968 school building is associated with a significant event in California history. Instead, the construction of the 1968 school building was dependent on the number of houses sold within Park Pacifica neighborhood, constructed to offer single-family housing to those who could not afford to buy a house in areas such as San Francisco. In addition, the 1968 school building is not associated with the post-war housing boom of the 1940s and 1950s in California.

Therefore, the 1968 school building, 1972 shed building, and associated landscape is not individually eligible for listing in the CRHR under Criterion 1.

2. **(Person): Is associated with the lives of persons important in our past.**

The property containing the 1968 school building, 1972 shed building, and associated landscape was thoroughly researched, and it does not appear to be associated with a person important in our past.

Therefore, the 1968 school building, 1972 shed building, and associated landscape does not appear individually eligible for listing in the CRHR under Criterion 2.

3. **(Construction/Architecture): Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.**

Architect: The 1968 school building was designed by local San Francisco architect **Harold Dana Crosby, AIA**, of Masten and Hurd, whose architectural work included educational, medical, research, transportation, and commercial facilities during his career. Crosby has not been recognized for greatness in architecture, nor did he complete any work that would distinguish him from other local architects. While he was a prolific (aka productive) architect in the San Francisco Bay Area, Crosby neither developed a style – necessary to establish distinction as a master architect – nor have any of his buildings received recognition through inclusion on local, state, or national registers of historic places. Furthermore, the 1968 school building does not reflect a style of architecture for which Crosby is known, as his works vary in style and form. In addition, Crosby is not a known or prominent architect listed as an important California architect within the PCAD, which was part of the online research completed by EDS. As such, based on Crosby's record as an architect, significance under Criterion 3 has not been established in accordance with the regulations, which state that *"the property must express a particular phase in the development of the master's career, an aspect of his or her work, or a particular idea or theme in his or her craft".* Therefore, the 1968 school building was not found to be representative of the work of an important creative individual or possess high artistic values in

association with Crosby.

Architecture: The **1968 school building is associated with Mid-Century Modern** architecture with a period of significance of 1968, the date of construction. When designing a school to "fit" into a new neighborhood, architects often utilized the residential designs elements to convey continuity within new suburban communities, such as Park Pacifica. Mid-Century Modern schools are often featured within larger properties with a greater emphasis on landscaping and outdoor recreation and function over design. As such, plans were often irregular. The 1968 school building consists of some elements of Mid-Century Modern design such as a flat roof, and the original 1968 forms are irregular, but the design is restrained and lacks horizontal composition and stylistic elements such as angular shapes found in representative work or expansive ribbons of windows or plate glass. Although the 1968 school building contains Mid-Century Modern architectural details, it is a modest example and was likely restrained in design by budget and function. As such, the 1968 school building is not a representative example of Mid-Century Modern architecture.

The 1972 shed building and associated landscape are not associated with any architectural style, form, or landscape design.

Therefore, the 1968 school building, 1972 shed building, and associated landscape do not appear individually eligible for listing in the CRHR under Criterion 3.

4. (Information potential): Has yielded, or may be likely to yield, information important in prehistory or history.

Criterion 4 most commonly applies to resources that contain or are likely to contain information bearing on an important archaeological research question. While most often applied to archaeological sites, Criterion 4 can also apply to buildings that contain important information. For a building to be eligible under Criterion 4, it must be a principal source of important information, such as exhibiting a local variation on a standard design or construction technique can be eligible if a study can yield important information, such as how local availability of materials or construction expertise affected the evolution of local building development.

The 1968 school building does not appear to have the ability to convey information about the history of Mid-Century Modern architecture. *Therefore, the 1968 school building, 1972 shed building, and associated landscape do not appear individually eligible for listing in the CRHR under Criterion 4.*

State of California Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

 ***Resource Name or #** 930 Oddstad Boulevard

***Map Name:** USGS 7.5' Montara Mountain Quadrangle ***Scale:** 1:24,000 ***Date of map:** 1993



Resource Location Map

1968 School Building, 1972 Shed and Associated Landscape
930 Oddstad Boulevard, Pacifica
San Mateo County, California
(APN 023-672-600)

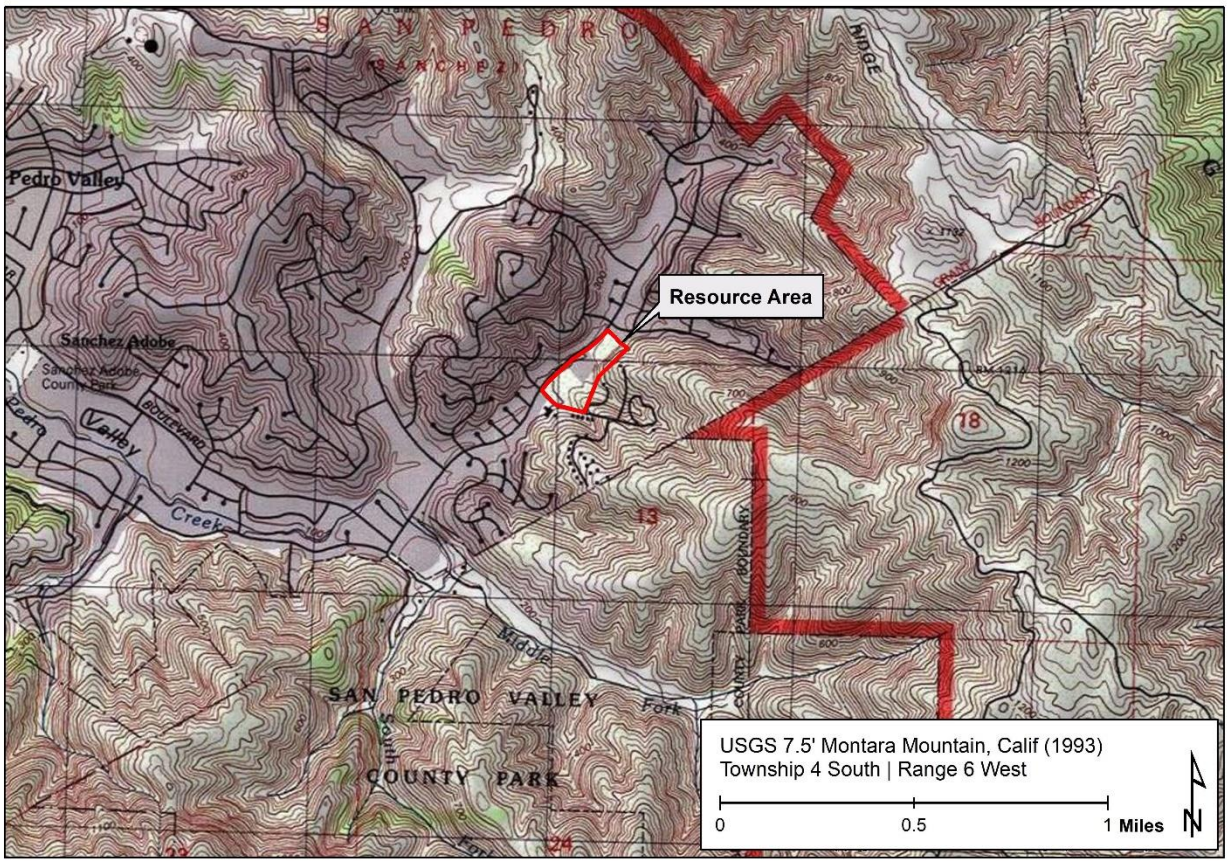
LEGEND

Resource Area



Map by: Sally Evans, 12/23/2021

EVANS & DE SHAZO
ARCHAEOLOGY
HISTORIC PRESERVATION



APPENDIX 4.4-B: CULTURAL RESOURCES EVALUATION FOR THE PROPOSED PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING PROJECT, PREPARED BY EVANS & DE SHAZO, DECEMBER 30, 2021 (CONFIDENTIAL).

Please note that due to the sensitive content and confidential nature of this report, it is not included for public review.

APPENDIX 4.5-A: GEOTECHNICAL INVESTIGATION PROPOSED PACIFICA WORKFORCE HOUSING, 930 ODDSTAD BOULEVARD, PACIFICA, CALIFORNIA, PREPARED BY ROCKRIDGE GEOTECHNICAL, AUGUST 20, 2020.

ROCKRIDGE GEOTECHNICAL

Prepared for **Pacifica School District**

GEOTECHNICAL INVESTIGATION
PROPOSED PACIFICA WORKFORCE HOUSING
930 ODDSTAD BOULEVARD
Pacifica, California

DRAFT

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August 20, 2020
Project No. 20-1874

270 Grand Avenue
Oakland, CA 94610

www.rockridgegeo.com

510 420-5738 tel
510 652-3096 fax

ROCKRIDGE GEOTECHNICAL

August 20, 2020
Project No. 20-1874

Ms. Josie Peterson
Chief Business Official
Pacifica School District
375 Reina del Mar Avenue
Pacifica, California 94044

Subject: Geotechnical Investigation
Proposed Pacifica Workforce Housing
930 Oddstad Boulevard
Pacifica, California

DRAFT

Dear Ms. Peterson,

We are pleased to present the results of our geotechnical investigation for the proposed Pacifica School District workforce housing to be constructed at 930 Oddstad Boulevard in Pacifica, California. Our services were provided in accordance with our proposal dated June 10, 2020.

The site is on the eastern side of Oddstad Boulevard, between Big Bend Drive to the north and Yosemite Drive to the south. The site is bordered by Oddstad Boulevard to the west, an existing play field to the south, houses to the north, and a hill to the east. The site encompasses about 7.5 acres and is situated on a fill pad. The hillside bordering the southeastern limit of the site slopes up towards the southeast. Currently, the site is occupied by several one-story school buildings, paved parking lots and vacant land.

Plans are to demolish the existing school buildings and construct seven residential buildings with 70 dwelling units; four buildings for site office, bike storage, and trash enclosures; and two community amenity buildings. The proposed residential buildings will be two stories high and the other proposed buildings will be one story high. All proposed buildings will be constructed at-grade. Other site improvements include landscaped courtyards, new driveways, new carports, and a retaining wall that will be up to about 10 feet high along the eastern property line.

From a geotechnical standpoint, we conclude the site can be developed as planned, provided the recommendations presented in this report are incorporated into the project plans and specifications and implemented during construction. The primary geotechnical concerns for the site are: (1) the presence of up to about 35 feet of fill underlying the site, some of which is undocumented, and (2) providing adequate foundation support for the

proposed buildings. We conclude the proposed buildings may be supported on stiffened continuous footings or mat foundations.

The recommendations contained in our report are based on a limited subsurface exploration and laboratory testing program. Consequently, variations between expected and actual subsurface conditions may be found in localized areas during construction. Therefore, we should be engaged to observe excavation, grading, and installation of foundations, during which time we may make changes in our recommendations, if deemed necessary

We appreciate the opportunity to provide our services to you on this project. If you have any questions, please call.

Sincerely yours,
ROCKRIDGE GEOTECHNICAL, INC.





Linda H. J. Liang, P.E., G.E.
Associate Engineer

Craig S. Shields, P.E., G.E.
Principal Geotechnical Engineer



Lou M. Gilpin, Ph.D.
Engineering Geologist

DRAFT

ROCKRIDGE GEOTECHNICAL

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Figures A-1 through A-9 Cone Penetration Test Results

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Figure A-19 Classification Chart

Figure A-20 Physical Properties Criteria for Rock Descriptions

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APPENDIX B

Figures B-1 and B-2	Partical Size Distribution
Figure B-3	R-value Test Results
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GEOTECHNICAL INVESTIGATION
PROPOSED PACIFICA WORKFORCE HOUSING
930 ODDSTAD BOULEVARD
Pacifica, California

1.0 INTRODUCTION

This report presents the results of the geotechnical investigation performed by Rockridge Geotechnical, Inc. for the proposed Pacifica School District workforce housing to be constructed at 930 Oddstad Boulevard in Pacifica, California. The site is on the eastern side of Oddstad Boulevard, between Big Bend Drive to the north and Yosemite Drive to the south, as shown on the Site Location Map, Figure 1.

The site for the proposed Pacifica workforce housing is bordered by Oddstad Boulevard to the west, an existing play field to the south, houses to the north, and a hill to the east, as shown on the Site Plan, Figure 2. The site encompasses about 7.5 acres and is situated on a fill pad. The site slopes up towards the northeast with site elevations varying from about Elevation 231 feet[1] along the southwest to about Elevation 249 feet along the northeast. The hillside bordering the southeastern limit of the site slopes up towards the southeast. Currently, the site is occupied by several one-story school buildings, paved parking lots and vacant land.

Plans are to demolish the existing school buildings and construct seven residential buildings with 70 dwelling units; four buildings for site office, bike storage, and trash enclosures; and two community amenity buildings. The proposed residential buildings will be two stories high and the other proposed buildings will be one story high. All proposed buildings will be constructed at-grade. Other site improvements include landscaped courtyards, new driveways, new carports, and a retaining wall that will be up to about 10 feet high along the eastern property line.

2.0 SCOPE OF SERVICES

Our geotechnical investigation was performed in accordance with our proposal dated June 10, 2020. Our scope of services consisted of reviewing available geotechnical and geologic

[1] Elevations references the City of Pacifica datum.

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information of the site and vicinity, exploring the subsurface conditions at the site by drilling test borings and performing cone penetration tests (CPTs), and performing engineering analyses to develop conclusions and recommendations regarding:

- site and subsurface conditions
- site seismicity and seismic/geologic hazards (i.e. landslide, ground shaking, fault rupture, liquefaction and cyclic densification)
- the most appropriate foundation type(s) for the proposed buildings
- design criteria for the recommended foundation type(s), including vertical and lateral capacities for each of the foundation type(s)
- estimates of foundation settlement
- slab-on-grade floors
- lateral earth pressures for design of site retaining walls
- temporary cut slopes and shoring, as appropriate
- site grading and excavation, including criteria for fill quality and compaction
- subgrade preparation for exterior concrete flatwork
- surface drainage and bioswales, including design infiltration rates
- flexible and rigid pavement design
- 2019 California Building Code (CBC) site class and design spectral response acceleration parameters
- corrosivity of the near-surface soil and the potential effects on buried concrete and metal structures and foundations
- construction considerations.

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3.0 DOCUMENTS REVIEWED

Documents reviewed for the project include geotechnical reports prepared in the 1960s for the existing buildings and recent geotechnical and geological studies for the currently proposed Pacifica workforce housing. In 1966, Dames & Moore (D&M) performed a geotechnical investigation for the existing school at this site and presented their findings and recommendations in a report titled *Foundation Investigation, Proposed Park Pacifica Elementary School, Pacifica, California*, dated August 25, 1966 (D&M 1966). During

construction of the existing site improvements D&M performed construction observation and testing and prepared a letter summarizing the results in a letter dated April 25, 1967 (D&M 1967). D&M prepared a report titled *Engineering Study, Proposed Additions to the Andreas F. Oddstad School, Pacifica, California*, and dated August 19, 1968 (D&M 1968) for two new buildings and additions. Geologic and geotechnical evaluations of the site are presented in memorandum and letter reports by Slate Geotechnical Consultants (2018, 2019a, 2019b, & 2020).

4.0 FIELD INVESTIGATION AND LABORATORY TESTS

We explored the subsurface conditions at the site by performing nine CPTs and drilling six test borings. In addition, we performed three borehole infiltration tests to measure infiltration rates in proposed bioretention areas. Prior to drilling, we obtained a permit from the San Mateo County Environmental Health Services Division (SMCEHSD) and contacted Underground Service Alert (USA) to notify them of our work, as required by law. We also retained Precision Locating LLC, a private utility locator, to check that the CPT, boring, and infiltration test locations were clear of buried utilities. Details of our field investigation are presented in this section.

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4.1 Cone Penetration Tests

Nine CPTs, designated as CPT-1 through CPT-9, were performed by Middle Earth Geo Testing, Inc. of Orange, California on July 9, 2020 to provide in-situ soil data. The approximate locations of the CPTs are shown on Figure 2. The CPTs were each advanced to a depth of about 50 feet below the ground surface (bgs), except for CPT-2 which encountered practical refusal at a depth of 40 feet bgs.

The CPTs were performed by hydraulically pushing a 1.7-inch-diameter cone tipped probe with a projected area of 15 square centimeters into the ground. The cone-tipped probe measured tip resistance and the friction sleeve behind the cone tip measured frictional resistance. Electrical strain gauges within the cone continuously measured soil parameters for the entire depth advanced. Soil data, including tip resistance and frictional resistance, were recorded by a

computer while the test was conducted. Accumulated data were processed by computer to provide engineering information such as the types and approximate strength characteristics of the soil encountered. The CPT logs showing tip resistance, friction ratio, and pore pressure, as well as correlated soil behavior type, are presented in Appendix A on Figures A-1 through A-9.

Upon completion, the CPTs were backfilled with cement grout in accordance with the SMCEHSD grouting requirements.

4.2 Test Borings

Six borings, designated as B-1 through B-6, were drilled on July 15 and 22, 2020 by Exploration Geoservices, Inc. of San Jose, California at the approximate locations shown on Figure 2. The borings were each drilled to depths of 30 to 31-1/2 feet bgs using a truck-mounted drill rig equipped with eight-inch-diameter hollow-stem flight augers. Exploration Geoservices also drilled and set up three borehole infiltration tests, designated as IT-1 through IT-3, at the approximate locations shown on Figure 2 on July 15, 2020. The boreholes for all three infiltration tests were drilled to a depth of 7 feet bgs. Details for the infiltration tests are presented in Section 4.4.

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During drilling, our field geologist logged the soil and bedrock encountered and obtained representative samples for visual classification and laboratory testing. The logs of borings, including the borings for infiltration tests, are presented on Figures A-10 through A-18 in Appendix A. The soil and bedrock encountered in the borings were classified in accordance with the classification charts shown on Figures A-19 and A-20.

Soil and bedrock samples were obtained using the following samplers:

- Sprague and Henwood (S&H) split-barrel sampler with a 3.0-inch outside diameter and 2.5-inch inside diameter, lined with 2.43-inch inside diameter stainless steel tubes.
- Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside and 1.5-inch inside diameter; the sampler can accommodate liners, but liners were not used.

The type of sampler used was selected based on soil type and the desired sample quality for laboratory testing. In general, the S&H samplers were used to obtain samples in medium stiff to

very stiff cohesive soil and the SPT sampler was used to evaluate the relative density of granular soil or to sample hard clays. The samplers were driven with a 140-pound, downhole safety hammer falling 30 inches per drop from a rope-and-cathead system. The samplers were driven up to 18 inches and the hammer blows required to drive the samplers were recorded every six inches and are presented on the boring logs. A "blow count" is defined as the number of hammer blows per six inches of penetration or 50 blows for six inches or less of penetration. The blow counts required to drive the S&H and SPT samplers were converted to approximate SPT N-values using factors of 0.63 and 1.1, respectively, to account for sampler type and approximate hammer energy. The blow counts used for this conversion were: (1) the last two blow counts if the sampler was driven more than 12 inches, (2) the last one blow count if the sampler was driven more than six inches but less than 12 inches, and (3) the only blow count if the sampler was driven six inches or less. The converted SPT N-values are presented on the boring logs.

Upon completion of drilling (and infiltration tests), the boreholes were backfilled with cement grout in accordance with the requirements of SMCEHSD. The soil cuttings from the borings were spread in landscaping areas on site.

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4.3 Laboratory Testing

We re-examined the soil samples obtained from the borings to confirm the field classifications and selected representative samples for laboratory testing. We performed laboratory tests to measure moisture content, dry density, particle-size distribution, resistance value (R-value), and corrosivity. The results of the laboratory tests are presented on the boring logs and attached in Appendix B.

4.4 Infiltration Tests

On July 15, 2020, we drilled three boreholes, designated as IT-1 through IT-3, at the approximate locations shown on Figure 2, and set up the boreholes for infiltration tests. The boreholes were eight inches in diameter and bottomed at seven feet bgs. We also obtained soil samples from the bottom of each borehole for laboratory tests to determine the particle-size

distribution and effective particle sizes where 10 percent of the particles are finer (D_{10}); the laboratory test results are presented on the boring logs and attached in Appendix B.

A four-inch-diameter slotted PVC pipe was placed in each of the boreholes and the bottom three feet of the annulus between the boreholes and the PVC pipes were backfilled with pea gravel. The boreholes were presoaked on July 15, 2020. On July 16, 2020, we presoaked the boreholes a second time and then we proceeded to perform the infiltration tests.

During the infiltration tests, we maintained about 12 inches of water above the bottom of the boreholes. We took groundwater level measurements in about 15-minute intervals until steady state measurements were obtained for the final three readings. The results of our infiltration tests are presented in Table 1. On July 22, 2020, the PVC pipes were removed from the boreholes and the boreholes were backfilled cement grout.

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TABLE 1
Infiltration Test Summary

Test	Ground Surface Elevation (feet)	Infiltration Test Elevation (feet)	D_{10} (mm)	Correction Factor	Measured Infiltration Rate (inches/hour)	Design Infiltration Rate (inches/hour)
IT-1	231	224	<0.10	0.10	8.64	0.86
IT-2	231	224	0.13	0.15	0.96	0.14
IT-3	231	224	>0.10	0.15	0.96	0.14
Average Infiltration Rates:					3.52	0.38

The document titled *Determination of Design Infiltration Rates for the Sizing of Infiltration-based Green Infrastructure Facilities*, prepared by the San Francisco Public Utilities Commission and dated September 2016 recommends a correction factor (CF) of 0.15 and 0.10 be applied to borehole infiltration test results to determine the design infiltration rate where D_{10} (effective particle sizes where 10 percent of the particles are finer) is higher and lower than 0.1 mm, respectively. Therefore, the design infiltration rates for IT-1, IT-2, and IT-3 are 0.86, 0.14

and 0.14 inches per hour, respectively; and the average design infiltration rate is 0.38 inches per hour.

5.0 REGIONAL AND SITE GEOLOGY

5.1 Regional Geology

Predominantly Franciscan Complex rocks of Jurassic and Cretaceous age (160 to 100 million years old) comprise the Santa Cruz Mountains, the spine of the San Mateo Peninsula that forms the west side of the San Francisco Bay. The Santa Cruz Mountains have been elevated by the stresses induced by the gentle bend in the San Andreas fault on the southern end of the Peninsula.

The steep slopes of the westward draining canyons that characterize the hills above Pacifica were formed by uplift from fault interaction and subsequent incision by the erosion from heavy winter storms. Historic debris landslides in Pacifica (Cannon and Ellen, 1985; Ellen and Wieczorek, 1988; Jayko and others, 1999, Shlemon and others, 1987; Smith and Hart, 1982;Wentworth, 1986; Wentworth and others, 1985; Wieczorek and others, 1985; Wright and Nilsen, 1974; Howard Donley Associates, 1982) documented the catastrophic combination of high relief mountainous terrain and heavy winter storm activities. One of the debris flows occurred above Frontier Park at the top of Yosemite Drive (Howard Donley Associates, 1982); Frontier Park is located 550 feet southeast of the proposed Pacifica workforce housing site. It deposited debris on the upper playing field of the park as a result of the heavy rains of January 1982. Deposition of eroded materials onto the gently sloping valley floors and along the shoreline of the coastal mountain fronts resulted in accumulations of interlayered alluvial/slope and ravine debris fans, marine terraces, and localized beach sand deposits.

5.2 Site Geology

The site is located inland from the beach and shorelines that characterize the Highway 1 corridor. The site occupies a prominent corner of Yosemite Drive and Oddstad Boulevard in the Park Pacifica neighborhood of Pacifica. Frontier Park, located about 550 feet southeast of the proposed Pacifica workforce housing site, steps up the heavily vegetated hill above the site on

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several graded benches that provide expansive playing fields and recreation areas. The eastern 530 feet of the proposed Pacifica workforce housing site lies at the toe of a steep slope that crops out sandstone bedrock in prominent knobs, approximately mid-slope, at its eastern and western extents.

We reviewed seven stereo pairs of aerial photographs of the site for the period between 1946 and 2005 at Pacific Aerial Surveys in Novato, California. The pairs provide stereograph views of the site over time. The photographs reviewed are summarized in Table 2.

TABLE 2
Aerial Photographs Reviewed

Date	Photo Number	Scale	Source
3-11-05	AV-9010-81-5, 6	1:10,000	Pacifica Aerial Surveys
6-23-97	AV-5434-104-20, 21	1:12,000	Pacifica Aerial Surveys
6-06-83	AV-2263-03-22, 23	1:12,000	Pacifica Aerial Surveys
6-19-81	AV-2020-03-24, 25	1:12,000	Pacifica Aerial Surveys
12-30-69	AV-933-04-26, 27	1:12,000	Pacifica Aerial Surveys
4-14-66	AV-710-05-33, 34	1:36,000	Pacifica Aerial Surveys
4-14-46	AV 09-14-3, 4	1:23,600	Pacifica Aerial Surveys

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Standard aerial photograph review techniques were employed to identify site history and slope stability features at the site, such as tonal contrasts, vegetation patterns, and abrupt changes in topographic slope. The results of our aerial photograph review indicated significant developments in the site history included the following:

- The 1946 photographs show no development at the site and a well-developed alluvial/slope and ravine debris fan in the drainage where Yosemite Drive would be constructed.
- Grading and construction of the existing school buildings from approximately 1966 to 1969.

- Grading and construction of Frontier Park starting in 1966 and continuing in parts through 1981; included construction of an elaborate hillside bench and v-ditch drainage system spaced at close intervals up the hillside.
- Debris flow landslide scar and deposit on upper playing field of Frontier Park in 1983 photographs.
- Slopes above the proposed Pacifica workforce housing site are heavily vegetated and show no erosional scars or other evidence of slope instability over the period of our review (1946-2005).

The proposed Pacifica workforce housing site, as shown on Figure 2, is underlain by artificial fill placed during early development of the subdivision and for grading of the site. During exploration in 1966, D&M encountered up to 24 feet of existing fill at the site. The construction of the existing school consisted of leveling the building and playground areas by placing up to 10 feet of fill locally (D&M 1966).

The site lies on the valley floor of the coastal mountain uplands that make up much of the Park Pacifica residential subdivision. The geology map prepared by Brabb and others (1998) shows the site to be underlain by artificial fill overlying Holocene-age (11,000 years old to recent) alluvial fan and fluvial deposits accumulated from the eroding steep mountainsides (Figure 3). We have reviewed published maps to document mapped landslide deposits that may impact the site (Brabb and others, 1998; Jayko and others, 1999; Wentworth, 1986; Wentworth and others, 1985, Wieczorek and others, 1985; and Wright and Nilsen, 1974) and we did not identify any evidence of significant instability that could impact the site from the adjacent slopes.

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6.0 SUBSURFACE CONDITIONS

A regional geologic map prepared by Brabb and others (1998), a portion of which is presented on Figure 3, indicates the site is underlain by artificial fill (af) and Franciscan Complex greywacke sandstone (fs). Based on the results of our borings and CPTs and review of D&M documents (1966, 1967, and 1968), we conclude the proposed Pacifica workforce housing site is underlain by fill overlying alluvium and sandstone bedrock. The fill may extend up to about 35 feet bgs. The fill generally consists of loose to very dense gravels and sands with varying amounts of clay.

The fill is underlain by native alluvium that consists of stiff sandy clay and medium dense to very dense clayey gravel with sand. The alluvium extends to the maximum depths explored of 31.5 feet bgs in the borings and 50 feet bgs in the CPTs, except in Boring B-6, CPT-2, CPT-6, and CPT-9 where the alluvium is underlain by bedrock at depths of 25, 31, 48, and 42 feet bgs, respectively. The bedrock encountered in Boring B-6 is sandstone that has low hardness and is friable to weak and deeply weathered.

During drilling, groundwater was measured at depths of 20 to 25 feet bgs in the borings and at depths of 18 to 23 feet bgs in the CPTs, except in CPT-5 where groundwater was measured at a depth of 14 feet bgs. CPT-5 encountered a very stiff fine-grained layer between depths of 14 and 15 feet bgs; therefore, the groundwater level (14 feet bgs) measured in CPT-5 may not represent stabilized groundwater conditions. The depth to groundwater is expected to vary several feet annually, depending on rainfall amounts. Based on available groundwater information, we conclude a design groundwater level at 15 feet bgs should be used for this project.

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7.0 SEISMICITY AND GEOLOGIC HAZARDS

7.1 Regional Seismicity

The site is located in the Coast Ranges geomorphic province that is characterized by northwest-southeast trending valleys and ridges. These are controlled by folds and faults that resulted from the collision of the Farallon and North American plates and subsequent shearing along the San Andreas fault system. Movements along this plate boundary in the Northern California region occur along right-lateral strike-slip faults of the San Andreas fault system.

The major active faults in the area are the San Andreas, San Gregorio, and Hayward faults. These and other faults in the region are shown on Figure 4. Numerous damaging earthquakes have occurred along these faults in recorded time. For these and other active faults within a 50-kilometer radius of the site, the distance from the site and estimated characteristic moment

magnitude[2] [Petersen et al. (2014) & Thompson et al. (2016)] are summarized in Table 3. These references are based on the Third Uniform California Earthquake Rupture Forecast (UCERF3), prepared by Field et al. (2013).

TABLE 3
Regional Faults and Seismicity

Fault Segment	Approximate Distance from Site (km)	Direction from Site	Characteristic Moment Magnitude
Total North San Andreas (SAO+SAN+SAP+SAS)	3.9	East	8.04
North San Andreas (Peninsula, SAP)	3.9	East	7.38
San Gregorio (North)	6.1	West	7.44
Monte Vista - Shannon	18	Southeast	7.14
Butano	32	South	6.93
Total Hayward + Rodgers Creek (RC+HN+HS+HE)	33	East	7.58
Hayward (South, HS)	33	East	7.00
Hayward (North, HN)	34	Northeast	6.90
North San Andreas (North Coast, SAN)	39	Northwest	7.52
Zayante-Vergeles (2011 CFM)	46	Southeast	7.48
Total Calaveras (CN+CC+CS+CE)	47	Northeast	7.43
Calaveras (North, CN)	47	Northeast	6.86
Mount Diablo Thrust	50	Northeast	6.67
Mount Diablo Thrust North CFM	50	Northeast	6.72

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[2] Moment magnitude (M_w) is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

Since 1800, four major earthquakes have been recorded on the North San Andreas fault. In 1836, an earthquake with an estimated maximum intensity of VII on the Modified Mercalli (MM) scale occurred east of Monterey Bay on the San Andreas fault (Toppozada and Borchardt 1998). The estimated moment magnitude (M_w) for this earthquake is about 6.25. In 1838, an earthquake occurred with an estimated intensity of about VIII-IX (MM), corresponding to an M_w of about 7.5. The San Francisco Earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas fault from Shelter Cove to San Juan Bautista approximately 470 kilometers in length. It had a maximum intensity of XI (MM), an M_w of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. The Loma Prieta Earthquake of October 17, 1989 had an M_w of 6.9 and occurred about 80 kilometers south of the site.

In 1868, an earthquake with an estimated maximum intensity of X on the MM scale occurred on the southern segment (between San Leandro and Fremont) of the Hayward fault. The estimated M_w for the earthquake is 7.0. In 1861, an earthquake of unknown magnitude (estimated M_w of about 6.5) was reported on the Calaveras fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill earthquake (M_w = 6.2).

As a part of the UCERF3 project, researchers estimated that the probability of at least one $M_w \geq$ 6.7 earthquake occurring in the greater San Francisco Bay Area during a 30-year period (starting in 2014) is 72 percent. The highest probabilities are assigned to sections of the Hayward (South), Calaveras (Central), and the North San Andreas (Santa Cruz Mountains) faults. The respective probabilities are approximately 25, 21 , and 17 percent.

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7.2 Geologic and Seismic Hazards

Because the project site is in a seismically active region, we evaluated the potential for earthquake-induced geologic hazards including ground shaking, ground surface rupture, liquefaction[3], lateral spreading[4], cyclic densification[5], and landslides. We used the results of our field investigation to evaluate the potential of these phenomena occurring at the project site.

7.2.1 Ground Shaking

The seismicity of the site is governed by the activity of the San Andreas and San Gregorio faults, although ground shaking from future earthquakes on other faults, including the Hayward fault, will also be felt at the site. The intensity of earthquake ground motion at the site will depend upon the characteristics of the generating fault, distance to the earthquake epicenter, and magnitude and duration of the earthquake. We judge that strong to very strong ground shaking could occur at the site during a large earthquake on one of the nearby faults.

7.2.2 Ground Surface Rupture

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. We therefore conclude the risk of fault offset at the site from a known active fault is very low. In a seismically active area, the remote possibility exists for future faulting in areas where no faults previously existed; however, we conclude the risk of surface faulting and consequent secondary ground failure from previously unknown faults is also very low.

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[3] Liquefaction is a phenomenon where loose, saturated, cohesionless soil experiences temporary reduction in strength during cyclic loading such as that produced by earthquakes.

[4] Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

[5] Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing ground-surface settlement.

7.2.3 Liquefaction and Associated Hazards

When a saturated, cohesionless soil liquefies, it experiences a temporary loss of shear strength created by a transient rise in excess pore pressure generated by strong ground motion. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Flow failure, lateral spreading, differential settlement, loss of bearing strength, ground fissures and sand boils are evidence of excess pore pressure generation and liquefaction.

A majority of the site is located within a zone of liquefaction potential, as shown on the map titled *State of California Earthquake Zones of Required Investigation, Montara Mountain Quadrangle*, prepared by the California Geological Survey (CGS), released April 9, 2019 (Figure 5). CGS has provided recommendations for procedures and report content for site investigations performed within seismic hazard zones in Special Publication 117 (SP-117), titled *Guidelines for Evaluating and Mitigating Seismic Hazard Zones in California*, dated September 11, 2008. SP-117 recommends subsurface investigations in mapped liquefaction hazard zones be performed using rotary-wash borings and/or CPTs.

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We used the results of our CPTs to evaluate the potential for liquefaction to occur at the site. Liquefaction susceptibility was assessed using the software CLiq v3.0 (GeoLogismiki, 2019). CLiq uses measured field CPT data and assesses liquefaction potential, including post-earthquake vertical settlement, given a user-defined earthquake magnitude and peak ground acceleration (PGA). Our liquefaction analyses were performed using the methodology proposed by Boulanger and Idriss (2014). We also used the relationship proposed by Zhang, et al (2002) to estimate post-liquefaction volumetric strains and corresponding ground surface settlement; a relationship that is an extension of the work by Ishihara and Yoshimine (1992).

Our analyses were performed using the approximate in-situ groundwater depths measured in our CPTs and a “during earthquake” groundwater depth of 15 feet bgs. In accordance with the 2019 CBC, we used a peak ground acceleration of 0.98 times gravity (g) in our liquefaction evaluation; this peak ground acceleration is consistent with the Maximum Considered

Earthquake Geometric Mean (MCE_G) peak ground acceleration adjusted for site effects (PGA_M). We also used a moment magnitude 8.04 earthquake, which is consistent with the mean characteristic moment magnitude for the Total North San Andreas fault, as presented in Table 3.

The results of our liquefaction analysis indicate there are lenses of loose to medium dense fill that are susceptible to liquefaction. The potentially liquefiable layers are generally less than four feet thick and most of the material identified as potentially liquefiable in the liquefaction analyses has a soil behavior type of "sand", "silty sand", and "silty clay" based on interpretations of the CPT data. We estimate total and differential settlements associated with liquefaction at the site during a MCE event generating a PGA_M of 0.98g will be up to about 1-1/4 inches and up to about 3/4 inch across a horizontal distance of 30 feet, respectively.

Our analysis indicates the non-liquefiable soil overlying the potentially liquefiable soil layers is sufficiently thick and the potentially liquefiable soil layers are sufficiently thin such that the potential for surface manifestations from liquefaction, such as sand boils, and loss of bearing capacity for shallow foundations are very low. The potentially liquefiable soil layers are also discontinuous, so the potential for lateral spreading is nil.

7.2.4 Cyclic Densification

Seismically induced compaction or cyclic densification of non-saturated sand (sand above the groundwater table) caused by earthquake vibrations may result in differential settlement. The results of our field investigation indicate the soil above the groundwater table generally consists of sand and gravel fill that are relatively dense and contains variable amounts of clay. Therefore, we conclude the potential for cyclic densification of the soil above the groundwater table is low due to its cohesion and/or relative density.

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7.2.5 Landslide Hazards

Although the proposed Pacifica workforce housing site is essentially flat, the southeastern edge of the proposed development area lies at the toe of a steep hillside that rises up to the southeast at at an inclination of about 2:1 (horizontal to vertical). Based on our research, site geologic reconnaissance, and aerial photograph review (see Section 5.0), we judge the potential for slope failures, such as debris flows, impacting the site is low. Despite numerous winter storm seasons that caused extensive landsliding, including deaths attributed to a large debris slide failure on the south-facing slopes of Oddstad Boulevard (Shlemon and others, 1987), and a smaller failure that deposited material on the upper playing fields of Frontier Park (Howard Donley Associates, 1982) about 550 feet southeast from the site, we did not identify any evidence of significant instability that could impact the site from the adjacent slopes.

8.0 DISCUSSIONS AND CONCLUSIONS

From a geotechnical standpoint, we conclude the site can be developed as planned, provided the recommendations presented in this report are incorporated into the project plans and specifications and implemented during construction. The primary geotechnical concerns for the site are: (1) the presence of up to about 35 feet of fill underlying the site, some of which is undocumented, and (2) providing adequate foundation support for the proposed buildings. These and other geotechnical issues as they pertain to the proposed development are discussed in the remainder of this section.

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8.1 Foundation Support and Settlement

The footprints of the proposed buildings are underlain by up to about 35 feet of fill. The fill may settle differentially and erratically under static loads and due to post-liquefaction reconsolidation. To mitigate the effects of potential erratic differential settlements, we recommend the proposed buildings be supported on stiffened shallow foundation systems, such as interconnected continuous spread footings or mats.

We estimate total and differential settlements of properly constructed interconnected continuous spread footings or mats designed using the allowable bearing pressures presented in Section 9.3

of this report will be less than 3/4 inch and 1/2 inch over a 30-foot horizontal distance, respectively, under static loading. As discussed in Section 7.2.3, we estimate total and differential settlements associated with liquefaction at the site during a MCE event generating a PGA_M of 0.98g will be up to about 1-1/4 inches and up to about 3/4 inch across a horizontal distance of 30 feet, respectively.

8.2 Construction Considerations

The soil to be excavated consists predominately of gravels, sands, and clays, which can be excavated with conventional earth-moving equipment such as loaders and backhoes. Removal of existing on-site improvements, including buried foundation, will require equipment capable of breaking concrete.

Excavations that will be deeper than five feet and will be entered by workers should be shored or sloped in accordance with the Occupational Safety and Health Administration (OSHA) standards (29 CFR Part 1926). Where space permits, the sides of the temporary excavation can be sloped. The maximum inclination of stable slopes will vary depending on the soil exposed in the excavation. Temporary slopes excavated in sandy/gravelly soil (OSHA TYPE B soil) can be excavated at inclinations as steep as 1.5:1 (horizontal:vertical). Where there is insufficient space to slope-cut the excavations, shoring may be required. The selection, design, construction, and performance of the shoring system (if needed) should be the responsibility of the contractor.

8.3 Soil Corrosivity

Corrosivity testing was performed by Project X Corrosion Engineering of Murrieta, California on three samples of soil obtained from Boring B-1 at 3 feet bgs and from Borings B-3 and B-6 at 5 feet bgs. The results of the corrosivity tests are presented in Appendix B.

Based on the resistivity test results (3,015 to 7,370 ohm-cm) the samples are classified as mildly corrosive to buried steel. Accordingly, all buried iron, steel, cast iron, ductile iron, galvanized steel and dielectric-coated steel or iron may need to be protected against corrosion, depending upon the critical nature of the structure. If it is necessary to have metal in contact with soil, a corrosion engineer should be consulted to provide recommendations for corrosion protection.

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The chloride ion concentrations (10.7 to 48.5 mg/kg) and pH (7.8 to 8.3) indicate the near-surface soil is "negligibly corrosive" to buried metallic structures and reinforcing steel in concrete structures below ground. The results also indicate the sulfate ion concentrations are sufficiently low such that sulfates do not pose a threat to buried concrete.

9.0 RECOMMENDATIONS

Our recommendations for site preparation and grading, foundation design, and other geotechnical aspects of the project are presented in this section.

9.1 Site Preparation and Grading

Site clearing should include removal of any vegetation and organic topsoil (where present). Organic soil generated during stripping should be removed from the site or stockpiled for later use in landscaped areas, if approved by the landscape architect. Tree roots with a diameter greater than 1/2 inch within three feet of subgrade should be removed.

Site demolition should include the removal of all existing pavements, underground utilities, and buried foundations, where present. In general, abandoned underground utilities should be removed to the property line or service connections and properly capped or plugged with concrete. Where existing utility lines will not interfere with the proposed construction, they may be abandoned in place provided the lines are filled with lean concrete or cement grout to the property line. Voids resulting from demolition activities should be properly backfilled with compacted fill under the observation of our field engineer and following the recommendations provided in this section.

9.1.1 Subgrade Preparation

In areas to receive fill or improvements, the soil subgrade should be scarified to a depth of at least eight inches, moisture-conditioned to near optimum moisture content, and compacted to at

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least 90 percent relative compaction[6]. The upper eight inches of soil subgrade beneath vehicular pavements should be compacted to at least 95 percent relative compaction and be non-yielding. The soil subgrade should be kept in a moist state until it is covered by fill or improvements.

9.1.2 Fill Quality and Compaction

Fill should consist of on-site soil or imported soil (select fill) that is free of organic matter, contain no rocks or lumps larger than three inches in greatest dimension, have a liquid limit less than 40 and plasticity index less than 12, and be approved by the Geotechnical Engineer. Samples of proposed imported fill material should be submitted to the Geotechnical Engineer at least three business days prior to use at the site. The grading contractor should provide analytical test results or other suitable environmental documentation indicating the imported fill is free of hazardous materials at least three days before use at the site. If this data is not provided, up to two weeks should be allowed to perform analytical testing on the proposed imported material.

Fill should be placed in horizontal lifts not exceeding eight inches in uncompacted thickness, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction. Fill consisting of clean sand or gravel (defined as poorly graded soil with less than five percent fines by weight) should be compacted to at least 95 percent relative compaction. Fill greater than five feet in thickness should also be compacted to at least 95 percent relative compaction.

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9.1.3 Utility Trench Backfill

Excavations for utility trenches can be readily made with a backhoe. All trenches should conform to the current CAL-OSHA requirements. All temporary excavations used in construction should be designed, planned, constructed, and maintained by the contractor and should conform to all state and/or federal safety regulations and requirements, including those of CAL-OSHA.

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[6] Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, as determined by the ASTM D1557 laboratory compaction procedure.

To provide uniform support, pipes or conduits should be bedded on a minimum of four inches of clean sand or fine gravel. After the pipes and conduits are tested, inspected (if required) and approved, they should be covered to a depth of six inches with clean sand or fine gravel, which should be mechanically tamped. Backfill for utility trenches and other excavations is also considered fill, and should be placed and compacted as according to the recommendations previously presented. Special care should be taken when backfilling utility trenches within the building footprint and beneath pavements. Poor compaction may cause excessive settlements, resulting in damage to the building and/or pavements. If imported clean sand or gravel (defined as poorly graded soil with less than five percent fines by weight) is used for trench backfill, it should be compacted to at least 95 percent relative compaction. Jetting of trench backfill should not be permitted.

9.1.4 Exterior Concrete Flatwork

Exterior concrete flatwork that will not receive vehicular traffic (e.g., sidewalks) should be underlain by at least four inches of Class 2 aggregate base compacted to at least 90 percent relative compaction. Prior to placement of the aggregate base, the upper eight inches of the subgrade soil should be scarified, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction. The Class 2 aggregate base should also be compacted to at least 90 percent relative compaction.

9.2 Surface Drainage and Erosion Control

Surface drainage should be provided to collect surface runoff, prevent surface erosion, and prevent saturation of the engineered fill. All surfaces should be sloped to drain and all water should be directed to v-ditches to collect and transport surface water runoff to a suitable outlet or retention basin. V-ditches should be constructed at the crest of all engineered slopes and at the toe of all slopes greater than five feet in height, including slopes above retaining walls. The v-ditches may be constructed as either an earth (up to five percent slope), fabric (up to 10 percent slope), or rock swale (greater than 10 percent slope); however, the final design should be determined by the civil engineer. Existing and new v-ditches should be cleaned and maintained on a regular basis.

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Positive surface drainage should be provided around the buildings to direct surface water away from the foundations. To reduce the potential for water ponding adjacent to the buildings, we recommend the ground surface within a horizontal distance of five feet from the buildings slope down away from the buildings with a surface gradient of at least two percent in unpaved areas and one percent in paved areas. In addition, roof downspouts should be discharged into controlled drainage facilities to keep the water away from the foundations. The use of water-intensive landscaping around the perimeter of the buildings should be avoided to reduce the amount of water introduced to the soil subgrade.

Erosion Control

We recommend protecting new fill slopes and cut slopes against erosion by hydroseeding or hydromulching with deeply rooted, fast-growing vegetation after construction is complete. If the vegetation will not be established prior to the rainy season, slopes should be protected using measures such as netting, hay bales, and/or silt fences. We do not recommend irrigating the slopes except for an initial period to establish vegetation, if necessary. The final erosion control plan should be developed by the landscape architect.

Bioswales

The primary concerns with the proposed bioretention areas are: 1) providing suitable support for foundations and curbs constructed near the bio-retention areas, 2) potential for subsurface water from the bio-retention areas to migrate (and possibly build up) beneath pavements and the proposed buildings, and 3) introduction of water into the slopes. Consequently, we recommend bioswales be set back a horizontal distance of 50 feet upgradient from on-site slopes that are less than 20 feet in height and 100 feet upgradient from onsite slopes that are more than 20 feet in height. We also recommend bioswales constructed at the site be provided with underdrains and/or drain inlets; and unlined bioswales should be constructed at least five feet from the buildings. The subdrain pipes in bioswales should be installed eight inches above the bottom of the infiltration area for treatment areas that are at least five feet away from the new buildings and pavements. The intent of this recommendation is to allow infiltration into the underlying soil, but to reduce the potential for bioretention areas to flood during periods of heavy rainfall.

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Where bioretention areas are constructed within five feet of the new buildings and pavements, the bottom of the treatment area should be lined with an impermeable liner. Where a vertical curb or foundation is constructed near a bioretention area, the curb and the edge of the foundation should be founded below an imaginary line extending up at an inclination of 1.5:1 (horizontal: vertical) from the base of the bioretention area.

9.3 Foundations

The proposed buildings may be supported on stiffened shallow foundation systems, such as interconnected continuous spread footings or mats. Recommendations for interconnected continuous spread footings and mats are presented below.

9.3.1 Interconnected Continuous Spread Footings

Interconnected continuous footings should be at least 18 inches wide. Perimeter footings should be bottomed at least 18 inches below the lowest adjacent outside grade. Interior footings should extend at least 12 inches below the bottom of the capillary moisture break. Footings may be designed using allowable bearing pressures of 3,000 and 4,000 pounds per square foot (psf) for dead-plus-live loads and total loads, respectively. The allowable bearing pressures for dead-plus-live and total loads include factors of safety of at least 2.0 and 1.5, respectively.

We recommend the footings be founded below an imaginary plane extending up at an inclination of 1.5:1 (horizontal:vertical) from the base of any vault, utility trench, bioswale/ storm water treatment area, etc. If the design bottom-of-footing elevation is above this plane, the footing can either be deepened, or over-excavated below the zone-of-influence line and replaced with controlled low-strength material (CLSM) with a 28-day unconfined compressive strength of at least 100 pounds per square inch (psi).

To compute lateral resistance, we recommend using an equivalent fluid weight of 280 pounds per cubic foot (pcf); the upper foot of soil should be ignored unless confined by a slab or pavement. Frictional resistance should be computed using a base friction coefficient of 0.35. The passive pressure and frictional resistance values include a factor of safety of at least 1.5 and may be used in combination without further reduction. The passive pressures presented above

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require that the bottom of footings be at a horizontal distance of at least seven feet from a slope face.

Footing excavations should be free of standing water, debris, and disturbed materials prior to placing concrete. The bottoms and sides of the footing excavations should be moistened following excavation and maintained in a moist condition until concrete is placed. We should check footing excavations prior to placement of reinforcing steel or the rat slab (if used) to check for proper bearing.

9.3.2 Mat Foundation

For structural design of the mat foundation, we recommend using a coefficient of vertical subgrade reaction of 30 pounds per cubic inch (pci) for dead-plus-live loads; this value has already been scaled to take into account the plan dimensions of the mat foundation (therefore, this is not k_{v1} for 1-foot-square plate) and may be increased by one-third for total load conditions. Once the structural engineer estimates the distribution of bearing stress on the bottom of the mat, we should review the distribution and revise the modulus of subgrade reaction, if appropriate. The maximum bearing pressure beneath the mat should not exceed 3,000 psf under dead-plus-live conditions; this value may be increased by one-third for total load conditions.

The edges of the mat should be thickened such that the mat edge is bottomed at least nine inches below the adjacent soil subgrade. In addition, we recommend the mat be founded below an imaginary plane extending up at an inclination of 1.5:1 (horizontal:vertical) from the base of any vault, utility trench, bioswale/ storm water treatment area, etc. If the design bottom-of-mat elevation is above this plane, the edge of mat can either be deepened, or over-excavated below the zone-of-influence line and replaced with CLSM with a 28-day unconfined compressive strength of at least 100 pounds per square inch (psi).

To compute lateral resistance, we recommend using an equivalent fluid weight of 280 pcf; the upper foot of soil should be ignored unless confined by a slab or pavement. Assuming the mat is supported on a vapor retarder, a friction factor of 0.20 should be used to compute base friction. The passive pressure and frictional resistance values include a factor of safety of at least 1.5 and

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may be used in combination without further reduction. The passive pressures presented above require that the bottom of the mat edge be at a horizontal distance of at least seven feet from a slope face.

The mat subgrade should be kept moist prior to placement of the vapor retarder. We should check the mat subgrade prior to placement of the vapor retarder to confirm it is free of standing water, debris and disturbed material.

9.4 Capillary Moisture Break and Water Vapor Retarder

Where water vapor transmission through the floor slab/mat is not desirable, we recommend installing a capillary moisture break and water vapor retarder beneath the floor slab/mat. A capillary moisture break consists of at least four inches of clean, free-draining gravel or crushed rock. The vapor retarder should meet the requirements for Class B vapor retarders stated in ASTM E1745. The vapor retarder should be placed in accordance with the requirements of ASTM E1643. These requirements include overlapping seams by six inches, taping seams, and sealing penetrations in the vapor retarder. The particle size of the capillary break material should meet the gradation requirements presented in Table 4. The capillary break can be eliminated beneath the mat foundation provided the vapor retarder meets the requirements for Class A vapor retarders.

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TABLE 4
Gradation Requirements for Capillary Moisture Break

Sieve Size	Percentage Passing Sieve
1 inch	90 – 100
3/4 inch	30 – 100
1/2 inch	5 – 25
3/8 inch	0 – 6

Concrete mixes with high water/cement (w/c) ratios result in excess water in the concrete, which increases the cure time and results in excessive vapor transmission through the slab/mat. Where the concrete is poured directly over the vapor retarder, we recommend the w/c ratio of the

concrete not exceed 0.45. Water should not be added to the concrete mix in the field. If necessary, workability should be increased by adding plasticizers. In addition, the mat/slab should be properly cured. Before floor coverings are placed, the contractor should check that the concrete surface and the moisture emission levels (if emission testing is required) meet the manufacturer's requirements.

9.5 Permanent Below-Grade Walls

Permanent below-grade walls, such as site retaining walls, should be designed to resist the lateral earth pressure imposed by the retained soil, as well as a surcharge pressure from nearby vehicles, where appropriate. We recommend restrained and unrestrained walls at the site be designed for the more critical of the following criteria:

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Unrestrained Wall

- Active equivalent fluid weight of 37 pcf.
- An active equivalent fluid weight of 37 pcf plus a seismic increment of 20 pcf (triangular distribution).

Restrained Wall

- At-rest equivalent fluid weight of 57 pcf.
- An active equivalent fluid weight of 37 pcf plus a seismic increment of 46 pcf (triangular distribution).

The above values assume the backfill behind the retaining wall is level. Where the backfill behind the retaining walls will have a gradient greater than 4:1 (horizontal to vertical), the retaining walls should be designed with lateral earth pressure values adjusted for sloped backfill conditions. We can provide lateral earth pressures for sloped backfill conditions on a case-by-case basis and upon request.

Where the wall will be less than six feet tall and a factor of safety of 1.5 is used by the structural engineer for the design of the wall, we judge that the potential for damage during a seismic event is low and no additional seismic increment is required.

Where there will be vehicular traffic within a horizontal distance equal to 1.5 times the retained soil height, the wall should be designed for a traffic surcharge of 50 psf (uniform distribution) applied to the entire wall height or 10 feet, whichever is less.

The lateral earth pressures recommended are applicable to walls that are backdrained to prevent the buildup of hydrostatic pressure. One acceptable method for back-draining a retaining wall is to place a prefabricated drainage panel against the back of the wall. The drainage panel should extend down to a perforated PVC collector pipe. The pipe should be surrounded on all sides by at least four inches of Caltrans Class 2 permeable material or 3/4-inch drain rock wrapped in filter fabric (Mirafi NC or equivalent). A proprietary, prefabricated collector drain system, such as Tremdrain Total Drain or Hydroduct Coil (or equivalent), designed to work in conjunction with the drainage panel may be used in lieu of the perforated pipe surrounded by gravel described above. The pipe should be connected to a suitable discharge point; a sump and pump system may be required to drain the collector pipes, in the event the elevation is insufficient to gravity drain to the storm drain system.

Where moisture transmission through retaining walls is undesirable, walls should be waterproofed and water stops should be placed at all construction joints. If backfill is required behind retaining walls, the walls should be braced, or hand compaction equipment used, to prevent unacceptable surcharges on walls (as determined by the structural engineer).

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9.6 Pavement Design

Design recommendations for asphalt and Portland-cement concrete pavements and concrete pavers are presented in this section.

9.6.1 Flexible (Asphalt Concrete) Pavement Design

The State of California flexible pavement design method was used to develop the recommended asphalt concrete pavement sections. The final soil subgrade in pavement areas will likely consist of gravels and sands with varying amounts of clay. The results of the R-value test performed on a sample of the near-surface fill indicate an R-value of 20. For our pavement design, we assumed an R-value of 15 to account for variability in the soil subgrade across the site.

Recommended pavement sections for traffic indices (TIs) ranging from 4.5 to 7.0 are presented in Table 5. The project civil engineer should determine the appropriate design TI based on the anticipated vehicular traffic the pavement will experience. We can provide additional pavement sections for different TIs upon request.

TABLE 5
AC Pavement Sections (Soil Subgrade R-Value of 15)

TI	Asphaltic Concrete (inches)	Class 2 Aggregate Base (inches)
4.5	2.5	8.0
5.0	3.0	8.0
5.5	3.0	10.0
6.0	3.5	10.5
6.5	4.0	11.5
7.0	4.0	13.0

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The upper eight inches of the subgrade should be moisture-conditioned and compacted in accordance with requirements presented in Section 9.1.1 and be non-yielding. The aggregate base should be moisture-conditioned to near optimum and compacted to at least 95 percent relative compaction and be non-yielding.

If pavements are adjacent to irrigated landscaped areas, curbs adjacent to those areas should extend through the aggregate base and at least three inches into the underlying soil to reduce the potential for irrigation water to infiltrate into the pavement section. If drip irrigation is used in the landscaping adjacent to the pavement, however, the deepened curb is not required.

Where pavement is constructed near bioswales or other storm water treatment areas, curbs should be deepened so that the base is founded below an imaginary line extending up at an inclination of 1.5:1 (horizontal:vertical) from the base of the bioswale/treatment area. Further, deepened curbs near bioswales may require some type of lateral restraint. The need for lateral restraint of deepened curbs should be evaluated during design of the biotreatment features.

9.6.2 Rigid (Portland-Cement Concrete) Pavement Design

The Portland-cement concrete (PCC) pavement section design is based on a maximum single-axle load of 20,000 pounds and a maximum tandem axle of 32,000 pounds (i.e., several garbage trucks per week). The recommended rigid pavement section for these axle loads is 6.5 inches of Portland-cement concrete over six inches of Class 2 aggregate base. For areas that will receive fire truck traffic, the pavement section should consist of seven inches of Portland-cement concrete over six inches of Class 2 aggregate base.

The modulus of rupture and unconfined compressive strength of the concrete should be at least 500 and 3,200 psi at 28 days, respectively. Contraction joints should be placed at a 15-foot spacing. Where the outer edge of a concrete pavement meets asphalt pavement, the concrete slab should be thickened by 50 percent at a taper not to exceed a slope of 1 in 10. For areas that will garbage/recycling truck traffic, we recommend the concrete slab be reinforced with a minimum of No. 4 bars at 16 inches on center in both directions.

Recommendations for subgrade preparation and aggregate base compaction for concrete pavement are the same as those we have described above for asphalt concrete pavement. Recommendations for pavements adjacent to irrigated landscaped areas, bioswales, or other storm water treatment areas are also the same as those presented above for asphalt concrete pavement.

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9.7 Seismic Design

The latitude and longitude of the site are 37.5873º and -122.4678º, respectively. For design in accordance with 2019 CBC, we recommend the following:

- Site Class D – stiff soil
- S_S = 2.074, S_1 = 0.859g

The 2019 CBC is based on the guidelines contained within ASCE 7-16 which stipulates that where S_1 is greater than 0.2 times gravity (g) for Site Class D, a ground motion hazard analysis is needed unless the seismic response coefficient (C_s) value will be calculated as outlined in

Section 11.4.8, Exception 2. Assuming the C_s value will be calculated as outlined in Section 11.4.8, Exception 2, we recommend the following seismic design parameters:

- F_a = 1.0, F_v = 1.7
- S_{MS} = 2.074g, S_{M1} = 1.460g
- S_{DS} = 1.383g, S_{D1} = 0.974g
- Seismic Design Category E for Risk Factors I, II, and III

10.0 GEOTECHNICAL SERVICES DURING CONSTRUCTION

Prior to construction, Rockridge Geotechnical should review the project plans and specifications to verify that they conform to the intent of our recommendations. During construction, our field engineer should provide on-site observation and testing during site preparation, placement and compaction of fill, and installation of building foundations. These observations will allow us to compare actual with anticipated subsurface conditions and to verify that the contractor's work conforms to the geotechnical aspects of the plans and specifications.

11.0 LIMITATIONS

This geotechnical investigation has been conducted in accordance with the standard of care commonly used as state-of-practice in the profession. No other warranties are either expressed or implied. The recommendations made in this report are based on the assumption that the subsurface conditions do not deviate appreciably from those disclosed in the borings and CPTs. If any variations or undesirable conditions are encountered during construction, we should be notified so that additional recommendations can be made. The foundation recommendations presented in this report are developed exclusively for the proposed development described in this report and are not valid for other locations and construction in the project vicinity.

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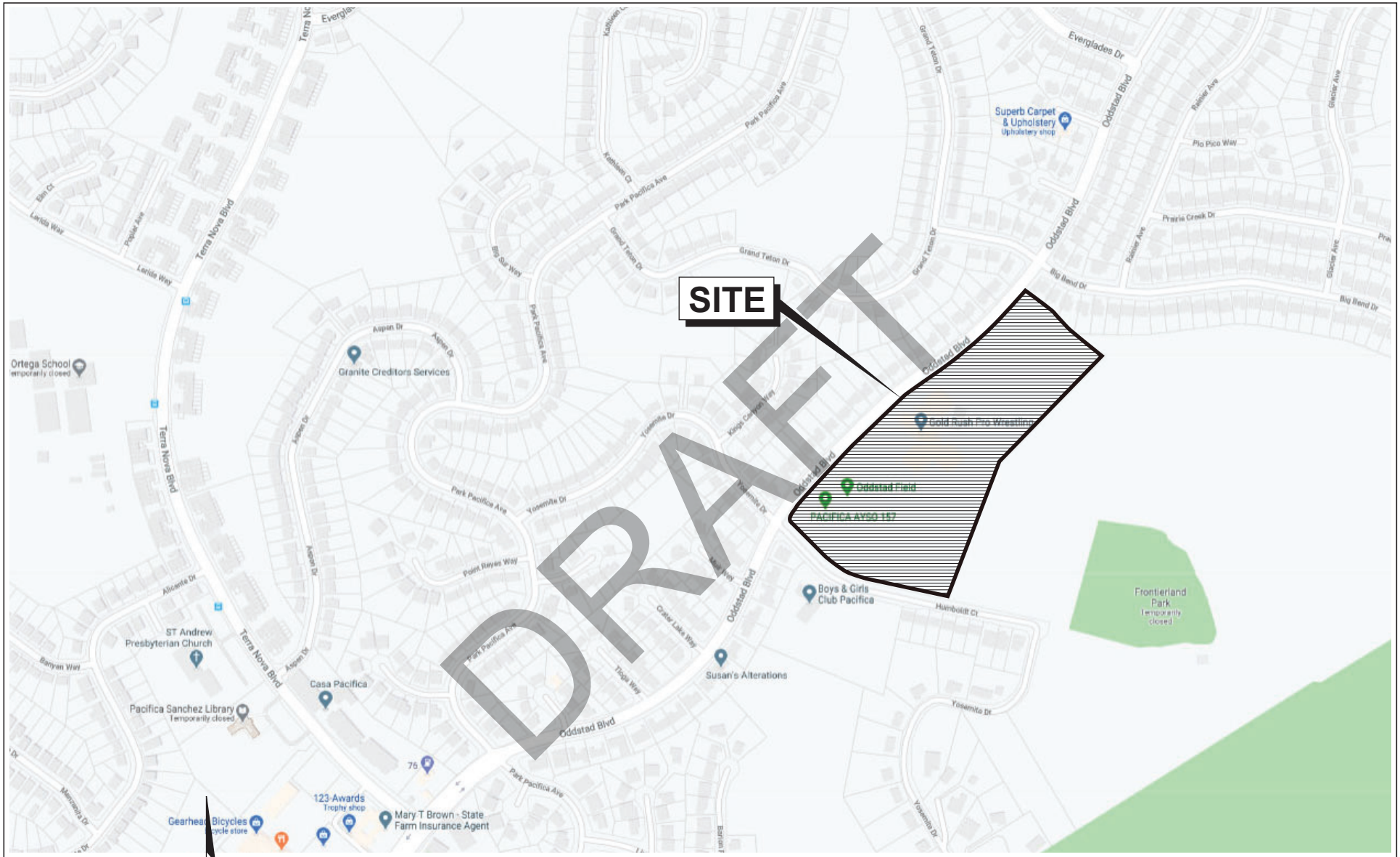
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FIGURES

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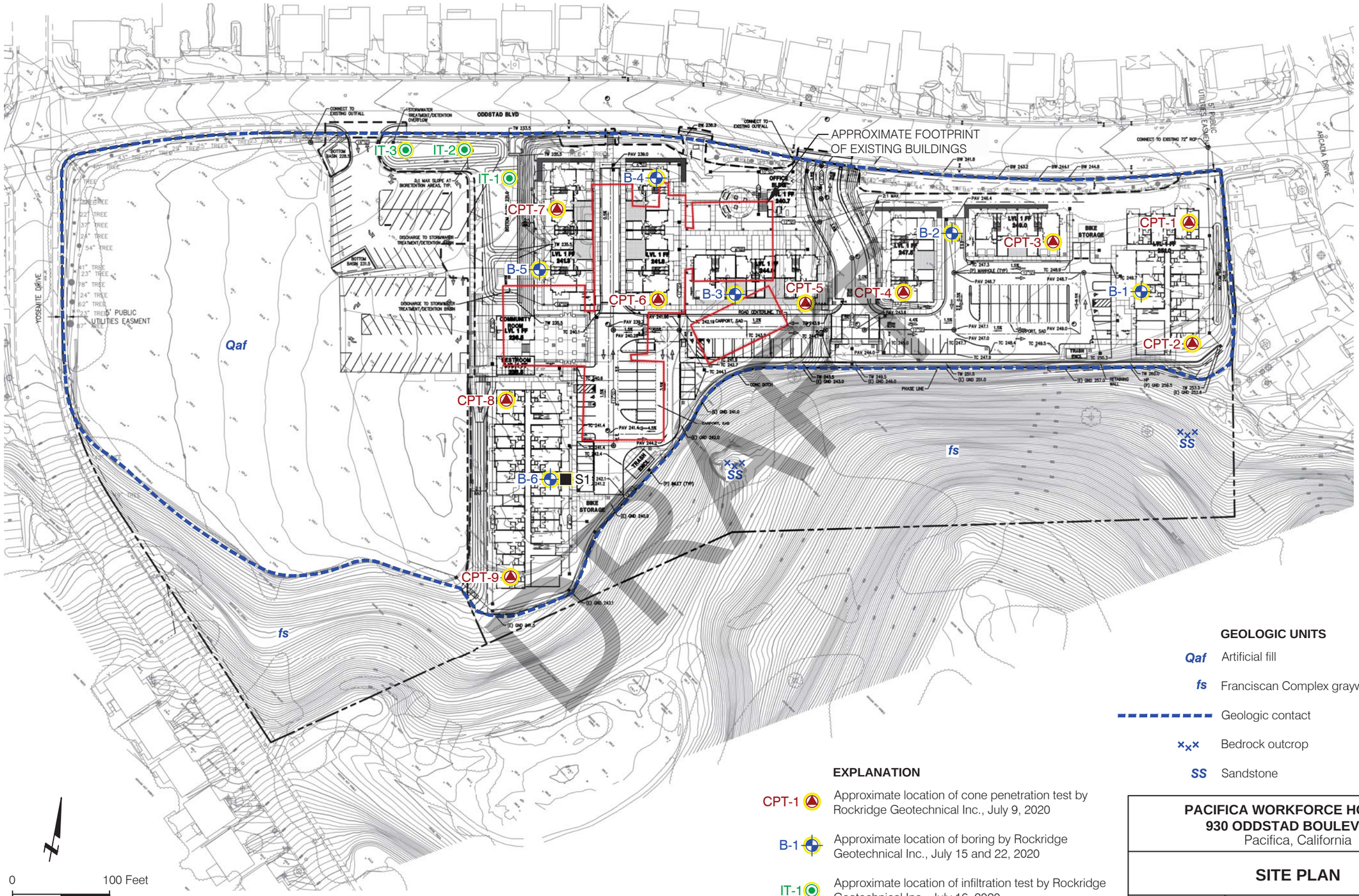
Base map: Google Maps, 2020.

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Pacifica, California

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SITE LOCATION MAP

Date 08/14/20	Project No. 20-1874	Figure 1



0 100 Feet

Approximate scale

Reference: Base map from a drawing titled "Grading Exhibit", by BKF Engineers, dated June 23, 2020.

GEOLOGIC UNITS

Qaf	Artificial fill
fs	Franciscan Complex graywacke sandstone
	Geologic contact
×ₓ×	Bedrock outcrop
SS	Sandstone

EXPLANATION

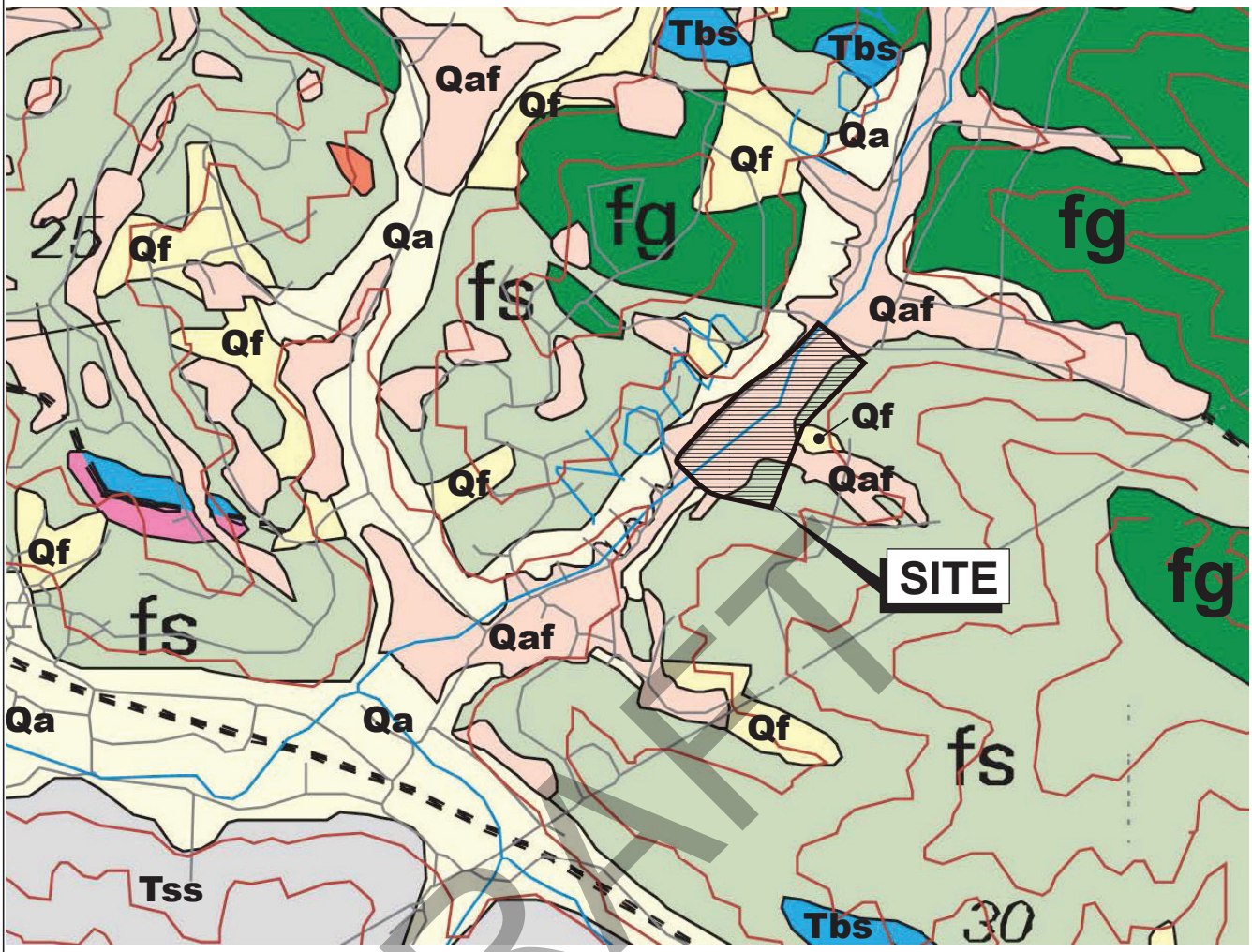
CPT-1	Approximate location of cone penetration test by Rockridge Geotechnical Inc., July 9, 2020
B-1	Approximate location of boring by Rockridge Geotechnical Inc., July 15 and 22, 2020
IT-1	Approximate location of infiltration test by Rockridge Geotechnical Inc., July 16, 2020
S1	Bulk sample obtained by Rockridge Geotechnical, Inc. on August 3, 2020 for resistance value test

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SITE PLAN

Date 08/14/20 | Project No. 20-1874 | Figure 2

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Reference: Brabb and others, 1998.

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N

1,000 ft

Scale

Geologic Units

Qaf - artificial fill
Qf - alluvial fan
Qa - alluvium

Tss - sandstone
Tbs - shale

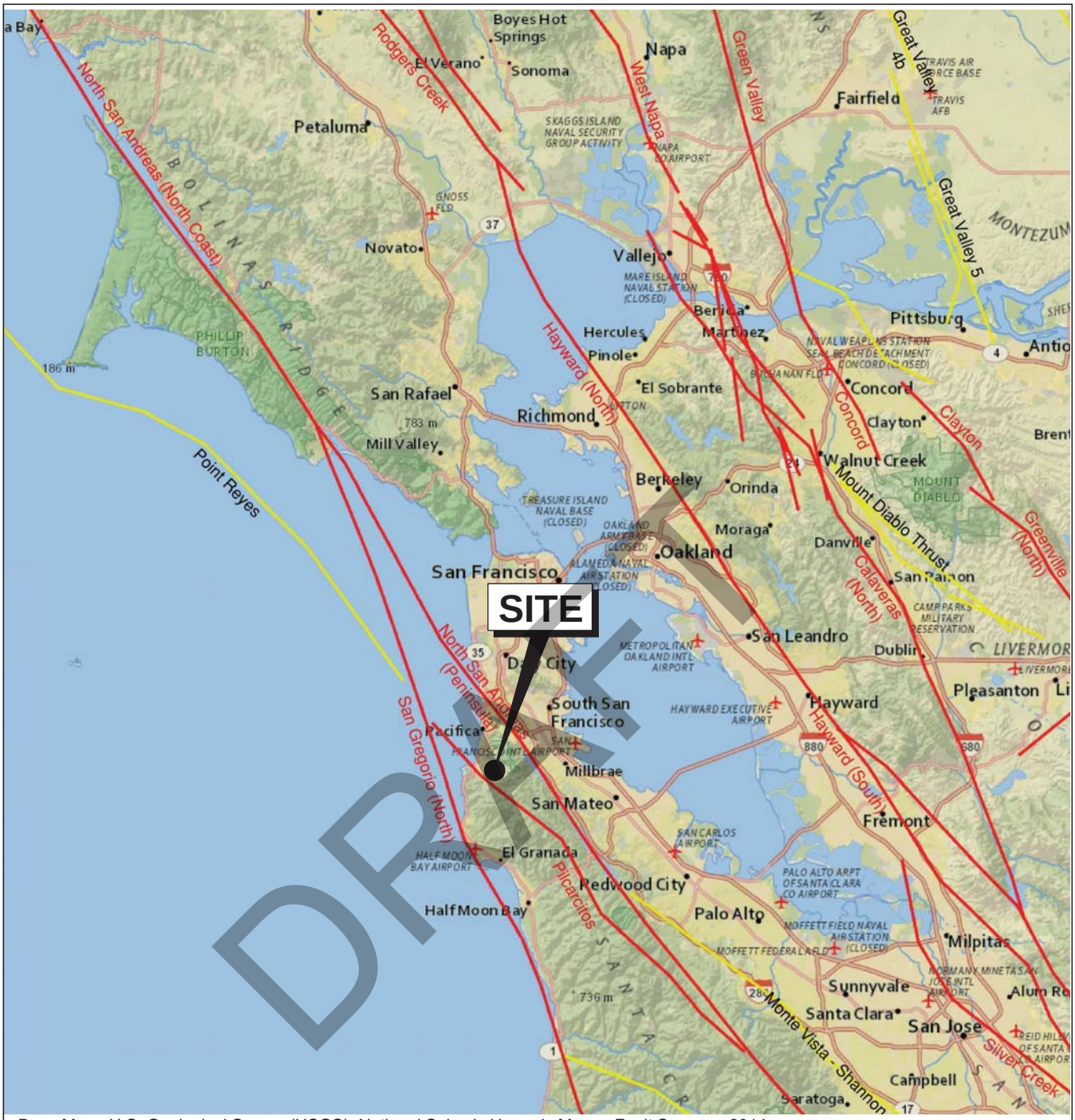
Franciscan Complex
fs - greywacke sandstone
fg - greenstone

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REGIONAL GEOLOGIC MAP

Date 08/14/20 | Project No. 20-1874 | Figure 3



Base Map: U.S. Geological Survey (USGS), National Seismic Hazards Maps - Fault Sources, 2014.

EXPLANATION

Strike slip

Thrust (Reverse)

N

0 5 10 Miles

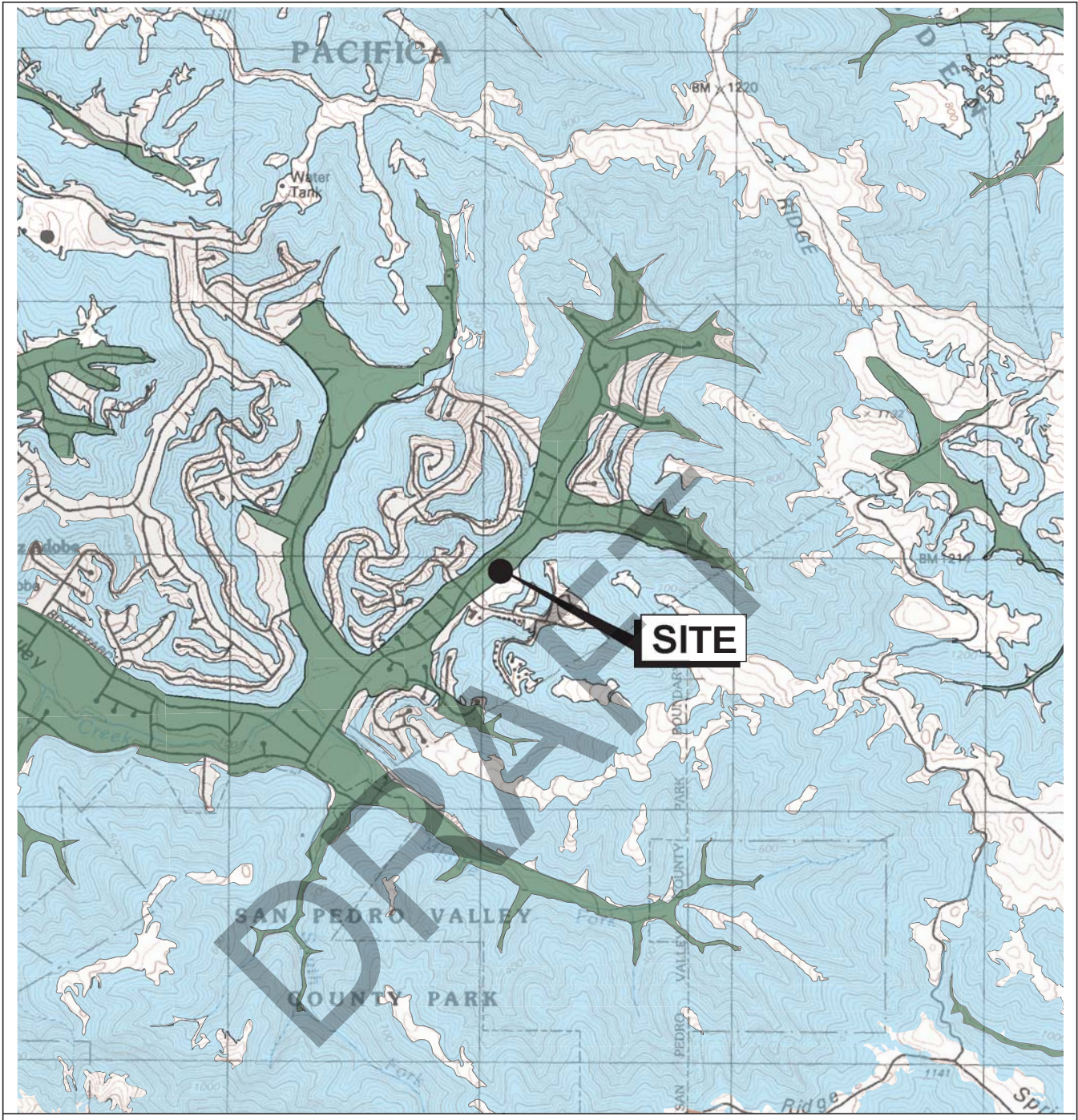
Approximate scale

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REGIONAL FAULT MAP

Date 08/14/20	Project No. 20-1874	Figure 4



Liquefaction Zones
Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslide Zones
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Reference:
Earthquake Zones of Required Investigation
Montara Mountain Quadrangle
California Geological Survey
Released April 4, 2019

N

0 2,000 4,000 Feet
Approximate scale

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EARTHQUAKE ZONES OF REQUIRED INVESTIGATION MAP

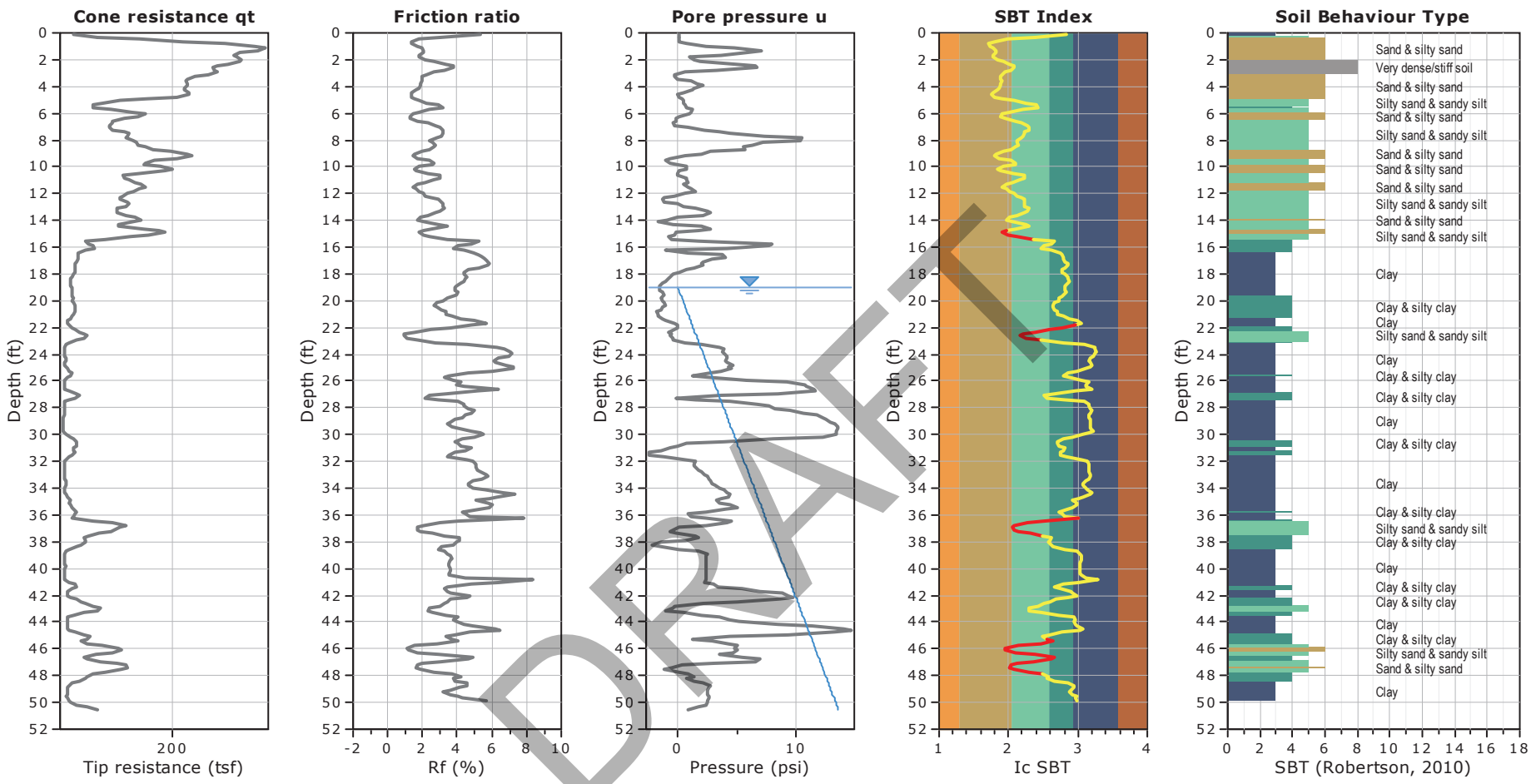
Date 08/14/20	Project No. 20-1874	Figure 5

ROCKRIDGE GEOTECHNICAL

APPENDIX A

Cone Penetration Test Results and Boring Logs

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Total depth: 50.5 ft, Date: July 9, 2020
Depth to Groundwater: 19 feet (measured with weighted tape)
Cone Operator: Middle Earth Geo Testing, Inc.

SBT legend

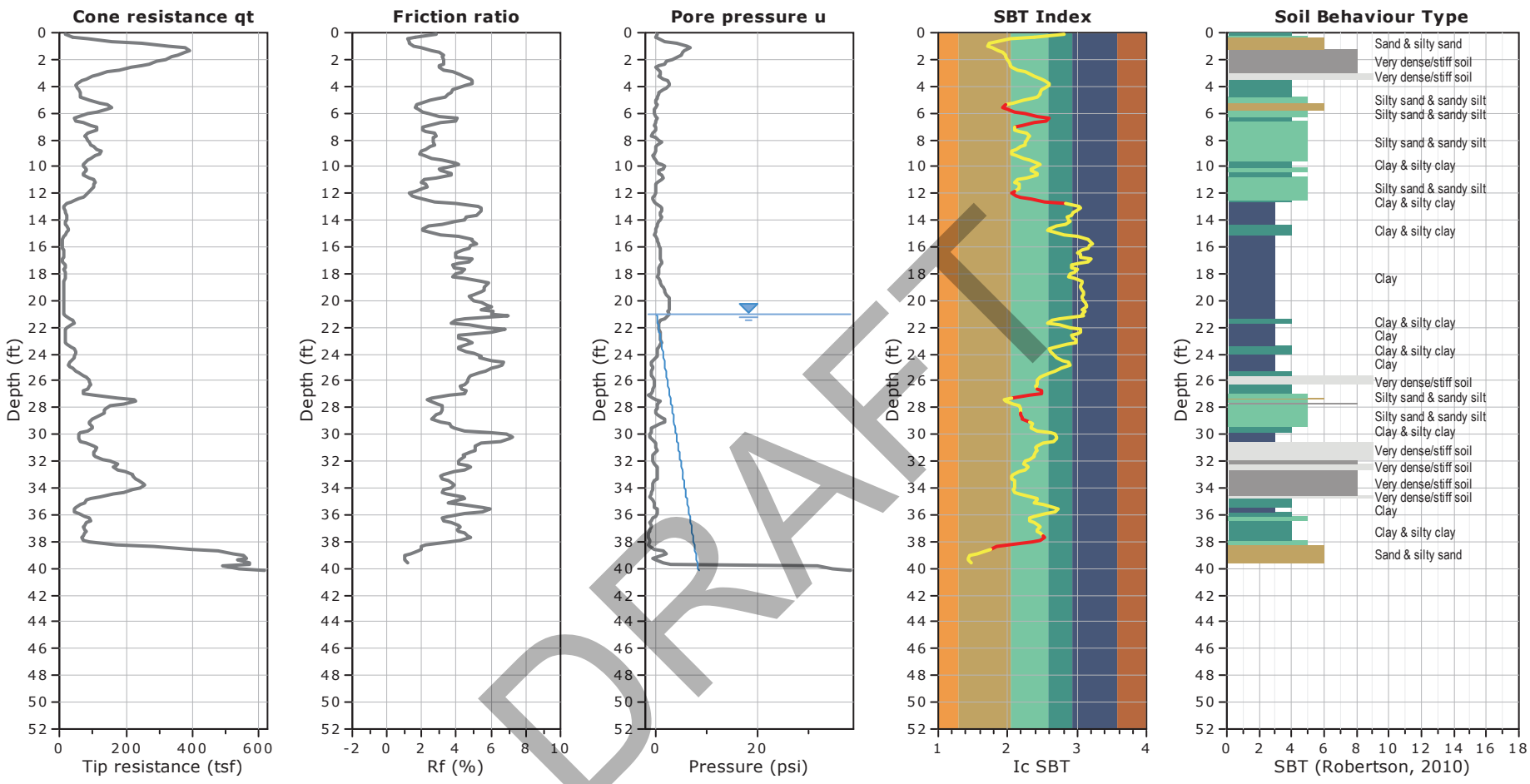
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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CONE PENETRATION TEST RESULTS
CPT-1

Date 08/14/20	Project No. 20-1874	Figure A-1



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Total depth: 40.2 ft, Date: July 9, 2020
Depth to Groundwater: 21 feet (measured with weighted tape)
Cone Operator: Middle Earth Geo Testing, Inc.

SBT legend

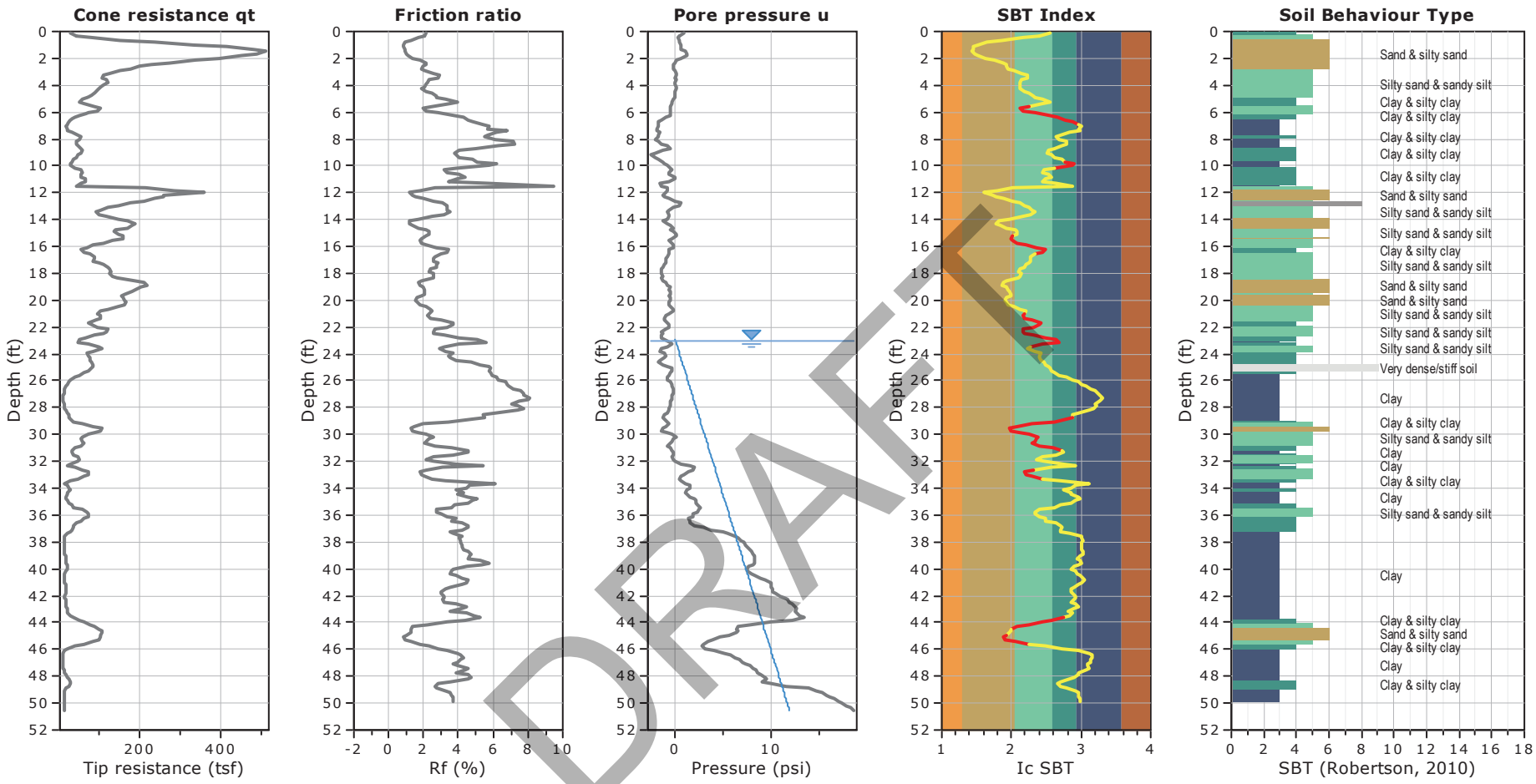
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-2

Date 08/14/20	Project No. 20-1874	Figure A-2



DRAFT

Total depth: 50.5 ft, Date: July 9, 2020
Depth to Groundwater: 23 feet (measured with weighted tape)
Cone Operator: Middle Earth Geo Testing, Inc.

SBT legend

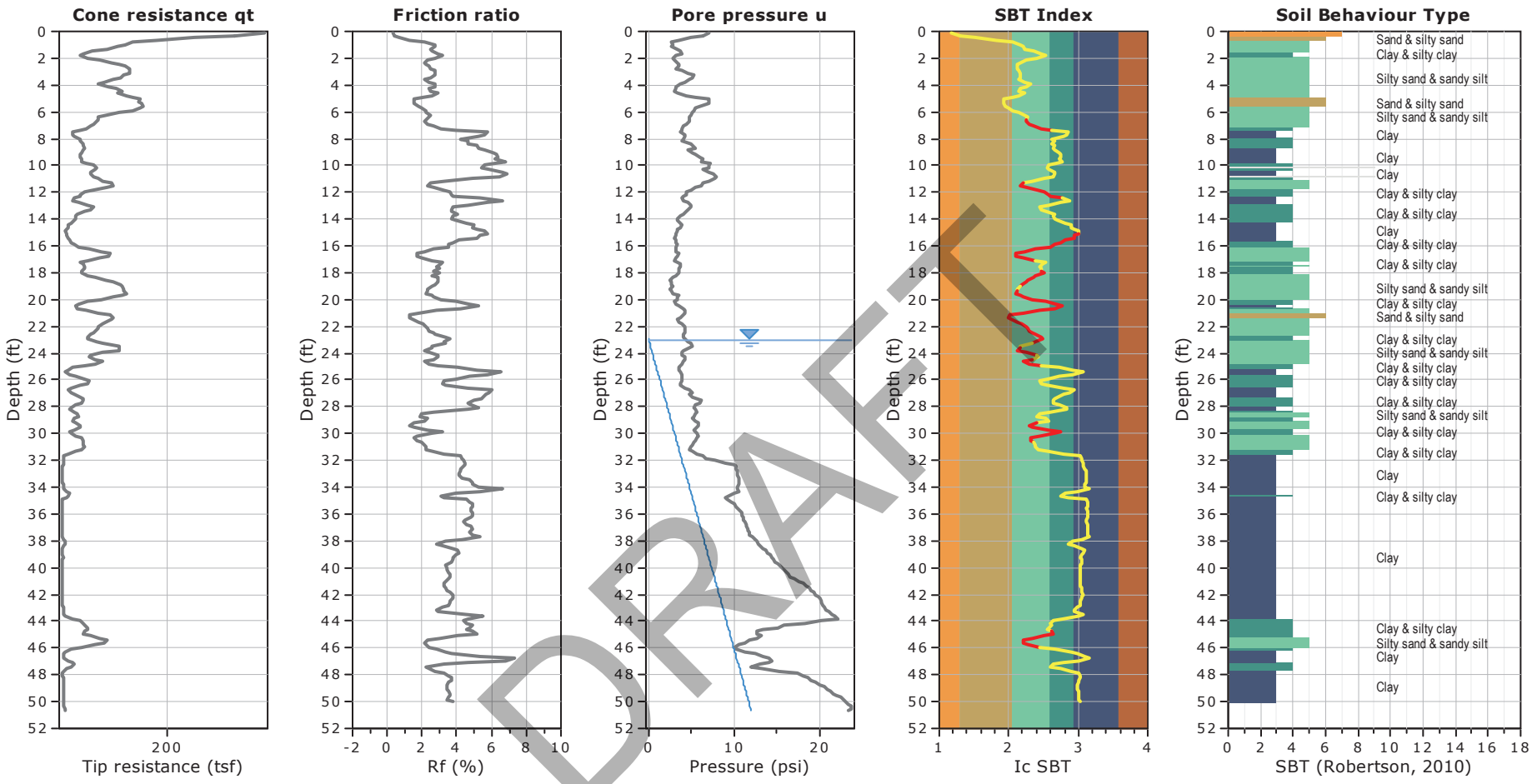
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-3

Date 08/14/20	Project No. 20-1874	Figure A-3



Total depth: 50.7 ft, Date: July 9, 2020
Depth to Groundwater: 23 feet (measured with weighted tape)
Cone Operator: Middle Earth Geo Testing, Inc.

SBT legend

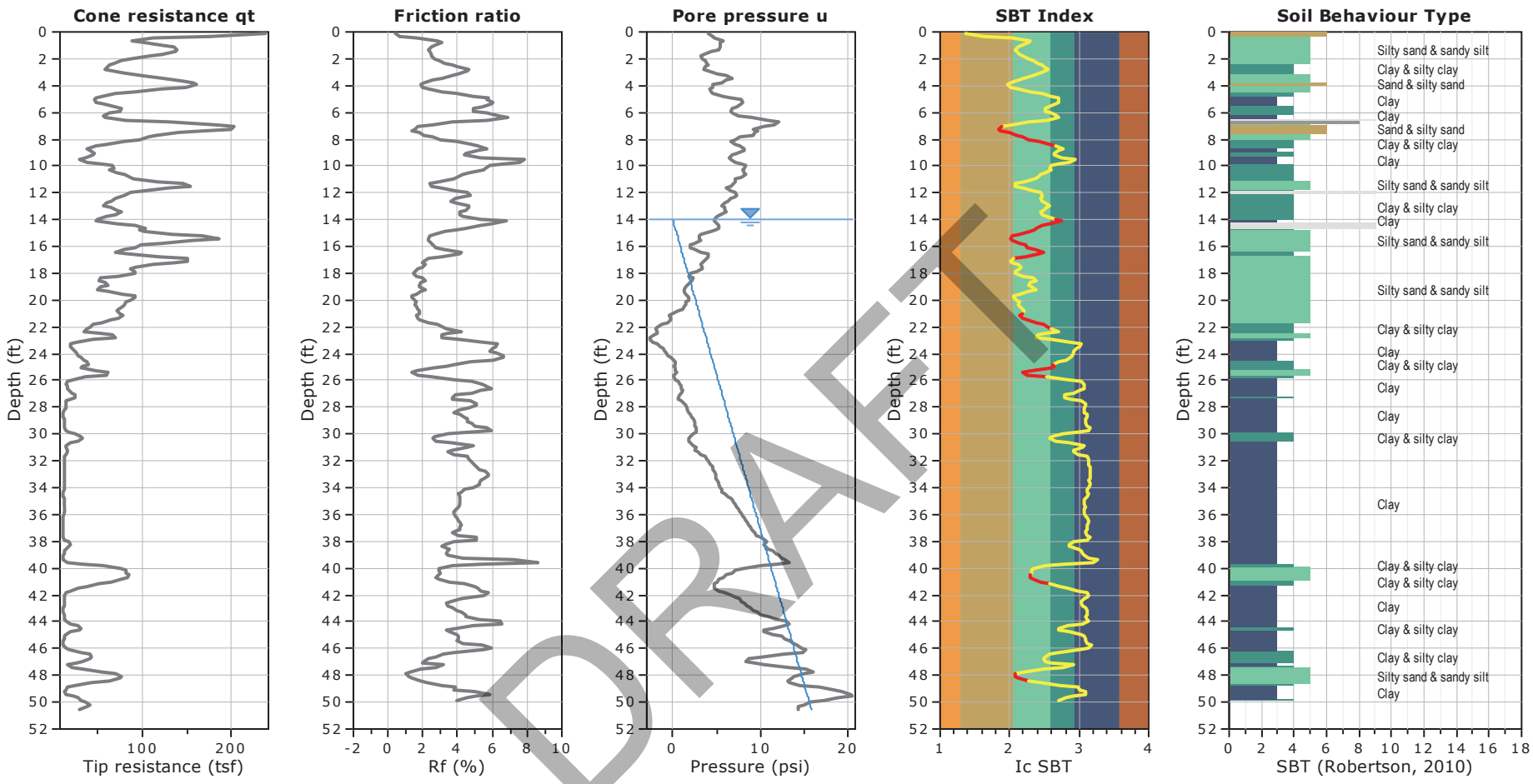
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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CONE PENETRATION TEST RESULTS
CPT-4

Date 08/14/20	Project No. 20-1874	Figure A-4



DRAFT

Total depth: 50.5 ft, Date: July 9, 2020
Depth to Groundwater: 14 feet (measured with weighted tape)
Cone Operator: Middle Earth Geo Testing, Inc.

SBT legend

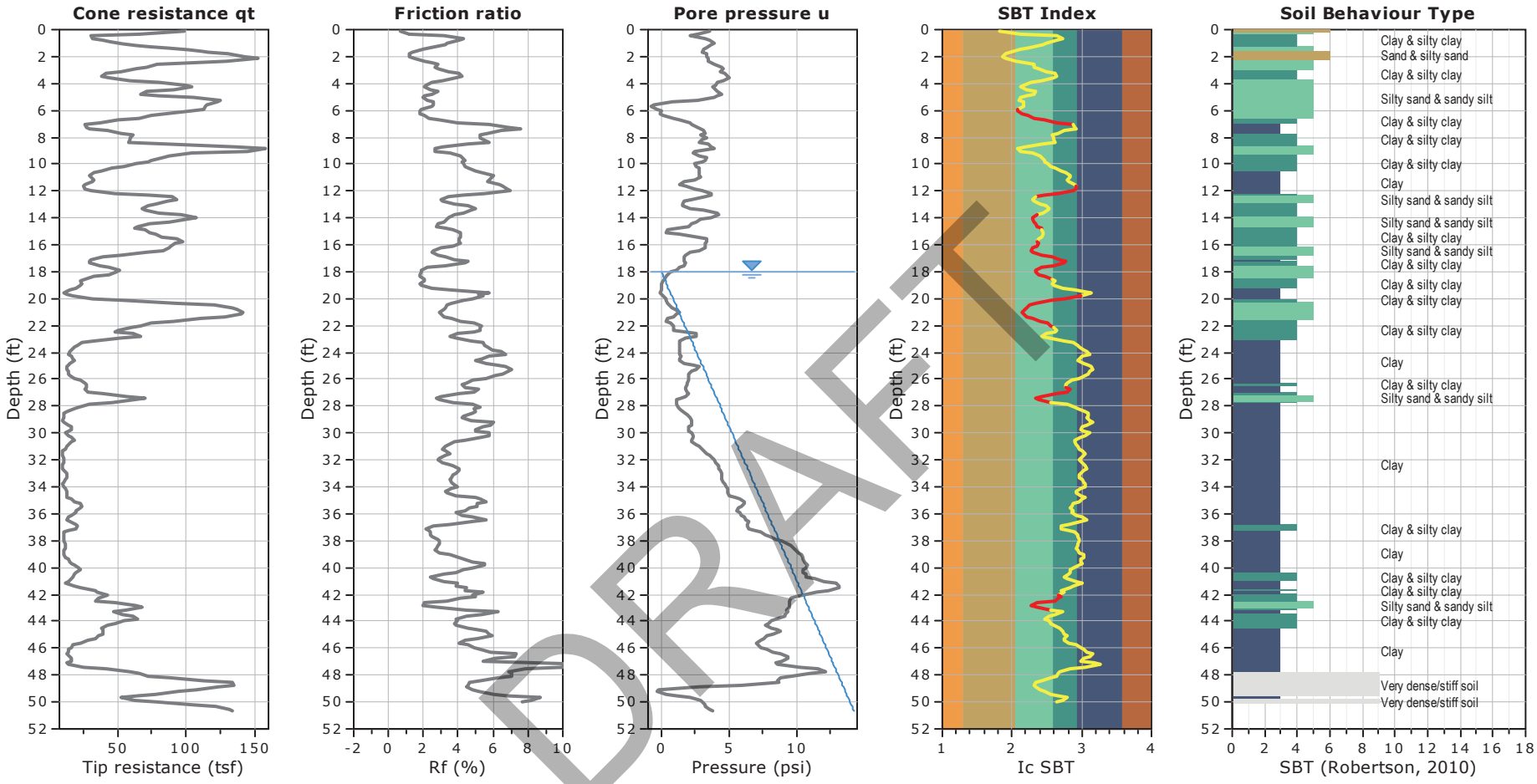
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-5

Date 08/14/20	Project No. 20-1874	Figure A-5



DRAFT

Total depth: 50.7 ft, Date: July 9, 2020
Depth to Groundwater: 18 feet (measured with weighted tape)
Cone Operator: Middle Earth Geo Testing, Inc.

SBT legend

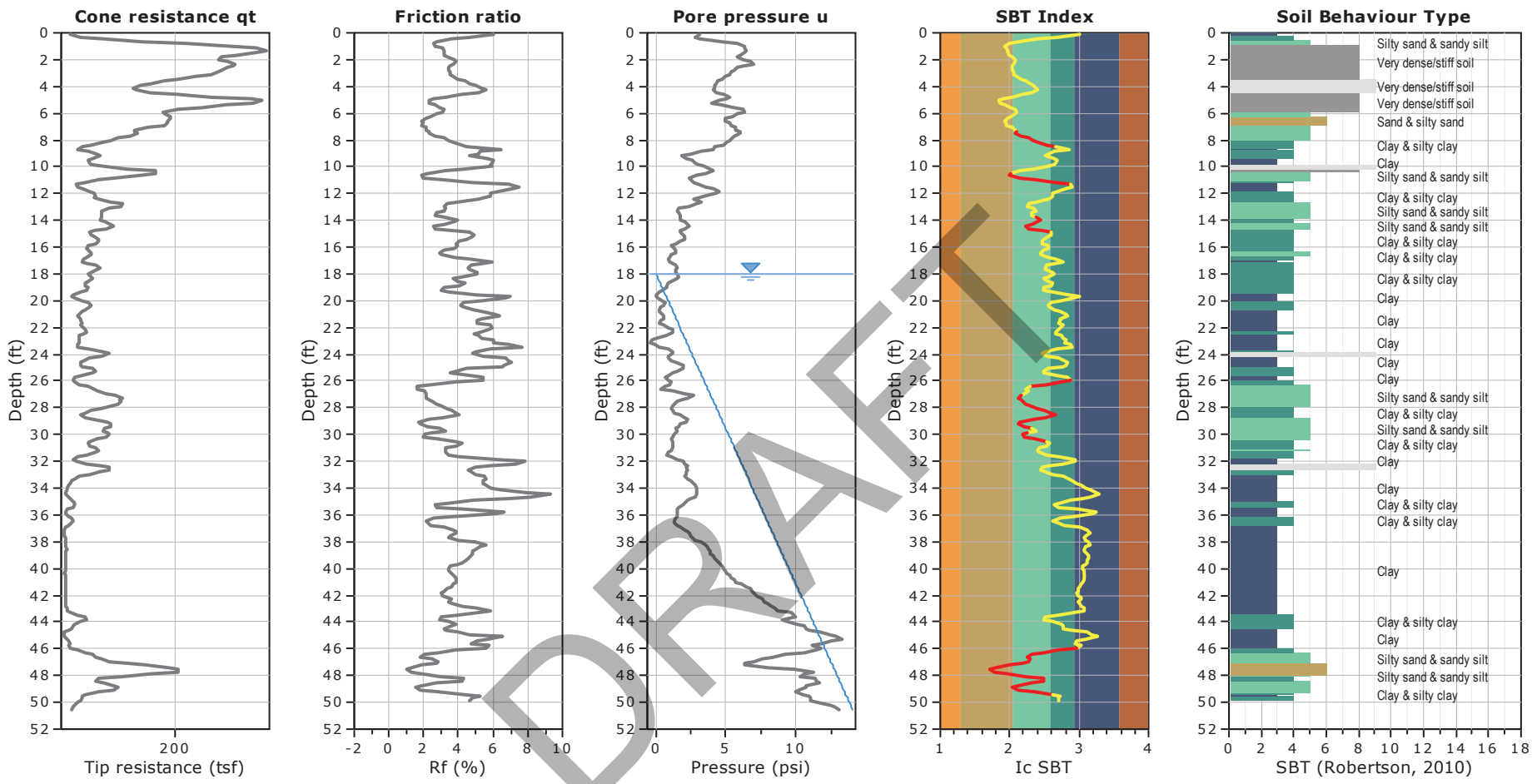
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-6

Date 08/14/20 | Project No. 20-1874 | Figure A-6



DRAFT

Total depth: 50.5 ft, Date: July 9, 2020
Depth to Groundwater: 18 feet (measured with weighted tape)
Cone Operator: Middle Earth Geo Testing, Inc.

SBT legend

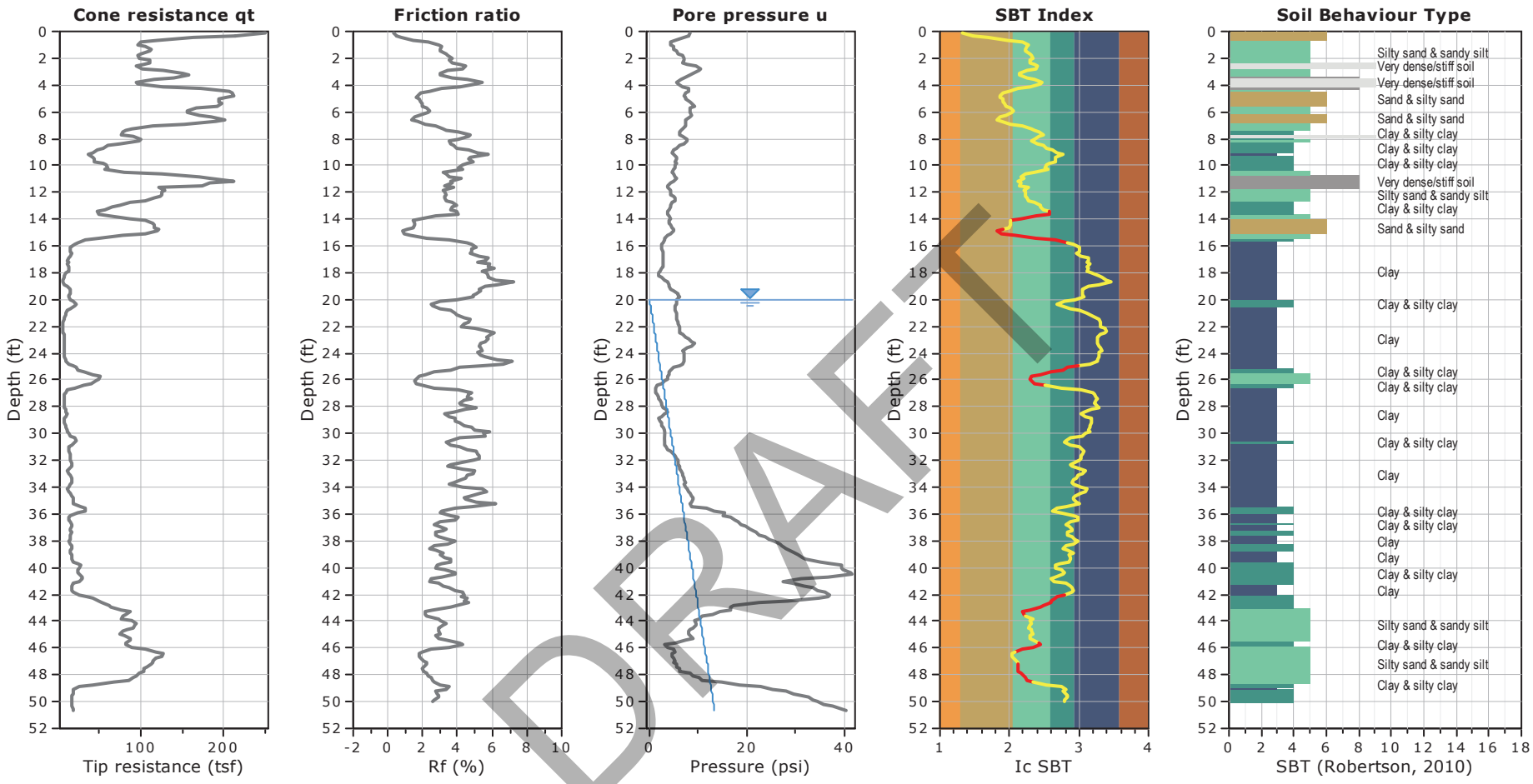
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-7

Date 08/14/20	Project No. 20-1874	Figure A-7



DRAFT

Total depth: 50.7 ft, Date: July 9, 2020
Depth to Groundwater: 20 feet (measured with weighted tape)
Cone Operator: Middle Earth Geo Testing, Inc.

SBT legend

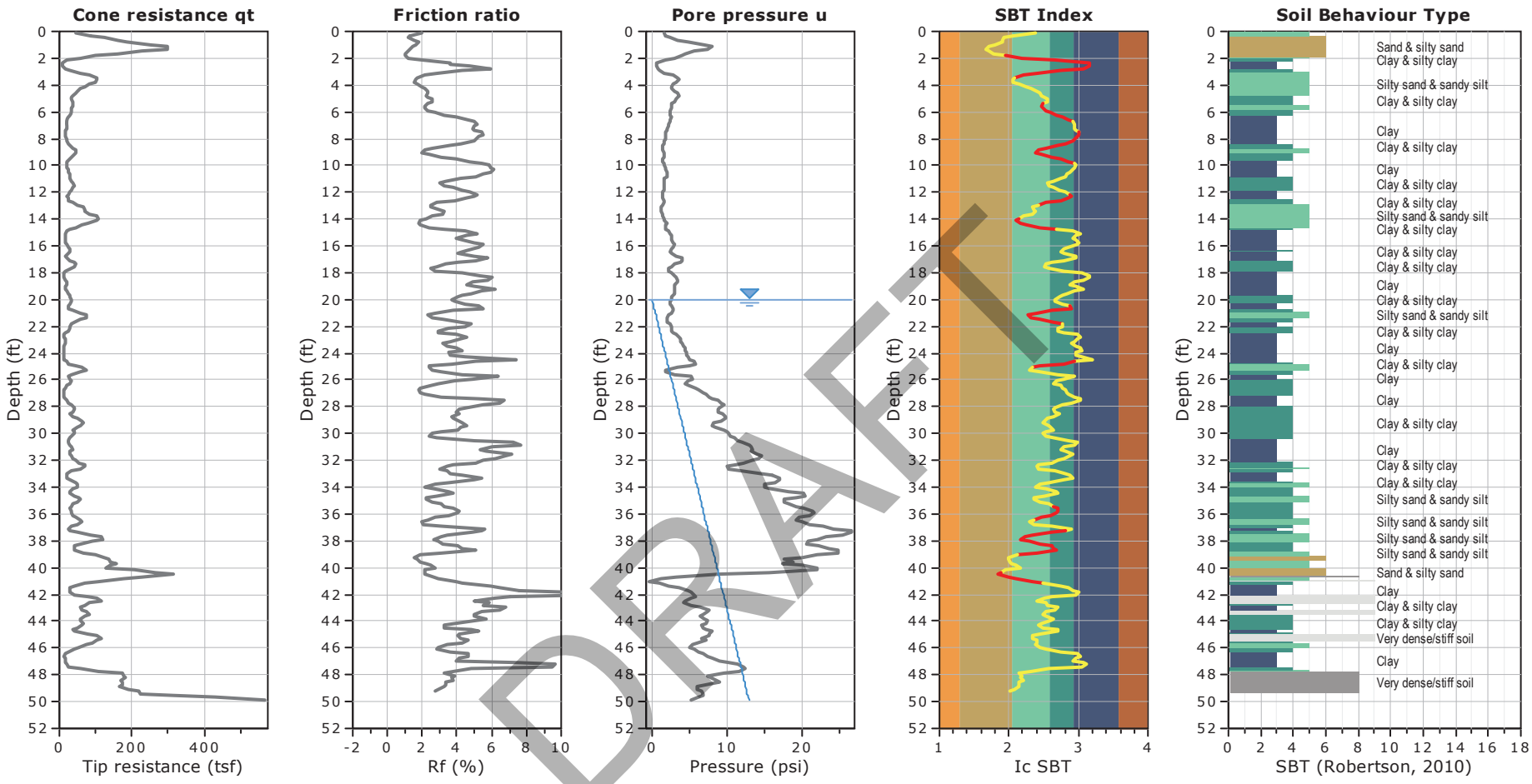
1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-8

Date 08/14/20	Project No. 20-1874	Figure A-8



DRAFT

Total depth: 49.9 ft, Date: July 9, 2020
Depth to Groundwater: 20 feet (measured with weighted tape)
Cone Operator: Middle Earth Geo Testing, Inc.

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty clay
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

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ROCKRIDGE GEOTECHNICAL

CONE PENETRATION TEST RESULTS
CPT-9

Date 08/14/20 | Project No. 20-1874 | Figure A-9

PROJECT: **PACIFICA WORKFORCE HOUSING**
930 ODDSTAD BOULEVARD
Pacifica, California

Log of Boring IT-1

Boring location: See Site Plan, Figure 2

Date started: 07/15/2020 | Date finished: 07/15/2020

Drilling method: 8-inch diameter Hollow-Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Downhole Safety Hammer

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford
Drilled by: Exploration Geoservices, Inc.
Rig: Mobile B61

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1						GRAVEL with CLAY and SAND (GW-GC) yellow-brown and gray, dense, dry to moist, fine to coarse angular gravel						
2	S&H		22	36	GW-GC							
3			30									
4			21			FILL						
5												
6	S&H		15	13		medium dense				46		
7			10									
8			9		SC	CLAYEY SAND (SC) gray-brown, medium dense, moist, with organics Particle Size Distribution; see Appendix B						
9												
10												
11												
12												

DRAFT

Boring terminated at a depth of 7 feet below ground surface.
Borehole backfilled with cement grout on July 22, 2020.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.63 and 1.1, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 20-1874 | Figure: A-10

PROJECT: **PACIFICA WORKFORCE HOUSING**
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Pacifica, California

Log of Boring IT-2

Boring location: See Site Plan, Figure 2

Date started: 07/15/2020 | Date finished: 07/15/2020

Drilling method: 8-inch diameter Hollow-Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Downhole Safety Hammer

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford
Drilled by: Exploration Geoservices, Inc.
Rig: Mobile B61

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value [1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1						SAND with CLAY and GRAVEL (SW-SC) yellow-brown and gray, medium dense, dry to moist, fine to coarse subangular gravel						
2	S&H		22	22	SW-SC							
3			16									
4			16			FILL						
5												
6	S&H		25	23		moist				9		
7			22			Particle Size Distribution; see Appendix B						
8			11									
9												
10												
11												
12												

DRAFT

Boring terminated at a depth of 7 feet below ground surface.
Borehole backfilled with cement grout on July 22, 2020.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.63 and 1.1, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 20-1874 | Figure: A-11

PROJECT: **PACIFICA WORKFORCE HOUSING**
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Pacifica, California

Log of Boring IT-3

Boring location: See Site Plan, Figure 2

Date started: 07/15/2020 | Date finished: 07/15/2020

Drilling method: 8-inch diameter Hollow-Stem Auger

Hammer weight/drop: 140 lbs./30 inches | Hammer type: Downhole Safety Hammer

Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford
Drilled by: Exploration Geoservices, Inc.
Rig: Mobile B61

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value [1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1						CLAYEY GRAVEL with SAND (GC) yellow-brown and gray, medium dense, dry to moist, coarse subangular gravel						
2	SPT		9									
3			9 14	28	GC							
4												
5												
6	S&H		17 27	42		dense Particle Size Distribution; see Appendix B				12		
7			33			FILL						
8												
9												
10												
11												
12												

DRAFT

Boring terminated at a depth of 7 feet below ground surface.
Borehole backfilled with cement grout on July 22, 2020.
Groundwater not encountered during drilling.

[1] S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.63 and 1.1, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 20-1874 | Figure: A-12

PROJECT: **PACIFICA WORKFORCE HOUSING**
930 ODDSTAD BOULEVARD
Pacifica, California

Log of Boring B-1

Boring location: See Site Plan, Figure 2
Date started: 07/22/2020 Date finished: 07/22/2020
Drilling method: 8-inch diameter Hollow-Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Downhole Safety Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford
Drilled by: Exploration Geoservices, Inc.
Rig: Mobile B61

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION		Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	S&H		28 30 23	34	SC	CLAYEY SAND with GRAVEL (SC) yellow-brown and gray, dense, dry to moist, fine to coarse gravel	FILL					11.5	122
3	SPT		10 10 17	30		Corrosivity Test; see Appendix B medium dense to dense, moist							
5	S&H		18 35 46	51		red chert-rich zone, very dense						10.8	134
7	SPT		10 8 8	18		medium dense							
10	S&H		16 17 34	32		dark brown, dense, increase fines content Particle Size Distribution; see Appendix B					26	19.2	112
15	SPT		16 24 28	57		very dense							
20	S&H		18 22 22	28		medium dense							
22					GC	CLAYEY GRAVEL with SAND (GC) dark brown-gray, with green and yellow, medium dense, moist, fine gravel ▽ (07/22/2020; 13:50 PM)							
24					GC	CLAYEY GRAVEL with SAND (GC) brown, medium dense, moist to wet, coarse sand, fine gravel	ALLUVIUM						
25	SPT		5 5 10	17									
29					CL	SANDY CLAY (CL) brown to dark yellow-brown, stiff, wet, coarse sand, trace fine gravel							
30	SPT		4 4 7	12									
32													

DRAFT

Boring terminated at a depth of 31.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at a depth of 23 feet during drilling.

S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.63 and 1.1, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 20-1874
Figure: A-13

PROJECT: **PACIFICA WORKFORCE HOUSING**
930 ODDSTAD BOULEVARD
Pacifica, California

Log of Boring B-2

Boring location: See Site Plan, Figure 2
Date started: 07/22/2020 Date finished: 07/22/2020
Drilling method: 8-inch diameter Hollow-Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Downhole Safety Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford
Drilled by: Exploration Geoservices, Inc.
Rig: Mobile B61

LABORATORY TEST DATA

DEPTH (feet)	Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1–2	SPT		8 11 12	25	GW-GC	GRAVEL with CLAY and SAND (GW-GC) yellow-brown and gray, medium dense, moist, fine to coarse gravel						
3–4	S&H		10 20 22	28		Particle Size Distribution; see Appendix B				8	5.5	121
5–6	SPT		10 10 9	21		increase fines content						
7–8	S&H		10 10 18	18							12.7	123
9–10	SPT		12 12 22	19								
11–12												
13–14												
15–16	S&H		16 28 50/5"	49/ 11"		CLAYEY GRAVEL with SAND (GC) light brown, yellow-red, and green, very dense, moist						
17–18					GC							
19–20						GRAVEL with CLAY and SAND (GW-GC) yellow-brown, dense, moist						
21–22	SPT		14 14 20	37								
23–24					GW-GC	▽ (07/22/2020; 11:40 AM)						
25–26	SPT		9 10 13	25		CLAYEY GRAVEL with SAND (GC) brown-gray, medium dense, moist to wet, gray sandstone gravel						
27–28					GC							
29–30												
31–32	S&H		28 38 50/5"	55/ 11"		dark brown-gray and green mottled, very dense, moist, with high plasticity CLAY (CH) and roots						

FILL

ALLUVIUM

DRAFT

Boring terminated at a depth of 31.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at a depth of 23 feet during drilling.

S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.63 and 1.1, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 20-1874
Figure: A-14

PROJECT: **PACIFICA WORKFORCE HOUSING**
930 ODDSTAD BOULEVARD
Pacifica, California

Log of Boring B-3

Boring location: See Site Plan, Figure 2
Date started: 07/22/2020 | Date finished: 07/22/2020
Drilling method: 8-inch diameter Hollow-Stem Auger
Hammer weight/drop: 140 lbs./30 inches | Hammer type: Downhole Safety Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford
Drilled by: Exploration Geoservices, Inc.
Rig: Mobile B61

LABORATORY TEST DATA

DEPTH (feet)	Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	S&H		9 10 10	13		CLAYEY GRAVEL with SAND (GC) yellow-brown and gray, medium dense, dry to moist, fine to coarse gravel						
3	S&H		24 30 36	23		Particle Size Distribution; see Appendix B				18	8.9	120
5	SPT		13 14 30	48		Corrosivity Test; see Appendix B dense						
7	SPT		18 37 27	70		very dense						
9	SPT		16 12 14	29	GC	medium dense, moist						
14	SPT		15 25 26	56		very dense, abundant chert, greenstone sandstone gravel						
19	SPT		16 14 14	31		▽ (07/22/2020; 9:20 AM) GRAVEL with CLAY and SAND (GW-GC) yellow-brown, dense, moist						
23	SPT		7 11 15	29	GW-GC	CLAYEY GRAVEL with SAND (GC) dark gray and olive-brown, medium dense, wet, fine gravel, trace rootlets						
30	SPT		13 18 15	36	GC	dark brown-gray and green, dense, coarse sand fine subrounded gravel						

FILL

ALLUVIUM

DRAFT

Boring terminated at a depth of 31.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at a depth of 20 feet during drilling.

S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.63 and 1.1, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 20-1874
Figure: A-15

PROJECT: **PACIFICA WORKFORCE HOUSING**
930 ODDSTAD BOULEVARD
Pacifica, California

Log of Boring B-4

Boring location: See Site Plan, Figure 2
Date started: 07/15/2020 Date finished: 07/15/2020
Drilling method: 8-inch diameter Hollow-Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Downhole Safety Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford
Drilled by: Exploration Geoservices, Inc.
Rig: Mobile B61

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	SPT		11 7 5	16	GW-GC	GRAVEL with CLAY and SAND (GW-GC) yellow-brown, medium dense, moist, fine sandstone gravel						
3	S&H		8 8 8	11							10.2	105
6	SPT		18 17 15	38		dense, gray sandstone gravel						
8	SPT		6 6 5	13		medium dense						
11	SPT		9 6 8	17		FILL						
16	S&H		8 8 6	10		CLAYEY SAND with GRAVEL (SC) red-brown, green and dark gray, loose to medium dense, moist Particle Size Distribution; see Appendix B				25	16.0	121
21	SPT		6 9 8	20	SC	red-brown, medium dense						
25						▽ (07/15/2020; 16:15 PM) wet				22		
26	SPT		4 5 8	16		Particle Size Distribution; see Appendix B						
29	SPT		5 4 3	8	CL	SANDY CLAY (CL) yellow, medium stiff to stiff, wet						
32												

DRAFT

Boring terminated at a depth of 30 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at a depth of 25 feet during drilling.

S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.63 and 1.1, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 20-1874
Figure: A-16

PROJECT: **PACIFICA WORKFORCE HOUSING**
930 ODDSTAD BOULEVARD
Pacifica, California

Log of Boring B-5

Boring location: See Site Plan, Figure 2
Date started: 07/15/2020 Date finished: 07/15/2020
Drilling method: 8-inch diameter Hollow-Stem Auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Downhole Safety Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford
Drilled by: Exploration Geoservices, Inc.
Rig: Mobile B61

LABORATORY TEST DATA

DEPTH (feet)	Sampler Type	Sample	Blows/ 6"	SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
0						5 inches of concrete						
1	SPT		16 17 15	38	GW-GC	GRAVEL with CLAY and SAND (GW-GC) yellow-brown and gray, dense, dry, fine to coarse sandstone gravel						
3	SPT		6 7 15	26		yellow-orange oxidation, medium dense, moist						
6	SPT		19 17 13	36		dense						
8	SPT		4 4 7	13		CLAYEY SAND with GRAVEL (SC) yellow-brown, gray, and olive, medium dense, moist, fine gravel						
11	S&H		25 20 15	25		FILL						
16	SPT		9 6 7	16	SC							
21	SPT		7 7 6	16		Particle Size Distribution; see Appendix B (07/15/2020; 14:10 PM) ▽				20		
26	SPT		5 5 7	14		seam of stiff SANDY CLAY (CL)						
29	S&H		18 25 27	36		dense						
32												

DRAFT

Boring terminated at a depth of 30 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at a depth of 21 feet during drilling.

S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.63 and 1.1, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 20-1874
Figure: A-17

PROJECT: **PACIFICA WORKFORCE HOUSING**
930 ODDSTAD BOULEVARD
Pacifica, California

Log of Boring B-6

Boring location: See Site Plan, Figure 2
Date started: 07/15/2020 | Date finished: 07/15/2020
Drilling method: 8-inch diameter Hollow-Stem Auger
Hammer weight/drop: 140 lbs./30 inches | Hammer type: Downhole Safety Hammer
Sampler: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

Logged by: R. Ford
Drilled by: Exploration Geoservices, Inc.
Rig: Mobile B61

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES: Sampler Type	SAMPLES: Sample	SAMPLES: Blows/ 6"	SAMPLES: SPT N-Value[1]	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
1	S&H		39 44 50/3"	59/8"		CLAYEY SAND with GRAVEL (SC) yellow-brown and gray, very dense, dry, fine to coarse gravel					7.6	123
3	SPT		21 16 24	45		dense						
6	SPT		17 11 10	25		Corrosivity Test; see Appendix B medium dense, moist, less gravel						
8	SPT		7 4 4	10		red, olive, and dark gray, loose to medium dense						
11	S&H		6 6 7	9	SC	dark gray, loose, fine olive sandstone gravel Particle Size Distribution; see Appendix B				28	16.4	106
16	SPT		10 8 8	19		medium dense						
20						(07/15/2020; 11:27 PM)						
21	SPT		3 4 4	10		SANDY CLAY with GRAVEL (CL) dark gray-brown to olive-green, stiff, wet, coarse sand to fine subrounded gravel						
23					CL							
26	S&H		13 31 50/4"	51/ 10"		SANDSTONE olive, yellow, and red-brown, low hardness, friable to weak, deeply weathered						
29	SPT		50/6"	55/6"								

FILL
ALLUVIUM?
FRANCISCAN COMPLEX

DRAFT

Boring terminated at a depth of 29 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at a depth of 20 feet during drilling.

S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.63 and 1.1, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 20-1874
Figure: A-18

UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions		Symbols	Typical Names
Coarse-Grained Soils (more than half of soil > no. 200 sieve size)	Gravels (More than half of coarse fraction > no. 4 sieve size)	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine -Grained Soils (more than half of soil < no. 200 sieve size)	Silts and Clays LL = < 50	ML	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays LL = > 50	MH	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils		PT	Peat and other highly organic soils

GRAIN SIZE CHART

Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel coarse fine	3" to No. 4 3" to 3/4" 3/4" to No. 4	76.2 to 4.76 76.2 to 19.1 19.1 to 4.76
Sand coarse medium fine	No. 4 to No. 200 No. 4 to No. 10 No. 10 to No. 40 No. 40 to No. 200	4.76 to 0.075 4.76 to 2.00 2.00 to 0.420 0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

Unstabilized groundwater level

Stabilized groundwater level

SAMPLE DESIGNATIONS/SYMBOLS

Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered

Classification sample taken with Standard Penetration Test sampler

Undisturbed sample taken with thin-walled tube

Disturbed sample

Sampling attempted with no recovery

Core sample

Analytical laboratory sample

Sample taken with Direct Push sampler

Sonic

SAMPLER TYPE

C	Core barrel
CA	California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter
D&M	Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube
O	Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube
PT	Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube
S&H	Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter
SPT	Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter
ST	Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

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Pacifica, California

ROCKRIDGE GEOTECHNICAL

CLASSIFICATION CHART

Date 08/14/20 | Project No. 20-1874 | Figure A-19

I FRACTURING

Intensity	Size of Pieces in Feet
Very little fractured	Greater than 4.0
Occasionally fractured	1.0 to 4.0
Moderately fractured	0.5 to 1.0
Closely fractured	0.1 to 0.5
Intensely fractured	0.05 to 0.1
Crushed	Less than 0.05

II HARDNESS

1. **Soft** - reserved for plastic material alone.
2. **Low hardness** - can be gouged deeply or carved easily with a knife blade.
3. **Moderately hard** - can be readily scratched by a knife blade; scratch leaves a heavy trace of dust and is readily visible after the powder has been blown away.
4. **Hard** - can be scratched with difficulty; scratch produced a little powder and is often faintly visible.
5. **Very hard** - cannot be scratched with knife blade; leaves a metallic streak.

III STRENGTH

1. **Plastic** or very low strength.
2. **Friable** - crumbles easily by rubbing with fingers.
3. **Weak** - an unfractured specimen of such material will crumble under light hammer blows.
4. **Moderately strong** - specimen will withstand a few heavy hammer blows before breaking.
5. **Strong** - specimen will withstand a few heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.
6. **Very strong** - specimen will resist heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.

IV WEATHERING - The physical and chemical disintegration and decomposition of rocks and minerals by natural processes such as oxidation, reduction, hydration, solution, carbonation, and freezing and thawing.

D. Deep - moderate to complete mineral decomposition; extensive disintegration; deep and thorough discoloration; many fractures, all extensively coated or filled with oxides, carbonates and/or clay or silt.

M. Moderate - slight change or partial decomposition of minerals; little disintegration; cementation little to unaffected. Moderate to occasionally intense discoloration. Moderately coated fractures.

L. Little - no megascopic decomposition of minerals; little of no effect on normal cementation. Slight and intermittent, or localized discoloration. Few stains on fracture surfaces.

F. Fresh - unaffected by weathering agents. No disintegration of discoloration. Fractures usually less numerous than joints.

ADDITIONAL COMMENTS:

V CONSOLIDATION OF SEDIMENTARY ROCKS: usually determined from unweathered samples. Largely dependent on cementation.

U = unconsolidated
P = poorly consolidated
M = moderately consolidated
W = well consolidated

VI BEDDING OF SEDIMENTARY ROCKS

Splitting Property	Thickness	Stratification
Massive	Greater than 4.0 ft.	very thick-bedded
Blocky	2.0 to 4.0 ft.	thick bedded
Slabby	0.2 to 2.0 ft.	thin bedded
Flaggy	0.05 to 0.2 ft.	very thin-bedded
Shaly or platy	0.01 to 0.05 ft.	laminated
Papery	less than 0.01	thinly laminated

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ROCKRIDGE GEOTECHNICAL

PHYSICAL PROPERTIES CRITERIA FOR ROCK DESCRIPTIONS

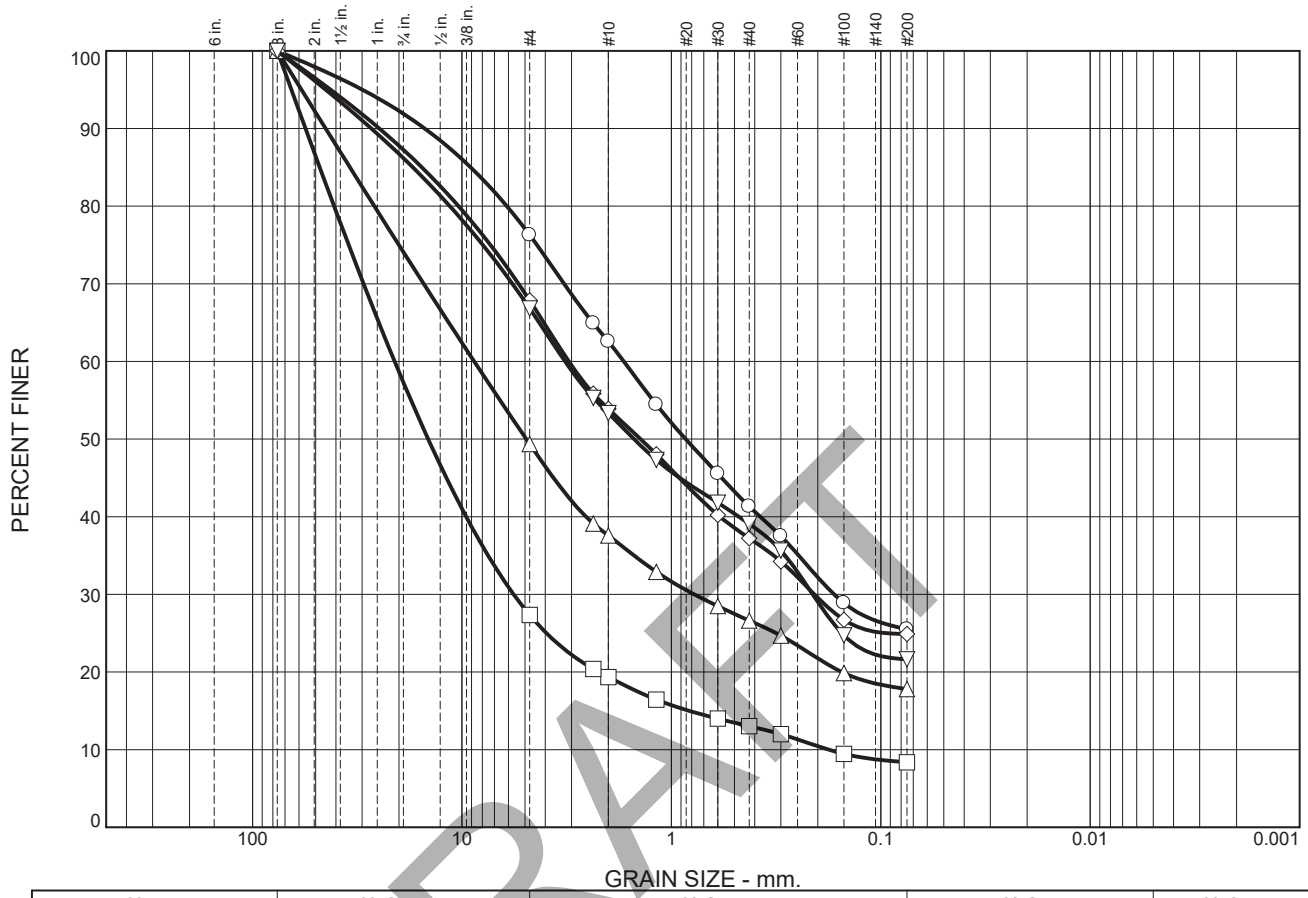
Date 08/14/20 | Project No. 20-1874 | Figure A-20

ROCKRIDGE GEOTECHNICAL

APPENDIX B

Laboratory Test Results

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	% +3"	% Gravel	% Sand	% Silt	% Clay
○	0.0	23.7	50.8	25.5	
□	0.0	72.7	18.9	8.4	
△	0.0	50.6	31.6	17.8	
◇	0.0	32.1	43.0	24.9	
▽	0.0	33.2	45.2	21.6	

SOIL DATA

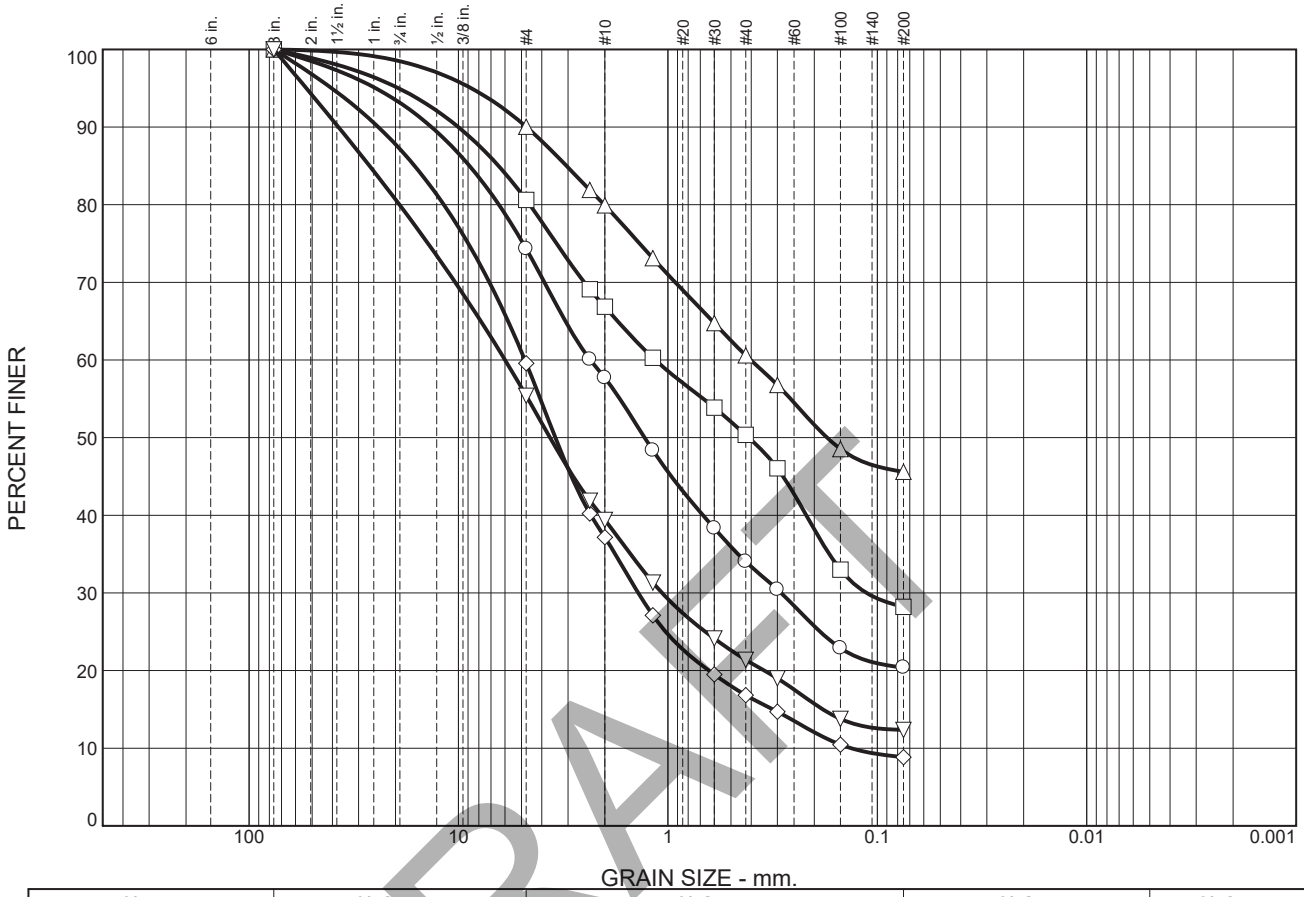
SYMBOL	SOURCE	DEPTH (ft.)	Material Description	USCS
○	B-1	11.0'	CLAYEY SAND with GRAVEL, dark brown	SC
□	B-2	4.0'	GRAVEL with CLAY and SAND, yellow-brown and gray	GW-GC
△	B-3	3.5'	CLAYEY GRAVEL with SAND, yellow-brown and gray	GC
◇	B-4	16.0'	CLAYEY SAND with GRAVEL, red-brown, green and dark gray	SC
▽	B-4	25.0'	CLAYEY SAND with GRAVEL, red-brown	SC

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ROCKRIDGE GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION REPORT

Date 08/14/20 | Project No. 20-1874 | Figure B-1



	% +3"	% Gravel	% Sand	% Silt	% Clay
○	0.0	25.7	53.9	20.4	
□	0.0	19.4	52.4	28.2	
△	0.0	10.0	44.4	45.6	
◇	0.0	40.4	50.8	8.8	
▽	0.0	44.6	43.1	12.3	

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SOIL DATA

SYMBOL	SOURCE	DEPTH (ft.)	Material Description	USCS
○	B-5	20.0'	CLAYEY SAND with GRAVEL, yellow-brown, gray, and olive	SC
□	B-6	11.0'	CLAYEY SAND with GRAVEL, dark gray	SC
△	IT-1	6.5'	CLAYEY SAND, gray-brown	SC
◇	IT-2	6.5'	SAND with CLAY and GRAVEL, yellow-brown and gray	SW-SC
▽	IT-3	6.5'	CLAYEY GRAVEL with SAND, yellow-brown and gray	GC

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ROCKRIDGE GEOTECHNICAL

PARTICLE SIZE DISTRIBUTION REPORT

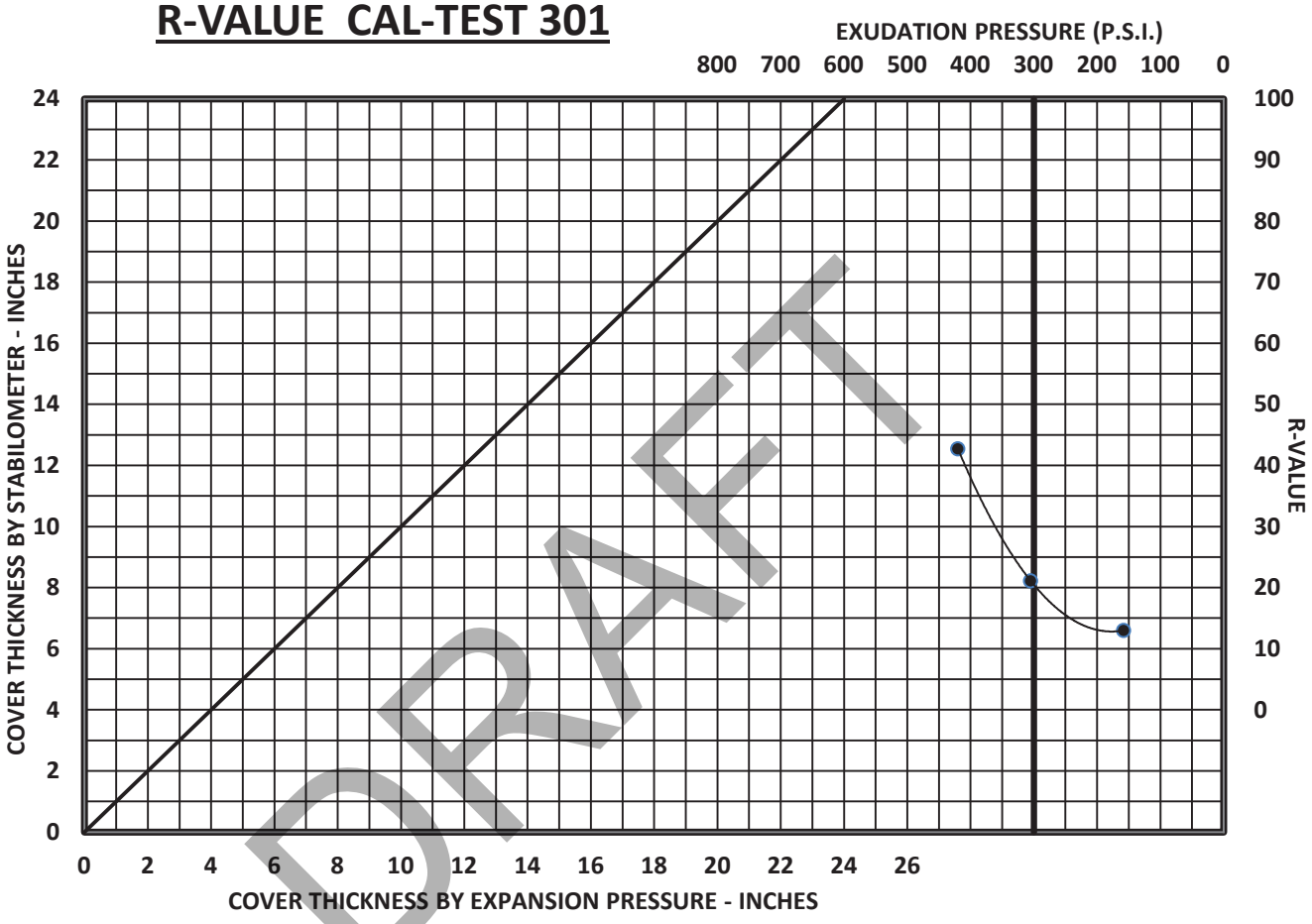
Date 08/14/20 | Project No. 20-1874 | Figure B-2

Sample Description: Dark yellow-brown sandy silt w/ rock Sample No: Bucket #1 Bulk (S1)

Source: 6-18 inches Date: 8/3/2020

Client Name: Rockridge Geotechnical #20-1874 Sampled: client Tested: BR/MR

R-VALUE CAL-TEST 301



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Exudation psi	Compaction (psi)	Expansion (0.0001")	Expansion (psf)	Moisture %	Dry Density	Resistance Value
420	350	34	147	13.4	123.4	43
305	201	26	113	14.5	119.6	21
158	162	22	95	16.2	117.0	13

Resistance Value
20

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ROCKRIDGE GEOTECHNICAL

R-VALUE TEST REPORT

Date 08/14/20 | Project No. 20-1874 | Figure B-3

	Method	ASTM D4327		ASTM D4327		ASTM G187		ASTM D4972	ASTM G200	SM 4500-S2-D	ASTM D4327	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D4327	ASTM D4327
Bore# / Description	**Depth**	**Sulfates** SO_4^{2-}		**Chlorides** Cl^-		**Resistivity** As Rec'd | Minimum		**pH**	**Redox**	**Sulfide** S^{2-}	**Nitrate** NO_3^-	**Ammonium** NH_4^+	**Lithium** Li^+	**Sodium** Na^+	**Potassium** K^+	**Magnesium** Mg^{2+}	**Calcium** Ca^{2+}	**Fluoride** F_2^-	**Phosphate** PO_4^{3-}
	(ft)	(mg/kg)	(wt%)	(mg/kg)	(wt%)	(Ohm-cm)	(Ohm-cm)		(mV)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B-1	3.0	109.0	0.0109	48.5	0.0049	18,760	7,370	7.84	166	ND	3.8	0.2	ND	68.3	7.2	18.4	40.1	4.2	0.1
B-3	5.0	16.2	0.0016	12.7	0.0013	14,070	6,700	8.30	158	ND	1.2	0.2	ND	21.9	1.0	9.8	23.2	4.3	0.2
B-6	5.0	16.7	0.0017	10.7	0.0011	44,220	3,015	8.24	154	ND	ND	ND	ND	24.3	1.1	7.5	24.1	3.5	0.1

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract

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930 ODDSTAD BOULEVARD
Pacifica, California

ROCKRIDGE GEOTECHNICAL

CORROSION RESULTS

Date 08/14/20 | Project No. 20-1874 | Figure B-4

APPENDIX 4.5-B: SUMMARY OF EXISTING GEOTECHNICAL AND GEOLOGIC INFORMATION – LETTER REPORT, ODDSTAD SITE PLANNED DEVELOPMENT, PACIFICA, CALIFORNIA, PREPARED BY SLATE GEOTECHNICAL CONSULTANTS, FEBRUARY 21, 2020.

SLATE
GEOTECHNICAL CONSULTANTS

February 21, 2020
Project No. 18-005.01

Slate Geotechnical Consultants, Inc.
490 43rd Street
Oakland, California 94609

Ken Klebanoff
Brookwood Advisors
50 California Street, Suite 1500
San Francisco, CA 94111

Re: Summary of Existing Geotechnical and Geologic Information – Letter Report
Oddstad Site Planned Development
Pacifica, California

Dear Mr. Klebanoff:

At your request, Slate Geotechnical Consultants, Inc. (Slate) has prepared this letter summarizing existing geotechnical and geologic information relating to the planned Oddstad site development located at 930 Oddstad Boulevard in Pacifica, California. The site is currently occupied by a former elementary school and playfields. Pacifica School District is currently in the process of applying for a planning permit with the City of Pacifica, which requires a preliminary geotechnical assessment be performed as part of the planning process. This letter does not address the requirements of a formal geotechnical assessment, though it is our understanding that a geotechnical assessment is being planned soon and will be required as a condition for approval of the permit.

EXISTING GEOTECHNICAL REPORTS

One geotechnical investigation was performed as part of the pre-development planning in 1966 by Dames and Moore:

1. Dames & Moore, 1966, Foundation Investigation Report, Proposed Park Pacifica Elementary School, Pacifica, California, unpublished report prepared for Laguna Salada Union School District, Job No. 2730-023-03, 18 p., August 25.

The investigation included a series of shallow boring logs, test pits, and laboratory testing to support geotechnical recommendations for design of the planned school structure foundations and mass grading efforts. To our knowledge, no post-construction subsurface explorations have been performed since the 1966 investigation to characterize the existing site fill (up to 10 feet thick).

A construction observation report was prepared in 1967 by Dames & Moore for the construction of the fill pad at the site:

2. Dames & Moore, 1967, Observation and Testing of Grading Operation, Proposed Park Pacifica Elementary School, Pacifica, California, unpublished report prepared for Laguna Salada Union School District, Job No. 2730-025, 4 p., April 25.

No results of specific field tests are included with this report to support the conclusions made by the authors on the suitability of the fill.

An engineering study was performed in 1968 by Dames & Moore to support the design of additional structures at the site:

3. Dames & Moore, 1968, Engineering Study Report, Proposed Additions to the Andres F. Oddstad School, Pacifica, California, unpublished report prepared for Laguna Salada Union School District, Job No. 2730-028, 30 p. with appendixes, August 19.

This report includes a summary of compaction tests in the site fill from the 1967 construction and geotechnical recommendations for the design and construction of new building foundations and mass grading efforts.

GEOLOGY-RELATED DOCUMENTS PREPARED BY SLATE

In 2018, Slate conducted a limited geologic site reconnaissance of the hillslopes that border the property to the east for signs of potential landslide hazards that could affect the planned re-development at the site:

4. Slate Geotechnical Consultants, Inc., 2018, Limited Geologic Reconnaissance Memorandum, prepared for Telesis Engineers, 3p., October 4.

A follow-up geologic study was performed in 2019 by Slate to provide a more detailed assessment of the hillslopes:

5. Slate Geotechnical Consultants, Inc., 2019, Limited Geologic Study of Hillslopes – Letter Report, Oddstad Site Planned Development, prepared for Pacifica School District, 11p., April 22.

This report included a detailed review of available geologic hazard maps and historical aerial photography of the site.

Included as enclosures to this letter are all five references listed above.

Sincerely yours,

Slate Geotechnical Consultants, Inc.



Justin D. Phalen, PE, GE
Associate Principal Engineer
jphalen@slategeotech.com
510.277.3325 Ext. 704

Enclosures

Reference 1 – Dames & Moore, 1966, Foundation Investigation Report
Reference 2 – Dames & Moore, 1967, Observation and Testing of Grading Operation
Reference 3 – Dames & Moore, 1968, Engineering Study Report (without Appendixes)
Reference 4 – Slate Geotechnical Consultants, Inc., 2018, Limited Geologic Reconnaissance Memorandum
Reference 5 – Slate Geotechnical Consultants, Inc., 2019, Limited Geologic Study of Hillslopes

REPORT
FOUNDATION INVESTIGATION
PROPOSED PARK PACIFICA ELEMENTARY SCHOOL
PACIFICA, CALIFORNIA

FOR LAGUNA SALADA UNION SCHOOL DISTRICT

DAMES & MOORE
JOB NO. 2730-023-03

DAMES & MOORE
CONSULTANTS IN APPLIED EARTH SCIENCES
SOIL MECHANICS · ENGINEERING GEOLOGY · GEOPHYSICS

ATLANTA · CHICAGO · HONOLULU · HOUSTON · LOS ANGELES · NEW YORK · PORTLAND · SALT LAKE CITY · SAN FRANCISCO · SEATTLE · WASHINGTON, D.C. · MADRID, SPAIN · SAINT JOHN, N.B., CANADA · TEHRAN, IRAN

500 SANSOME STREET · SAN FRANCISCO, CALIFORNIA 94111 · (415) 433-0700

PARTNERS: WILLIAM W. MOORE · WILLIAM ENKEBOLL · MALCOLM D. HORTON · ROBERT D. DARRAGH · CHARLES L. NICHOLS · DONALD F. JAVETE
ASSOCIATES: GEORGE D. ROBERTS · DENNIS J. R. HODGSON · ROBERT C. K. AU · CARL W. GARBE · PETER E. QUINN

August 25, 1966

Job No. 2730-023

Laguna Salada Union School District
c/o The Office of Masten and Hurd, Inc.
526 Powell Street
San Francisco, California 94108

Attention: Mr. H. D. Crosby, Jr.

Gentlemen:

Report
Foundation Investigation
Proposed Park Pacifica Elementary School
Pacifica, California
For Laguna Salada Union School District

INTRODUCTION

This report presents the results of our foundation investigation for the proposed Park Pacifica Elementary School to be located east of Oddstad Boulevard and Yosemite Drive in Pacifica, California.

The purpose of this study is to evaluate the subsurface soil conditions in the building and proposed borrow areas, type and depth of foundations, allowable soil pressures to be used in their design, anticipated settlements, and the suitability of the on-site fill to satisfactorily support the proposed development. Recommendations for site preparation, grading requirements, fill slopes, and slab-on-grade construction are also contained in this report.

PROPOSED DEVELOPMENT

It is proposed to develop this site into a complete school unit consisting of a one-story, grouted brick, slab-on-grade building with associated playground and parking areas. The location of the proposed building complex, and a future addition are shown on the Plot Plan, Plate 1, of this report. Grading will consist of maximum fills in both the building and playground areas ranging from eight to ten feet in thickness. No cuts are contemplated on this site. The anticipated building loads for this project will be nominal.

FIELD EXPLORATION

The field exploration program on this project was conducted under the supervision of one of our engineers in two phases, i.e., building site and borrow area.

At the building site we drilled four borings utilizing truck-mounted bucket-type drilling equipment, and excavated three test pits with the use of a backhoe at the locations shown on the Plot Plan, Plate 1. Both undisturbed and disturbed sack samples were obtained from the borings and test pits. In-place field density tests were taken in the test pits at various depths. From the field data, the Log of Borings and Log of Test Pits were prepared and are presented on Plates Nos. 3 through 5.

Due to limited access for conventional drilling equipment, a bull-dozer was used in the exploration of the proposed borrow area. Two test pits were excavated in this area at the locations shown on Plate 2. The materials encountered were classified in the field and disturbed samples were obtained for examination. A Log of Borrow Test Pits has been prepared and are presented on Plate 6.

LABORATORY TESTS

To evaluate the strength properties of the natural soils, unconsolidated-undrained triaxial compression tests were performed on selected samples. Moisture content and dry density tests were made on all undisturbed samples for classification and correlation purposes.

A consolidation test was performed on a representative sample of the underlying natural soils to evaluate potential settlements under the proposed loads. The results of this test are presented on Plate 8.

Laboratory compaction tests were performed on representative fill samples to evaluate the quality of the existing fill. Compaction curves have been prepared from these tests and are presented on Plate 9.

SITE AND SOIL CONDITIONS

The building site is relatively flat and is sparcely covered with weeds and occasional debris.

The subsurface soils at the boring locations consist of moderate to well-compacted red-brown gravelly sandy clay fill to depths ranging from 10 to 24 feet. Immediately below the fill a two- to four-foot layer of dark-gray sandy clay with gravel and some decayed vegetation was encountered. This material was underlain by a medium stiff brown silty clay to the limits of our borings.

At the time of drilling, groundwater was encountered in two borings approximately 25 to 27 feet below the ground surface.

The topography of the borrow area is steep and covered with heavy brush. The surface soils encountered in this area consist of about one to two feet of topsoil with some organics. Below the topsoil a two- to four-foot layer of light brown clayey sandy silt with weathered siltstone fragments was found. This material, in turn, is underlain by light-brown silty clay to the limits of our excavations.

The weathered siltstone within this zone can be readily excavated and where required crushed with a bulldozer. No ground or seepage water was encountered in these test pits.

A more detailed description of the actual soil conditions at the school site and borrow area is presented on the log of borings and log of test pits.

SEISMIC ACTIVITY

The entire bay area is in a zone of high seismic activity. In general all building sites in the bay area have equal shaking potentials. However, from the standpoint of displacement, the proximity of an active fault would be the primary concern.

The San Andreas Fault Rift Zone is the nearest known major active fault zone to the proposed school site, and it is located approximately three miles to the east. It is our opinion that the native soils or any properly compacted engineered fill that may be placed at this site would not be any more affected by seismic forces than other similar soils found in this locale.

DISCUSSION AND RECOMMENDATIONS

General - Based on the results of our investigation, the existing fill material has been satisfactorily placed and should be capable of supporting the anticipated loads of the proposed development without excessive settlements provided the foundations for the proposed and future buildings are designed in accordance with the following recommendations.

Foundations - It is recommended that the proposed and future buildings be supported on spread footing foundations bearing on properly compacted engineered fill. These footings should extend at least 2 feet below the lowest adjacent finished grade. All footings should be supported by a minimum of 1½ feet of granular engineered fill. To reduce the effect of differential settlement, all continuous footings should be designed to carry actual dead loads over an unsupported length of at least 12 feet.

It is also recommended that concrete walkways or pavements be supported by a minimum of 1 foot of granular fill. Any utility trenches adjacent to the building foundation (proposed or future) should have their bottom depths located above an imaginary 1:1 plane projected downward from the footing edge.

At the recommended depths,and with the provisions as stated above, the allowable soil pressures should not exceed 2,000 pounds per square foot for dead load only, 3,000 pounds per square foot for combined dead and live loads, and 4,000 pounds per square foot for all loads including wind or seismic.

Settlement - Due to the light loads imposed by the building, we do not anticipate significant settlements from the weight of the structure. However, the weight of the proposed fill in the building area will cause limited areal settlements on the order of $\frac{1}{2}$ to 1 inch over a period of several years. This settlement should be relatively uniform, and not cause excessive differential settlement of the structure.

Site Preparation and Grading - It is recommended that all site preparation and grading be done under the direct observation of the soil engineer issuing this report.

Site preparation should consist of clearing the site of any organics or debris, and stripping the upper 3 to 6 inches of surface soils in the building and paving areas as required. This material, if free of organics, may be reused for engineered fill outside these areas. Any isolated loose soil pockets of original fill material should be overexcavated. All surfaces exposed by stripping or overexcavation should be scarified to a minimum of 6 inches and recompacted to a minimum of 90 percent of the maximum dry density determined by the Modified A.A.S.H.O. Compaction Test Procedure (A.A.S.H.O. T 180-57). These compaction criteria also apply to the placement of any additional material used to bring the building and pavement areas to final grades. The required compaction should extend at least 5 feet beyond the limits of these areas.

In other areas such as the play areas where no major construction is planned, compaction to 85 percent of the above criteria would suffice. All fill material should be approved by the soil engineer prior to placement and subsequently placed in approximately six-inch-lifts in the compacted state, and to the compaction requirements stated above.

Fill slopes should not be placed in excess of 2:1 (two horizontal to one vertical) in the building and pavement areas. In areas with 85 percent compaction requirements, slopes should not be placed in excess of $2\frac{1}{2}$:1. All slopes should be protected from erosion and ponding of water during placement and after completion of the engineered fill.

Floor Slabs - Slab-on-grade floors should be supported on at least 1 foot of granular material compacted to 90 percent minimum density. In any area where dampness of the floor slab may be undesirable or where moisture-susceptible floor covering is to be used, it is recommended that a minimum of 4 inches of free-draining gravel be placed under the slab to act as a capillary break. The gravel should be covered by a moisture-proof membrane in order to prevent moisture-vapor condensation on the underside of the concrete slab. It is also suggested that the membrane be covered with a 2-inch sand layer to protect it during construction. The sand will also aid in curing the concrete provided it is moistened just prior to pouring the slab.

BORROW AREA

The materials encountered at the borrow area are suitable for use as a source of fill provided the topsoil containing numerous roots and decayed vegetation is wasted. Any rocks larger than 6 inches in diameter should not

be placed in the building or pavement areas. However, a limited amount of this oversized material may be placed in the other areas, but only under the direction of the soil engineer.

During our exploration of the borrow area material suitable as a source of granular fill (recommended earlier in this report) was not encountered. This condition may change during the actual borrow operation. Therefore, provisions for importing this granular material should be made at this time.

LIMITATIONS

The recommendations in this report are based on the assumption that the soil conditions do not deviate appreciably from those disclosed in the borings and test pits. If any variations or undesirable conditions are encountered during construction, the soil engineer should be notified so that supplemental recommendations can be made if required.

The following Plates are attached and complete this report.

Plate 1 - Plot Plan
Plate 2 - Borrow Site
Plate 3 - Log of Borings (Borings 1 and 2)
Plate 4 - Log of Borings (Borings 3 and 4)
Plate 5 - Log of Test Pits (Test Pits 1 and 2)
Plate 6 - Log of Borrow Test Pits (Borrow Test Pits 1 and 2)
Plate 7 - Soil Classification Chart and Key to Test Data
Plate 8 - Consolidation Test Data
Plate 9 - Compaction Test Data

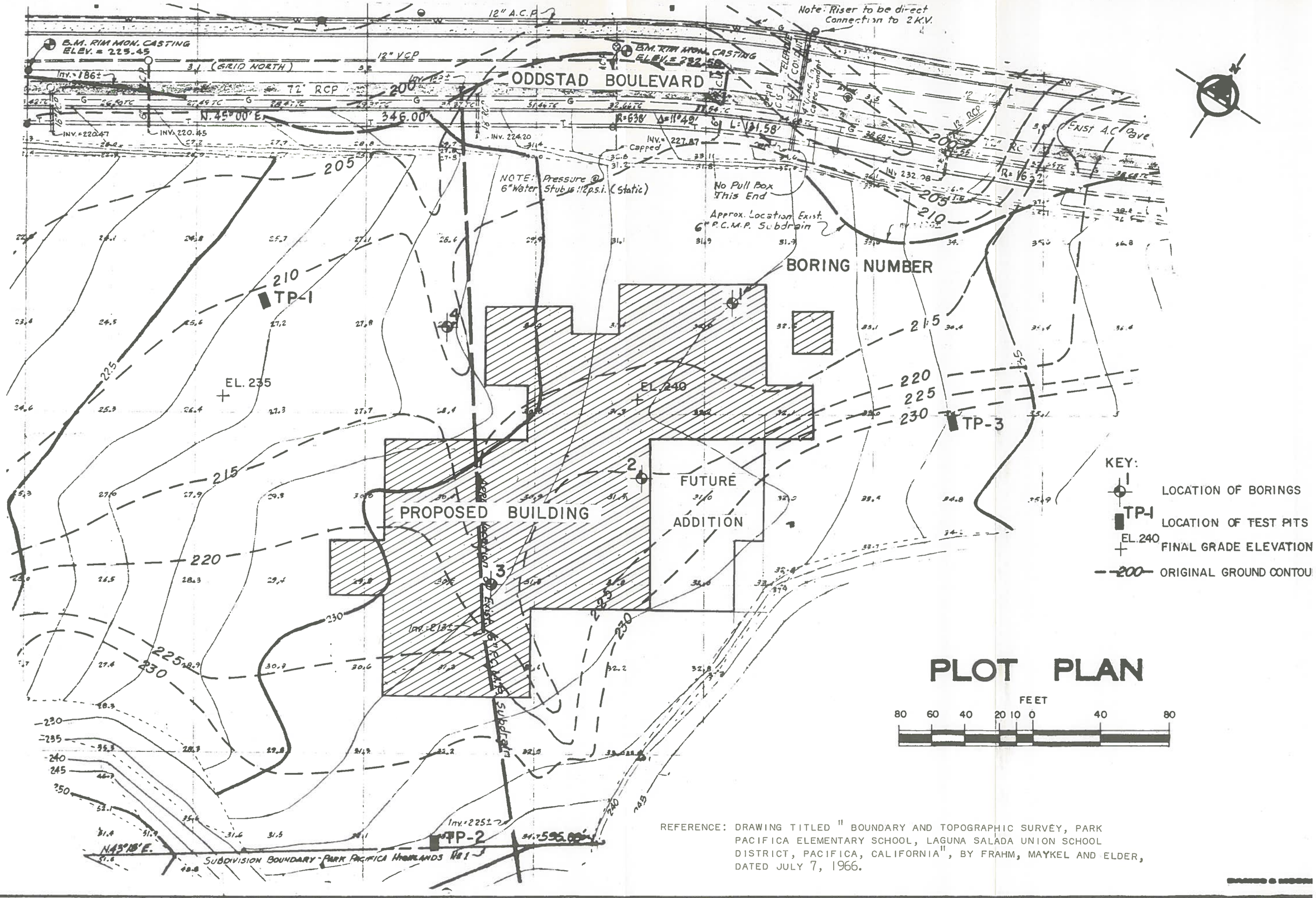
Yours very truly,

DAMES & MOORE

Peter E. Quinn

PEQ:ef
(Five copies submitted)

cc: Earl and Wright
Attention: Mr. Johathan C. Wright



2780-023

REFERENCE: DRAWING TITLED " BOUNDARY AND TOPOGRAPHIC SURVEY, PARK PACIFICA ELEMENTARY SCHOOL, LAGUNA SALADA UNION SCHOOL DISTRICT, PACIFICA, CALIFORNIA", BY FRAHM, MAYKEL AND ELDER, DATED JULY 7, 1966.

PLATE 1

BY MP DATE 8/8/66
CHECKED BY

FILE 2730-023 Laguna Salada

REVISIONS
BY DATE

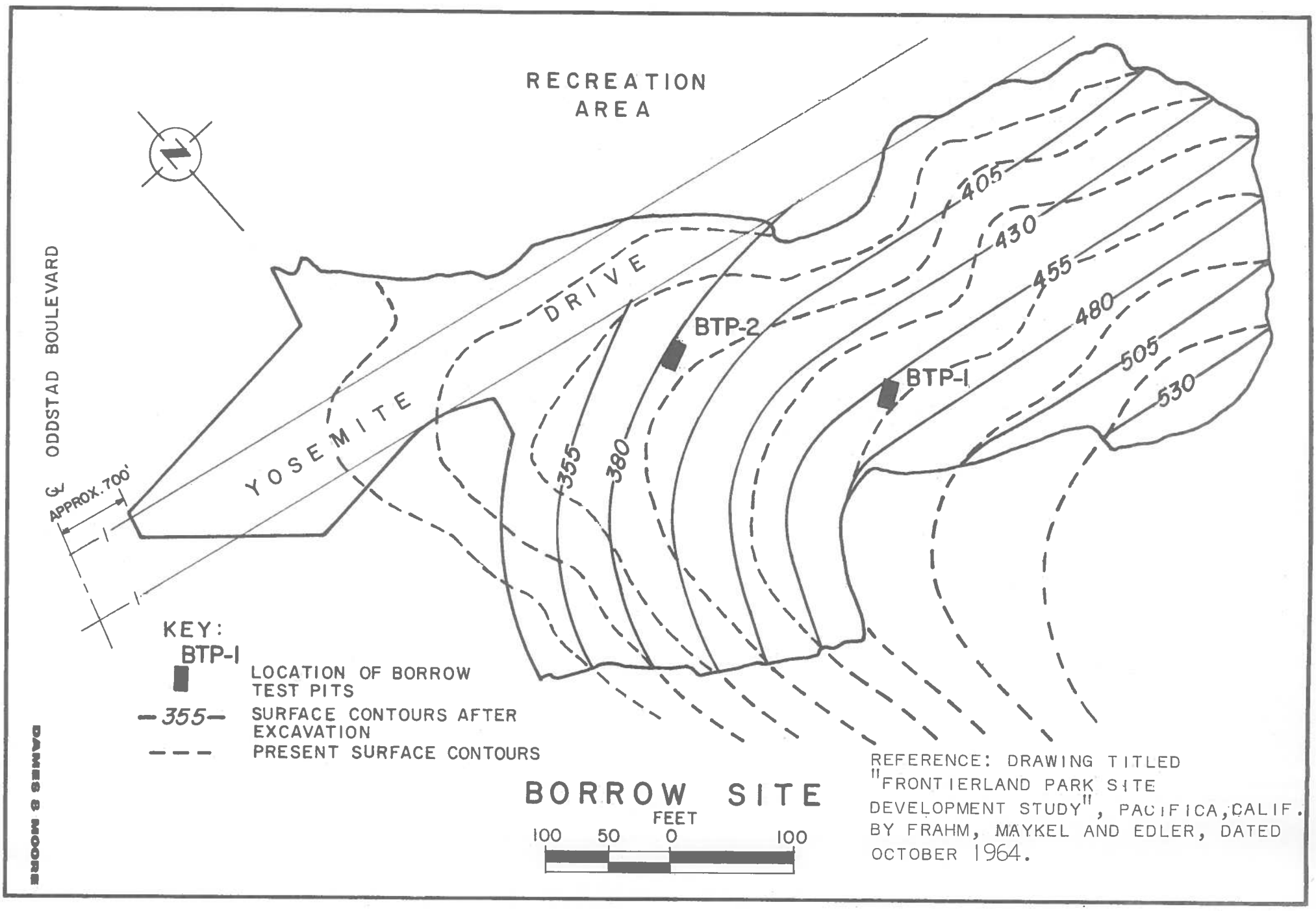
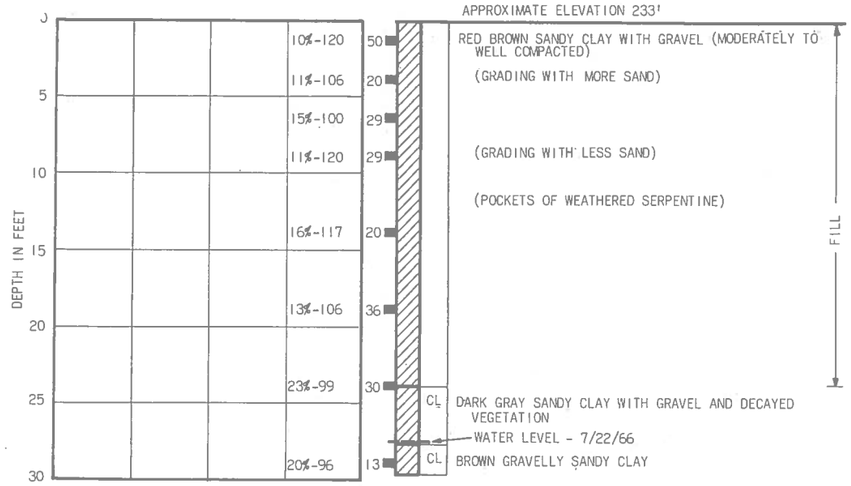


PLATE 2

DAMES & MOORE

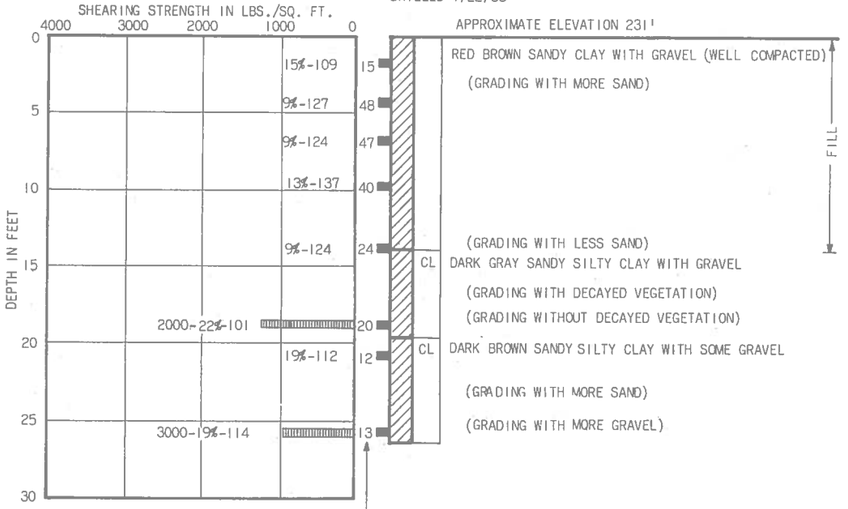
BORING 1

DRILLED 7/22/66



BORING 2

DRILLED 7/22/66



NOTES:
BORINGS DRILLED WITH TRUCK-MOUNTED BUCKET RIG USING 24" DIAMETER BUCKET.
ELEVATIONS REFER TO SPOT ELEVATIONS SHOWN ON PLOT PLAN.

LOG OF BORINGS

DAMES & MOORE

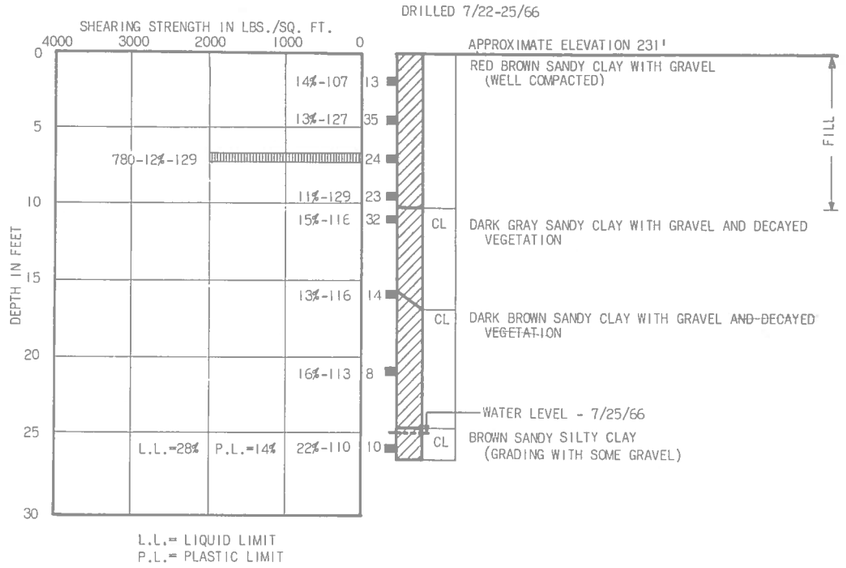
PLATE 3

DATE
BY
DATE
BY
PLATE OF

DRAWN BY D.M.P. DATE 8/9/66
CHECKED BY DATE

BORING 3

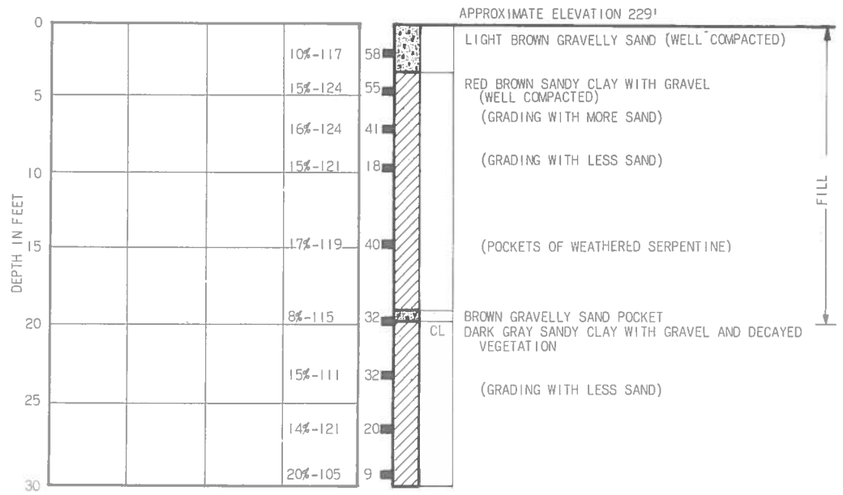
DRILLED 7/22-25/66



L.L.= LIQUID LIMIT
P.L.= PLASTIC LIMIT

BORING 4

DRILLED 7/21-22/66



LOG OF BORINGS

DAMES & MOORE

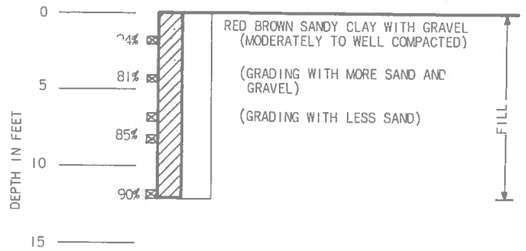
PLATE 4

REVISIONS BY DATE
BY DATE
PLATE OF

FILE 4750-052-4
Logged by Stafford
BY WMP DATE 8/3/66
CHECKED BY DATE

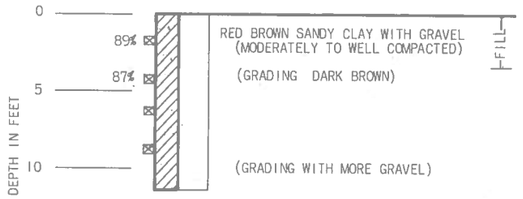
TEST PIT 1

EXCAVATED 7/26/66



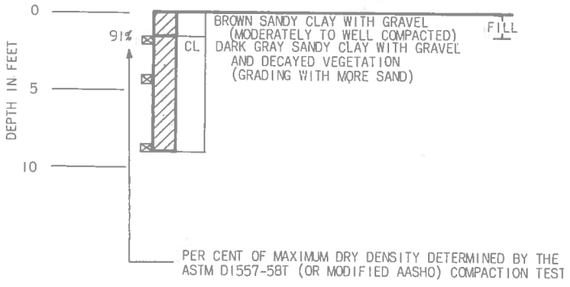
TEST PIT 2

EXCAVATED 7/26/66



TEST PIT 3

EXCAVATED 7/26/66



LOG OF TEST PITS

DAMES & MOORE

PLATE 5

BY _____ DATE _____
BY _____ DATE _____
PLATE _____ OF _____

tracing taken
BY A.P. DATE 8/5/66
CHECKED BY _____ DATE _____

REVISIONS BY ____ DATE ____

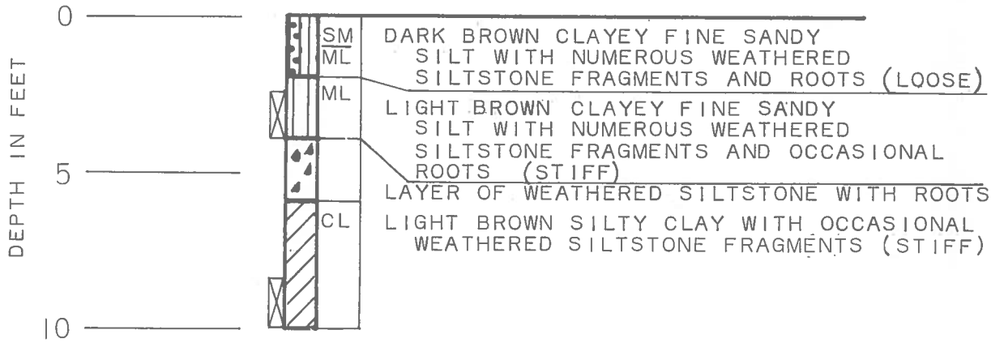
FILE 2730-073 Layout Sgl

BY DMW DATE 8/8/66

CHECKED BY ____ DATE ____

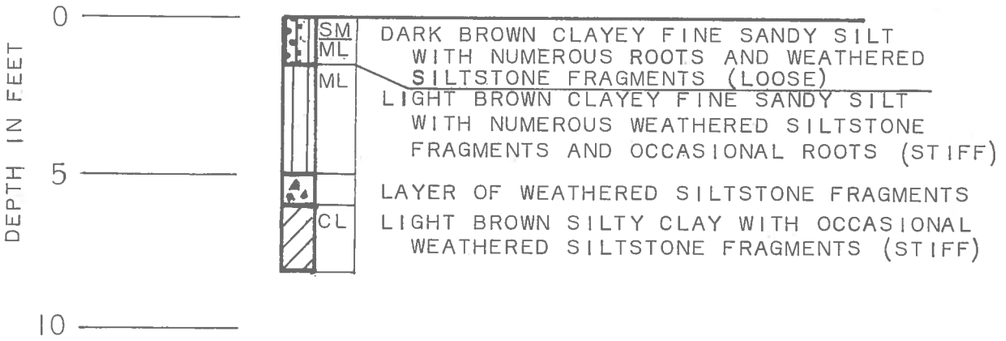
TEST PIT 1

EXCAVATED 8/4/66



TEST PIT 2

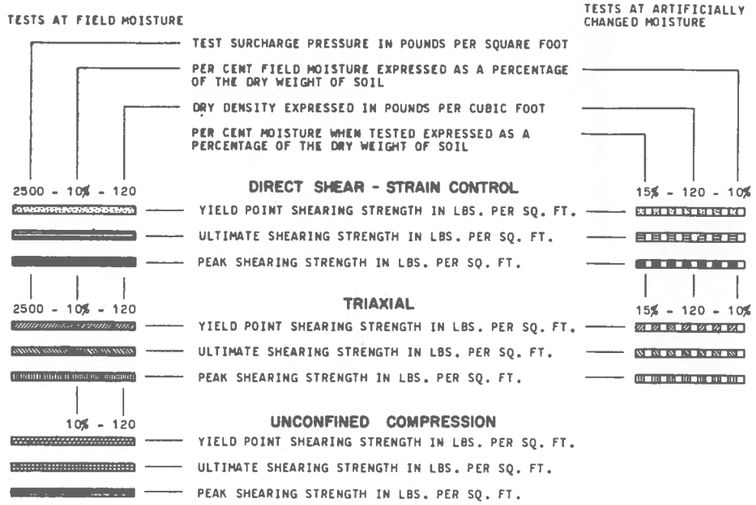
EXCAVATED 8/4/66



LOG OF BORROW TEST PITS

DAMES & MOORE

PLATE 6



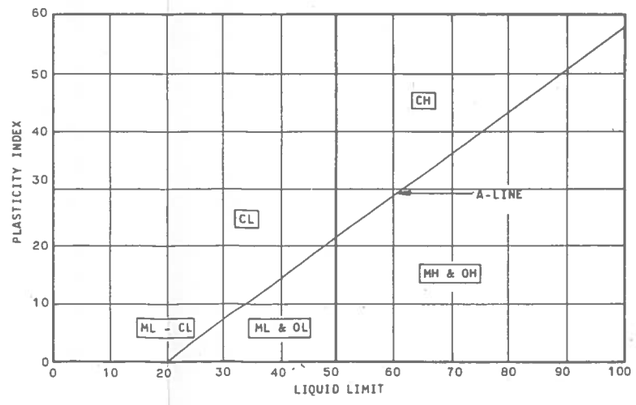
KEY TO TEST DATA

- INDICATES DEPTH OF UNDISTURBED SAMPLE
- INDICATES DEPTH OF DISTURBED SAMPLE
- INDICATES DEPTH OF SAMPLING ATTEMPT WITH NO RECOVERY
- INDICATES DEPTH OF STANDARD PENETRATION TEST
- INDICATES DEPTH AND LENGTH OF CORING RUN

KEY TO SAMPLES

SYMBOL	LETTER	DESCRIPTION	MAJOR DIVISIONS		
	GW	WELL-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	CLEAN GRAVELS (little or no fines)	GRAVELS — MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	COARSE-GRAINED SOILS — MORE THAN HALF OF MATERIAL IS LARGER THAN NO.200 SIEVE SIZE
	GP	POORLY-GRADED GRAVELS OR GRAVEL-SAND MIXTURES, LITTLE OR NO FINES			
	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES	GRAVELS WITH FINES (appreciable amount of fines)		
	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES			
	SW	WELL-GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES	CLEAN SANDS (little or no fines)	SANDS — MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE. for visual classification, the 1/4" size may be used as equivalent to the no. 4 sieve size.	
	SP	POORLY-GRADED SANDS OR GRAVELLY SANDS, LITTLE OR NO FINES			
	SM	SILTY SANDS, SAND-SILT MIXTURES	SANDS WITH FINES (appreciable amount of fines)		
	SC	CLAYEY SANDS, SAND-CLAY MIXTURES			
	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		FINE-GRAINED SOILS — MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE the no. 200 sieve size is about the smallest particle visible to the naked eye
	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS			
	OL	ORGANIC SILTS AND ORGANIC SILT-CLAYS OF LOW PLASTICITY			
	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		
	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS			
	OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS			
	PT	PEAT AND OTHER HIGHLY ORGANIC SOILS	HIGHLY ORGANIC SOILS		

SOIL CLASSIFICATION CHART
UNIFIED SOIL CLASSIFICATION SYSTEM

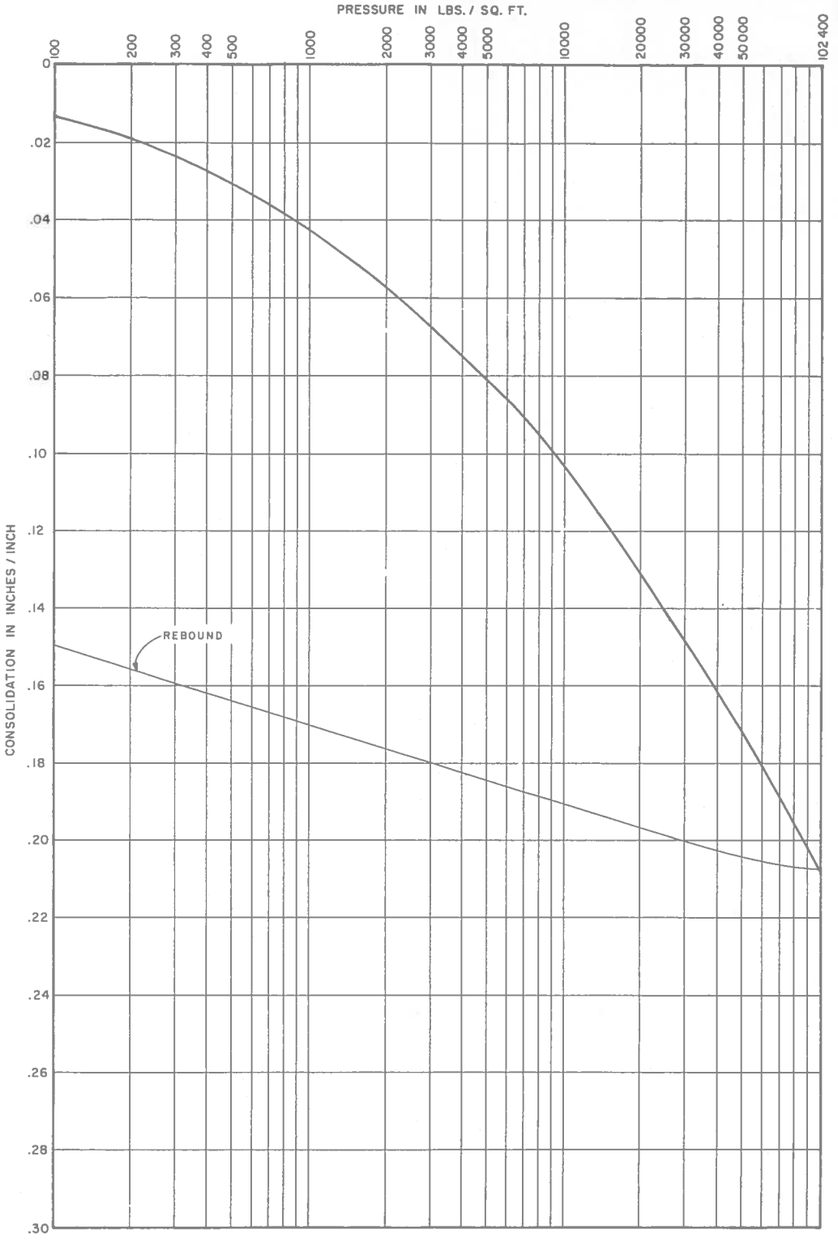


PLASTICITY CHART

SOIL CLASSIFICATION CHART & KEY TO TEST DATA

DAMES & MOO

PLATE 7



KEY	BORING	DEPTH.	ELEV.	SAMPLE	SYMBOL	SOIL CLASSIFICATION	LIQUID LIMIT	PLASTIC LIMIT	MOISTURE, %		DRY DENSITY, LBS/CU FT.		% SATURATION	
									BEFORE TEST	AFTER TEST	BEFORE TEST	AFTER TEST	BEFORE TEST	AFTER TEST
—	3	25.5'	205.5'±	8		BROWN SANDY SILTY CLAY	28	14	22	16	105	123		

CONSOLIDATION TEST DATA

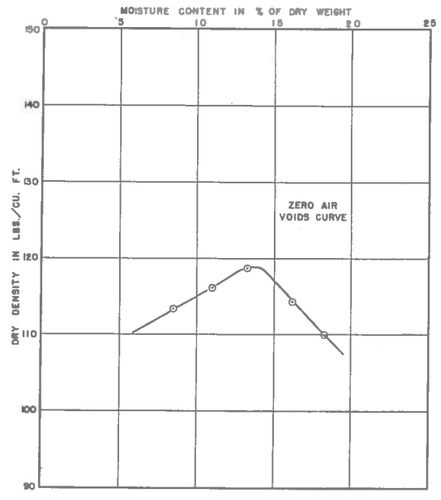
DAMES & MOORE

PLATE 8

REVISIONS
BY_____DATE_____
BY_____DATE_____
PLATE_____OF_____

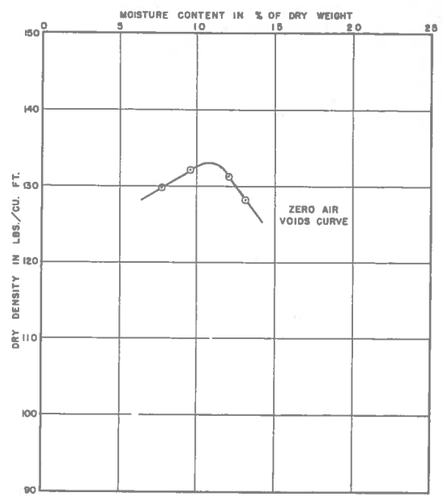
FILE CONSOLIDATION
BY Dmj.P. DATE 4/16/64
CHECKED BY_____DATE_____

SAMPLE NO. 1
DEPTH 1½'
SOIL - RED BROWN SANDY CLAY WITH GRAVEL
OPTIMUM MOISTURE CONTENT - 13.5%
MAXIMUM DRY DENSITY - 119 PCF
METHOD OF COMPACTION - ASTM D1557-58T METHOD C



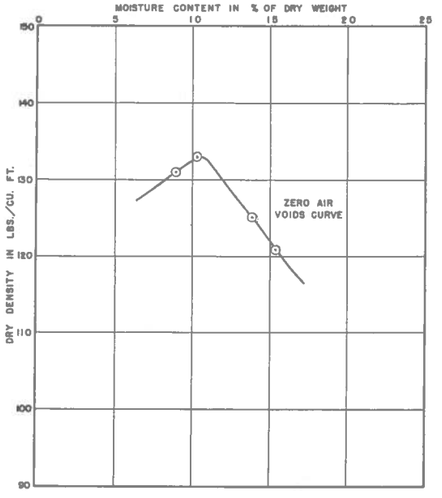
TEST PIT 1

SAMPLE NO. 2
DEPTH 4'
SOIL - RED BROWN GRAVELLY SANDY CLAY
OPTIMUM MOISTURE CONTENT - 11%
MAXIMUM DRY DENSITY - 133 PCF
METHOD OF COMPACTION - ASTM D1557-58T METHOD C



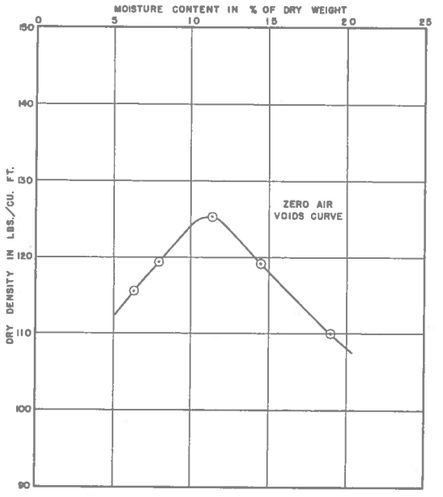
TEST PIT 1

SAMPLE NO. 3
DEPTH 8'
SOIL - RED BROWN GRAVELLY SANDY CLAY
OPTIMUM MOISTURE CONTENT - 10.5%
MAXIMUM DRY DENSITY - 133 PCF
METHOD OF COMPACTION - ASTM D1557-58T METHOD C



TEST PIT 1

SAMPLE NO. 1
DEPTH 1½'
SOIL - BROWN SANDY CLAY WITH GRAVEL
OPTIMUM MOISTURE CONTENT - 11.3%
MAXIMUM DRY DENSITY - 125 PCF
METHOD OF COMPACTION - ASTM D1557-58T METHOD C



TEST PIT 3

COMPACTION TEST DATA

DAMES & MOORE

PLATE 9

BY _____ DATE _____
BY _____ DATE _____ PLATE _____

BY Jaguar Materials DATE 6-17-71
CHECKED BY _____ DATE _____

APPENDIX B

REPORT

OBSERVATION AND TESTING OF GRADING OPERATION
PROPOSED PARK PACIFICA ELEMENTARY SCHOOL
PACIFICA, CALIFORNIA

FOR LAGUNA SALADA UNION SCHOOL DISTRICT

DAMES & MOORE
JOB NO. 2730-025-03

EARTH SCIENCES

DAMES & MOORE
CONSULTANTS IN APPLIED EARTH SCIENCES
SOIL MECHANICS · ENGINEERING GEOLOGY · GEOPHYSICS

ATLANTA · CHICAGO · HONOLULU · HOUSTON · LOS ANGELES · NEW YORK · PORTLAND · SALT LAKE CITY · SAN FRANCISCO · SEATTLE · WASHINGTON, D.C.
MADRID, SPAIN · SAINT JOHN, N.B., CANADA · TEHRAN, IRAN

500 SANSOME STREET · SAN FRANCISCO, CALIFORNIA 94111 · (415) 433-0700

PARTNERS: WILLIAM W. MOORE · WILLIAM ENKEBOLL · ROBERT D. DARRAGH · CHARLES L. NICHOLS · DONALD F. JAVETE
ASSOCIATES: GEORGE D. ROBERTS · DENNIS J. R. HODGSON · ROBERT C. K. AU · CARL W. GARBE · PETER E. QUINN

April 25, 1967

Job No. 2730-025

Laguna Salada Union School District
c/o The Office of Masten and Hurd, Inc.
526 Powell Street
San Francisco, California 94108

Attention: Mr. H. D. Crosby, Jr.

Gentlemen:

Observation and Testing of Grading Operation
Proposed Park Pacifica Elementary School
Pacifica, California
For Laguna Salada Union School District

Pursuant to your request, we have observed the grading operations and performed a series of tests on the engineered fill placed for the subject project. Criteria for site preparation, grading, material type, compaction requirements, and the installation of trenches are contained in the Plans and Specifications prepared by your architect, the Office of Masten and Hurd, Inc., and in accordance with the recommendation presented in our original foundation investigation report dated August 25, 1966.*

* Report, Foundation Investigation, Proposed Park Pacifica Elementary School, Pacifica, California, For Laguna Salada Union School District

An engineer from our firm was present on the site from December 20, 1966 through March 27, 1967, to observe grading operations and to test the placement of engineered fill as well as the installation of subsurface drains. Laboratory compaction curves were performed on acceptable borrow materials to be used as a source of engineered fill on this project. The data obtained from these curves were used to determine the acceptable minimum in-place density (pounds per cubic foot) required. Field density tests were performed in representative areas, to verify the percent of compaction obtained in the field. In localized areas, where the compaction requirements were not reached, the contractor was so informed. These areas were recompacted as required and tested to verify that the minimum compaction criteria on this project were obtained.

Based on our observations and the results of our in-place field density tests, all engineered fill placed on the project complies with the project specifications and has been satisfactorily placed.

The recommendations in our original foundation report for the placement of granular material in the proposed building and walkway areas have been followed. During the grading operations a suitable granular-type material was located in the borrow areas for this specific purpose.

It is our opinion that the properly placed engineered fill on this project would not be any more affected by seismic forces than similar natural soils found in this general locale.

Copies of all the test data and field reports have been submitted periodically. An additional copy of all test data and reports will be retained in our files for future reference if required. Should any questions arise concerning the statements presented in our field reports or this final report, please contact the undersigned at your convenience.

Yours very truly,

DAMES & MOORE

Peter E. Quinn

PEQ:ef
(Five copies submitted)

cc: Earl and Wright, Inc.

REPORT
ENGINEERING STUDY
PROPOSED ADDITIONS TO THE
ANDRES F. ODDSTAD SCHOOL
PACIFICA, CALIFORNIA

FOR LAGUNA SALADA UNION SCHOOL DISTRICT

DAMES & MOORE
JOB NO. 2730-028-03

EARTH SCIENCES

DAMES & MOORE
CONSULTANTS IN APPLIED EARTH SCIENCES
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WASHINGTON, D.C.
MADRID, SPAIN SAINT JOHN, N.B., CANADA
TEHRAN, IRAN

500 SANSOME STREET · SAN FRANCISCO, CALIFORNIA 94111 · (415) 433-0700

PARTNERS: WILLIAM W. MOORE · WILLIAM ENKEBOLL · ROBERT D. DARRAGH · CHARLES L. NICHOLS · DONALD F. JAVETE
ASSOCIATES: GEORGE D. ROBERTS · DENNIS J. R. HODGSON · ROBERT C. K. AU · CARL W. GARBE · PETER E. QUINN

August 19, 1968

Job No. 2730-028

Laguna Salada Union School District
c/o The Office of Masten and Hurd
One Kearny Street
San Francisco, California 94108

Attention: Mr. Christopher Ey

Gentlemen:

Report
Engineering Study
Proposed Additions to the
Andres F. Oddstad School
Pacifica, California

INTRODUCTION

This report presents the results of an engineering study for the Proposed Additions to the Andres F. Oddstad School in Pacifica, California. The recommendations given in this report were based on the data in our files and no additional drilling or testing was considered necessary.

At the subject site, we have performed a foundation investigation and have observed the placement of engineered fill as well. *Reports for these services were presented in August of 1966 and April of 1967, respectively.

* Foundation Investigation, Proposed Park Pacifica Elementary School, Pacifica, California, For the Laguna Salada Union School District dated August 25, 1966.

Observation and testing of Grading Operations, Proposed Pacifica Elementary School, Pacifica, California, For Laguna Salada Union School District dated April 25, 1967.

Copies of both reports submitted are included as Appendices A and B of this report for ease of reference.

PROPOSED FACILITIES

The proposed additions will consist of two single-story, grouted brick, slab-on-grade buildings, and associated paved playground areas. One of the structures will be a separate classroom building approximately 65 by 65 feet in plan, to be located southeast of the existing facilities. The other addition, approximately 40 by 25 feet in plan, will be an extension to the north of the main school building. Finished floor elevation of both buildings will be Elevation +239.75.

SUBSOIL CONDITIONS

A. Natural soils: these are described on pages 3 and 4 of our report, "Foundation Investigation, Proposed Park Pacifica Elementary School, Pacifica, California," presented in Appendix A.

B. Engineered fill: As stated in our report, "Observation and Testing of Grading Operations, Proposed Park Pacifica Elementary School, Pacifica, California" Appendix B, the grading operations were observed by an engineer of our firm. All fill placed complies with the project specifications.

DISCUSSIONS AND RECOMMENDATIONS

Grading - A comparison between existing grades and the proposed finished floor elevation discloses that only minor grading will be required. Maximum fill thickness will be on the order of two feet.

The surface soils in the building and paving areas should be scarified to a depth of six inches. All organic and/or otherwise unsuitable materials should be stripped and wasted. The remaining soils may be reused in the engineered fill. The scarified soils should be conditioned to optimum moisture content and recompacted to a minimum of 90 percent of the maximum dry density as determined by the Modified A.A.S.H.O. Compaction Test Procedure T 180-57. Any isolated pockets of soft soil should be recompacted at the direction of the soils engineer. The exposed subgrade should be approved by the soils engineer before any additional fill is placed.

All imported fill should be approved by the soils engineer. Fill materials should be granular. The granular borrow materials previously accepted by us can be used in this contract. Fill should be placed in six-inch layers (loose measurement) and compacted thereafter following the same criterion already stated (A.A.S.H.O. T 180-57, minimum 90 percent of the maximum dry density). All fills shall extend at least five feet beyond building limits. Fill slopes should not exceed two horizontal to one vertical.

Surface drainage during and after construction should be directed away from the building and paving areas, and all slopes should be protected from erosion.

Building Foundations - Spread footings are recommended for the EMR Addition and the Classroom addition. All footings should be placed on a minimum of 1½ feet of granular engineered fill, constructed as explained in the previous paragraph. To accomplish this, the material beneath and for a distance of one-foot on either side of footings should be over-excavated to a depth of 1½ feet. The material should then be replaced with granular compacted fill. The soils excavated may be used in general grading. The footing excavations should be

properly protected from any surface run-off water, in order to prevent the soils from becoming soft and unstable.

The footings can be designed using an allowable bearing pressure of 2,000 pounds per square foot for dead load only, 3,000 pounds per square foot for combined dead and live loads, and 4,000 pounds per square foot for all loads including wind or seismic.

In order to reduce the differential settlements all continuous footings should be designed to carry dead plus real live loads over an unsupported length of 12 feet.

In relation to the existing utility trenches all footings should extend below an imaginary plane starting at the utility trench edge, and projecting upward forming a 45 degree angle with the horizontal. New utility trenches should be designed so they will fulfill the same condition.

All footing excavations should be inspected and approved by a soils engineer immediately before the pouring of concrete.

Floor Slabs - Slab-on-grade floors should be supported on at least one foot of granular material compacted to a minimum of 90 percent maximum dry density (A.A.S.H.O. T 180-57). In any area where dampness of the floor slab may be undesirable or where moisture-susceptible floor covering is to be used, it is recommended that a minimum of four inches of free-draining gravel be placed under the slab to act as a capillary break. The gravel should be covered by a moistureproof membrane in order to prevent moisture-vapor condensation on the underside of the concrete slab. It is also suggested that the membrane be covered with a two-inch sand layer to protect it during construction. The sand will also aid in curing the concrete provided it is moistened just prior to pouring the slab.

The following Plates and Appendices are attached and complete this report.

Plate 1 - Plot Plan Showing In-Place Density Tests

Plate 2 - Results of In-Place Density Tests

Appendix A - Report, Foundation Investigation, Proposed Park Pacifica Elementary School, Pacifica, California dated August 25, 1966

Appendix B - Observation and Testing of Grading Operation, Proposed Park Pacifica Elementary School, Pacifica, California dated April 25, 1967

Yours very truly,

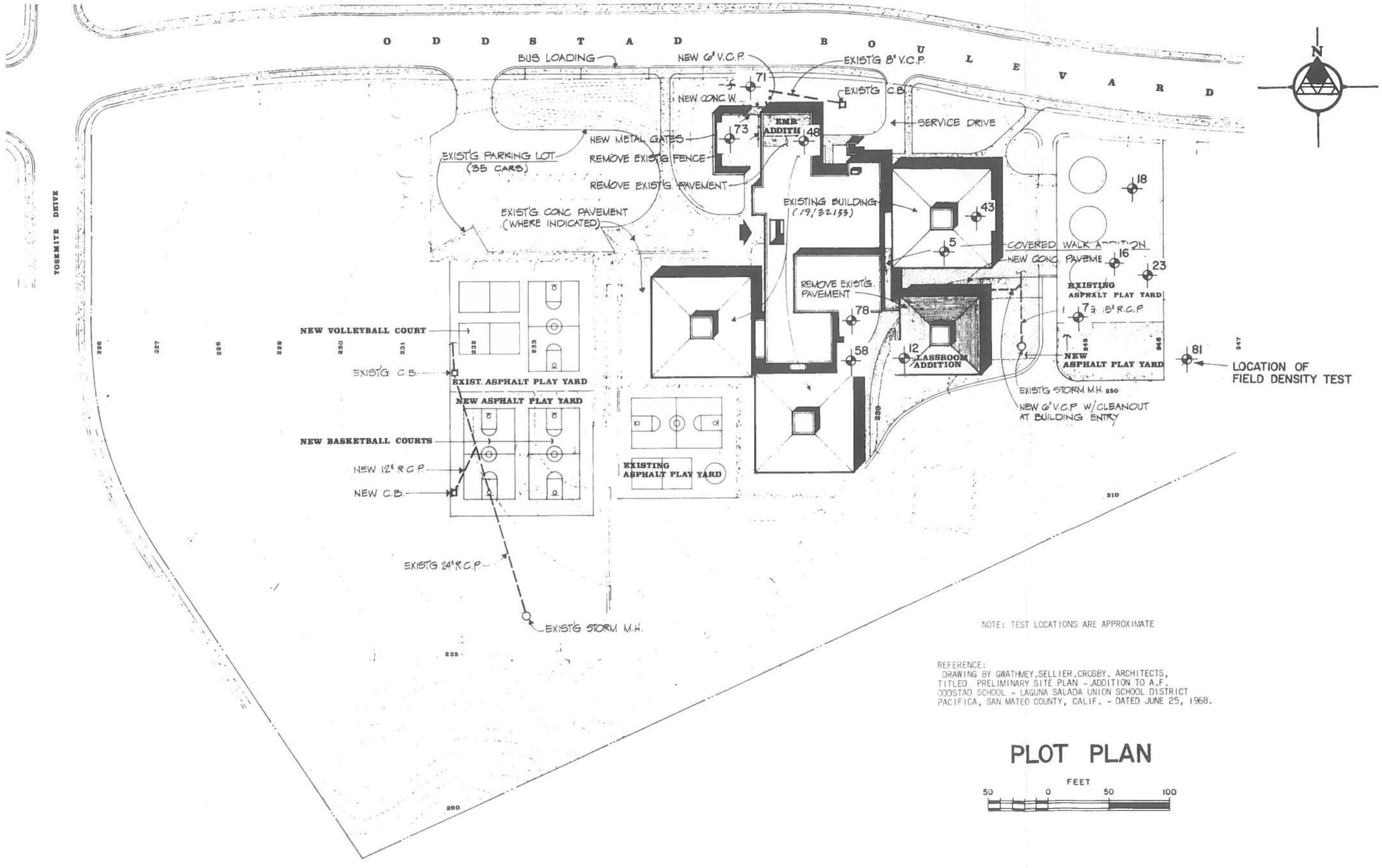
DAMES & MOORE

Peter E. Quinn

Peter E. Quinn

PEQ:AMC:ef
(Five copies submitted)

cc: Earl and Wright, Inc.
Attention: Mr. Jonathan C. Wright



NOTE: TEST LOCATIONS ARE APPROXIMATE

REFERENCE:
DRAWING BY GWATHMEY, SELLIER, CROSBY, ARCHITECTS, TITLED PRELIMINARY SITE PLAN - ADDITION TO A.F. ODDSTAD SCHOOL - LAGUNA SALADA UNION SCHOOL DISTRICT PACIFICA, SAN MATEO COUNTY, CALIF. - DATED JUNE 25, 1968.

PLOT PLAN

FEET
50 0 50 100

DAMES & MOORE

RESULTS OF IN-PLACE DENSITY TESTS

TEST NUMBER	PERCENT OF MAXIMUM DRY DENSITY (as determined by AASHO T 180-57)
5	91
7	98
12	92
16	91
18	94
23	90
43	94
48	93
58	95
71	85 (trench backfill)
73	95
78	97
81	87 (trench backfill)

PLATE 2

Memorandum

Limited Geologic Reconnaissance
Oddstad Site Planned Development
Pacifica, California
Project Number 18-005
October 4, 2018

To: Dr. Charles C. Thiel Jr., Ph.D.
Principal
Telesis Engineers
361 South Palouse Street
Walla Walla, Washington 99362

From: Ms. Courtney B. Johnson, PG
Associate Principal Geologist
Slate Geotechnical Consultants

Scope of Work

At your request, Slate Geotechnical Consultants Inc. (Slate) conducted a limited geologic reconnaissance of the project site and immediately surrounding hillslopes to make preliminary observations of the existing slope conditions. The site is located at 930 Oddstad Boulevard in Pacifica, California, and is currently occupied by a former elementary school and play fields. The school and surrounding grounds are situated on a relatively flat area with steep hills along the southeastern border of the property. Some portion of the hillslopes appear to be cut into bedrock. The purpose of the work was to conduct a geologic site reconnaissance of the hillslopes that border the property for signs of potential landslide hazards that could affect the planned re-development at the site.

Site Reconnaissance and Observations

Slate geologist, Ms. Courtney Johnson, conducted a brief site reconnaissance on Friday, September 21, 2018. As noted above, the reconnaissance was conducted to observe current conditions of the hillslopes located along the southeastern side of the site, between Yosemite Drive and to the property lines of the houses along Arcadia Drive (see Attachment 1). Observations were made primarily from the flat areas at the base of the slopes, and additionally from the top of slopes and along the slopes only where accessible. The property southwest of the site is a public park which allowed for additional access to a small portion of the slopes by foot.

The following observations of existing slope conditions were made during the site reconnaissance, and apply to all the hillslopes along the southeastern side of the site:

1. Hillslopes are typically heavily vegetated with grasses, shrubs, poison oak, and some trees;
2. Thick vegetation on the slopes renders the slopes predominantly inaccessible;
3. Based on knowledge of regional geologic maps of the area and the fairly high slope angles, slopes appear to be composed of Franciscan Complex bedrock with a colluvial soil cover of an unknown thickness;

4. Local signs of slope creep and raveling were visible in some locations, consistent with slope degradation that is typical to the region;
5. Trees growing on the hillslopes do not show signs of major downslope movement (e.g., trunks are vertical rather than bowing downslope);
6. Slope crests were generally obscured by vegetation, even where accessible by traversing the slope or from the public park property southwest of the site;
7. A shallow, 2-foot-wide concrete lined drainage ditch is located at the base of slope extending from southwest to northeast along a majority of the sloped area – the ditch does not appear to have been routinely cleared out and holds minor soil and vegetation but is not generally clogged with down-slope debris wash; and
8. No obvious signs of major head scarps or features of deep-seated landslides were observed during the site reconnaissance.

In addition to the general observations noted above, there are two areas for which descriptions of specific details are warranted. The large, steep cut slope at the northeastern end of the property (area noted on Attachment 1) appears to have been cut into rock and is steep enough that it was not safely accessible by foot, nor was there access to the top of the slope by any clear means.

The other area of interest is located at roughly the midpoint of the northeast-southwest-trending site (see Attachment 1). At the location where the existing school buildings extend the closest to the hillslopes, the base of the slope is retained by a roughly 4-foot-tall brick and mortar wall. Roughly 20 feet upslope from the retaining wall is a bedrock outcrop. South of the outcrop is what appears to be a shallow landslide area indicated by an evacuation area upslope and hummocky ground surface downhill. The landslide area extends roughly 150 to 200 feet from the base of the slope, with the geomorphic expression of landsliding indicated by a small evacuation area, eroded head scarp, then a shallowing of slope angle and hummocky ground surface downhill of the evacuation area. The base of the landslide area is likely shallow based on the relatively narrow (about 50 feet wide) affected area, and the geomorphic features of the hillslope at that location. The head scarp of the landslide was not directly accessible but appeared to be only a couple feet tall and heavily eroded. Vegetation type and concentration on the small landslide area is generally similar to the surrounding areas but also includes some marsh-type plants that may indicate water concentration near the base of the slope.

Timing for the occurrence of the shallow landslide is unclear based on the available information, as a portion of the landslide area appears to extend behind the brick retaining wall, along which there are no obvious signs of displacement or past repairs, and there is no evidence for whether the ground failure extended beyond the current base of slope.

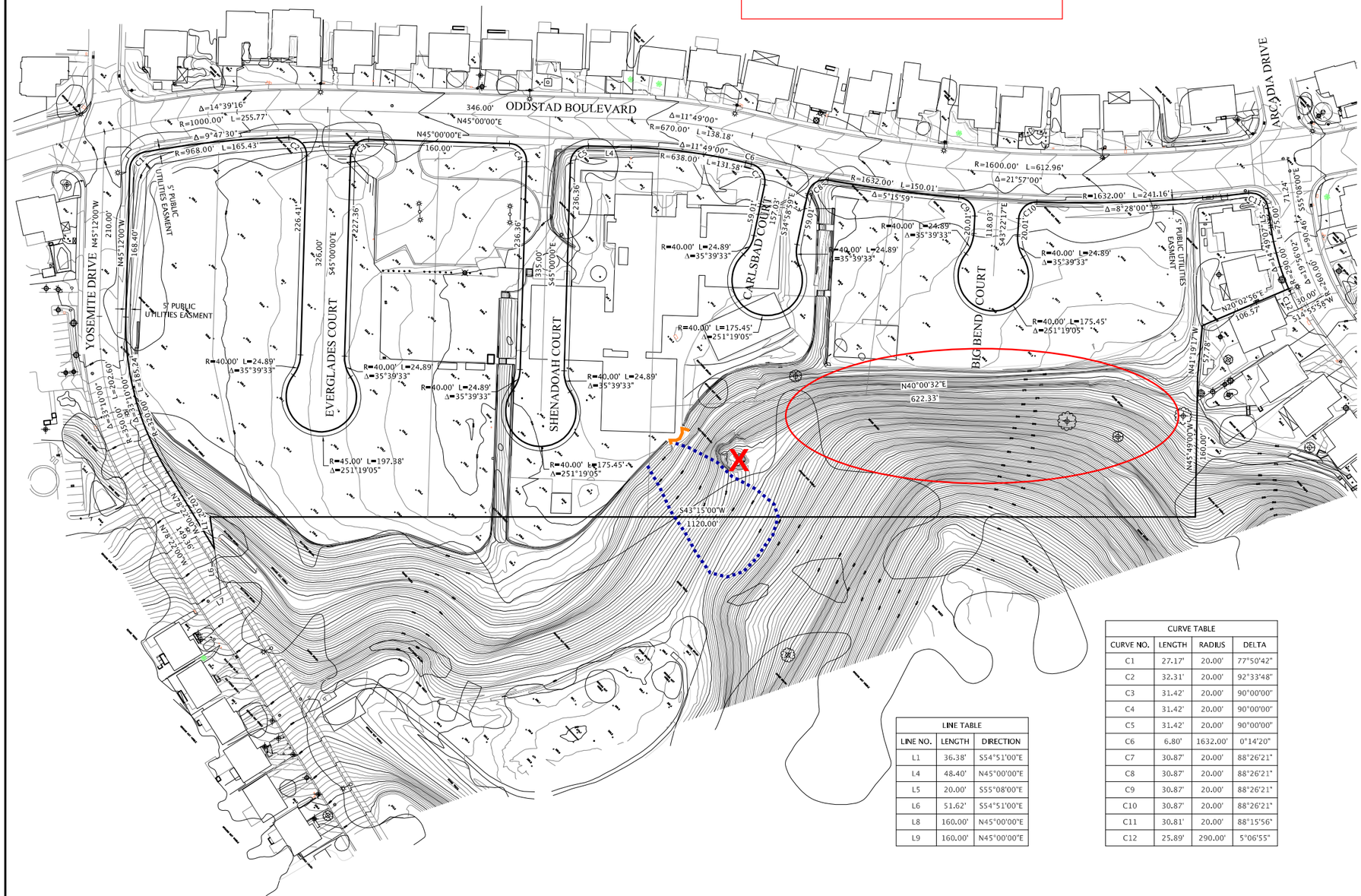
Overall, the observed slopes at the Oddstad site are heavily vegetated but show typical signs of slope degradation. Despite the presence of an apparent ground failure that occurred previously, preliminary observations of the site conditions do not indicate the presence of extensive or deep-seated landslides that could pose a significant hazard to the planned development at the site. It is our opinion that both the existing shallow landslide and other potential hazard areas for shallow landslides could be mitigated during development of the site. A more detailed desktop reconnaissance of the Oddstad site and the hillslopes to the southeast of the planned development may provide a more definitive assessment of the potential for deep-seated landslide hazards A proposal for further desktop research is currently in progress for your consideration.

Attachment 1 – Annotated Site Plan

© BKF Engineers

Slate Annotations

- X — Bedrock outcrop
- ···· — Approximate landslide area
- — Brick retaining wall
- ⬭ — Steep apparent cutslope



GRAPHIC SCALE
60 0 60 120

LINE TABLE		
LINE NO.	LENGTH	DIRECTION
L1	36.38'	S54°51'00"E
L4	48.40'	N45°00'00"E
L5	20.00'	S55°08'00"E
L6	51.62'	S54°51'00"E
L8	160.00'	N45°00'00"E
L9	160.00'	N45°00'00"E

CURVE TABLE			
CURVE NO.	LENGTH	RADIUS	DELTA
C1	27.17'	20.00'	77°50'42"
C2	32.31'	20.00'	92°33'48"
C3	31.42'	20.00'	90°00'00"
C4	31.42'	20.00'	90°00'00"
C5	31.42'	20.00'	90°00'00"
C6	6.80'	1632.00'	0°14'20"
C7	30.87'	20.00'	88°26'21"
C8	30.87'	20.00'	88°26'21"
C9	30.87'	20.00'	88°26'21"
C10	30.87'	20.00'	88°26'21"
C11	30.81'	20.00'	88°15'56"
C12	25.89'	290.00'	5°06'55"

BENCHMARK STATEMENT:

THE ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88 DATUM,

BASIS OF BEARINGS:

THE BEARING OF NORTH 45°12'00" WEST OF CENTERLINE OF YOSEMITE DRIVE, WAS TAKEN AS THE BASIS OF BEARINGS SHOWN ON THIS MAP.

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF PACIFICA, IN THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL ONE:

LOTS 1 THRU 53, INCLUSIVE LOT 56 AND LOTS C AND D, BLOCK 6 AS SAID LOTS AND BLOCK, AS DELINEATED UPON THAT CERTAIN MAP ENTITLED "PARK PACIFICA HIGHLANDS NO. 1, PACIFICA, CALIFORNIA", FILED FOR RECORD IN THE OFFICE OF THE RECORDER OF THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, ON OCTOBER 5TH, 1965 IN BOOK 63 OF MAPS, AT PAGES 13 TO 15.

PARCEL TWO:

BEGINNING AT THE NORTHERLY MOST CORNER OF LOT "C", BLOCK 6, PARK PACIFICA HIGHLANDS NO. 1, AS SHOWN ON THAT MAP ENTITLED, "PARK PACIFICA HIGHLANDS NO. 1, PACIFICA, CALIFORNIA", RECORDED OCTOBER 5, 1965 IN VOLUME 63 OF MAPS ON PAGE 14, RECORDS OF SAN MATEO COUNTY; THENCE ALONG THE BEARING **N.** 43° 15' 00" E., AS SHOWN AND RECORDED ON SAID MAP OF PARK PACIFICA HIGHLANDS NO. 1, 595.88 FEET; S. 20° 29' 17" W. 528.25 FEET; N. 78° 22' 00" W., 197.71 FEET; N. 54° 51' 00" W., 36.38 FEET TO THE POINT OF BEGINNING. **(NOT PLOTTED)**

AERIAL PHOTO

AERIAL PHOTOGRAMMETRY WAS PROVIDED BY VERTICAL MAPPING RESOURCES IN JUNE OF 2018.

NOTES:

1. ALL ELEVATIONS AND DISTANCES SHOWN ARE IN FEET AND DECIMALS THEREOF.
2. THIS EXHIBIT WAS PREPARED UTILIZING A CHICAGO TITLE PRELIMINARY TITLE REPORT, ORDER NO. 982010119-982-SK-KC, EFFECTIVE DATE OCTOBER 11, 2017.
   - A 5' PUBLIC UTILITIES EASEMENT

SURVEYORS STATEMENT

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION; IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT.

DAVID JUNGMANN
P.L.S. NO. 9267

LICENSED LAND SURVEYOR DAVID C. JUNGMANN No. 9267 STATE OF CALIFORNIA

06/21/2018
DATE

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PROPERTY EXHIBIT
LANDS OF PACIFICA SCHOOL DISTRICT
930 ODDSTAD BOULEVARD

CITY OF PACIFICA COUNTY OF SAN MATEO CALIFORNIA

No.	Revisions

Date 06/21/2018
Scale 1"=60'
Design RVW
Drawn DCJ
Approved
Job No 20180948

Drawing Number:
180948
1 OF 1

DRAWING NAME: K:\2018\180948_Pacifica_School_District_Housing\SUR\Boundary\180948_V-BNDY.dwg
PLOT DATE: 06-21-18 PLOTTED BY: waldr

SLATE
GEOTECHNICAL CONSULTANTS

April 22, 2019
Project No. 18-005.01

Slate Geotechnical Consultants Inc.
490 43rd Street
Oakland, California 94609

Josie Peterson
Chief Business Official
Pacifica School District
375 Reina Del Mar Avenue
Pacifica, California 94044

Re: Limited Geologic Study of Hillslopes – Letter Report
Oddstad Site Planned Development
Pacifica, California

Dear Ms. Peterson:

Slate Geotechnical Consultants Inc. (Slate) is pleased to present this letter report summarizing the findings of our geologic assessment of slope failure potential for the subject site. The site is located at 930 Oddstad Boulevard in Pacifica, California, and is currently occupied by a former elementary school and playfields. The school and surrounding grounds are situated on a relatively flat area with steep hills along the southeastern border of the property. Some portion of the hillslopes appear to be cut into bedrock while other areas appear to be terraced.

Previously, Slate conducted a limited geologic site reconnaissance of the hillslopes that border the property for signs of potential landslide hazards that could affect the planned re-development at the site (Limited Geologic Reconnaissance Memorandum, dated October 4, 2018). As described in that memorandum, observations of the site conditions did not indicate the immediate presence of extensive or deep-seated landslides nearby the site, but significant vegetation on the hillslopes prevented visual access to a majority of the slopes. To better assess the potential for deep-seated landslide areas that could pose a significant hazard to the planned development of the site, additional assessment of the site was deemed warranted.

The current scope of work includes performing a detailed background review and preparing this letter report documenting the sources reviewed and summarizing the findings. Based on the findings of the detailed background review, no areas were identified where additional visual reconnaissance was deemed necessary. At the request of the project team, we previously prepared an interim summary letter to briefly outline the overall findings of our studies (Limited Geologic Study of Hillslopes Letter, dated February 26, 2019) which is superseded by the letter herein. The tasks completed and findings for the current project are outlined below.

Project Site, Setting, and Description of Existing Slopes

The site is located on the west side of the San Francisco Peninsula amongst the hilly terrain of the northern Santa Cruz Mountains. The greater San Francisco Bay Area is within the Coast Ranges physiographic province, a series of northwest-trending mountain ranges and valleys that extend along much of the coastal region of California. The Coast Ranges were formed by folding and faulting of the

collisional plate boundary margins during the Plio-Pleistocene era, approximately 5 million years ago. The basement bedrock of the region generally consists of Franciscan Complex sandstone, shale, chert, conglomerate, serpentinite, and metamorphosed volcanic rocks. Franciscan Complex bedrock is the prominent bedrock underlying the northern Santa Cruz Mountains where the site is located.

The planned development is to be located on a property extending along Oddstad Boulevard between Yosemite Drive on the south and nearly to Big Bend Drive on the north. The relatively level portion of the site is currently occupied by former school buildings and playfields to the northeast and southwest of the buildings (Figure 1). Park space owned by the City of Pacifica borders the entire southeast side of the property and extends far uphill of Oddstad Boulevard. The park space is primarily undeveloped hills that are heavily vegetated.

Two areas of interest have been identified that border the project property: Slope A and Slope B, as shown on Figure 1. These are hillslope areas located immediately uphill of the proposed development. The two slopes are described in further detail below.

Slope A: Above Southwest Playfields
Slope A is located to the east of the southwest playfields and extends from Yosemite Drive to a location behind the former school buildings. The slope is roughly 400 to 600 feet long and extends from the playfields uphill to an unpaved access road at Frontierland Park (Figure 1). The original condition of the natural slope is unknown, as the entire slope has been heavily modified and developed over time, but is likely extended up to Frontierland Park. The slope area outlined on Figure 1 illustrates the extent of the slope that is nearest the planned development and that portion of the overall slope most likely to produce landslide hazards that could affect the site.

Uphill of Slope A is Frontierland Park, consisting of a wide level playfield and multiple play structures at the easternmost extent of Yosemite Drive. Immediately downhill and west of Frontierland Park is a 600-foot-long unpaved access road and parking area that leads to an apparent service building maintained by the City of Pacifica. In general, the hillside located between the service building access road and the southwest playfields on the project property has been modified and includes several terraced areas and surficial drainage features. The modified slope is interrupted by a level terraced area about 130 feet wide and 300 feet long. The sloped areas upslope and downslope of the wide terrace consist of regularly-sloped ground surface, broken up incrementally by surficial drainage consisting of small (about 12-inch wide) concrete ditches or gutters. The slopes extending between Frontierland Park and the project property were clearly modified, but it is unknown how much fill is on the slope, whether the soils were compacted, and whether the slopes can be considered engineered (i.e., following specific design criteria).

Slope B: Above Northeast Playfields
The area identified as Slope B includes a steep slope located immediately adjacent to the northeast playfields, as shown on Figure 1. Slope B is about 500 feet long (along the length of the playfield), nearly 200 feet wide (toe to crest), and 200 feet tall. The slope extends the entire length of the playfields and is characterized by a steep, relatively consistent grade (roughly 2H:1V as shown on available topographic maps). Historic aerial photographs do not show clear evidence of slope disturbance so it is uncertain whether this slope has been modified. A shallow concrete ditch or gutter is present at the base of the slope along the length of the northeast playfields; the gutter consists of formed concrete and is about 12 inches wide and 6 inches deep. At the time of observation, some portions of the gutter were full of apparent slope wash debris or cobble-sized rock fragments. It did not appear that the gutter had been cleaned out recently.

Detailed Background Review

Existing available geologic information for the site vicinity was gathered and reviewed for information that may be relevant to the potential for landslide hazards at the site.

Geologic Maps

Regional geologic maps of the Oddstad site vicinity indicate that the level low-lying area at the site, where the existing buildings and playfields are located, is underlain by fill (Pampeyan, 1994) that was likely placed as the site was graded and prepared for construction. Surficial geologic deposits on the hillslopes bordering the site are generally mapped as unconsolidated slope wash and colluvium that is a minimum of about 5 feet thick (Pampeyan, 1994). Oftentimes, colluvial deposits are ignored in regional geologic mapping efforts, with the hillsides at the site mapped as Franciscan Complex sandstone and shale (Brabb et al., 1998). As noted above, the Franciscan Complex is the primary basement bedrock of the San Francisco Peninsula and the Coast Ranges of coastal California, and includes a chaotic mixture of sandstone, shale, chert, conglomerate, serpentinite, and metamorphosed volcanic rocks.

Landslide Maps

A map of landslide deposits for San Mateo County was compiled by Brabb and Pampeyan (1972) and identifies a number of existing landslides in the hillsides near the site (Figure 2). Some of the identified landslides are within adjacent watershed areas, and therefore would not affect the site even with future additional failures. The nearest identified features are two small landslides (maximum dimensions of no more than 500 feet) at the upstream end of the catchment area adjacent to the Oddstad site to the north, upstream of what is now residential development along Big Bend drive.

Another map of landslide deposits for the site region was compiled by Wright and Nilsen (1974) and includes the same features identified by Brabb and Pampeyan (1972) in the immediate vicinity of the site. No new features or perceptible changes to the previously-identified landslide areas are evident on the Wright and Nilsen (1974) map in the vicinity of the Oddstad site.

Our review of geologic and landslide deposit or inventory maps indicate that no major landslide areas have been identified by previous landslide or geologic mapping efforts that could affect the site (Brabb and Pampeyan, 1972; Wright and Nilsen, 1974; Pampeyan, 1994; Brabb et al., 1998). In general, slope failures mapped in the hills within the site region are scattered and defined as “small” landslides with maximum dimensions of 50 to 500 feet.

Susceptibility and Hazard Maps

The California Geological Survey (CGS) is responsible for generating maps of Earthquake Fault Zones following the State of California Alquist-Priolo Earthquake Fault Zoning Act (A-P Act) of 1972. Starting in the early 2000s, CGS has begun updating the regulatory maps to also include special study zones for areas with the potential for earthquake-induced geologic hazards (e.g., liquefaction and landsliding). In April of 2019, the CGS published an updated map and accompanying report for the Pacifica area, including the Oddstad site (CGS, 2019a, 2019b). The previous map available for the site (CGS, 1982) identified only active fault zone areas (“areas of required investigation”) that immediately surround local traces of the San Andreas fault. The updated Montara Mountain Quadrangle map (CGS, 2019a) shows that most of the northern Santa Cruz Mountain hills and slopes near the site area are included in earthquake-induced landslide zones (Figure 3), therefore confirming the need for the present study of landslide hazards for the project site.

A map of debris flow probability developed for San Mateo County by Mark (1992) shows the hillsides upslope of the site having up to a 10% probability of debris flow occurrence for a major rain event. The results of the mapped debris flow probabilities are based on slope steepness, curvature, mapped geologic unit, and using an input rain event emulating the observed rainfall during one storm event in 1982 (Mark, 1992). In addition, a General Plan drafted by the City of Pacifica indicates that the hillsides upslope of the site are characterized within a zone of “few landslides” (City of Pacifica, 2014).

Observed and Reported Slope Failures

Widespread triggering of slope failures across the San Francisco Bay Area has occurred numerous times historically, typically connected with earthquakes or an exceptionally wet season that included several major rain events over the course of several months.

Maps compiled by Wentworth (1986) identify debris flow features observed following major storms that occurred in December 1955 and January 1982. The mapping indicates a few debris flow scars (upstream evacuation points) on the slopes uphill of Frontierland Park. Relatively short debris flow tracks were identified for those features, and none extended beyond the extent of the present day Frontierland Park. No other debris flow features were identified in the vicinity of Slope A or Slope B.

Additional mapping of the effects following the rain storms of 1982 was conducted by Ellen and Wieczorek (1988), including landslides, flooding, and rain gauge information. No damaging landslides were noted in the vicinity of Slope A or Slope B, nor in the hills upslope of the planned development.

A series of storms over the winter of 1997-1998 produced a significant amount of rainfall in the San Francisco Bay Area and resulted in widespread slope failures at numerous scales. No significant landslides or slope failures were identified in the hillsides upslope of the planned development following the winter of 1997-1998 (Jayko et al., 1999).

Given the proximity of the site to the San Andreas fault, a significant level of shaking was likely experienced at the site during both the 1906 San Francisco and 1989 Loma Prieta earthquakes, the two most recent and regionally-damaging earthquakes to have affected the San Francisco Bay Area. A compilation of reported ground failures resulting from these two earthquakes indicate that there were no reported ground failures, including landslides, in the area immediately surrounding the site nor within the hills upslope of the site (Youd and Hoose, 1978; Tinsley et al., 1998).

Historical Aerial Photograph Review

Collections of historical aerial photographs are available for review at the University of California Earth Sciences & Map Library in Berkeley and the U.S. Geological Survey Library in Menlo Park. Slate visited both libraries to view available aerial photographs of the site vicinity. Available aerial photographs span between 1943 (scale of 1:24,000) and 1983 (scale of 1:12,000), with a maximum scale of about 1:1,200. Photographs were viewed in stereo, when available, and were reviewed for major changes in site and slope conditions over time, failure of hillsides upslope of the site, geomorphic features indicative of head scarps or deep-seated landslides, and general hillslope conditions/failures in the areas surrounding the site. The aerial photographs available for review, along with the scale and specific frames viewed, are tabulated and presented in Table 1.

The progression of aerial photographs available shows the Oddstad site vicinity prior to development of the area, during construction of the existing school buildings, and also during major grading and development of the Oddstad site and surrounding areas. Mostly notably, there is an extent of hillside that extends from Frontierland Park down to the playfields south of the existing school. Aerial photographs show that the slope was extensively modified and landscaped over a span of several years. Near the end of the apparent hillslope modification, plantings were placed on some portions of the slopes, although at the scale of the photograph it was unclear what type of vegetation was planted.

The most detailed aerial photographs available are at a scale of 1:1,200 from 1965 (Table 1). No signs of existing major slope failure or landsliding that might affect the planned development at the Oddstad site were observed in the photos at that scale. Photographs at smaller (less detailed) scales of 1:12,000 to 1:30,000 are somewhat lacking in detail sufficient to identify small or subtle slope failure or landslide features.

Discussion of Findings

In conjunction with the previous limited geologic site reconnaissance, the detailed background review and review of aerial photographs did not identify potential extensive or deep-seated landslide areas that could pose a significant hazard to the planned development at the site. Existing reports, maps, and aerial photographs indicate the presence of small debris flows and slumps or landslides that have occurred infrequently both spatially and temporally across the hillslopes in the site vicinity. The potential for scattered, small (e.g., less than about 50-100 feet in maximum dimension) landslides or debris flows on

the hillslopes immediately above the site appears to be consistent with the mountainous areas of the region surrounding the site. Overall, the primary slope stability issues for the hillslopes at and adjacent to the site appear to be the potential for scattered small landslides and/or debris flows, slope creep, and raveling of colluvial soils on slopes.

In total, the available information does not indicate the presence of existing or past deep-seated or extensive slope failures that could pose a significant hazard to the proposed development. It is our opinion that shallow landslide or debris flow hazards to the site could be mitigated by typical means during development of the site.

Please call should you have any questions.

Sincerely yours,

Slate Geotechnical Consultants, Inc.

Courtney B. Johnson, PG
Associate Principal Geologist
cjohnson@slategeotech.com
509.293.0393

Tables

Table 1 – Aerial Photographs Reviewed

Figures

Figure 1 – Site Layout
Figure 2 – Mapped Landslides
Figure 3 – California Geological Survey Landslide Study Zones

Bibliographic References

Geologic Maps

Brabb, E.E., 1983, Map showing direction and amount of bedding dip of sedimentary rocks in San Mateo County, California: U.S. Geological Survey Miscellaneous Investigations Series Map I-1257-C, scale 1:62,500.

Brabb, E.E., Graymer, R.W., and Jones, D.L., 1998, Geology of the onshore part of San Mateo County, California: A digital database: U.S. Geological Survey Open File Report OF98-137, scale 1:62,500.

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City of Pacifica, 2014, Pacifica General Plan Draft Environmental Impact Report, SCH No. 2012022046, prepared for the City of Pacifica by Dyett & Bhatia Urban and Regional Planners, Chapter 3.6 Geology, Soils and Seismic Risk, 30 p.

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California, Earthquake of October 17, 1989 - Liquefaction: U.S. Geological Survey Professional Paper 1551-B.

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Wentworth, C.M., 1986, Maps of debris flow features evident after the storms of December 1955 and January 1982, Montara Mountain Area, California: U.S. Geological Survey Open File Map 86-363, 2 Sheets, scale 1:24,000.

Other Project-Specific References

Dames & Moore, 1966, Foundation Investigation Report, Proposed Park Pacifica Elementary School, Pacifica, California, unpublished report prepared for Laguna Salada Union School District, Job No. 2730-023-03, 18 p.

Table 1

AERIAL PHOTOGRAPHS REVIEWED
Limited Geologic Study of Hillslopes - Oddstad Site Planned Development
Pacifica, California

Year	Flight ID	Scale	Frame ID	Notes
1943	DDB 1943	1:24,000	2B-199 2B-200 2B-214	-At scale, details of slopes are difficult to distinguish.
1956	DDB 1956	1:24,000	1R-32 1R-33 1R-63 1R-64	-At scale, details of slopes are difficult to distinguish.
1965	Air Photo 17	1:1,200	SM 10-28	-Site is under development. -Clear signs of slope modification at south end of site area.
1968	GS-VBZJ	1:30,000?	1-5 1-6 1-7 1-106 1-107	-School building construction appears complete. -Major earthwork in progress upslope of site. -At scale, details of slopes are difficult to distinguish.
1973	3567-2	1:12,000	196 197 198	-Engineered slope immediately upslope of site appears to have been planted with vegetation.
1977	G1528	1:12,000	Photo/Sector 6	-Continued development in park area upslope of site, including engineered slopes. -Many neighboring residential developments have engineered and landscaped slopes upslope of structures.
1983	AV-2265	1:12,000	2-24 3-23 3-24	-Development at park upslope of site appears complete.



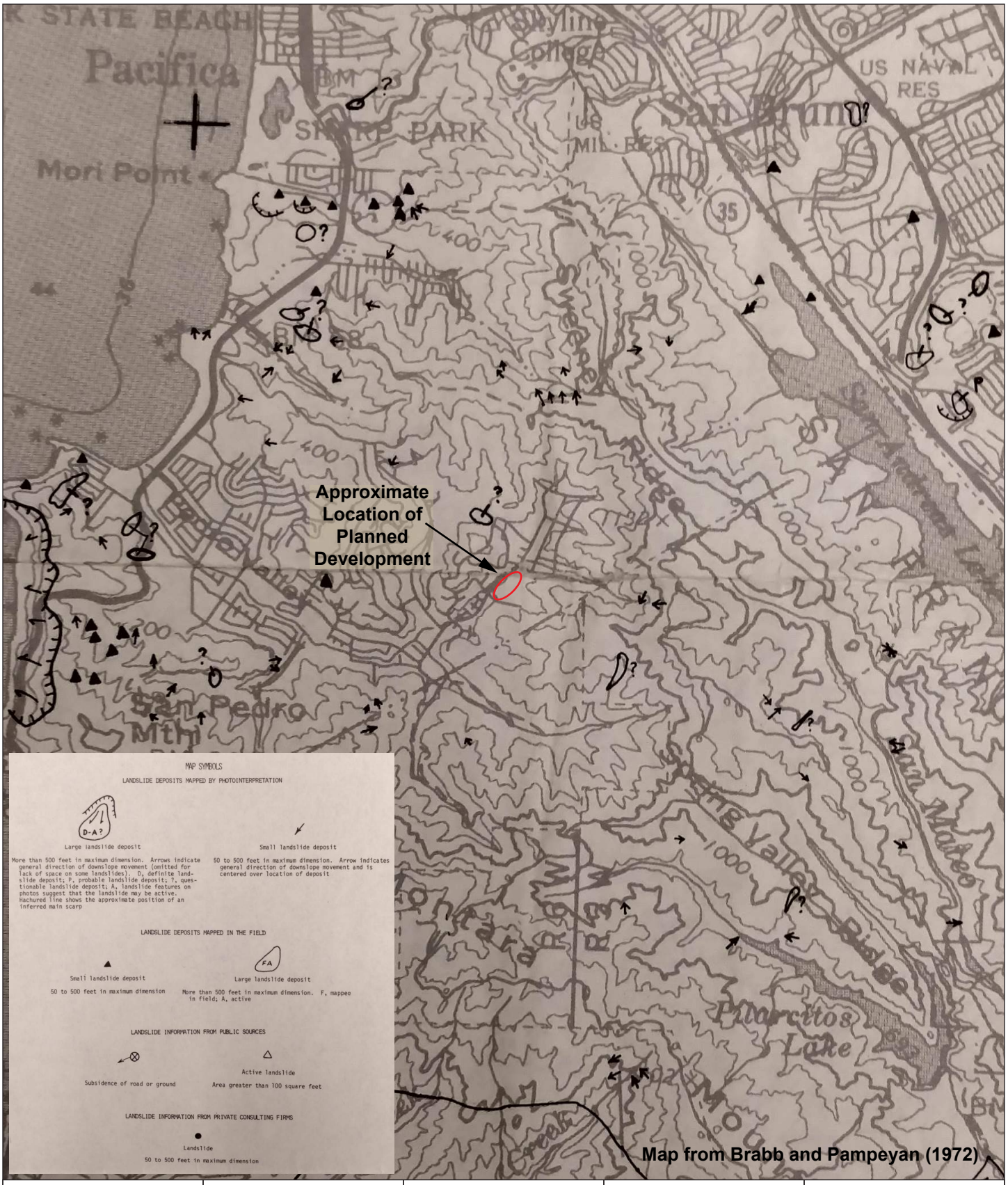
Project No: 18-005.01	Date: 4/9/2019	Created By: CBJ	Checked By: --	Figure No: **1**

SLATE GEOTECHNICAL CONSULTANTS

SITE LAYOUT

Limited Geologic Study of Hillslopes - Oddstad Planned Development
Pacifica, California

Filepath: SlateGeotech\SlateDrive - Documents_Projects\18-005.00_Brookwood_Pacifica_GeoReconn\07_GIS_Graphics_Fig_01_Oddstad Site.mxd



Map from Brabb and Pampeyan (1972)

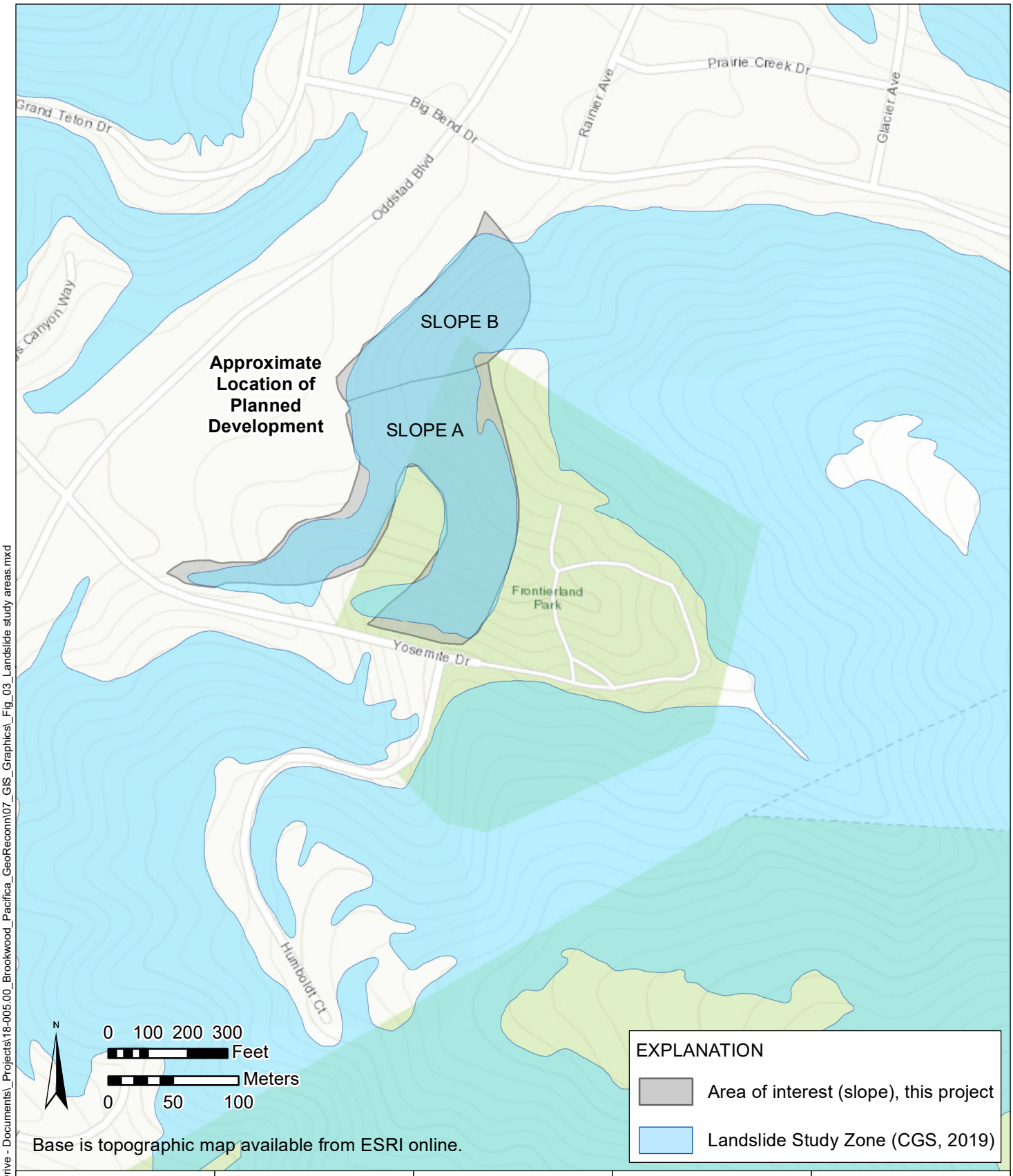
Project No: 18-005.01	Date: 4/22/2019	Created By: CBJ	Checked By: --	Figure No: **2**

SLATE GEOTECHNICAL CONSULTANTS

MAPPED LANDSLIDES

Limited Geologic Study of Hillslopes - Oddstad Planned Development
Pacifica, California

Filepath: SlateGeoTech\SlateDrive - Documents_Projects\18-005.00_Brookwood_Pacifica_GeoReconn\07_GIS_Graphics_Fig_2_Landslide Map.ai



Project No: 18-005.01	Date: 4/16/2019	Created By: CBJ	Checked By: --	Figure No: **3**

SLATE GEOTECHNICAL CONSULTANTS

CALIFORNIA GEOLOGICAL SURVEY LANDSLIDE STUDY ZONES

Limited Geologic Study of Hillslopes - Oddstad Planned Development
Pacifica, California

Filepath: SlateGeotech\SlateDrive - Documents_Projects\18-005.00_Brookwood_Pacifica_GeoReconn\07_GIS_Graphics_Fig_03_Landslide study areas.mxd

APPENDIX 4.7-A: PHASE I ENVIRONMENTAL SITE ASSESSMENT, PREPARED BY STRATA ENVIRONMENTAL SERVICES, INC., MAY 2018

DRAFT

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Pacifica School District
930 Oddstad Boulevard
Pacifica, California 94044

Prepared for:

Brookwood Group
One Embarcadero, Suite 500
San Francisco, California 94111

Prepared by:

Strata Environmental Services, Inc.
110 Perimeter Park Road, Suite E
Knoxville, Tennessee 37922

May 2018

Strata ENVIRONMENTAL

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Appendix D – Regulatory Records Documentation

Appendix E – Qualifications

COMMON ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Description
AAI	All Appropriate Inquiry
ACM	Asbestos-Containing Material
AST	Aboveground Storage Tank
bgs	Below Ground Surface
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CERCLIS-NFRAP	Comprehensive Environmental Response, Compensation, and Liability Information System – No Further Remedial Action Planned
CORRACTS	Corrective Action Report
ECHO	Enforcement & Compliance History Information
EDR	Environmental Data Resources, Inc.
EDR MGP	EDR Manufactured Gas Plant – Suspected coal gas plants operating from the 1800s to 1950s to produce gas using whale oil, rosin, coal, or a mixture of coal, oil, and water.
EDR Hist Auto	EDR Historic Auto Gas Stations – Suspected gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.
EDR Hist Cleaner	EDR Historic Dry Cleaner – Suspect dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.
ENG CONTROLS	Engineering Controls
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
FINDS	Facility Index System/Facility Registry System
HIST	Historical
HMIRS	Hazardous Materials Incident Reporting System
HWS	Hazardous Waste Site
INST CONTROL	Institutional Controls
LUST	Leaking Underground Storage Tank
MANIFEST	Hazardous Waste Manifest
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
OSHA	Occupational Health and Safety Administration
RCRA-CESQG	Resource Conservation Recovery Act – Conditionally Exempt Small Quantity Generator
RCRA-LQG	Resource Conservation Recovery Act – Large Quantity Generator
RCRA NonGen/NLR	Resource Conservation Recovery Act – Non Generators/No Longer Regulated
RCRA-SQG	Resource Conservation Recovery Act – Small Quantity Generator
RCRA-TSDF	Resource Conservation Recovery Act – Treatment Storage and Disposal
RGA	Recovered Government Archives
SHWS	State Hazardous Waste Site
SWF/LF	Solid Waste Facility/Landfill
UST	Underground Storage Tank
VCP	Voluntary Cleanup Program

SECTION 1.0 INTRODUCTION AND EXECUTIVE SUMMARY

Brookwood Group authorized Strata Environmental Services, Inc. (Strata) to perform a Phase I Environmental Site Assessment (ESA) of the real property, physical plant, and operations of the Pacifica School District located at 930 Oddstad Boulevard, Pacifica, San Mateo County, California (the Property). Pacifica School District owns the Property. Mr. Paul Platillero of Strata conducted the site reconnaissance on May 9, 2018, and fulfilled other necessary site research, interviews, and reviews. Mr. John Hashizume, Pacifica School District Director of Facilities (Site Contact) provided knowledge of the uses and physical characteristics of the Property.

1.1 Purpose

The primary purpose of the Phase I ESA is to identify recognized environmental conditions (RECs) in connection with the Property in conformance with American Society for Testing and Materials (ASTM) Practice E1527-13, and the U.S. Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312). ASTM defines REC as the "presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release [as defined by CERCLA 42 U.S.C. § 9601] 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." RECs in connection with a property include the presence and/or migration of hazardous substances or petroleum products in any form including solid and liquid at the surface or subsurface, and vapor in the subsurface. The definition of an REC does not include de minimis conditions that generally do not present a material risk of harm to public health or the environment, and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The Phase I ESA also serves to identify any known or suspect controlled recognized environmental conditions (CRECs), or historical recognized environmental conditions (HRECs) in connection with the Property. ASTM defines CREC as an "REC 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 the regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls." ASTM defines an 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 (using current criteria), or meeting unrestricted use criteria established by the regulatory authority, without subjecting the property to any required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls)".

1.2 Findings and Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 of the Pacifica School District located at 930 Oddstad Boulevard,

Pacifica, San Mateo County, California, the Property. Any exceptions to, or deletions from, this practice are described in Sections 2 through 5 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property. This assessment has revealed no evidence of recognized environmental conditions, controlled recognized environmental conditions, or historical recognized environmental conditions in connection with the Property.

1.3 Non-Scope Considerations

Additional environmental aspects associated with the Property are generally intended to address additional relevant environmental liabilities and to identify obvious factors to comply with certain environmental laws (non-scope considerations). In addition to the requirements of ASTM and AAI, as requested by the client, Strata investigated the additional aspect of asbestos-containing material (ACM), which may result in significant risk or cost. Strata's observations and findings from the investigation of additional aspects are discussed in Section 4.7 of this report.

SECTION 2.0 PROPERTY DESCRIPTION

The Property is located in the Park Pacifica neighborhood within the incorporated city limits of Pacifica, California. A portion of a U.S. Geological Survey Topographic Map in Figure 1, located in Appendix A, shows the location and topographic features of the Property. Figure 2 in Appendix A presents the site plan. Appendix B includes photographs taken of the Property during the site walkdown. Table 1 summarizes pertinent Property information.

Table 1. Summary of Property Information

Feature	Description
Property size:	11.38 acres
Property shape:	Irregular
Legal description:	Parcel Number 023-672-600, as recorded with the San Mateo County Assessor
Property topography:	Relatively flat across the major portion with steep hills along the northern boundary
Groundwater flow:	Based on review of the USGS 7.5-minute topographic map, estimated to be generally to the southwest toward the Pacific Ocean
Surface water features:	None. Storm water swales along the boundaries of the developed areas discharge to the City of Pacifica separate storm drain system.
Building description and use:	One-story main (school) building comprising three divided areas; one modular building used by local organizations and commercial entities for storage
Building size:	Main building – approximately 34,000 square feet (ft^2); modular building – 3,600 ft^2
Building age:	~49 years (1969)
Building construction:	Steel frame with exterior brick walls, interior dry wall; integrated pitched steel roofing system, concrete slab-on-grade with various covers (tile, carpet, painted)
Other structures:	Modular building – manufactured
Heating system(s):	Formerly heated with central heating system; replaced with unit windows and individual electrical or natural gas heating units
Cooling system(s):	None
Landscaped or unimproved areas:	Landscaped around the school building and athletic fields on the eastern and western portions of the Property; wooded along the northern portion
On-site roads/ parking/paved areas:	No roads on-site; two parking lots on either side of the school building next to the athletic fields; both are accessed from Oddstad Boulevard, to the south
Potable water source:	North Coast County Water District; majority purchased from San Francisco Regional Water System; source is Hetch Hetchy Reservoir supplemented by other surface water storage reservoirs in the region
Wells on-site:	There are no wells on-site
Sanitary sewer:	City of Pacifica Department of Public Works
Storm sewer:	Storm water swales along the boundaries of the developed areas discharge to the City of Pacifica separate storm drain system.
Zoning:	R-1; C-R – Single-Family Residential and Commercial Recreation

2.1 Current Uses of the Property

The Property is occupied by Spectrum, a non-profit learning organization and four additional entities. Spectrum occupies the main portion of the former elementary school building, including the main entrance and parking areas. Other tenants and uses include: Gold Rush, a wrestling/entertainment training business; Spill Drift, a performing arts company; Beven Jones, a local artist; and AYSO leases the soccer fields for recreation. See Section 4.0 for further information regarding Strata's site reconnaissance.

2.2 Current Uses of the Adjoining Properties

Strata evaluated the current uses of adjoining properties. The property vicinity is located in an area of commercial and residential development within the city limits of Pacifica, California. The current uses of the adjoining properties, as observed by Strata from property boundaries or reported by the Site Contact, are identified and analyzed in Table 2.

Table 2. Adjoining Properties and Thoroughfares

Direction	Occupant and/or Use	Potential Impact to the Property
North	Oddstad Boulevard and residential properties	None Likely
South	Frontierland Park and undeveloped area	None Likely
East	Residential properties, undeveloped area, and Big Bend Dr.	None Likely
West	Yosemite Drive, Boys & Girls Club	None Likely

Strata did not observe any evidence of environmental contamination (e.g., spills, stained soils, groundwater monitoring wells) or any pits, ponds, or lagoons at any of the adjoining properties or other activities indicative of releases that could potentially impact the Property. Section 3.0 discusses regulatory database and pertinent historical use information regarding adjoining properties.

SECTION 3.0 RECORDS REVIEW

Strata obtained and reviewed historical sources and environmental records pertaining to the Property and vicinity. This section discusses the various sources and records Strata reviewed and relevant findings.

3.1 Historical Use Information

To determine the previous uses of the Property and surrounding properties, Strata reviewed reasonably ascertainable, standard historical sources including aerial photographs, historical topographic maps, city street directories and interviewed the Site Contact. Sanborn® fire insurance maps were not available for the Property.

3.1.1 The Property

Strata investigated past uses of the Property from the present back to the Property's first developed use or 1940, whichever was earlier. Table 3 summarizes the Property history. Appendix C provides historical research documentation.

Table 3. Historical Uses of the Property

Time Period/Date	Occupant/Use	Source(s) of Information
Prior to ~1969	Undeveloped	Aerial photographs, topographical maps, Site Contact
~1970 to ~2005	Elementary School (K-5th grade)	Site Contact, aerial photographs, EDR directories
~2006 to Present	Various educational and other non-industrial uses – commercial tenants	Site Contact, personal observations, EDR directories

Strata did not observe evidence of environmental impacts to the Property from past uses and operations. Based on historical information reviewed, reported uses, and the site walkdown, Strata discovered no evidence for significant environmental impact to the Property from past uses and operations. Further information regarding site observations is presented in Section 4.0.

3.1.2 Adjoining Properties

Historical sources indicate that past uses on adjoining properties have generally been the same as those Strata observed during the site inspection. Strata discovered no evidence for environmental contamination of the Property by historical activities on the adjoining properties.

3.2 Environmental Database Records

Strata evaluated available regulatory database information prepared by Environmental Data Resources, Inc. (EDR). EDR searched databases for the Property and surrounding properties including: (1) ASTM standard federal, state and tribal environmental record sources; (2) reasonably ascertainable local records and/or additional federal, state or tribal records provided to enhance and supplement the ASTM standard environmental record sources; and (3) EDR's proprietary collection of potential historical auto stations, dry cleaners, and manufactured gas plants. EDR Radius Map Report, dated May 7, 2018, and provided in Appendix D, presents regulatory database search results. The Property and adjoining properties identified within approximate minimum search distances from the Property, as defined by ASTM Standard E1527-13, were considered in the EDR Report unless stated otherwise (see the index of the EDR Report for the specified standard geographic radii).

Facilities identified in EDR's report for the Property and sites within the search radius of the Property and judged by Strata to be within a reasonable, proximity to the Property are summarized in Table 4.

Table 4. Regulatory Database Findings Summary

Site Name Address Position to the Property	Database Listing(s)	Risk Posed to Property/Evaluation/Comments
Frontierland Park Landfill Yosemite Ave. <1/8 mi SSE	SWF/LF (SWIS)	None Likely – unpermitted solid waste disposal site (non-hazardous) reported closed 12/31/1972; no indication of environmental impacts to soil or groundwater; currently developed in residences
UNOCAL 765 Oddstad 1/4-1/2 mi WSW	LUST, HIST UST, HIST CORTESE, San Mateo Co. Bl	None Likely – Gasoline release from UST system regulated by the San Francisco Bay Regional Water Quality Control Board (Region 2) (SFWQCB); remediation conducted, currently groundwater monitoring only; location is downgradient.
Park Pacifica Chevron 1055 Terra Nova 1/4 - 1/2 mi WSW	LUST, San Mateo Co. Bl, HIST CORTESE	None Likely – Gasoline release from UST system regulated by the SFWQCB; remediation completed, case closed 12/06/2002; location is downgradient.

All other listings in the database report for sites within the search radius, including those on the unmappable orphan site listing (sites that could not be mapped due to inaccurate or insufficient address data), were judged by Strata to be hydrologically crossgradient or downgradient, a sufficient distance away, and/or hydrologically separated from the Property such that they do not pose a significant environmental risk to the Property. Based on the database entries, Strata discovered no evidence for likely impact to the Property from hazardous substances or petroleum products.

3.3 Additional Records

According to ASTM E1527-13 Section 8.2, pertinent regulatory agency files and/or records from an alternative source should be reviewed if the Property or any adjoining property is identified on one or more of the standard federal, state, or tribal environmental record sources as listed in Section 8.2.1.

Strata accessed and relied on the GeoTracker online record access program, which stores data and information for sites (regulatory communication with responsible parties, regulatory actions, and records of decision) that are regulated by the California State Water Resources Control Board. These include cleanup sites (LUSTs, Brownfields, state hazardous waste sites, etc.), and permitted facilities (USTs, RCRA generators, NPDES, etc.).

SECTION 4.0 PROPERTY RECONNAISSANCE

According to ASTM, "The objective of the site reconnaissance is to obtain information indicating the likelihood of recognized environmental conditions (RECs) in connection with the Property." To achieve the objective, Strata interviewed the Site Contact and inspected the Property to evaluate property uses, activities, procedures, and practices. The site reconnaissance included an inspection of the interior and exterior of structures, property grounds, and operational areas that comprise the Property. Access was provided to all areas considered necessary to perform this assessment. Strata encountered no limiting conditions during the site visit. This section summarizes Strata's observations and findings.

4.1 Hazardous Substances and Petroleum Products

Strata observed only de minimis quantities of hazardous substances and petroleum products on-site. Strata observed maintenance and cleaning materials in chemical cabinets and other designated storage areas of the building. All storage containers appeared to be in good condition. Strata did not observe any stressed vegetation, discolored or stained soil or pavement, areas of corrosion, pools of liquid, or other signs of historical spills, releases, or environmental damage on the Property related to the use, handling, or storage of hazardous substances or petroleum products, and the Site Contact did not report any such incidences. Based on site observations and available information from the Site Contact, Strata discovered no evidence for significant contamination of the Property from the handling and storage of hazardous substances or petroleum products.

4.2 Storage Tanks

Determining the presence of aboveground storage tanks (ASTs) and underground storage tanks (USTs) is considered essential in assessing potential contamination sources. Strata used visual inspection and tank registration records to determine the possible existence of past and present storage tanks on the Property.

4.2.1 Aboveground Storage Tanks

Strata did not identify any evidence of the existence of ASTs on the Property, past or present. Strata did not identify any outstanding issues regarding the potential impact from ASTs to the environmental condition of the Property.

4.2.2 Underground Storage Tanks

Strata did not identify any evidence of the existence of USTs on the Property, past or present. Strata did not identify any outstanding issues regarding the potential impact from USTs to the environmental condition of the Property.

4.3 Solid and Hazardous Waste

Strata interviewed the Site Contact and surveyed the Property to evaluate the types of wastes generated on the Property, and to assess the potential for impacts to the Property. Strata did not observe, nor did the Site Contact report, any hazardous wastes to be currently generated on the Property.

One metal dumpster for general trash and two plastic waste bins for recycling (paper) are located outside the main school building on the north (outside the mechanical room).Strata did not observe any evidence of solid waste disposal (i.e., dumping or burying) on the Property. Based on observations, Strata discovered no evidence for significant contamination of the Property from the generation or storage of solid or hazardous wastes.

4.4 Polychlorinated Biphenyls (PCBs) and Oil-Filled Equipment

Because of their nonflammable characteristics, polychlorinated biphenyls (PCBs) may be found in oil-filled electrical equipment such as transformers, capacitors, switches, compressors, and heat transfer equipment. U.S. EPA regulation 40 CFR, Part 761 identifies three categories for classifying electrical equipment: less than 50 ppm of PCBs, “Non-PCB”; between 50 and 500 ppm, “PCB-Contaminated”; and greater than 500 ppm, “PCB”. PCBs can also be found in hydraulic lift systems such as vehicle lifts, hoists, and elevators. Strata inspected the Property for the presence of liquid-cooled electrical and hydraulic equipment, which could be potential sources of PCBs and/or petroleum impacts to the Property.

Strata observed one pad-mounted transformer located north of the main school building, outside of the mechanical room, in a secured (fenced) locked area. The transformer is owned by Pacific Gas & Electric (PG&E). Strata could not observe any labeling regarding PCB content from outside the restricted area. Therefore, the oil-filled transformer must be assumed to be PCB-contaminated (range of contamination 50 to 499 ppm) according to U.S. EPA guidance. However, because the transformer is owned by the utility (PG&E), any release of PCBs from the transformer would be the responsibility of the utility. Further, Strata did not observe evidence of any fires, spills, weeps, stains, or other indications of oil leakage, nor did the Site Contact report any such incidences associated with the transformer. Except for the pad-mounted transformer, Strata observed no other potential sources of PCBs on the Property. Strata did not identify any outstanding issues regarding the potential impact of PCBs to the environmental condition of the Property.

4.5 Air Emissions

Based on observed and reported activities, Strata did not identify any air emissions sources currently at the Property. Strata did not identify any issues relating to odors or fumes from facility operations during the site inspection, and the Site Contact did not report any historic or current complaints from neighbors or regulatory agencies. Strata did not identify any issues regarding air emissions.

4.6 Storm Water and Wastewater

Storm water from roof drains and parking lots on the Property flows overland and either to city storm drains along Oddstad Boulevard to the north, or to a storm water swale to the east and south of the Property. Strata did not observe any sheens or other signs of contamination associated with any of the storm water drainage features during the site walkdown. Strata did not identify any issues related to storm water.

Sanitary wastewater is discharged from the facility into the city's publicly owned treatment works (POTW), operated by the City of Pacifica Department of Public Works. Strata did not identify any evidence of the existence of any septic tanks located on the Property, past or present.

Strata observed several floor drains, located in the school kitchen and restrooms. According to the Site Contact, the floor drains are connected to the POTW wastewater system; further, based on interviews and observations, no process wastewater is generated or discharged to the floor drains. Strata did not observe any stains around the floor drains, and no hazardous materials are known to have been discharged to the drains. Strata did not identify any outstanding issues regarding the potential impact of wastewater to the environmental condition of the Property.

4.7 Non-Scope Considerations

This section discusses any additional environmental aspects associated with the Property outside the scope of ASTM E1527-13 that were investigated by Strata at the client's request for the purpose of assessing additional relevant environmental liabilities that could result in future costs associated with the Property's use or redevelopment, and to identify factors to comply with certain environmental laws.

4.7.1 Asbestos-Containing Materials

Suspect asbestos-containing materials (ACM) are any material that could potentially contain asbestos based on age and physical appearance. Certain suspect ACM may or may not be regulated under the Asbestos Hazard Emergency Response Act (AHERA), the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation, or the Occupational Safety and Health Administration (OSHA) regulations. The inspection was designed to identify the potential presence of suspect materials in readily accessible and visible locations and did not include dismantling permanent structures. The inspection was not intended as an asbestos survey or intended to identify all suspect ACM at the facility. Strata inspected the facility for, and interviewed the Site Contact about the presence of ACM.

Strata observed suspect ACM at the facility in the form of floor tiles, pipe insulation and (former) boiler insulation. The floor tiles were located throughout various areas of the main school building, and the insulation materials were observed in the mechanical room. Insulation materials in the mechanical room were labeled with a caution sign to not disturb without proper training and equipment. Strata observed each of these materials to be in good condition.

Pacifica School District provided Strata with an AHERA Reinspection Report (6/29/1992) containing historical records regarding the on-site ACM. According to the AHERA document, non-friable ACM was identified in vinyl floor tiles (30,000 square feet), hot water piping/joint insulation (3 feet of 4-inch and 4

feet of 8-inch), breeching/exhaust packing around boiler (200 square feet), and transite siding (126 square feet). There was no indication of ACM abatement in the records provided. No additional data was available for Strata to review regarding ACM.

U.S. EPA NESHAP regulations require removal of regulated (friable) ACM and certain non-friable ACM, which might be rendered friable, prior to renovation or demolition activities that would result in the disturbance of the ACM. Therefore, prior to conducting any renovation or demolition activities, an ACM survey of the building should be performed by a licensed asbestos inspector to identify all ACMs and determine appropriate removal and disposal protocols. Removal of ACMs must be performed by a qualified asbestos abatement contractor using trained, accredited/licensed personnel in accordance with applicable federal and state regulations governing asbestos removal activities.

SECTION 5.0 INTERVIEWS AND USER-PROVIDED INFORMATION

Strata conducted interviews and obtained information from the user as required by the AAI and ASTM standards to identify Recognized Environmental Conditions (RECs) in connection with the Property. The interviews and user provided information are discussed in this section.

5.1 Interviews

Table 5 lists the interviews Strata conducted with present owners and occupants. All pertinent information relating to the environmental condition of the Property revealed in the interviews is discussed in the previous sections of this report. Also, a summary of information provided by the user is presented in Section 5.2.

Table 5. Interviews

Date	Name	Title or Position	Organization
May 9, 2018	Mr. John Hashizume	Director of Facilities	Pacifica School District

5.2 User Provided Information

For Landowner Liability Protections (LLP) offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the Brownfields Amendments), the user, defined by ASTM as the party on whose behalf the ESA of the Property is prepared, must provide certain information, if available. The user for this ESA is Brookwood Group (the client). This section is based on a user questionnaire, which includes the key user-provided information necessary to meet the AAI standard.

5.2.1 Environmental Cleanup Liens or Activity and Use Limitations (40 CFR 312.25, 312.26)

The client is not aware of any environmental cleanup liens against the Property that are filed or recorded under federal, tribal, state or local law, or any activity or use limitations (AULs), such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry.

5.2.2 Specialized Knowledge or Experience (40 CFR 312.28)

The client does not have any specialized knowledge or experience related to the Property or nearby properties with respect to the chemicals and processes used thereon.

5.2.3 Valuation Reduction for Environmental Issues (40 CFR 312.29)

The client is not aware of any value reduction of this Property due to environmental issues.

5.2.4 Commonly Known or Reasonably Ascertainable Information (40 CFR 312.30)

The client was not aware of the past uses of the Property, which are discussed in Section 3.0 of this report. The client does not know of any specific chemicals that are present or were once present at the

Property, as discussed in Section 4.1 of this report. The client does not know of any spills or other chemical releases that have taken place at the Property. The client does not know of any environmental cleanups that have taken place at the Property.

5.2.5 Obvious Indicators of Contamination (40 CFR 312.31)

The client does not know of any pending, threatened, or past litigation relevant to hazardous substances or petroleum products in, on, or from the Property. The client does not know of any pending, threatened, or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Property. The client does not know of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products. Therefore, as the user of this ESA, the client believes, based on knowledge and experience related to the Property, there are no obvious indicators that point to the presence, or likely presence of contamination of the Property.

SECTION 6.0 SOURCES

American Society for Testing and Materials Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (ASTM E1527-13).

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund), as amended by Superfund Amendments and Reauthorization Act of 1986 (SARA) and Small Business Liability Relief and Brownfields Revitalization Act of 2002 (Brownfield Amendments), 42 U.S.C. §§9601, et. Seq.

Environmental Data Resources, Inc., "Certified Sanborn® Map Report – PSD Facility Housing – No Coverage Exists, Inquiry No. 5283927.3, May 7, 2018.

Environmental Data Resources, Inc., "EDR Historical Topographic Map Report – PSD Facility Housing – (1896, 1899, 1915, 1939, 1947, 1949, 1956, 1968, 1980, 1996, 1997, 2012)", No. 5283927.4, May 7, 2018.

Environmental Data Resources, Inc., "The EDR Aerial Photo Decade Package –PSD Facility Housing – (1943, 1946, 1956, 1963, 1968, 1982, 1993, 1998, 2006, 2010, 2014)," Inquiry No. 5283927.9, May 9, 2018.

Environmental Data Resources, Inc., "The EDR-City Directory Image Report – PSD Facility Housing," Inquiry No. 5283927.5, May 8, 2018.

Environmental Data Resources, Inc., "The EDR Radius Map™ Report with GeoCheck®– PSD Facility Housing," Inquiry No. 5283927.2s, May 7, 2018.

U.S. Geological Survey Topographic Map, Montara Mountain Quadrangle, Dated 2012.

SECTION 7.0 SCOPE AND LIMITATIONS

Brookwood Group engaged Strata to conduct a Phase I Environmental Site Assessment (ESA) of the real property, physical plant, and operations of the Pacifica School District located at 930 Oddstad Boulevard, Pacifica, San Mateo County, California referred to in this report as "the Property". Pacifica School District owns the Property. This ESA was performed in accordance with the American Society for Testing and Materials (ASTM Practice E1527-13) and the U.S. Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries (AAI) (40 CFR Part 312).

7.1 Purpose

The general purpose of this Phase I ESA is to provide an objective, independent evaluation and professional opinion regarding environmental conditions, if any, associated with the Property. Strata reviewed available environmental records maintained by the company and interviewed persons knowledgeable about the Property. The services performed and outlined in this report were based, in part, upon visual observations of the Property and attendant structures.

7.2 Scope of Services

The scope of work for this assessment was in general accordance with the ASTM Standard Practice for ESAs: Phase I ESA Process (ASTM Designation: E1527-13) and the EPA Standards and Practices for AAI. These methodologies are described as representing good commercial and customary practice for conducting an ESA of a property for the purpose of identifying Recognized Environmental Conditions (RECs).

7.3 Significant Assumptions

While this report may provide an overview of potential environmental concerns, both past and present, the ESA is limited by the availability of information at the time of the assessment. It is possible that unreported disposal of waste or illegal activities impairing the environmental status of the Property may have occurred which could not be identified. The conclusions and recommendations regarding environmental conditions that are presented in this report are based on a scope of work authorized by the client. Note, that virtually no scope of work, no matter how exhaustive, can identify all contaminants or all conditions above and below ground.

7.4 Limitations and Exceptions

The report has been prepared in accordance with generally accepted environmental methodologies referred to in ASTM E1527-13 and AAI, and contains all of the limitations inherent in these methodologies. No other warranties, expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

Strata conducted this assessment using standard engineering and scientific judgment, principles, and practices. Written qualifications of the assessor to perform this environmental review have been

presented to the authorizing party. The ESA is based on visual observations recorded by the assessor and information provided by personal interviews and records reviews from reasonably ascertainable/standard sources that were practically reviewable, which information is assumed to be correct. Strata has made no independent investigation as to the accuracy or completeness of the information gained from secondary sources or personal interviews, and Strata also cannot guarantee the accuracy or interpretations by others except where evidence suggested such information to be incomplete or inaccurate and such information had significant bearing on matters under assessment.

This ESA does not include any intrusive sampling of soils or subsurface materials. Materials and conditions that are concealed or inaccessible may not have been discovered during this ESA. The ESA may include an evaluation of the nature and extent of potential contamination, but this evaluation is a professional judgment based on interpretation of available investigations, geological and hydrogeological reports for the site and vicinity, experience with apparently similar sites, and other relevant information. The information contained in this report is deemed reliable; however, there cannot be a guarantee that all hazardous or potentially hazardous conditions have been identified or located.

All findings and conclusions stated in this report are based on facts and circumstances as they existed during the site inspection survey and during the time period of preparation of this report and are further limited by the mutually agreed upon Scope of Work, budget, and schedule. The objective of this report was to assess environmental conditions at the Property, within the context of our contract and existing environmental regulations within the applicable jurisdiction. Evaluating compliance of past or future owners with applicable local, provincial and federal government laws and regulations was not included in our contract for services. The report is not intended to be exhaustive in scope or imply a risk-free site. Any change in fact or circumstance upon which this report is based may affect the expressed findings and conclusions of this report. Should this occur, Strata reserves the right to modify its opinion(s), as necessary.

Strata makes no warranties, expressed or implied, as to marketability of the Property or fitness for a particular use. This report is intended to be used in its entirety; taking or using excerpts from this report is not permitted and any party doing so does at its own risk. Information in this report is not to be construed as legal advice. All data, maps, field notes, report drafts, and other related information held by the consultant are confidential and restricted, and are only available to the client, and upon written approval from client, to client's attorney or designated agents, unless otherwise required by law.

7.5 Special Terms and Conditions

There were no special terms or contractual conditions for this ESA.

7.6 User Reliance

This report may be distributed and relied upon by Brookwood Group, its successors and assigns. Reliance on the information and conclusions in this report by any other person or entity is not authorized without the written consent of Strata.

7.7 Data Gaps and Deviations

Strata identified no data gaps that affected the ability to identify RECs associated with the Property.

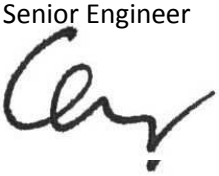
7.8 Signatures of Environmental Professional(s)

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 312. We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared by:



Paul S. Platillero, PE, CPEA
Senior Engineer



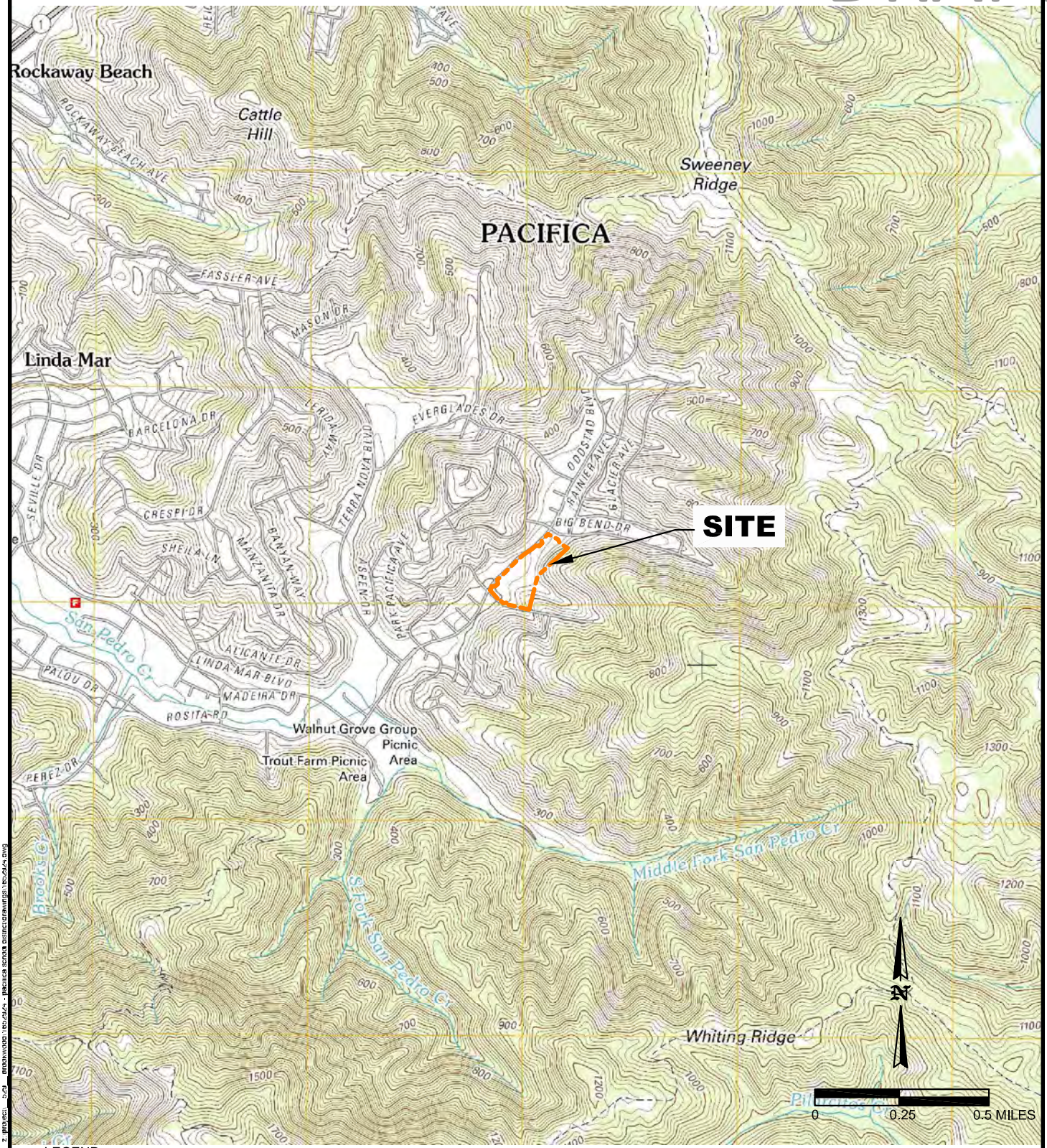
Charles W. Ferst, PE, CPEA, REPA
CEO

7.9 Qualifications of Environmental Professionals

The qualifications of the environmental professional(s) and personnel conducting the site reconnaissance and interviews (if conducted by someone other than an environmental professional) are provided in Appendix E.

APPENDIX A
FIGURES

DRAFT



LEGEND

- PROPERTY BOUNDARY
- PRIMARY ROADS
- TOPOGRAPHY
- WATERWAY

SOURCE: USGS 2012

Strata ENVIRONMENTAL

110 PERIMETER PARK ROAD
SUITE E
KNOXVILLE, TN 37922
PHONE (865) 539-2077
FAX (865) 539-3970

Topographic Map
Montara Mountain Quadrangle 2012

FIGURE 1

PROJECT NUMBER	DATE
1852924	May 2018

PSD Faculty Housing
930 Oddstad Boulevard, Pacifica, California 94044

DRAFT



SOURCE: GOOGLE EARTH® 2017

z:\project__528__brookwood\1852924 - pacifica school district\drawings\1852924.dwg

Strata ENVIRONMENTAL
110 PERIMETER PARK ROAD
SUITE E
KNOXVILLE, TN 37922
PHONE (865) 539-2077
FAX (865) 539-3970

Property Layout

FIGURE 2

PROJECT NUMBER	DATE
1852924	May 2018

PSD Faculty Housing
930 Oddstad Boulevard, Pacifica, California 94044

APPENDIX B
SITE PHOTOGRAPHS



Photograph 1: School campus – eastern portion



Photograph 2: Main building entrance from the east



Photograph 3: Drainage swale and inlet south of the main buildings



Photograph 4: South exterior of the main building



Photograph 5: Former kitchen area inside main building



Photograph 6: Exterior east portion of the main building



Photograph 7: Soccer fields on the eastern portion of the Property



Photograph 8: Entrance to the mechanical room



Photograph 9: Waste storage containers on the south side of the main building



Photograph 10: Interior hallway in the main building



Photograph 11: Interior Goldmine wrestling area



Photograph 12: Exterior of modular building on the north and west of the school campus



Photograph 13: Northeast corner of the main school building



Photograph 14: Mechanical room and pipe insulation (ACM)



Photograph 15: Drainage swale along the west portion of the school campus

APPENDIX C
HISTORICAL RESEARCH DOCUMENTATION

PSD Faculty Housing
930 Oddstad Blvd
Pacifica, CA 94044

Inquiry Number: 5283927.4
May 07, 2018

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

05/07/18

Site Name:

PSD Faculty Housing
930 Oddstad Blvd
Pacifica, CA 94044
EDR Inquiry # 5283927.4

Client Name:

STRATA Environmental Serv Inc.
110 Perimeter Park
Knoxville, TN 37922
Contact: Paul Platillero

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by STRATA Environmental Serv 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.# PSD Faculty Housing

Project: PSD Faculty Housing

Coordinates:

Latitude:	37.587109 37° 35' 14" North
Longitude:	-122.467532 -122° 28' 3" West
UTM Zone:	Zone 10 North
UTM X Meters:	547010.33
UTM Y Meters:	4160138.76
Elevation:	221.09' above sea level

Maps Provided:

2012	1939
1997	1915
1996	1899
1980	1896
1968	
1956	
1949	
1947	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



Montara Mountain
2012
7.5-minute, 24000

1997 Source Sheets



Montara Mountain
1997
7.5-minute, 24000
Aerial Photo Revised 1993

1996 Source Sheets



Montara Mountain
1996
7.5-minute, 24000
Aerial Photo Revised 1993

1980 Source Sheets



Montara Mountain
1980
7.5-minute, 24000
Aerial Photo Revised 1979

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1968 Source Sheets



Montara Mountain
1968
7.5-minute, 24000
Aerial Photo Revised 1968

1956 Source Sheets



Montara Mountain
1956
7.5-minute, 24000
Aerial Photo Revised 1955

1949 Source Sheets



Montara Mountain
1949
7.5-minute, 24000
Aerial Photo Revised 1946

1947 Source Sheets



SAN MATEO
1947
15-minute, 50000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1939 Source Sheets



San Mateo
1939
15-minute, 62500
Aerial Photo Revised 1939

1915 Source Sheets



San Mateo
1915
15-minute, 62500

1899 Source Sheets



San Mateo
1899
15-minute, 62500

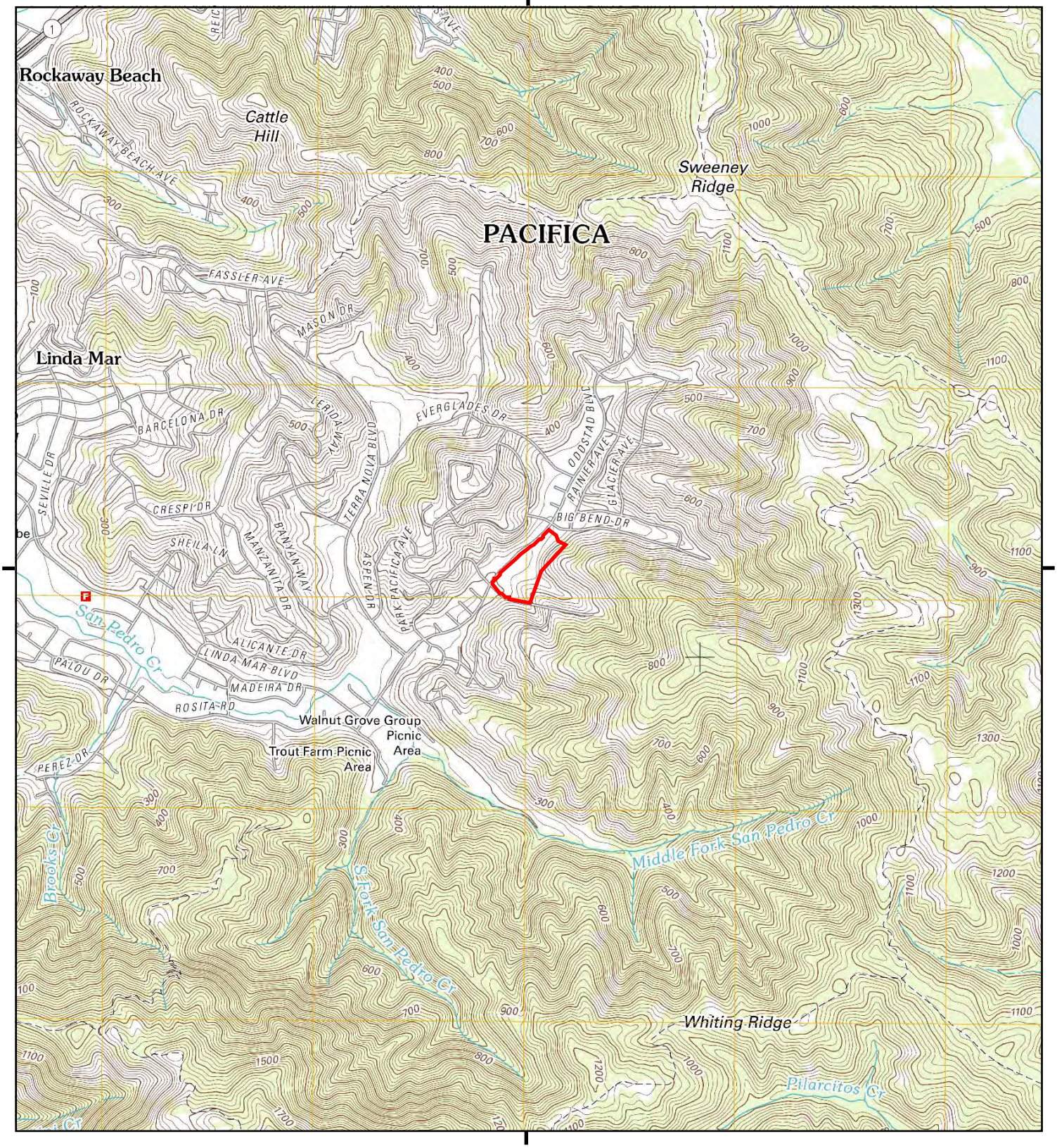
1896 Source Sheets



San Mateo
1896
15-minute, 62500

Historical Topo Map

2012



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W E
SW S SE

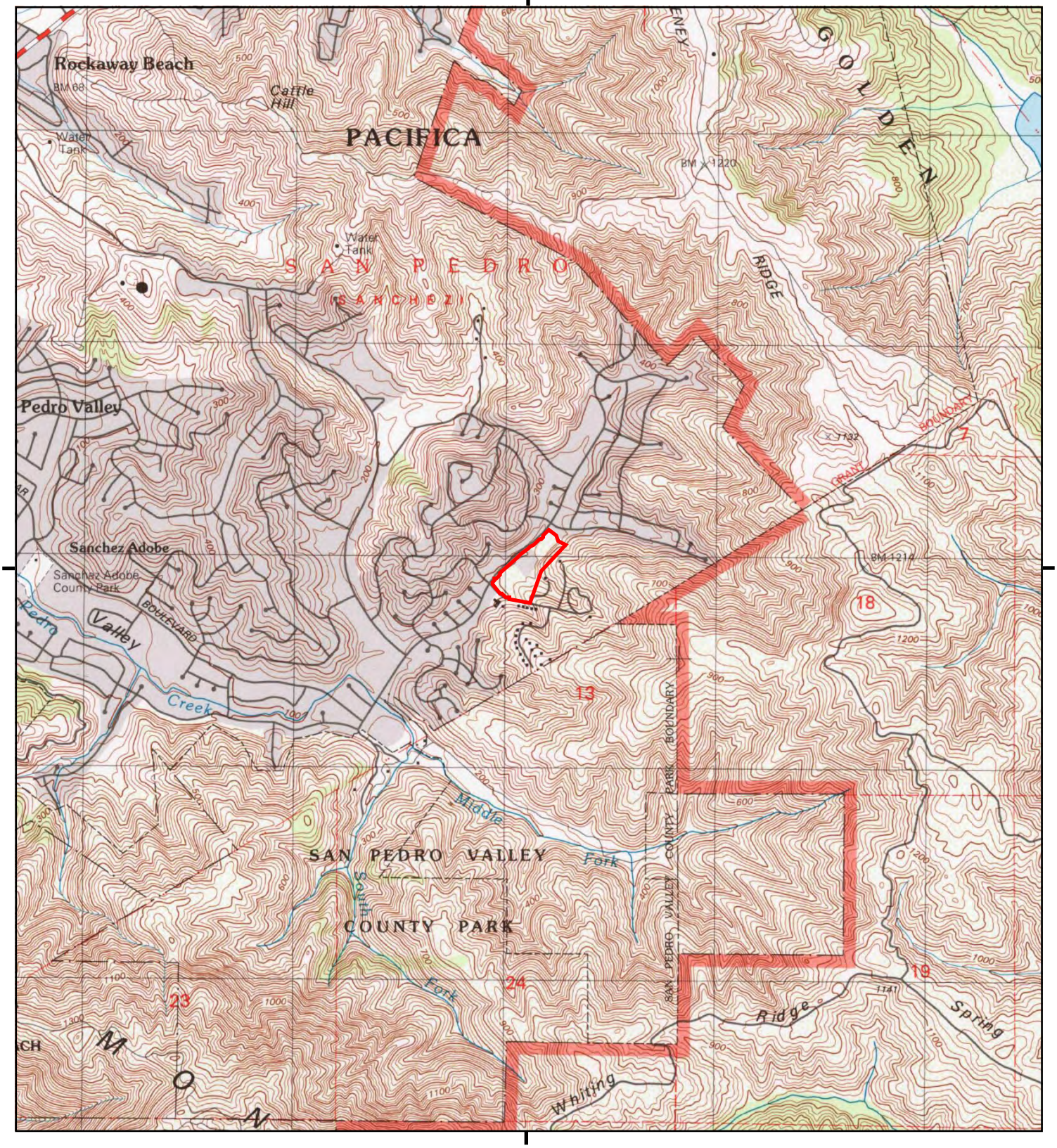
TP, Montara Mountain, 2012, 7.5-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N

Historical Topo Map

1997



This report includes information from the following map sheet(s).

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W E
SW S SE

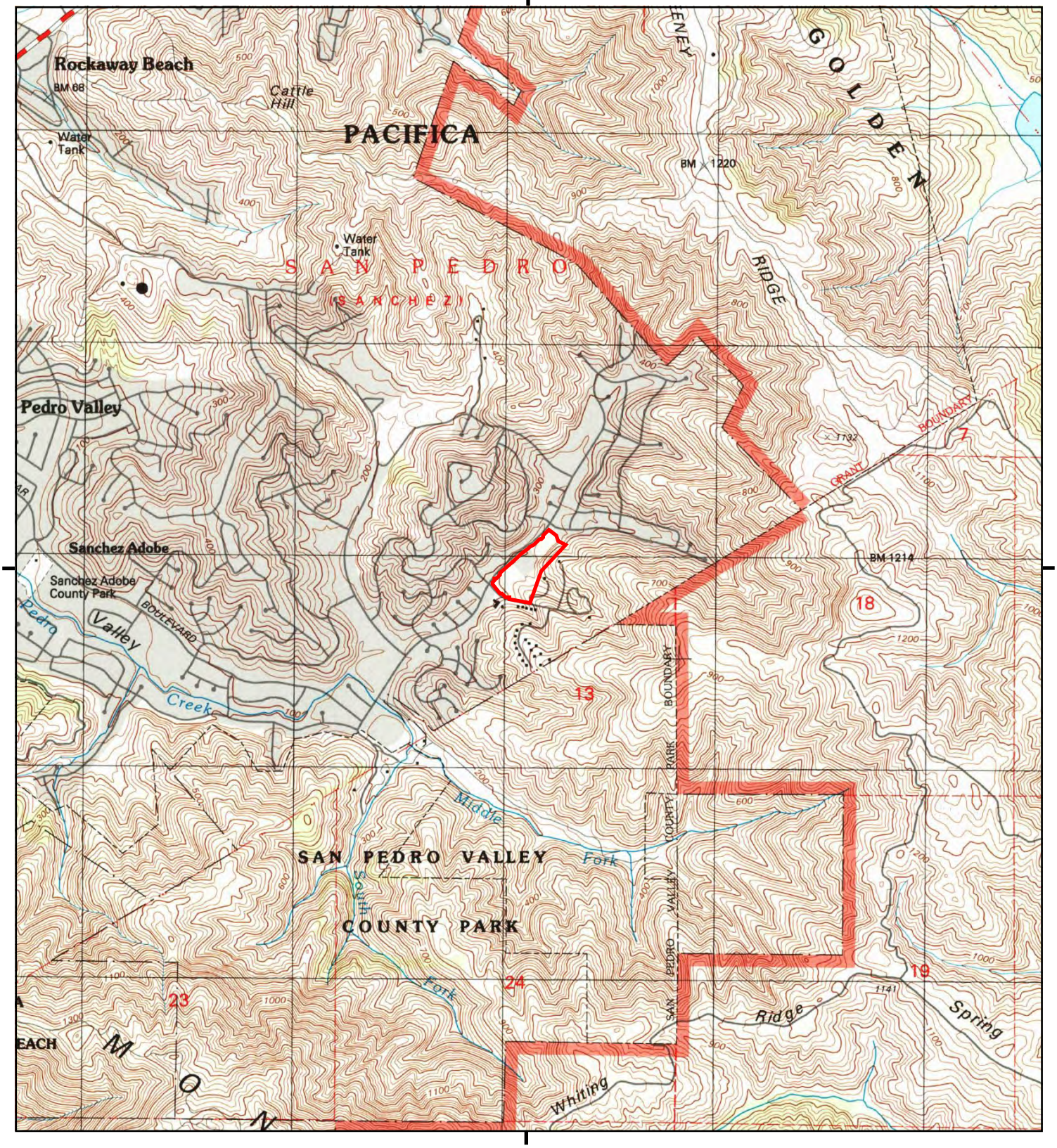
TP, Montara Mountain, 1997, 7.5-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N

Historical Topo Map

1996



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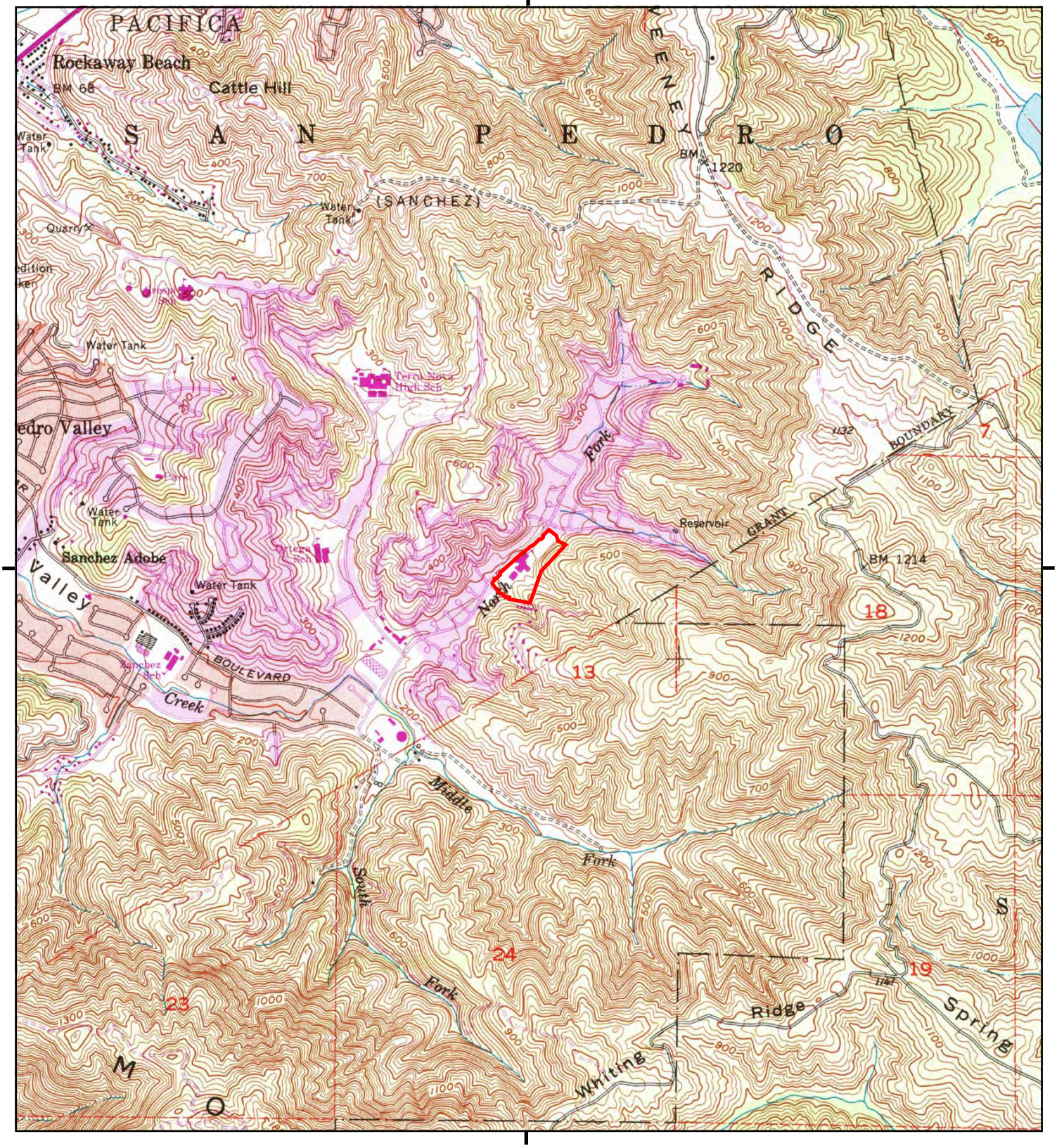
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NW N NE
W E
SW S SE

TP, Montara Mountain, 1996, 7.5-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N



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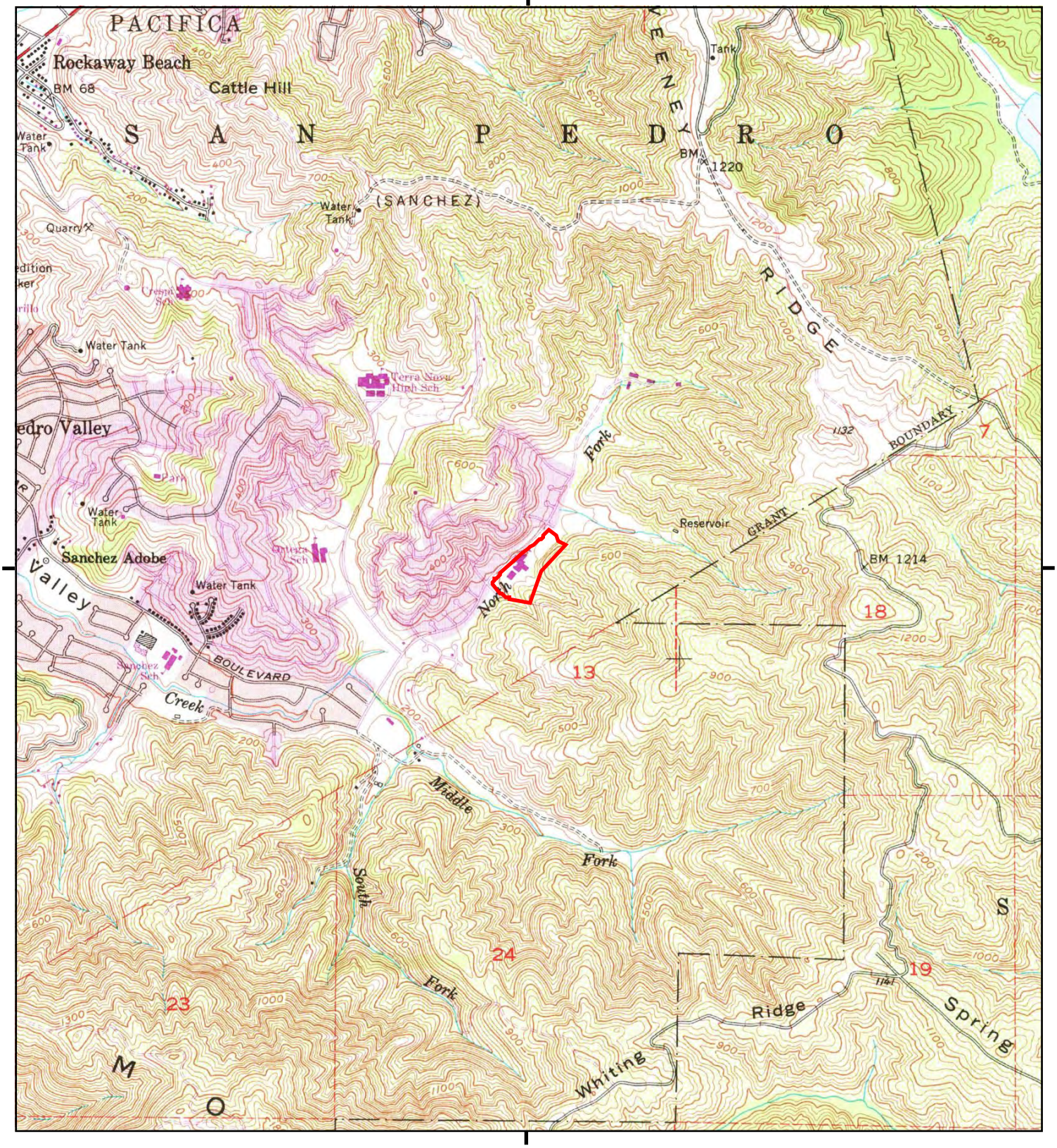
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NW N NE
W E
SW S SE

TP, Montara Mountain, 1980, 7.5-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N



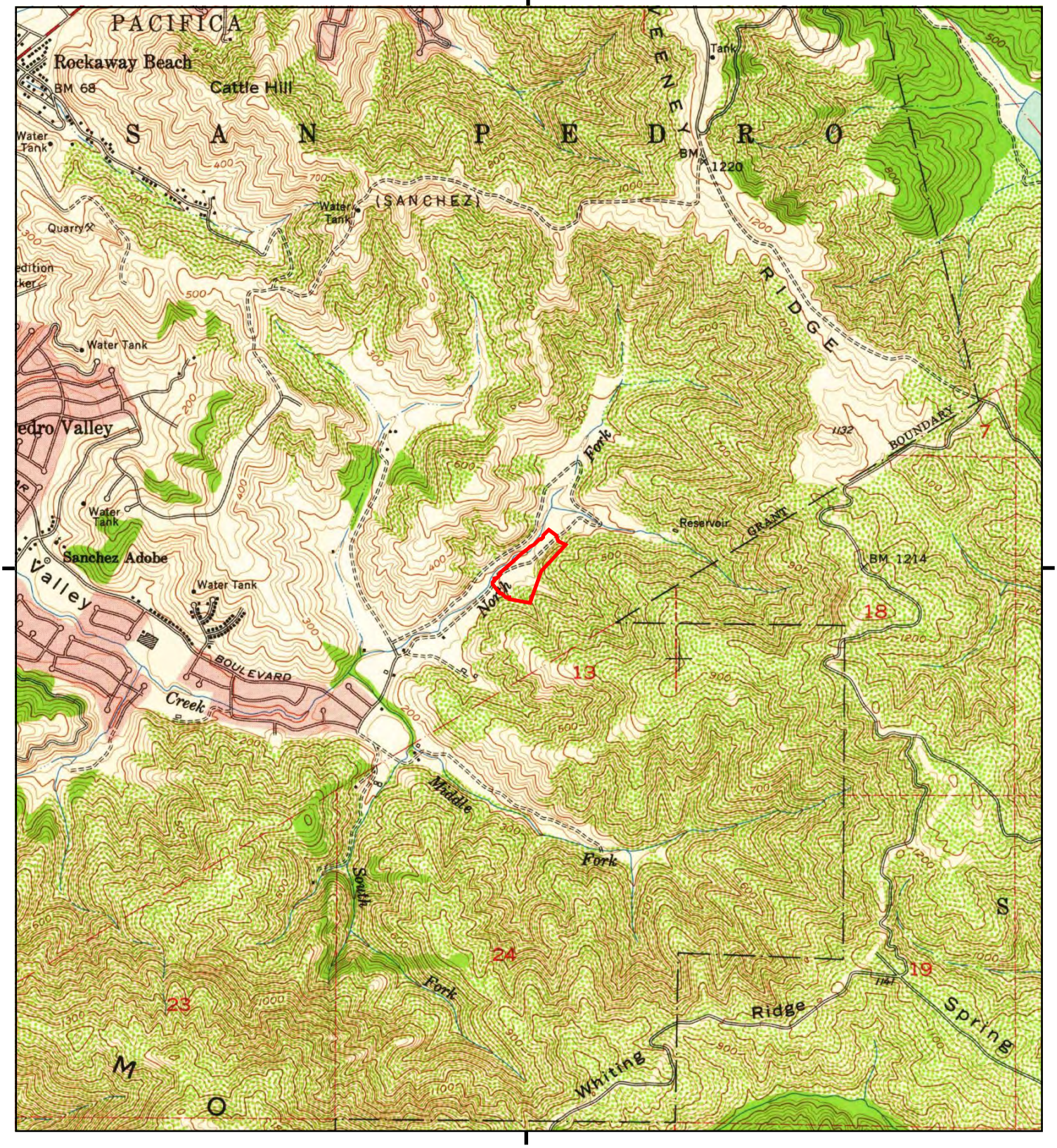
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W E
SW S SE

TP, Montara Mountain, 1968, 7.5-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N



This report includes information from the following map sheet(s).

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NW N NE
W E
SW S SE

TP, Montara Mountain, 1956, 7.5-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N



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W E
SW S SE

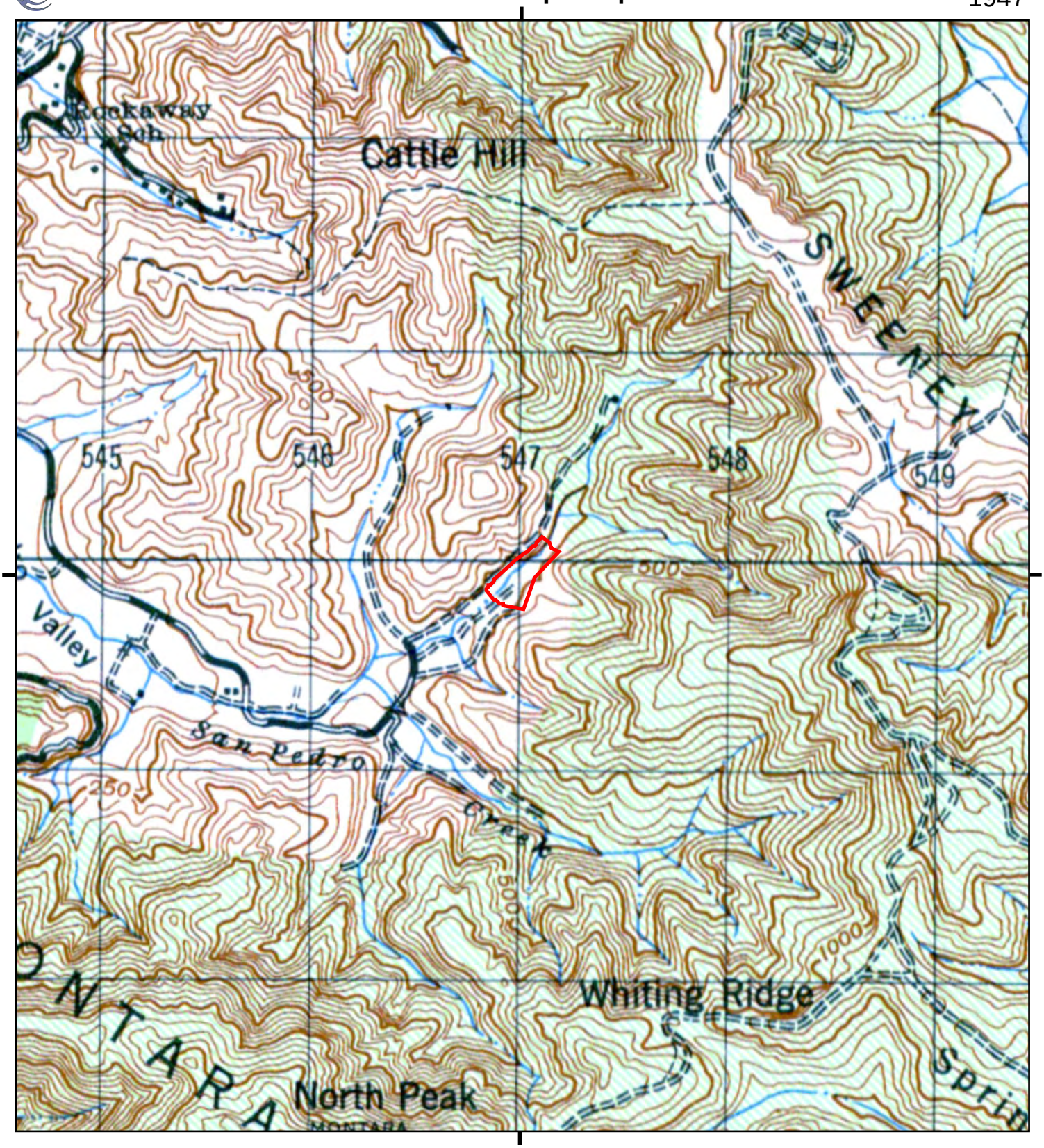
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SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N

Historical Topo Map

1947



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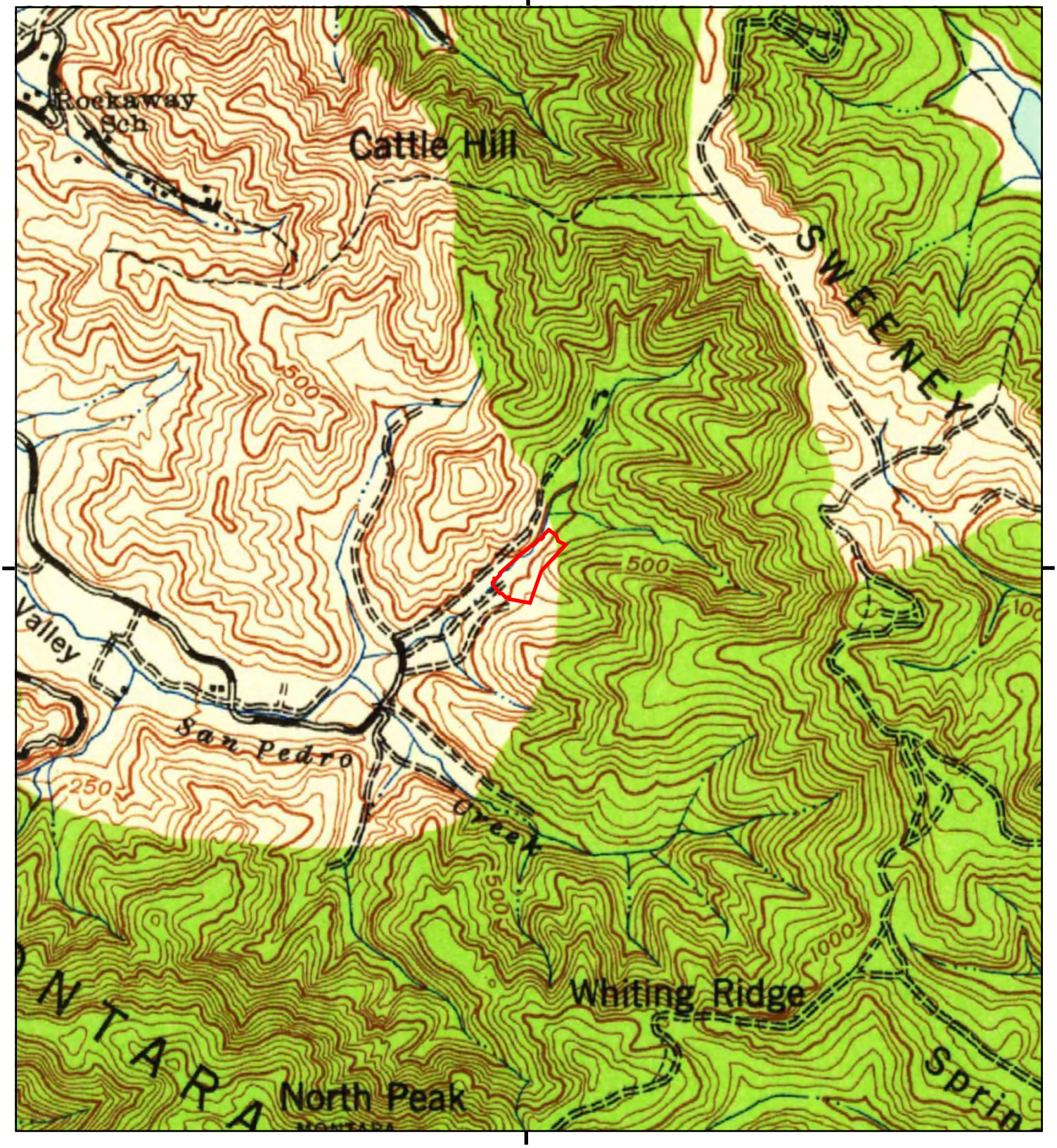
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NW N NE
W E
SW S SE

TP, SAN MATEO, 1947, 15-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N



This report includes information from the following map sheet(s).

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NW N NE
W E
SW S SE

TP, San Mateo, 1939, 15-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv 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, San Mateo, 1915, 15-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N



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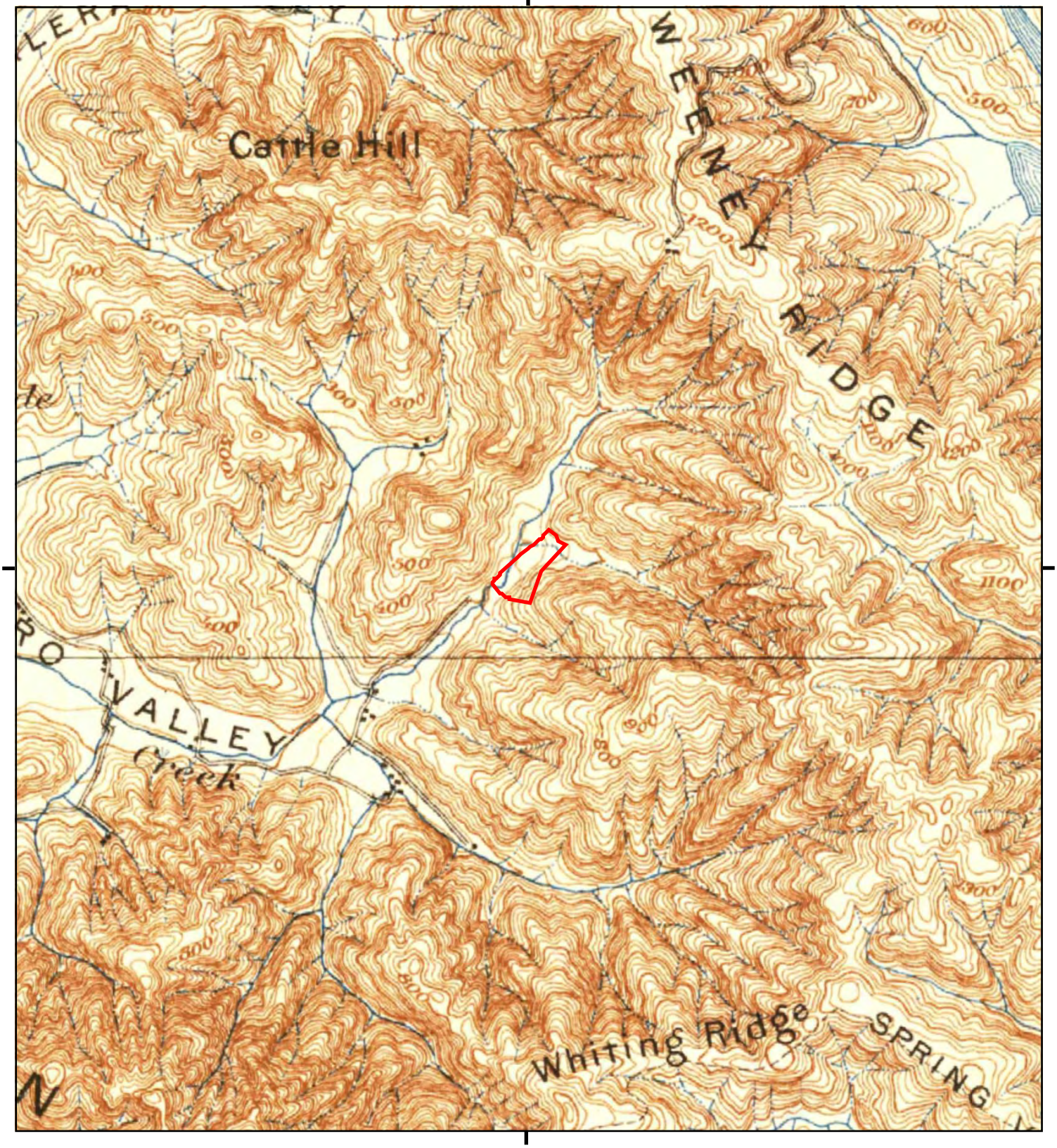
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NW N NE
W E
SW S SE

TP, San Mateo, 1899, 15-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv 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, San Mateo, 1896, 15-minute

SITE NAME: PSD Faculty Housing
ADDRESS: 930 Oddstad Blvd
Pacifica, CA 94044
CLIENT: STRATA Environmental Serv Inc.

N

PSD Faculty Housing

930 Oddstad Blvd

Pacifica, CA 94044

Inquiry Number: 5283927.9

May 09, 2018

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

05/09/18

Site Name:

PSD Faculty Housing
930 Oddstad Blvd
Pacifica, CA 94044
EDR Inquiry # 5283927.9

Client Name:

STRATA Environmental Serv Inc.
110 Perimeter Park
Knoxville, TN 37922
Contact: Paul Platillero

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
2014	1"=500'	Flight Year: 2014	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1998	1"=500'	Flight Date: September 06, 1998	USDA
1993	1"=500'	Acquisition Date: July 10, 1993	USGS/DOQQ
1982	1"=500'	Flight Date: August 16, 1982	USDA
1968	1"=500'	Flight Date: April 18, 1968	USGS
1963	1"=500'	Flight Date: July 09, 1963	USGS
1956	1"=500'	Flight Date: September 08, 1956	USGS
1946	1"=500'	Flight Date: July 29, 1946	USGS
1943	1"=500'	Flight Date: October 11, 1943	USDA

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INQUIRY #: 5283927.9
YEAR: 2014
= 500'
N
EDR


INQUIRY #: 5283927.9
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 5283927.9
YEAR: 2006
= 500'
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EDR

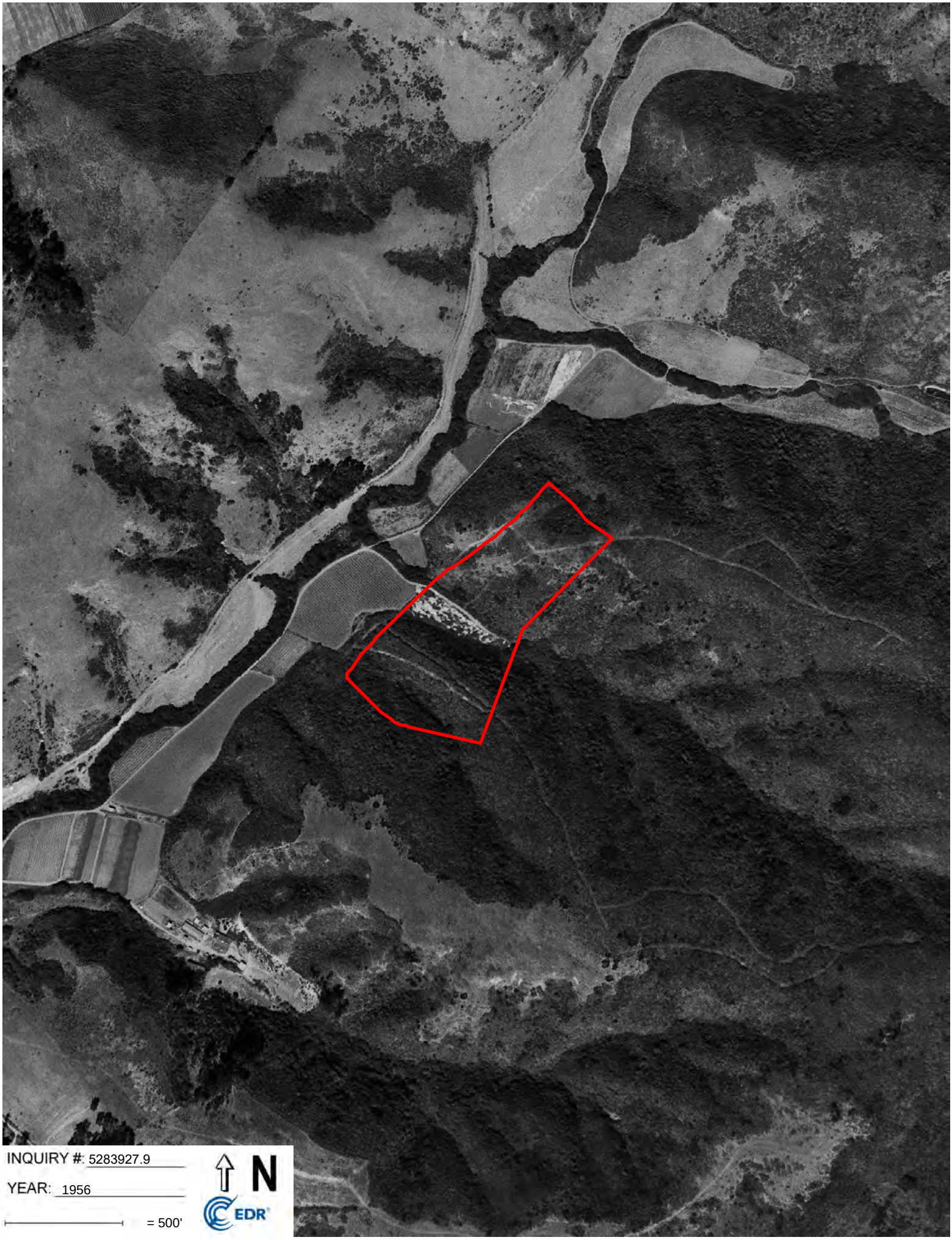

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YEAR: 1998
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EDR


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INQUIRY #: 5283927.9
YEAR: 1968
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EDR


INQUIRY #: 5283927.9
YEAR: 1963
= 500'
N
EDR


INQUIRY #: 5283927.9
YEAR: 1956
= 500'
N
EDR


INQUIRY #: 5283927.9
YEAR: 1946
= 500'
N
EDR



INQUIRY #: 5283927.9

YEAR: 1943

= 500'

N

EDR

PSD Faculty Housing
930 Oddstad Blvd
Pacifica, CA 94044

Inquiry Number: 5283927.3
May 07, 2018

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

05/07/18

Site Name:

PSD Faculty Housing
930 Oddstad Blvd
Pacifica, CA 94044
EDR Inquiry # 5283927.3

Client Name:

STRATA Environmental Serv Inc.
110 Perimeter Park
Knoxville, TN 37922
Contact: Paul Platillero

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by STRATA Environmental Serv Inc. were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 12A7-46D7-A072

PO # PSD Faculty Housing

Project PSD Faculty Housing

UNMAPPED PROPERTY

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Sanborn® Library search results

Certification #: 12A7-46D7-A072

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- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

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PSD Faculty Housing
930 Oddstad Blvd
Pacifica, CA 94044

Inquiry Number: 5283927.5
May 08, 2018

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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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*
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive
1987	☑	☐	Haines Criss-Cross Directory
1982	☑	☐	Haines Criss-Cross Directory
1977	☑	☐	Haines Criss-Cross Directory
1970	☑	☐	Haines Criss-Cross Directory

FINDINGS

TARGET PROPERTY STREET

930 Oddstad Blvd
Pacifica, CA 94044

Year	*CD Image*	*Source*

ODDSTAD BLVD

2014	pg A1	EDR Digital Archive
2010	pg A2	EDR Digital Archive
2005	pg A3	EDR Digital Archive
2000	pg A4	EDR Digital Archive
1995	pg A5	EDR Digital Archive
1992	pg A7	EDR Digital Archive
1987	pg A8	Haines Criss-Cross Directory
1982	pg A9	Haines Criss-Cross Directory
1977	pg A10	Haines Criss-Cross Directory
1977	pg A11	Haines Criss-Cross Directory
1970	pg A12	Haines Criss-Cross Directory

ODDSTADT BLVD

1995	pg A6	EDR Digital Archive

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ODDSTAD BLVD 2014

700	ST PETERS CATHOLIC CHURCH
750	NINE STAR WEB TECHNOLOGY LLC
	PACIFIC OAKS ASSOC INC
765	BAY AREA OIL SUP & SVC STN MGT
	PACIFICA UNOCAL
804	AMER CETACEAN SOC SAN FRANCSCO
828	SOUTHERN CROSS TECH LLC
836	BEVS FAMILY DAY CARE
	GATWOOD, DAVID J
840	GARDENER, JENNIFER
905	PEARSON, ROBERT F
909	YBARRA, SAMUEL R
913	SHAPOVAL, ANATONILY I
917	IVERSON, MICHELLE
921	CARLSON, DAVID E
925	NASOL, CECILIA M
929	MACAULAY, DANIEL D
	SEVEN HILLS PAINTING INC
930	OCEANSHORE ALTERNITIVE SCHOOL
	SPECTRUM CENTER SCHOOLS
933	MUSSMAN, RONALD W
937	OCCUPANT UNKNOWN,
941	OBRIEN, LARRY R
	SAN FRANCISCO JEEPERS
945	PARODI, LAURIE A
953	TIEDJE, LELAND G
957	CONNORS, JAMES M
961	JOVES, GENE V
965	DOWNS, LEVY
973	SABINS, TODD C
	TODD SABINS
1006	PELLEGRINI, ROBERT J
1010	ALL TEAK TIGERWOOD IMPORTS LLC
	CASTELLANOS, EDUARDO
	RAYGOZA, FRANCISCO
1014	WOLF, KARL H
1018	MADSEN, ANDREW D
1021	PETERSON, PAUL
1022	NG, MICHAEL D
1035	ANDADREJEFF
1053	KAPUNIAI MIKE
1055	CHOWTOPIA INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ODDSTAD BLVD 2010

700	ST PETERS CATHOLIC CHURCH
750	MISSIONGUATEMALA
	NINE STAR WEB TECHNOLOGY LLC
	PACIFIC OAKS ASSOC INC
	STARTING AGAIN
	STAY ALIVE AND HEALTHY
765	BAY AREA OIL SUP & SVC STN MGT
	PACIFICA UNOCAL
768	LORNA MOSUELA-BUEHLER
836	BEVS FAMILY DAY CARE
	WARDEN, JAMIE
840	GARDENER, JENNIFER
905	PEARSON, ROBERT F
909	YBARRA, SAMUEL R
913	SHAPOVAL, ANATONILY I
921	CARLSON, DAVID E
925	DAVINI, BARBARA P
929	MACAULAY, DANIEL D
	SEVEN HILLS PAINTING INC
930	KIEWIT PACIFIC COMPANY
933	BLANCKENSEE, DOUGLAS T
937	YIP, LINDA A
941	OBRIEN, LARRY R
	SAN FRANCISCO JEEPERS
945	OCCUPANT UNKNOWN,
949	TABACHNIK, BAZIL
953	TIEDJE, LELAND G
957	CONNORS, JAMES M
961	AVANZINO, C
965	WHITE, MICHAEL D
969	DEVINCENZI, RICHARD O
973	SABINS, TODD C
1006	PELLEGRINI, ROBERT J
1010	ALL TEAK TIGERWOOD IMPORTS LLC
	CASTELLANOS, EDUARDO
	RAYGOZA, MANUEL
1014	WOLF, KARL H
1018	MADSEN, ANDREW D
1021	PETERSON, PAUL
1022	NG, MICHAEL D
1035	ANDADREJEFF
	SIMPLI INC
1042	BOTTOMLINE FITNESS TRAINING
1053	COASTAL COTTAGE SALON
	KAPUNIAI MIKE
1055	CHOWTOPIA INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ODDSTAD BLVD 2005

700	ST PETERS CATHOLIC CHURCH
750	HOME MAINTENANCE
	PACIFIC OAKS ASSOC INC
	STARTING AGAIN
765	BAY AREA OIL SUP & SVC STN MGT
768	LORNA MOSUELA-BUEHLER
836	BEVS FAMILY DAY CARE
	GATWOOD, EDWARD R
909	YBARRA, SAMUEL R
913	RUBIE, JAMES E
921	CARLSON, DAVID E
925	DAVINI, WALTER V
929	MACAULAY, DANIEL D
	SEVEN HILLS PAINTING INC
930	TEMPORARY TOT TENDING INC
937	YIP, LINDA A
941	OCCUPANT UNKNOWN,
	SAN FRANCISCO JEEPERS
945	PARODI, BEN J
949	TATARINOV, YURIY
953	TIEDJE, ELIZABETH M
957	CONNORS, JAMES M
961	JOVES, JACQUELINE J
965	WHITE, MICHAEL M
969	DEVINCENZI, RICHARD O
1006	PELLEGRINI, ROBERT J
1010	FIDLER, MARK
1014	WOLF, KARL H
1018	MADSEN, JENNIFER A
1021	OCCUPANT UNKNOWN,
1022	NG, MICHAEL D
1053	KAPUNIAI MIKE
1061	AXIS SOLUTIONS INC
1069	BAY MORTGAGE SERVICES

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ODDSTAD BLVD 2000

700	ST PETERS CHURCH
750	PACIFIC OAKS ASSOC INC
765	BAY AREA OIL SUP & SVC STN MGT
836	OCCUPANT UNKNOWN,
905	ROVNO, KEVIN
909	YBARRA, SAMUEL R
917	OCCUPANT UNKNOWN,
921	CARLSON, DAVID E
925	DAVINI, WALTER V
929	MACAULAY, DANIEL D
	SEVEN HILLS PAINTING INC
933	BLANCKENSEE, GEORGE G
937	YIP, WAYMAN C
941	OBRIEN, LARRY R
	SAN FRANCISCO JEEPERS
945	PARODI, BEN J
949	OCCUPANT UNKNOWN,
953	OCCUPANT UNKNOWN,
957	CONNORS, JAMES
961	JOVES, GENE
965	OCCUPANT UNKNOWN,
969	DEVINCENZI, RICHARD O
973	VILELA, MARLENE B
1006	PELLEGRINI, ROBERT J
1014	WOLF, KARL
1018	MADSEN, J A
1021	GALAGIK, GAYNEL L

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ODDSTAD BLVD 1995

700	ROMAN CATHOLIC ARCHBISHOP
750	PACIFIC OAKS ASSOC INC
765	CHOW JOHNSON C S CHING PATRICK
	PACIFICA UNOCAL
836	GATWOOD, THOMAS D
905	OCCUPANT UNKNOWNN
909	OCCUPANT UNKNOWNN
917	WOOTEN, K L
921	CARLSON, TONI A
929	MACAULAY, DANIEL D
	SEVEN HILLS PAINTING INC
930	LAGUNA SALADA UNION SCHL DIST
	WESTON LEARNING CENTER
933	SORENSON, PHILLIP E
937	GALEHOUSE, JON S
941	OBRIEN, LARRY R
945	SITES, WILLIAM E
949	ADCOCK, LOREN N
953	OCCUPANT UNKNOWNN
957	CONNORS, JAMES
961	JOVES, GENE
973	OCCUPANT UNKNOWNN
1006	OCCUPANT UNKNOWNN
1010	EGAN, JAMES L
1014	OCCUPANT UNKNOWNN
1018	MADSEN DAVID R
	MADSEN, DAVID

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ODDSTADT BLVD 1995

707	LEMBCKE, BERND
750	BACHER, F
	BAISH, M
	BALL, RUTH
	BERARDY, RICHARD
	BURKMAN, ROBERT E
	CALVELLO, MICHAEL A SR
	CLINE, M
	CROWELL, M E
	DAVALOS, VINCENT A
	DUNCKEL, RUTH M
	DUNN, RITA
	EDWARDS, T
	ENGLISH, OWEN
	FIELDS, BILLIE V
	GRAY, HERBERT W
	HOERBE, M
	HOGAN, S
	HOLLENBECK, FLOYD L
	HUMBARD, EDITH
	HUTCHINSON, V
	JONES, M
	KELLY, MARY J
	KLEIN, ALICE E
	MITCHELL, J B
	MORRISON, EILEEN
	MYERS, BERNICE
	NELSON, GORDON C
	NICHOLS, ALBERT V
	OLSEN, HELEN M
	PEREZ, MARIANO
	RANNIE, MARIE A
	RICHARDS, G M
	ROSENTHAL, ROSE G
	RYAN, NEIL J
	SILVERMAN, GEORGE L
	SLOANE, JAMES W
	SMITH, CHELLIS
	SMITH, M M
	SPELLMAN, RICHARD A
	STEGEMAN, JOYCE
	WHITE, DOROTHY

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

ODDSTAD BLVD 1992

700	ROMAN CATHOLIC
750	PACIFIC OAKS ASSOC INC
765	CHOW JOHNSON C S CHING PATRICK
	TERRA NOVA UNION 76
812	SAN FRANCISCO KIDS WEAR
836	GATWOOD, THOMAS D
905	SCOLINI, ERNEST L
909	STEPP, RUSSELL
929	BUSCHE, KARL E
930	LAGUNA SALADA UNION SCHL DIST
	WESTON LEARNING CENTER
937	GALEHOUSE, JON S
941	OBRIEN, LARRY R
945	SITES, WILLIAM E
953	TIEDJE, J
957	CONNORS, JAMES
961	JOVES, GENE
1018	JENNIFERS INTERIORS
	MADSEN DAVID R
	MADSEN, DAVID

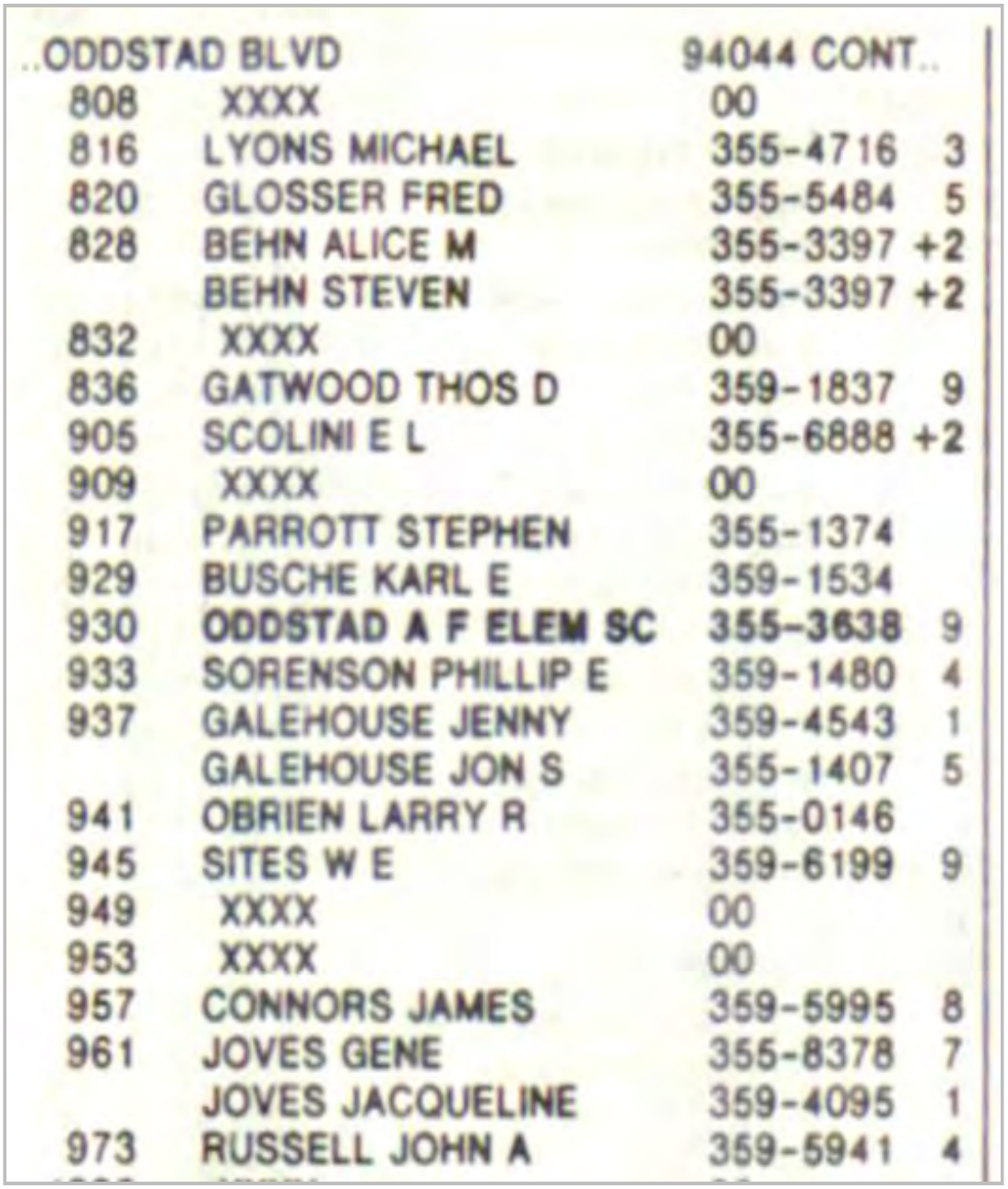
Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

ODDSTAD BLVD 1987

804	XXXX	00	
808	XXXX	00	
816	LYONS MICHAEL	355-4716	
820	GLOSSER FRED	355-5484	
828	BARROWS PHIL	359-3516	5
832	XXXX	00	
836	GATWOOD THOS D	359-1837	9
905	XXXX	00	
909	XXXX	00	
917	PARROTT STEPHEN	355-1374	
929	BUSCHE KARL E	359-1534	
930	★ODDSTAD A F ELEM SC	355-3638	9
	★WESTON LEARNING CT	355-8342	3
933	XXXX	00	
937	GALEHOUSE JENNY	359-4543	1
	GALEHOUSE JON S	355-1407	
941	OBRIEN LARRY R	355-0146	
945	SITES FRANCES	359-6199	9
	SITES W E	359-6199	
949	XXXX	00	
953	TIEDJE LEE	355-5824	5
957	CONNORS JAMES	359-5995	8
961	JOVES GENE	355-8378	

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

ODDSTAD BLVD 1982



..ODDSTAD BLVD		94044 CONT..	
808	XXXX	00	
816	LYONS MICHAEL	355-4716	3
820	GLOSSER FRED	355-5484	5
828	BEHN ALICE M	355-3397	+2
	BEHN STEVEN	355-3397	+2
832	XXXX	00	
836	GATWOOD THOS D	359-1837	9
905	SCOLINI E L	355-6888	+2
909	XXXX	00	
917	PARROTT STEPHEN	355-1374	
929	BUSCHE KARL E	359-1534	
930	ODDSTAD A F ELEM SC	355-3638	9
933	SORENSON PHILLIP E	359-1480	4
937	GALEHOUSE JENNY	359-4543	1
	GALEHOUSE JON S	355-1407	5
941	OBRIEN LARRY R	355-0146	
945	SITES W E	359-6199	9
949	XXXX	00	
953	XXXX	00	
957	CONNORS JAMES	359-5995	8
961	JOVES GENE	355-8378	7
	JOVES JACQUELINE	359-4095	1
973	RUSSELL JOHN A	359-5941	4

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

ODDSTAD BLVD 1977

804	YOUNGMAN GEORGE J	359-5470	
808	MORILLA MICHAEL J	355-3261	
812	GREENLEY RICHARD C	355-2671	
816	LYONS MICHAEL	355-4716	3
820	GLOSSER FRED	355-5484	5
828	WOODWARD ROBERT L	355-7625	
832	FILIOS PETER J	355-2029	
836	WATHEN JOHN	359-0408	
905	XXXX	00	
909	HILL JOHN R	359-4565	
917	PARROTT STEPHEN	355-1374	
929	BUSCHE KARL E	359-1534	
930*	ODDSTAD A ELEM SCHL	355-3638	
933	SORENSON PHILLIP E	359-1480	4
937	GALEHOUSE JON S	355-1407	5
941	OBRIEN LARRY R	355-0146	6

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

ODDSTAD BLVD 1977

.ODDSTAD BLVD 94044 CONT..

949	MINI RON	355-4587 2
953	XXXX	OO
957	PIERCE DENNIS	355-3903+7
961	JOVES GENE	355-8378+7
973	RUSSELL JOHN A	359-5941 4
1006	XXXX	OO
1014*	SCHUMACHER R RECKE	592-6611+7
1018	MADSEN DAVID R	355-6473
1021	GALAGIK GAYNEL MRS	359-5864 6

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

ODDSTAD BLVD 1970

ODDSTAD BLVD 94044 PACIFICA

700	GAFFNEY EDW M	359-5037
	*ST PETERS CATHLC CH	359-0561
703	WILSON ROBT L	355-3594
707	LEMBCKE BERND	359-5638
	LEMBCKE DORIS	359-5638
715	MENCARINI TERRI	355-4352
725	BERNARDI A	359-1586
765	*PARK PCFCA UNION SV	355-4700
776	COTTRELL CLIFFORD R	355-0895
	COTTRELL PATRICIA	359-1725
780	CURRY A M JR	355-4621
784	BRACCO JOHN N	359-1456
788	MCDERMID ROBT L	359-2077
796	SMITS L C	355-4038
804	YOUNGMAN GEO J	359-5470
808	MORILLA MICHAEL J	355-3261
812	GREENLEY RICHARD C	355-2671
816	RICKETT ROBT W	359-1672
828	WOODWARD ROBT L	355-7625
832	FILIOS PETER J	355-2029
836	WATHEN JOHN	359-0408
905	WILSON MIKE E	355-0306
909	HILL JOHN R	359-4565
917	PARROTT STEPHEN	355-1374
929	BUSCHE KARL E	359-1534
930	*ODDSTAD A ELEM SCHL	355-3638
937	GALEHOUSE JON S	355-3901
941	OBRIEN LARRY R	355-0146
949	HAYES RICHARD P	355-5657
953	TIEDJE LELAND G	359-6528
957	KRELL RICHARD B	359-2382
961	DILLER DAVID	359-4132
973	STRANDE PETE	355-6316

APPENDIX D
REGULATORY RECORDS DOCUMENTATION

PSD Faculty Housing
930 Oddstad Blvd
Pacifica, CA 94044

Inquiry Number: 5283927.2s
May 07, 2018

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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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

930 ODDSTAD BLVD
PACIFICA, CA 94044

COORDINATES

Latitude (North):	37.5871090 - 37° 35' 13.59''
Longitude (West):	122.4675320 - 122° 28' 3.11''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	547011.5
UTM Y (Meters):	4159934.0
Elevation:	220 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5641104 MONTARA MOUNTAIN, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140608
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
930 ODDSTAD BLVD
PACIFICA, CA 94044

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	FRONTIERLAND PARK LA	END OF YOSEMITE AVE.	SWF/LF	Higher	297, 0.056, SSE
A2	VERIZON WIRELESS SAN	YOSEMITE DR & HUMBOL	San Mateo Co. BI	Higher	329, 0.062, SSE
B3	UNOCAL #5898	765 ODDSTAD	LUST, HIST UST	Lower	1679, 0.318, WSW
B4	ODDSTAD 76 AUTO REPA	765 ODDSTAD	LUST, San Mateo Co. BI, HIST CORTESE	Lower	1679, 0.318, WSW
C5	PARK PACIFICA CHEVRO	1055 TERRA NOVA	LUST, San Mateo Co. BI, HIST CORTESE	Lower	1931, 0.366, WSW
C6	CHEVRON 9-0418, FORM	1055 TERRA NOVA	LUST	Lower	1931, 0.366, WSW

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-SQG ---------- RCRA - Small Quantity Generators
RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List

US INST CONTROL ---------- Sites with Institutional Controls

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
SLIC ---------- Statewide SLIC Cases

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
Toxic Pits ---- Toxic Pits Cleanup Act Sites
US CDL ---- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

SWEEPS UST ---- SWEEPS UST Listing
HIST UST ---- Hazardous Substance Storage Container Database
CA FID UST ---- Facility Inventory Database

Local Land Records

LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information
DEED ---- Deed Restriction Listing

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

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
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
Cortese ---- "Cortese" Hazardous Waste & Substances Sites List
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
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
WASTEWATER PITS ---- Oil Wastewater Pits Listing
WDS ---- Waste Discharge System
WIP ---- Well Investigation Program Case List
PROD WATER PONDS ---- PROD WATER PONDS (GEOTRACKER)
PROJECT ---- PROJECT (GEOTRACKER)
OTHER OIL GAS ---- OTHER OIL & GAS (GEOTRACKER)
CIWQS ---- CIWQS
NON-CASE INFO ---- NON-CASE INFO (GEOTRACKER)
MILITARY PRIV SITES ---- MILITARY PRIV SITES (GEOTRACKER)
SAMPLING POINT ---- SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ ---- Well Stimulation Project (GEOTRACKER)
UIC GEO ---- UIC GEO (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---- EDR Proprietary Manufactured Gas Plants
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

EXECUTIVE SUMMARY

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

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.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FRONTIERLAND PARK LA	END OF YOSEMITE AVE.	SSE 0 - 1/8 (0.056 mi.)	A1	8
Database: SWF/LF (SWIS), Date of Government Version: 02/12/2018				
Facility ID: 41-AA-0020				
Operational Status: Closed				
Regulation Status: Unpermitted				

State and tribal leaking storage tank lists

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 4 LUST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
UNOCAL #5898	***765 ODDSTAD***	***WSW 1/4 - 1/2 (0.318 mi.)***	***B3***	***9***
Database: LUST REG 2, Date of Government Version: 09/30/2004				
Facility Status: Post remedial action monitoring				
ODDSTAD 76 AUTO REPA	***765 ODDSTAD***	***WSW 1/4 - 1/2 (0.318 mi.)***	***B4***	***10***
Database: LUST, Date of Government Version: 03/12/2018				
Database: SAN MATEO CO. LUST, Date of Government Version: 03/15/2018				

Status: Completed - Case Closed
Facility Id: 340013
Facility Status: 9- Case Closed
Global Id: T0608100590
Global ID: T0608100590

PARK PACIFICA CHEVRO	***1055 TERRA NOVA***	***WSW 1/4 - 1/2 (0.366 mi.)***	***C5***	***16***

Database: LUST, Date of Government Version: 03/12/2018
Database: SAN MATEO CO. LUST, Date of Government Version: 03/15/2018
Status: Completed - Case Closed
Facility Id: 340012
Facility Status: 9- Case Closed
Global Id: T0608100112
Global ID: T0608100112

CHEVRON 9-0418, FORM	1055 TERRA NOVA	WSW 1/4 - 1/2 (0.366 mi.)	C6	18

Database: LUST REG 2, Date of Government Version: 09/30/2004
Facility Status: Case Closed
date9: 12/6/2002

ADDITIONAL ENVIRONMENTAL RECORDS

Other Ascertainable Records

Hazardous Materials Business Plan, Hazardous Waste Generator, Underground Storage tanks

A review of the San Mateo Co. BI list, as provided by EDR, and dated 03/14/2018 has revealed that there is 1 San Mateo Co. BI site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
VERIZON WIRELESS SAN	YOSEMITE DR & HUMBOL	SSE 0 - 1/8 (0.062 mi.)	A2	8

Facility Id: FA0052569

HIST 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 [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 2 HIST CORTESE sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ODDSTAD 76 AUTO REPA	***765 ODDSTAD***	***WSW 1/4 - 1/2 (0.318 mi.)***	***B4***	***10***

Reg Id: 41-0618

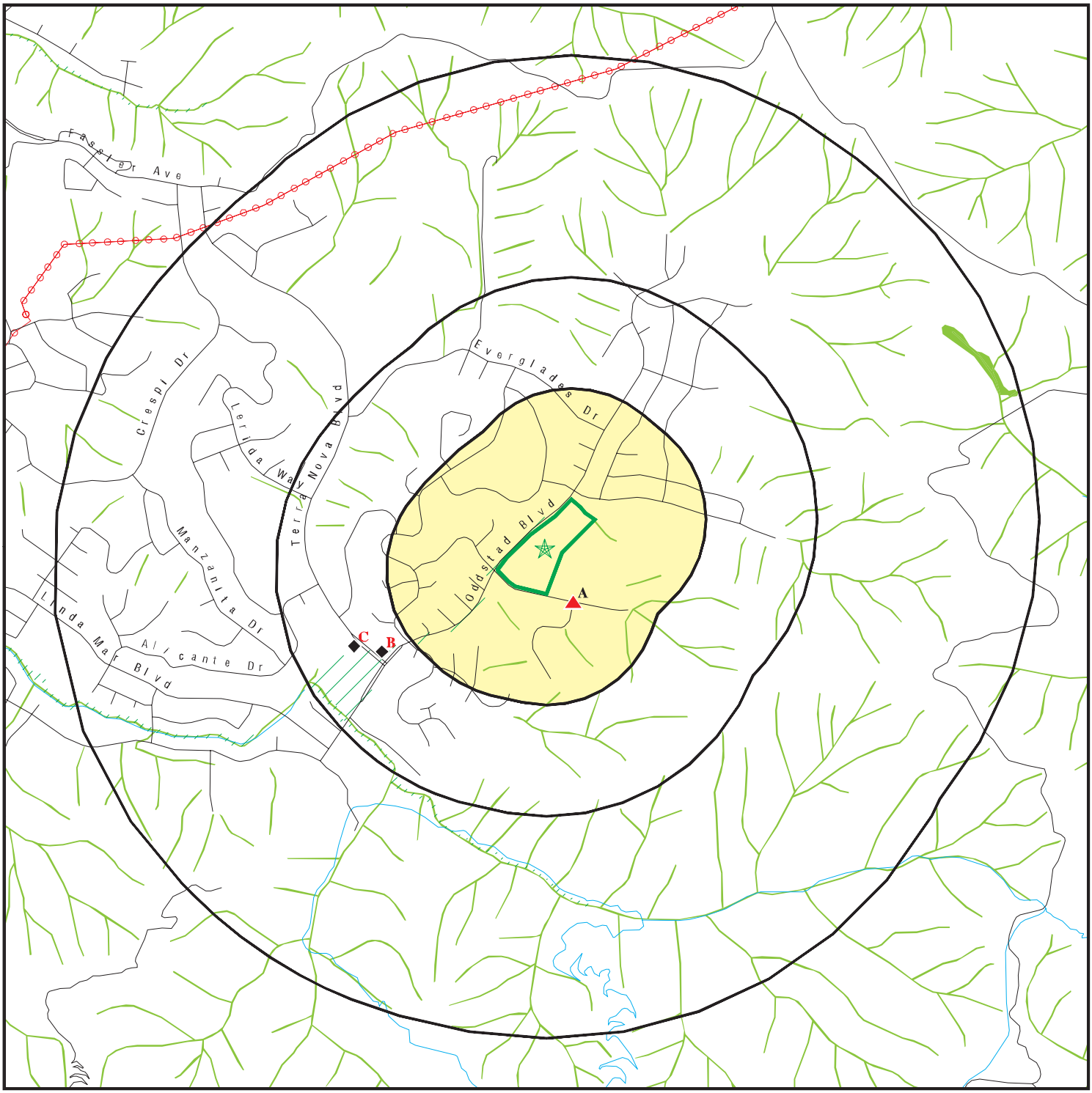
PARK PACIFICA CHEVRO	***1055 TERRA NOVA***	***WSW 1/4 - 1/2 (0.366 mi.)***	***C5***	***16***

Reg Id: 41-0119

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 5283927.2S



0 1/4 1/2 1 Miles

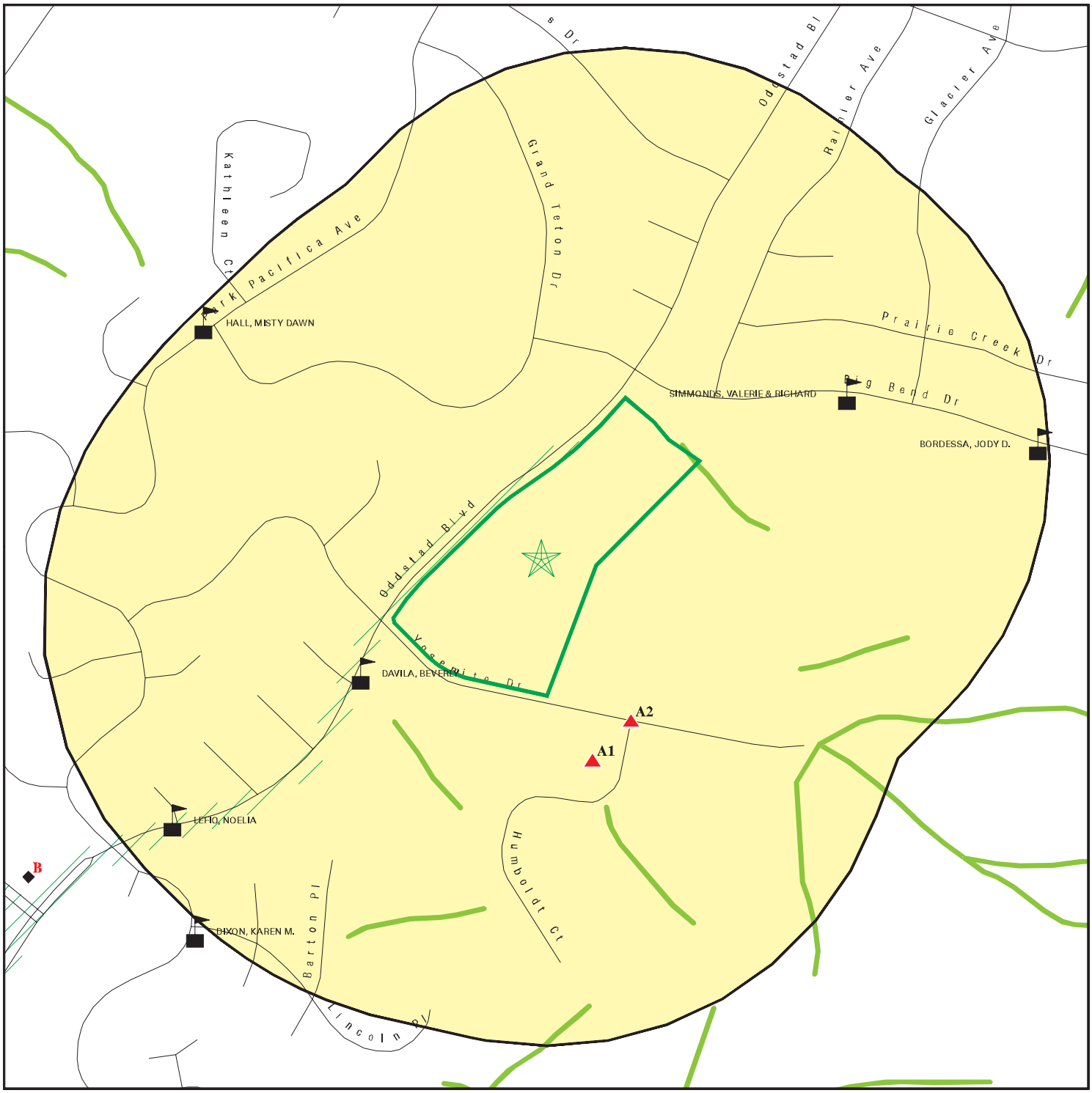
- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- 100-year flood zone
- 500-year flood zone
- National Wetland Inventory
- State Wetlands
- Upgradient Area
- 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: PSD Faculty Housing	CLIENT: STRATA Environmental Serv Inc.
ADDRESS: 930 Oddstad Blvd Pacifica CA 94044	CONTACT: Paul Platillero
LAT/LONG: 37.587109 / 122.467532	INQUIRY #: 5283927.2s DATE: May 07, 2018 10:43 am

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DETAIL MAP - 5283927.2S



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

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

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: PSD Faculty Housing	CLIENT: STRATA Environmental Serv Inc.
ADDRESS: 930 Oddstad Blvd Pacifica CA 94044	CONTACT: Paul Platillero
LAT/LONG: 37.587109 / 122.467532	INQUIRY #: 5283927.2s DATE: May 07, 2018 10:53 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								
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	0.001		0	NR	NR	NR	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		0	0	NR	NR	NR	0
RCRA-CESQG	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 CONTROL	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		1	0	0	NR	NR	1
State and tribal leaking storage tank lists								
LUST	0.500		0	0	4	NR	NR	4

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
INDIAN LUST	0.500		0	0	0	NR	NR	0
SLIC	0.500		0	0	0	NR	NR	0
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
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	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
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	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	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
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	0	NR	NR	NR	0
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	0.001		0	NR	NR	NR	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	0.001		0	NR	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
San Mateo Co. BI	0.250		1	0	NR	NR	NR	1
Cortese	0.500		0	0	0	NR	NR	0
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

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
HAZNET	0.001		0	NR	NR	NR	NR	0
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	2	NR	NR	2
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.001		0	NR	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
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
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0
CIWQS	TP		NR	NR	NR	NR	NR	0
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	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	2	0	6	0	0	8

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
SSE
< 1/8
0.056 mi.
297 ft.

FRONTIERLAND PARK LANDFILL
END OF YOSEMITE AVE.
PACIFICA, CA

Site 1 of 2 in cluster A

SWF/LF **S102362411**
N/A

Relative:
Higher

Actual:
337 ft.

SWF/LF (SWIS):

Region:	STATE
Facility ID:	41-AA-0020
Lat/Long:	37.58582 / -122.46682
Owner Name:	City Of Pacifica
Owner Telephone:	4153596038
Owner Address:	Not reported
Owner Address2:	170 Sant Maria Ave.
Owner City,St,Zip:	Pacifica, CA 94044
Operational Status:	Closed
Operator:	Not reported
Operator Phone:	Not reported
Operator Address:	Not reported
Operator Address2:	Not reported
Operator City,St,Zip:	Not reported
Permit Date:	Not reported
Permit Status:	Not reported
Permitted Acreage:	$0.00
Activity:	Solid Waste Disposal Site
Regulation Status:	Unpermitted
Landuse Name:	Not reported
GIS Source:	Map
Category:	Disposal
Unit Number:	01
Inspection Frequency:	Annual
Accepted Waste:	Not reported
Closure Date:	12/31/1972
Closure Type:	Estimated
Disposal Acreage:	$0.00
SWIS Num:	41-AA-0020
Waste Discharge Requirement Num:	Not reported
Program Type:	Not reported
Permitted Throughput with Units:	Not reported
Actual Throughput with Units:	Not reported
Permitted Capacity with Units:	Not reported
Remaining Capacity:	Not reported
Remaining Capacity with Units:	Not reported
Lat/Long:	37.58582 / -122.46682

A2
SSE
< 1/8
0.062 mi.
329 ft.

VERIZON WIRELESS SAN PEDRO VALLEY EAST
YOSEMITE DR & HUMBOLDT
PACIFICA, CA 94044

Site 2 of 2 in cluster A

San Mateo Co. BI **S113759092**
N/A

Relative:
Higher

Actual:
391 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0052569
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0072876
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	ACTIVE

B3 **UNOCAL #5898** **LUST** **1000167294**
WSW **765 ODDSTAD** **HIST UST** **N/A**
1/4-1/2 **PACIFICA, CA 94004**
0.318 mi.
1679 ft. **Site 1 of 2 in cluster B**

Relative:
Lower

Actual:
151 ft.

LUST REG 2:

Region:	2
Facility Id:	Not reported
Facility Status:	Post remedial action monitoring
Case Number:	340013
How Discovered:	OM
Leak Cause:	Unknown
Leak Source:	Unknown
Date Leak Confirmed:	Not reported
Oversight Program:	LUST
Prelim. Site Assesment Wokplan Submitted:	Not reported
Preliminary Site Assesment Began:	Not reported
Pollution Characterization Began:	Not reported
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	1/1/1965

HIST UST:

File Number:	0002C3DD
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002C3DD.pdf
Region:	STATE
Facility ID:	00000030780
Facility Type:	Gas Station
Other Type:	Not reported
Contact Name:	JOHNSON CHOW/PATRICK CHANG
Telephone:	4153591850
Owner Name:	UNION OIL CO.
Owner Address:	1 CALIFORNIA ST. SUITE 2700
Owner City,St,Zip:	SAN FRANCISCO, CA 94111
Total Tanks:	0003
Tank Num:	001
Container Num:	5898-1-1
Year Installed:	1967
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	002
Container Num:	5898-2-1
Year Installed:	1967
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	003
Container Num:	5898-4-1
Year Installed:	Not reported
Tank Capacity:	00000280

UNOCAL #5898 (Continued) **1000167294**

Tank Used for: WASTE
Type of Fuel: WASTE OIL
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

Click here for Geo Tracker PDF:

B4 **ODDSTAD 76 AUTO REPAIR #255898** **LUST** **S103171441**
WSW **765 ODDSTAD** **San Mateo Co. BI** **N/A**
1/4-1/2 **PACIFICA, CA 94044** **HIST CORTESE**
0.318 mi.
1679 ft. **Site 2 of 2 in cluster B**

Relative:
Lower

Actual:
151 ft.

LUST:
Lead Agency: SAN MATEO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100590
Global Id: T0608100590
Latitude: 37.5837020006578
Longitude: -122.474137544632
Status: Completed - Case Closed
Status Date: 03/27/2013
Case Worker: BG
RB Case Number: 41-0618
Local Agency: SAN MATEO COUNTY LOP
File Location: Local Agency
Local Case Number: 340013
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Gasoline
Site History: Can be extracted from most recent report in Geotracker or at San Mateo County offices if submitted prior to 2005, San Mateo County does not take responsibility for the accuracy of the statements made or any professional interpretations made in the referenced report.

LUST:
Global Id: T0608100590
Contact Type: Local Agency Caseworker
Contact Name: BRIAN GWINN
Organization Name: SAN MATEO COUNTY LOP
Address: 2000 Alameda de las Pulgas, Suite 100
City: SAN MATEO
Email: bgwinn@smcgov.org
Phone Number: 6502724590

Global Id: T0608100590
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 01/18/2005
Action: Staff Letter - #20050118

ODDSTAD 76 AUTO REPAIR #255898 (Continued) **S103171441**

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 07/12/2012
Action: Technical Correspondence / Assistance / Other - #20120712

Global Id: T0608100590
Action Type: RESPONSE
Date: 05/15/2010
Action: Monitoring Report - Semi-Annually

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 04/22/2011
Action: Staff Letter - #20110422

Global Id: T0608100590
Action Type: Other
Date: 11/26/1990
Action: Leak Reported

Global Id: T0608100590
Action Type: RESPONSE
Date: 01/23/2013
Action: Well Destruction Report

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 11/22/2010
Action: Staff Letter - #20101122

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 08/26/2010
Action: Staff Letter - #20100826

Global Id: T0608100590
Action Type: REMEDIATION
Date: 07/03/1990
Action: Excavation

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 03/04/2004
Action: Staff Letter - #20040304

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 08/30/2012
Action: Notification - Fee Title Owners Notice - #20120830

Global Id: T0608100590
Action Type: RESPONSE
Date: 12/31/2010
Action: Correspondence

Global Id: T0608100590
Action Type: Other

ODDSTAD 76 AUTO REPAIR #255898 (Continued) **S103171441**

Date: 07/09/1990
Action: Leak Discovery

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 02/14/2007
Action: Staff Letter - #20070214

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 09/16/2004
Action: Staff Letter - #20040916

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 04/23/2008
Action: Staff Letter - #20080423

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 06/05/2006
Action: Staff Letter - #20060605A

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 12/03/2009
Action: Staff Letter - #20091203

Global Id: T0608100590
Action Type: RESPONSE
Date: 11/15/2011
Action: Monitoring Report - Annually

Global Id: T0608100590
Action Type: RESPONSE
Date: 11/15/2012
Action: Monitoring Report - Annually

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 05/08/1991
Action: Notice of Responsibility - #19910508

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 06/05/2006
Action: Staff Letter - #20060605B

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 10/01/2012
Action: Staff Letter - #20121001

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 03/27/2013
Action: Closure/No Further Action Letter - #20130327

ODDSTAD 76 AUTO REPAIR #255898 (Continued) **S103171441**

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 01/17/2013
Action: Staff Letter - #20130117

Global Id: T0608100590
Action Type: RESPONSE
Date: 05/09/2005
Action: Electronic Reporting Submittal Due

Global Id: T0608100590
Action Type: RESPONSE
Date: 05/09/2005
Action: Soil and Water Investigation Report

Global Id: T0608100590
Action Type: RESPONSE
Date: 09/07/2006
Action: Soil and Water Investigation Workplan

Global Id: T0608100590
Action Type: RESPONSE
Date: 11/15/2006
Action: Monitoring Report - Annually

Global Id: T0608100590
Action Type: RESPONSE
Date: 11/15/2007
Action: Monitoring Report - Annually

Global Id: T0608100590
Action Type: RESPONSE
Date: 06/20/2007
Action: Electronic Reporting Submittal Due

Global Id: T0608100590
Action Type: RESPONSE
Date: 06/20/2007
Action: Soil and Water Investigation Report

Global Id: T0608100590
Action Type: RESPONSE
Date: 11/18/2008
Action: Sensitive Receptor Survey Report

Global Id: T0608100590
Action Type: RESPONSE
Date: 11/18/2008
Action: Soil and Water Investigation Report

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 03/01/2012
Action: Staff Letter - #20120301

Global Id: T0608100590
Action Type: ENFORCEMENT

ODDSTAD 76 AUTO REPAIR #255898 (Continued) **S103171441**

Date: 07/22/2009
Action: Staff Letter - #20090722

Global Id: T0608100590
Action Type: RESPONSE
Date: 11/15/2008
Action: Monitoring Report - Annually

Global Id: T0608100590
Action Type: RESPONSE
Date: 11/15/2009
Action: Monitoring Report - Annually

Global Id: T0608100590
Action Type: RESPONSE
Date: 05/11/2010
Action: Soil and Water Investigation Workplan

Global Id: T0608100590
Action Type: RESPONSE
Date: 02/22/2011
Action: Soil and Water Investigation Report

Global Id: T0608100590
Action Type: RESPONSE
Date: 05/15/2011
Action: Electronic Reporting Submittal Due

Global Id: T0608100590
Action Type: RESPONSE
Date: 11/15/2010
Action: Monitoring Report - Semi-Annually

Global Id: T0608100590
Action Type: ENFORCEMENT
Date: 01/27/2011
Action: Technical Correspondence / Assistance / Other

LUST:
Global Id: T0608100590
Status: Open - Case Begin Date
Status Date: 11/26/1990

Global Id: T0608100590
Status: Open - Verification Monitoring
Status Date: 01/31/1995

Global Id: T0608100590
Status: Open - Site Assessment
Status Date: 12/04/2005

Global Id: T0608100590
Status: Open - Verification Monitoring
Status Date: 04/22/2011

Global Id: T0608100590
Status: Completed - Case Closed

ODDSTAD 76 AUTO REPAIR #255898 (Continued) **S103171441**

Status Date: 03/27/2013

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 340013
Facility Status: 9- Case Closed
Global ID: T0608100590
APN Number: 023592010
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0017539
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0023946
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017539
Prog Element Code: LESS THAN 500 TIRES
Record Id: PR0045381
Description: LESS THAN 500 TIRES
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017539
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0004058
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017539
Prog Element Code: UNDERGROUND TANK - GENERAL
Record Id: PR0022503
Description: UNDERGROUND TANK - GENERAL
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0040276
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0056315
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0040276
Prog Element Code: LESS THAN 500 TIRES
Record Id: PR0056319
Description: LESS THAN 500 TIRES
Facility Status: ACTIVE

Region: SAN MATEO

ODDSTAD 76 AUTO REPAIR #255898 (Continued) **S103171441**

Facility ID:	FA0040276
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0056313
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	ACTIVE

Region:	SAN MATEO
Facility ID:	FA0040276
Prog Element Code:	UNDERGROUND TANK - GENERAL
Record Id:	PR0056314
Description:	UNDERGROUND TANK - GENERAL
Facility Status:	ACTIVE

HIST CORTESE:

Region:	CORTESE
Facility County Code:	41
Reg By:	LTNKA
Reg Id:	41-0618

C5 **PARK PACIFICA CHEVRON** **LUST** **S103892737**
WSW **1055 TERRA NOVA** **San Mateo Co. BI** **N/A**
1/4-1/2 **PACIFICA, CA 94044** **HIST CORTESE**
0.366 mi.
1931 ft. **Site 1 of 2 in cluster C**

Relative:
Lower

Actual:
136 ft.

LUST:

Lead Agency:	SAN MATEO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100112
Global Id:	T0608100112
Latitude:	37.5841058544152
Longitude:	-122.475864887238
Status:	Completed - Case Closed
Status Date:	12/06/2002
Case Worker:	BG
RB Case Number:	41-0119
Local Agency:	SAN MATEO COUNTY LOP
File Location:	Local Agency Warehouse
Local Case Number:	340012
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0608100112
Contact Type:	Local Agency Caseworker
Contact Name:	BRIAN GWINN
Organization Name:	SAN MATEO COUNTY LOP
Address:	2000 Alameda de las Pulgas, Suite 100
City:	SAN MATEO
Email:	bgwinn@smcgov.org
Phone Number:	6502724590

Global Id:	T0608100112
Contact Type:	Regional Board Caseworker
Contact Name:	Regional Water Board
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400

PARK PACIFICA CHEVRON (Continued) **S103892737**

City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608100112
Action Type: Other
Date: 11/14/1990
Action: Leak Reported

Global Id: T0608100112
Action Type: ENFORCEMENT
Date: 11/16/1990
Action: Notice of Responsibility - #1

Global Id: T0608100112
Action Type: Other
Date: 02/20/1991
Action: Leak Discovery

LUST:
Global Id: T0608100112
Status: Open - Case Begin Date
Status Date: 11/14/1990

Global Id: T0608100112
Status: Completed - Case Closed
Status Date: 12/06/2002

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 340012
Facility Status: 9- Case Closed
Global ID: T0608100112
APN Number: 023593070
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0017530
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0011427
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017530
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0004048
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO

PARK PACIFICA CHEVRON (Continued) **S103892737**

Facility ID: FA0017530
Prog Element Code: UNDERGROUND TANK - GENERAL
Record Id: PR0022496
Description: UNDERGROUND TANK - GENERAL
Facility Status: INACTIVE

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-0119

C6 **CHEVRON 9-0418, FORMER** **LUST** **S105030229**
WSW **1055 TERRA NOVA** **N/A**
1/4-1/2 **PACIFICA, CA 94044**
0.366 mi.
1931 ft. **Site 2 of 2 in cluster C**

Relative:
Lower

Actual:
136 ft.

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Case Closed
Case Number: 340012
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

Count: 0 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

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: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 07/16/2018
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: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 07/16/2018
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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 07/16/2018
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: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/06/2018
Next Scheduled EDR Contact: 07/16/2018
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: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 66

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 07/30/2018
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: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 66

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 07/30/2018
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: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
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: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
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: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
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: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - 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). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
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: 05/22/2017
Date Data Arrived at EDR: 06/13/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 94

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 05/28/2018
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: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

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: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
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: 01/16/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 63

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
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: 01/30/2018
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 47

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/13/2018
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: 01/30/2018
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 47

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/13/2018
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: 02/12/2018
Date Data Arrived at EDR: 02/14/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 48

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 7

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

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: Varies

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 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 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: Quarterly

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

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/12/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 09/30/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/24/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 01/06/2018
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/16/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

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: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 7

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
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: Quarterly

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: Semi-Annually

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: Varies

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: Semi-Annually

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: Semi-Annually

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: Semi-Annually

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: Annually

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: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/29/2018
Number of Days to Update: 15
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Semi-Annually

MILITARY UST SITES: MILITARY UST SITES (GEOTRACKER)
Military ust sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

UST CLOSURE: UST CLOSURE
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: 03/08/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
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: 03/21/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

SAN FRANCISCO AST: SAN FRANCISCO AST
Aboveground storage tank sites

Date of Government Version: 04/19/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 10

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
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: 10/24/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 09/30/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/12/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 01/13/2018
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 134

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/16/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 01/30/2018
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 47

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/13/2018
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: 04/20/2009
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: 03/21/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Varies

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: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
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: 01/19/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/21/2018
Next Scheduled EDR Contact: 07/02/2018
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: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: No Update Planned

SWRCY: Recycler Database

A listing of recycling facilities in California.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing

A listing of registered waste tire haulers.

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/09/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 39

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 02/26/2018
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: 01/30/2018
Next Scheduled EDR Contact: 05/14/2018
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: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
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: 05/04/2018
Next Scheduled EDR Contact: 08/13/2018
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: 01/19/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16
Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
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: 01/30/2018
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 47
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/13/2018
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: 06/30/2017
Date Data Arrived at EDR: 08/18/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 34
Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Varies

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: 01/09/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Quarterly

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

UST CLOSURE: UST CLOSURE

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: 03/08/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

MILITARY UST SITES: MILITARY UST SITES (GEOTRACKER)

Military ust sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 02/28/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 03/28/2018
Number of Days to Update: 27

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

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: SAN FRANCISCO AST

Aboveground storage tank sites

Date of Government Version: 04/19/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 10

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
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

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: 01/28/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 46

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
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: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
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: 01/19/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 63

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
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: 02/15/2018
Date Data Arrived at EDR: 02/20/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 42

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/24/2018
Next Scheduled EDR Contact: 08/06/2018
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: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
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: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 7

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
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: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 07/09/2018
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: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
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: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
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: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/23/2018
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: 02/16/2018
Next Scheduled EDR Contact: 05/28/2018
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: 01/11/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 42
Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
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: 01/31/2018
Next Scheduled EDR Contact: 05/21/2018
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: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/21/2018
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: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198
Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/23/2018
Next Scheduled EDR Contact: 07/02/2018
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: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
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: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/09/2018
Next Scheduled EDR Contact: 08/06/2018
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: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 06/18/2018
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: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/20/2018
Next Scheduled EDR Contact: 08/06/2018
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: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/20/2018
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: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
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: 04/09/2018
Next Scheduled EDR Contact: 07/23/2018
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: Quarterly

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: Quarterly

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: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/20/2018
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: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 03/09/2018
Next Scheduled EDR Contact: 06/18/2018
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: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
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: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
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: 01/03/2018
Date Data Arrived at EDR: 01/04/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 99
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/16/2018
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: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

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: 12/31/2017
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 79

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/06/2018
Next Scheduled EDR Contact: 07/02/2018
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: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
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: 04/11/2018
Next Scheduled EDR Contact: 07/23/2018
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: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/21/2018
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: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 07/16/2018
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: 10/29/2017
Date Data Arrived at EDR: 11/28/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 45

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/11/2018
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: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
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: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
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: 12/20/2017
Date Data Arrived at EDR: 12/21/2017
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 92

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/25/2018
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: 02/21/2018
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 28

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/30/2018
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: 01/13/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 03/02/2018
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/18/2018
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: 01/04/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 03/02/2018
Next Scheduled EDR Contact: 06/11/2018
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: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 30
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
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: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 38
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA LIVERMORE-PLEASANTON
list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 02/28/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 64
Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA SAN FRANCISCO CO
Cupa facilities

Date of Government Version: 04/20/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 10
Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: DRYCLEAN SOUTH COAST
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/16/2018
Date Data Arrived at EDR: 03/20/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 45

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/11/2018
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: 03/27/2018
Date Data Arrived at EDR: 03/29/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 36

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Annually

DRYCLEAN AVAQMD: DRYCLEAN AVAQMD

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 52

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/11/2018
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: 12/31/2015
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 147

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/23/2018
Next Scheduled EDR Contact: 07/02/2018
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: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 54

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 55

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
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: 02/14/2018
Date Data Arrived at EDR: 02/16/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 46

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
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: 12/31/2016
Date Data Arrived at EDR: 07/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 97

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/12/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 41

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
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: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
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: 01/08/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/23/2018
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: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
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: 02/27/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 42
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 03/14/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 05/28/2018
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: 03/05/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 04/19/2018
Number of Days to Update: 45
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/05/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
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: 03/23/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 38
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 07/02/2018
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: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
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 board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
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: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

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: 03/21/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Varies

CIWQS: The California Integrated Water Quality System
California Integrated Water Quality System Project (CIWQS)

Date of Government Version: 03/05/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 60
Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

SAN DIEGO CO LOP: SAN DIEGO CO LOP
A listing all LOP release sites that are or were under the County of San Diegoa??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: 04/18/2018
Date Data Arrived at EDR: 04/23/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 11
Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

WELL STIM PROJ: WELL SAMP PROJ (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: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

SAMPLING POINT: SAMPLING POINT (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

NON-CASE INFO: NON-CASE INFO (GEOTRACKER)
Non-Case Information sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

PROJECT: PROJECT (GEOTRACKER)
Projects sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

PROD WATER PONDS: PROD WATER PONDS (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

OTHER OIL GAS: OTHER OIL & GAS (GEOTRACKER)
Other Oil & Gas Projects sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Varies

UIC GEO: UIC GEO (GEOTRACKER)
Underground control injection sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 06/25/2018
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

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

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:

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: 01/09/2018
Date Data Arrived at EDR: 01/11/2018
Date Made Active in Reports: 02/22/2018
Number of Days to Update: 42

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 10

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

BUTTE COUNTY:

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: 04/05/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 01/25/2018
Date Data Arrived at EDR: 01/26/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 47

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/26/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 02/26/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 14

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 48

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 04/30/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/05/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 40

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 04/25/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 03/05/2018
Date Data Arrived at EDR: 03/08/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 39

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 04/30/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

FRESNO COUNTY:

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: 03/01/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 9

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 03/06/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Semi-Annually

GLENN COUNTY:

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: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 03/05/2018
Date Data Arrived at EDR: 03/08/2018
Date Made Active in Reports: 04/30/2018
Number of Days to Update: 53

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/26/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 47

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/08/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 56

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 03/28/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 02/02/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/28/2018
Number of Days to Update: 54

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

KINGS COUNTY:

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: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 28

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 02/06/2018
Date Data Arrived at EDR: 02/09/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 33

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/16/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

LASSEN COUNTY:

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: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

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: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 56
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 01/16/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 29
Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/17/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 04/21/2017
Date Made Active in Reports: 10/09/2017
Number of Days to Update: 171
Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 01/17/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 28
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/17/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Annually

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: 04/11/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 13

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

MADERA COUNTY:

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: 02/21/2018
Date Data Arrived at EDR: 02/22/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 40

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 03/30/2018
Date Data Arrived at EDR: 04/06/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 28

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 03/29/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/11/2018
Date Data Arrived at EDR: 01/12/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 27

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 15

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 03/27/2018
Date Data Arrived at EDR: 03/29/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 18
Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/20/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

NAPA COUNTY:

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: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 03/29/2018
Number of Days to Update: 30
Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/31/2018
Date Data Arrived at EDR: 02/01/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 41
Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 04/25/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 02/05/2018
Date Data Arrived at EDR: 02/13/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 49
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/05/2018
Date Data Arrived at EDR: 02/13/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 35
Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 02/07/2018
Date Made Active in Reports: 03/28/2018
Number of Days to Update: 49

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/07/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/15/2018
Date Data Arrived at EDR: 03/19/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 46

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 03/15/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 50

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/19/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/19/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/05/2018
Number of Days to Update: 33

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/04/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

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: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 42

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/04/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/17/2017
Number of Days to Update: 14

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

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: 11/30/2017
Date Data Arrived at EDR: 12/01/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 46

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 04/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

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: 03/05/2018
Date Data Arrived at EDR: 03/07/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 40

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

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: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

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: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 03/20/2018
Date Data Arrived at EDR: 03/22/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 43
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 07/02/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31
Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 03/14/2018
Date Data Arrived at EDR: 03/20/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 45
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/15/2018
Date Data Arrived at EDR: 03/20/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 45
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

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: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/20/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 27
Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

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

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: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/04/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 42

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

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: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SHASTA COUNTY:

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: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 52

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 03/29/2018
Number of Days to Update: 16

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 20

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/22/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/22/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 02/06/2018
Date Data Arrived at EDR: 02/07/2018
Date Made Active in Reports: 03/16/2018
Number of Days to Update: 37

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 04/16/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 01/08/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 03/30/2018
Number of Days to Update: 29

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA Facility List

Cupa facilities

Date of Government Version: 01/26/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 47

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

TULARE COUNTY:

CUPA Facility List
Cupa program facilities

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/22/2018
Date Made Active in Reports: 04/17/2018
Number of Days to Update: 26

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/16/2018
Number of Days to Update: 50

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

VENTURA COUNTY:

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: 12/26/2017
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 48

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/23/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Quarterly

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: 03/29/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Annually

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: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

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: 12/26/2017
Date Data Arrived at EDR: 01/25/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 54

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/23/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/28/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/30/2018
Number of Days to Update: 16
Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/14/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 03/27/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 31
Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/29/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 02/01/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 47
Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 04/25/2018
Next Scheduled EDR Contact: 08/13/2018
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: 01/03/2018
Date Data Arrived at EDR: 02/14/2018
Date Made Active in Reports: 03/22/2018
Number of Days to Update: 36
Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 07/27/2017
Number of Days to Update: 107
Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/23/2018
Next Scheduled EDR Contact: 07/23/2018
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: 12/31/2017
Date Data Arrived at EDR: 01/31/2018
Date Made Active in Reports: 03/09/2018
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/12/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 07/14/2017
Number of Days to Update: 92

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/08/2018
Next Scheduled EDR Contact: 06/25/2018
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: PennWell Corporation

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 PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data

Source: PennWell Corporation

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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

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 & Game
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

PSD FACULTY HOUSING
930 ODDSTAD BLVD
PACIFICA, CA 94044

TARGET PROPERTY COORDINATES

Latitude (North):	37.587109 - 37° 35' 13.59''
Longitude (West):	122.467532 - 122° 28' 3.12''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	547011.5
UTM Y (Meters):	4159934.0
Elevation:	220 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5641104 MONTARA MOUNTAIN, 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 principal 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).

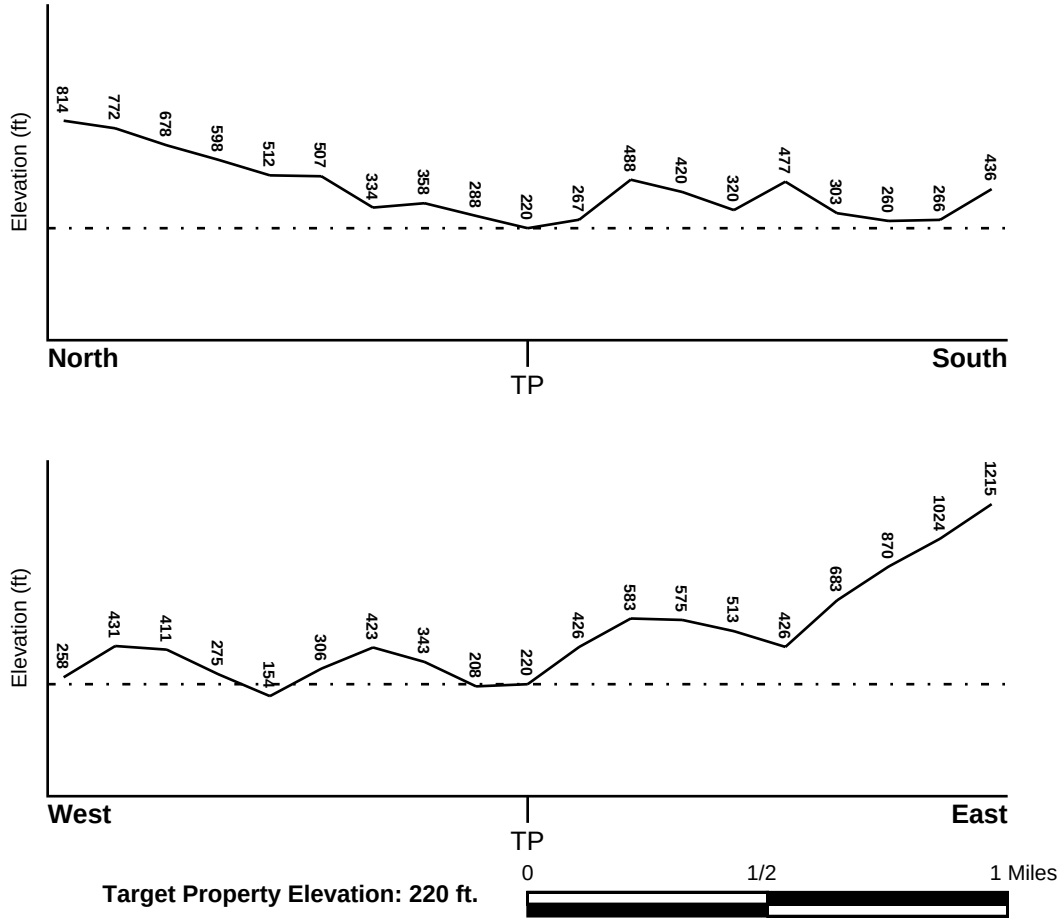
TOPOGRAPHIC INFORMATION

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 WNW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 220 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
06081C0129E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06081C0126E	FEMA FIRM Flood data
06081C0127E	FEMA FIRM Flood data
06081C0128E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
MONTARA MOUNTAIN	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
1	1/4 - 1/2 Mile WSW	SW
2	1/4 - 1/2 Mile WSW	Not Reported
1G	1/4 - 1/2 Mile WSW	Not Reported
2G	1/4 - 1/2 Mile WSW	SW

For additional site information, refer to Physical Setting Source Map Findings.

* ©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

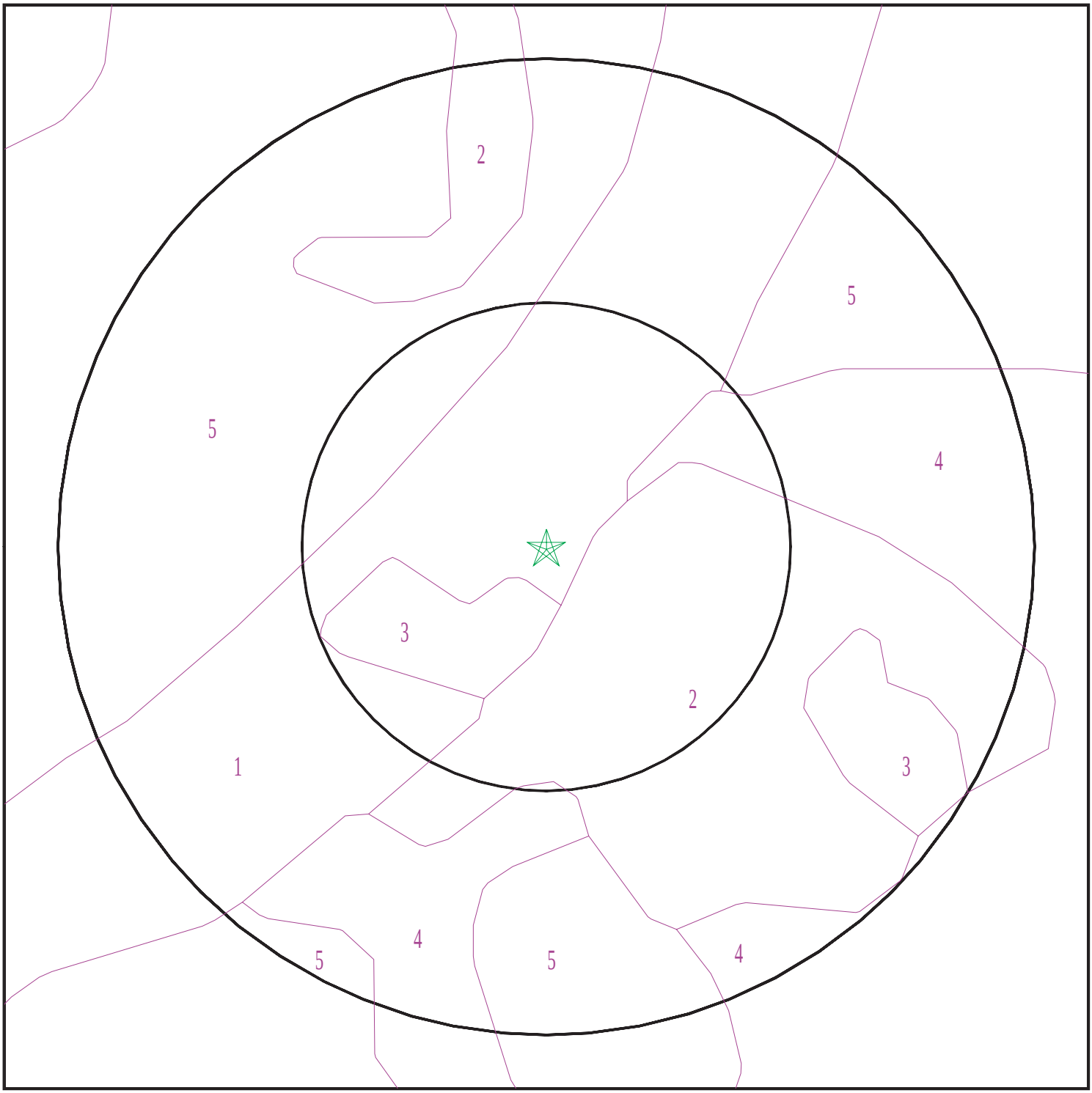
Era:	Mesozoic
System:	Cretaceous
Series:	Upper Mesozoic
Code:	uMze*(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Eugeosynclinal Deposits

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 - 5283927.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	PSD Faculty Housing	CLIENT:	STRATA Environmental Serv Inc.
ADDRESS:	930 Oddstad Blvd Pacifica CA 94044	CONTACT:	Paul Platillero
LAT/LONG:	37.587109 / 122.467532	INQUIRY #:	5283927.2s
		DATE:	May 07, 2018 10:54 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: Orthents

Soil Surface Texture:
Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Well drained

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	59 inches		Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 2

Soil Component Name: Orthents

Soil Surface Texture:
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: 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		Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 3

Soil Component Name: Orthents

Soil Surface Texture: variable

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

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	59 inches	variable	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 4

Soil Component Name: Barnabe

Soil Surface Texture: very gravelly 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: > 30 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	7 inches	very gravelly sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 42 Min: 14	Max: 6.5 Min: 5.6
2	7 inches	11 inches	very gravelly sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Silty Gravel	Max: 14 Min: 4	Max: 6.5 Min: 5.6
3	11 inches	16 inches	unweathered bedrock	Not reported	Not reported	Max: Min:	Max: Min:

Soil Map ID: 5

Soil Component Name: Orthents

Soil Surface Texture:

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: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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		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 0.001 miles
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

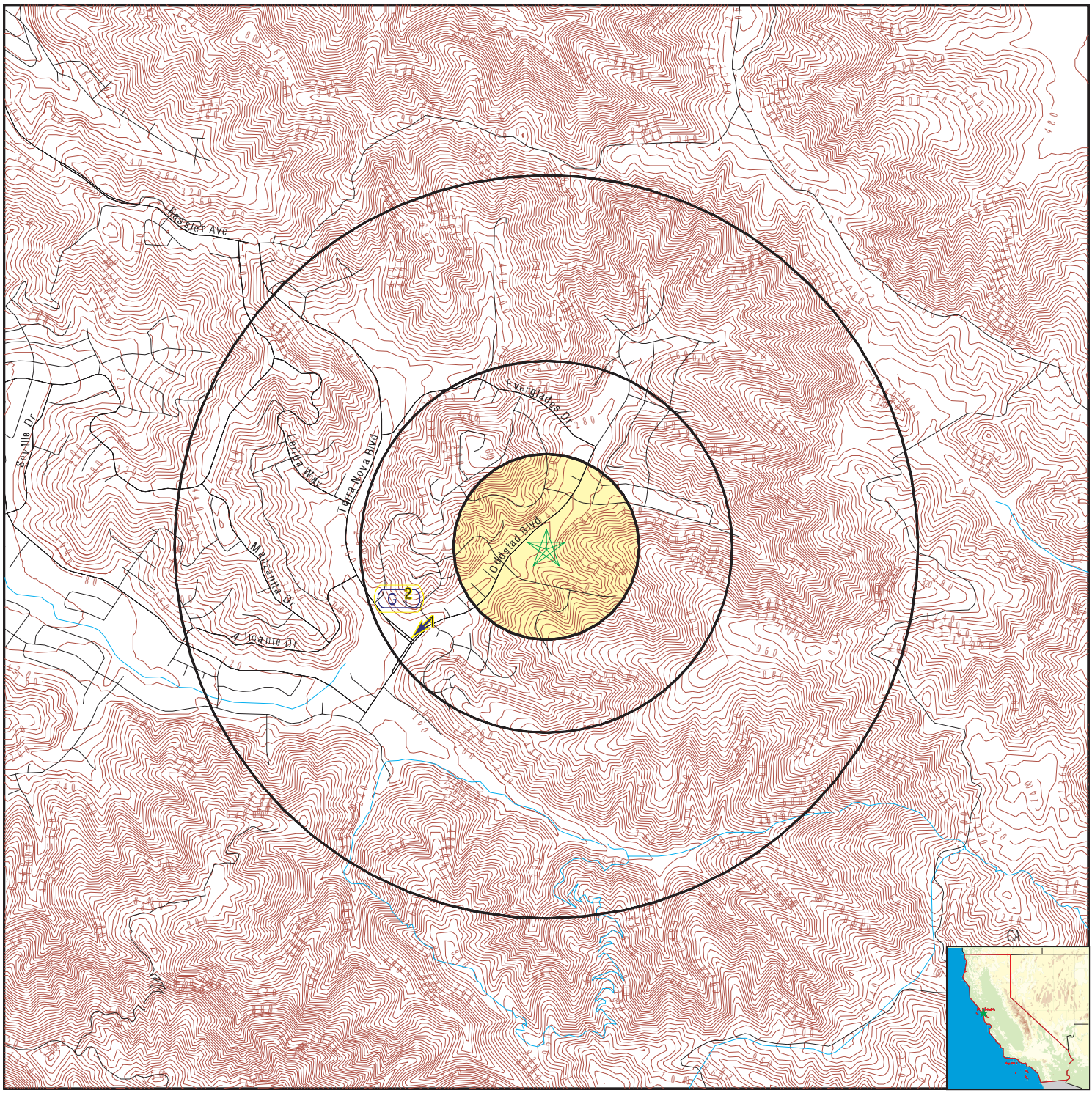
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 5283927.2s



0 1/4 1/2 1 Miles

- 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:	PSD Faculty Housing	CLIENT:	STRATA Environmental Serv Inc.
ADDRESS:	930 Oddstad Blvd Pacifica CA 94044	CONTACT:	Paul Platillero
LAT/LONG:	37.587109 / 122.467532	INQUIRY #:	5283927.2s
		DATE:	May 07, 2018 10:53 am

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1 **WSW** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0618 SW 6.47 12.16 Not Reported 01/15/1997	**AQUIFLOW**	**67931**
2 **WSW** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0119 Not Reported 9.99 12.92 Not Reported 12/19/1996	**AQUIFLOW**	**51399**
1G **WSW** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0119 Not Reported 9.99 12.92 Not Reported 12/19/1996	**AQUIFLOW**	**51399**
2G **WSW** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0618 SW 6.47 12.16 Not Reported 01/15/1997	**AQUIFLOW**	**67931**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
94044	68	1

Federal EPA Radon Zone for SAN MATEO County: 2

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: 94044

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.000 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	6.600 pCi/L	0%	100%	0%

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 & Game
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.

STATE RECORDS

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.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

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.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

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 E
QUALIFICATIONS

PAUL S. PLATILLERO, P.E.

Environmental Engineer

SUMMARY OF QUALIFICATIONS

- More than 18 years experience providing environmental engineering services in the areas of Environment Health and Safety (EHS) audits, environmental management/compliance, environmental site assessments, remedial investigation/design/action, storm water management, groundwater investigations, energy auditing, and solar thermal system design, installation, and maintenance.
- Technical training instructor: EHS auditing skills, environmental management systems, ISO 14001, pollution prevention, waste management, storm water management, solar energy systems (photovoltaic and thermal) and spill prevention, control and countermeasures (SPCC).
- Licensed Professional Engineer (P.E.), State of Tennessee # 00110403.
- Certified Professional Environmental Auditor (C.P.E.A.), Board of Environmental, Health & Safety Certifications #1207719.
- Member of the American Society of Civil Engineers (ASCE).
- Member of The Auditing Roundtable, an international organization for EHS Auditors.
- Member of American Solar Energy Society (ASES).
- Fluent in English and Spanish, some Italian, Portuguese and French.

EXPERIENCE

Performed EHS Audits for industrial clients in the United States, Canada, Spain, Italy, France, and England. Industrial sites included aluminum extrusion plants, smelters, refineries, rolling mills, fabricating plants, power plants, marine ports, loading/unloading facilities, electric substations, water and wastewater treatment plants, glass manufacturing, and other industrial facilities. Environmental audit areas included waste management, water/wastewater programs, air emission control programs, land management, environmental management systems, chemical release programs, and management of toxic substances. Health & Safety audit areas included confined space entry, fall protection, mobile equipment, hazard communications, respiratory protection and lock-out/tag-out.

Developed and helped to implement an Environmental Management System (EMS) in accordance with ISO 14001 standards. Services included assisting client to develop required documentation, procedures, and resources necessary for ISO registration. Conducted ISO 14001 training with facility employees and assisted personnel with internal audit.

Provided environmental compliance services to corporate manufacturing company with facilities located thirteen states. Services included assistance with stormwater and wastewater permitting, air permitting, hazardous waste management, storage tank registration, and management of toxic substances. Conducted location specific environmental compliance training in English and Spanish.

Completed facility energy audits to assess energy consumption and identify potential energy efficiency opportunities. Auditing process consisted of conducting site inspections and data evaluation. Data from the audits was entered in to EPA's Portfolio Manager database to evaluate energy efficiency ranking and determine annualized site energy intensity (kBTU/ft^2/year). Greenhouse gas (GHG) emissions were also calculated based on energy fuel source and location (MtCO2e/year). Facility water consumption and waste generation were also evaluated to determine feasible alternatives for reductions and potential cost savings.

Conducted Phase I and Phase II environmental site assessments (ESAs) and environmental due diligence for acquisitions and divestures, both nationally and internationally.

Completed the installation of solar thermal heating system at conference center in Alicante Spain. The solar thermal heating system consisted of Thermomax™ evacuated solar collector tubes and heat storage tank with internal heat exchanger. The system included a solar photovoltaic (PV) circulation pump and supplied hydronic space heating, domestic hot water, and pool heating.

Completed assessment of contaminated groundwater and wetland springs in karst geology. Assessment work included a widespread groundwater investigation, using an extensive network of monitoring wells. Several dye tracer studies were completed as part of the aquifer characterization, including groundwater flow in karst areas. Environmental impacts to surface water and sediments were assessed at a nearby public wetland area and groundwater quality at private residential sites.

Responsible for the design and construction of a hazardous waste landfill cover of a four acre site containing RCRA hazardous waste. The cap cover included an HDPE liner, geosynthetic drainage collection system, and exhaust vents to release potential landfill gases. Management of the construction work included quality assurance/quality control (QA/QC) oversight by third party inspections and documentation of significant aspects of the work.

Responsible for the design and construction of a six acre non-hazardous industrial waste landfill cap. The cap cover consisted of three cells using low permeability compacted clay and vegetative layer, as well as a storm water collection and discharge system.

Managed remedial investigation and feasibility study (RI/FS) at 13 acre landfill site. Remedial investigation includes soil, groundwater, surface water, and sediment. A risk assessment (RA) was also performed to quantify risk and establish risk based limits for contaminants of concern.

Completed a comprehensive feasibility study to reduce total suspended solids (TSS) and oil/grease (O&G) from a 113 acre industrial site in order to meet NPDES storm water permit requirements. Study included the development of a conceptual site model, pollutant load analysis, and the use of computer modeling of EPA's version 5.0 SWMM program.

Completed multi-phased remedial investigation at four state superfund sites containing mixed wastes, used hydraulic oils, solvents, scrap metals, transformer fluids, and other solid wastes.

EDUCATION

Solar Photovoltaic Technology, Pellissippi State Community College, Knoxville, Tennessee, 2011.

Solar Water Heating Systems, Florida Solar Energy Center, Cocoa, Florida, 2010.

Energy Auditing Course, The Auditing Roundtable, San Antonio, Texas, 2009.

Environmental Management Masters degree program, Escuela Europea de Negocios, Murcia, Spain, 2003-2004.

Environmental Management Systems, University of Alicante, Alicante, Spain, 2001.

Environment, Health and Safety Auditing training. Alcoa Inc, Brussels, Belgium, 1998.

Groundwater Pollution and Hydrology Course, The Princeton Course, Orlando, Florida, 1995.

Design/Installation of Groundwater Monitoring Wells, University of Madison, Wisconsin, 1994.

40-hour Hazardous Waste Operations Training, per 29 CRF 1910.120 (and annual 8-hour refresher courses), Knoxville, Tennessee, 1994-present.

Remediation and Human Health Risk Assessment, Radian Inc., Austin, Texas, 1993.

B.S. with honors, Civil Engineering, minor in Mathematics, University of Tennessee, Knoxville, Tennessee, 1990.

CHARLES FERST

CEO, STRATA ENVIRONMENTAL

SUMMARY OF QUALIFICATIONS

- Founder of Strata Environmental Services, Inc.
- Bachelor's Degree in Civil Engineering.
- Licensed Professional Engineer.
- Registered Environmental Property Assessor.
- Certified Professional Environmental Auditor.
- Accomplished 35-years plus record of environmental engineering, consulting, and project management experience with the U.S. EPA, the Department of Interior, and private practice.

EXPERIENCE

Technical, project and administrative consultant and project manager for environmental services firm since 1992 providing environmental compliance programs, permitting, regulatory analysis and support, soil/groundwater investigations and remediation and site assessment services.

Provided environmental due diligence consulting on major merger, acquisition and divestiture transactions including Pepsi acquisition of Tropicana, Graybar Building in New York, NBC Studios, Sands Hotel, Excide battery manufacturing, Square D electric, FinnChem manufacturing, Indalex aluminum, Salesforce corporate headquarters, Ghiradelli Square.

Managed litigation technical support teams in the defense of industrial clients including claims of damage to Pensacola pubic groundwater supply by chlorinated solvents, groundwater contamination by a battery manufacturer in Tampa, and contamination of the Biscayne Aquifer by PCB releases from a transformer disposal operation.

Conducted hundreds of compliance investigations and audits for commercial and industrial facilities including the Alyeska Pipeline.

Contributed to the development and implementation of the EPA's first analytical Quality Assurance/Quality Control program and national water quality database (STORET).

Directed development of water quality standards and water quality criteria for EPA Region 4. Developed federal rules to establish water quality standards and determinations of hydrological consequences.

Registered Environmental Assessor in the State of California.

EDUCATION

B.S., Civil Engineering, Virginia Polytechnic Institute, 1969.

APPENDIX 4.7-B: VEGETATION MANAGEMENT PLAN MEMO, PREPARED BY RICHARD JOHNSON, FEBRUARY 28, 2022

To: Brookwood Advisors Team

From: Richard Johnson, Retired Fire Marshal North County Fire Authority

Date: February 28, 2022

Subject: Vegetation Management Plan - Pacifica School District Workforce Housing Project (Oddstad School)

Alternate Materials and Methods Request to Mitigate the North County Fire Authority review condition of lack of Fire access, water, and steep slope.

On Monday February 21, 2022, I spoke with Mr. Shane Lauderdale representing North County Fire Authority ("NCFA"). NCFA review of the Pacifica School District Workforce Housing Project ("Project") revealed three conditions that could impede NCFA site access. These conditions are limited NCFA access, lack of water availability, and steep slopes. NCFA is requiring a 150-foot defensible zone around all structures as provided by California Government Code 51182(1)(B) and a Vegetation Management Plan ("VMP") as mitigation to be reviewed and approved by NCFA. The mitigation is referred to as "Alternate Materials and Methods" ("AMMR"). The AMMR mitigation will be levied as a condition of Project approval.

The VMP shall be based upon the "*FIRE SAFE San Mateo County Defensible Space Guidelines"* and sub sections Fire Safe Landscaping, Fire Smart Plants, Hazardous Plants, Topography & Wildfire Risk, and How Homes Ignite – Wildfire Embers Guidelines (County Plan). At a minimum the VMP shall:

1. Remove all vegetation within the site listed on the San Mateo County list of "Fire Prone (Pyrophytic) Plants" except for isolated specimen plants.
    a. Existing isolated or newly planted specimens shall meet the vertical and horizontal spacing guidelines.
2. Maintain and plant all trees and shrubs to the specifications identified in 'Plant and Tree Spacing', 'Vertical Spacing', and 'Horizontal Spacing' as outlined in the Plan "Fire Safe Landscaping" guide.
    a. An evaluation of slope implications shall be reflected when determining the landscape.
    b. All plantings shall be from the Plan "Firescaping with Native Plants" or otherwise fire resistive plantings.
3. Maintain an ember zone of 5 feet around all buildings as per CGC 51182 (5)(1), (2) within the Project.
    a. The ember zone be maintained on a minimum monthly basis.
4. Maintain all landscaping and vegetation on the Project site on a regular basis as part of a regular landscape maintenance program.
    a. All vegetation shall be irrigated as needed to maintain the vegetation.

Referenced Codes, Laws and Documents

Public Resources Code 4291 “State Fire Safety Regulations and defensible space codes

California Code of Regulations Title 14 “Fire Safe Regulations dealing with emergency access, address signage and water standards”

Board of Forestry “Guidelines to Creating Defensible Space”

California Government Code Chapter 6.8 - 51175-51189

Fire Safe San Mateo County “Preparedness Defensible Space”

APPENDIX 4.8-A: HYDROLOGY AND HYDRAULICS TECHNICAL MEMORANDUM, PREPARED BY BKF, SEPTEMBER 14, 2020

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

September 14, 2020

Mr. Ken Klebanoff
Brookwood Advisors
50 California Street, Suite 1500
San Francisco, CA 94111

Subject: Hydrology and Hydraulics Technical Memorandum
Pacifica School District – Workforce Housing Project
930 Oddstad Boulevard

Dear Mr. Klebanoff:

OVERVIEW

The Pacifica School District – Workforce Housing project located at 930 Oddstad Boulevard in the City of Pacifica is located on the campus of the former Andres F Oddstad School. The proposed development includes the construction of Condominiums, Town houses, surface parking lots, drive aisles, paths and utilities. The proposed development is located north of the existing fields at the corner of Oddstad Boulevard and Yosemite Drive. Existing hardscape areas, softscape areas and buildings will be removed to accommodate the proposed development.

The scope of this memo is to calculate the existing and proposed stormwater flows for the 14.1-acre area directly impacted by the Workforce Housing project. The project is subject to hydromodification requirements and will increase the imperviousness of the site. During detailed design the project will provide a stormwater control plan and will incorporate detailed hydromodification calculations at that time.

EXISTING CONDITIONS

The site is bound by Big Bend Drive to the north, Yosemite Drive to the south, Oddstad Boulevard to the west and a large hill to the east as shown in hydrology figure HYD-1. The portion of the campus that is undergoing renovations is located in the northern portion of the property extending from the northern edge of the existing school parking lots to the northern property line.

The project site consists of landscape areas, planters, concrete walkways, asphalt driveways, asphalt parking areas, and buildings. The existing buildings and surface improvements located within the project limits will be removed. The existing ground coverage is approximately 130,170 sf impervious and 485,450 sf pervious (21.1% impervious). Site elevations vary from approximately elevation 232 feet to the south and 250 feet at the northern end of the site with an average slope of 1.5%. Stormwater onsite is collected in area drains, inlets, and concrete drainage ditches, then conveyed in below grade pipes to 5 storm drain outfalls. Existing outfalls are located at the southern side of the site on Yosemite Drive, at the corner of Yosemite and Oddstad Boulevard, and three separate outfalls along Oddstad Boulevard between Yosemite and Big Bend Drive. The outfalls discharge to an existing 72" storm drain main in Oddstad Boulevard that flows to the southeast.

PROPOSED CONDITIONS

The proposed project consist of asphalt drives/parking, concrete paths, landscaping, a multi-story condominium building, multi-story Town Houses and utilities. The project proposes to alter the existing drainage patterns and install a new drainage system while keeping certain existing systems active. Refer to hydrology figure HYD-2 for the

proposed site.

The proposed ground coverage consists of approximately 172,206 sf impervious and 443,194 sf pervious (28.0% impervious). The project will increase the amount of impervious surface from the existing condition and will require detention to control the peak flow leaving the site. Overall, the proposed condition will increase the site's impervious footprint by approximately 42,036 sf.

The proposed drainage system will consist of area drains, drop inlets, manholes, new concrete drainage ditches, and bioretention areas with overflow structures, and below grade pipes. The drainage system will convey runoff to 5 outfalls. The first two outfalls are the existing outfalls at the southeast end of the site on Yosemite Drive and the corner of Yosemite Drive and Oddstad Boulevard. Similar to the original condition there are 3 outfalls located on Oddstad Boulevard. However, the project proposed to abandon one of the existing outfalls and add a new outfall near the northern limits of the property frontage.

STORM FLOWS

Stormwater runoff is calculated using the Rational Method. Tables 1A and 2A illustrate the calculations for the weighted "C" factor. Tables 1B and 2B illustrate the calculations for the anticipated flow.

Q=ACR
Where:
Q= Quantity of Run-off (cubic feet per second, cfs)
A = Drainage Area, tributary to the point under consideration (acres)
C = Run-off Coefficient
R = Rainfall intensity (inches per hour, in/hr).

TABLE 1A - EXISTING

WEIGHTED C FACTOR				
OUTFALL	**SURFACE TYPE**	**AREA (SF)**	**C FACTOR**	**WEIGHTED C**
1	IMPERVIOUS	38,995	0.90	0.41
	PERVIOUS	180,140	0.30	
	SUB-TOTAL	**219,135**		
2	IMPERVIOUS	26,810	0.90	0.69
	PERVIOUS	14,080	0.30	
	SUB-TOTAL	**40,890**		
3	IMPERVIOUS	62,700	0.90	0.53
	PERVIOUS	100,380	0.30	
	SUB-TOTAL	**163,080**		
4	IMPERVIOUS	0	0.90	0.30
	PERVIOUS	64,475	0.30	
	SUB-TOTAL	**64,475**		
5	IMPERVIOUS	1,665	0.90	0.31
	PERVIOUS	126,375	0.30	
	SUB-TOTAL	**128,040**		
	TOTAL	**615,620**		

Note, artificial turf and decomposed granite are considered impervious

TABLE 1B - EXISTING

Outfall	Total Area (acre)	Weighted "C"	Flow, 10-Year (cfs)	Flow, 100-Year (cfs)
1	5.03	0.41	5.16	7.84
2	0.94	0.69	1.64	2.49
3	3.74	0.53	5.01	7.61
4	1.48	0.30	1.12	1.70
5	2.94	0.31	2.28	3.47
		TOTAL	**15.20**	**23.11**

R for a 10 year event with a Tc of 10 minutes per NOAA Atlas 14, Volume 6, Version 2
Intensity 10-Year, 10-minute, I= 2.52 in/hr
Intensity 100-Year, 10-minute, I= 3.83 in/hr

TABLE 2A - PROPOSED

WEIGHTED C FACTOR				
OUTFALL	**SURFACE TYPE**	**AREA (SF)**	**C FACTOR**	**WEIGHTED C**
1	IMPERVIOUS	5,315	0.90	0.40
	PERVIOUS	26,791	0.30	
	SUB-TOTAL	**33,326**		
2	IMPERVIOUS	3,000	0.90	0.33
	PERVIOUS	57,568	0.30	
	SUB-TOTAL	**60,568**		
3	IMPERVIOUS	161,876	0.90	0.59
	PERVIOUS	172,074	0.30	
	SUB-TOTAL	**333,950**		
4	IMPERVIOUS	0	0.90	0.30
	PERVIOUS	63,466	0.30	
	SUB-TOTAL	**63,466**		
5	IMPERVIOUS	2,015	0.90	0.31
	PERVIOUS	123,295	0.30	
	SUB-TOTAL	**125,310**		
	TOTAL	**615,620**		

Note, artificial turf and decomposed granite are considered impervious

TABLE 2B - PROPOSED

Outfall	Total Area (acre)	Weighted "C"	Flow, 10-Year (cfs)	Flow, 100-Year (cfs)
1	0.74	0.40	0.74	1.13
2	1.39	0.33	1.16	1.76
3	7.67	0.59	11.41	17.35
4	1.46	0.30	1.10	1.67
5	2.88	0.31	2.24	3.41
		TOTAL	**16.66**	**25.32**

R for a 10 year event with a Tc of 10 minutes per NOAA Atlas 14, Volume 6, Version 2

Intensity 10-Year, 10-minute, I= 2.52 in/hr

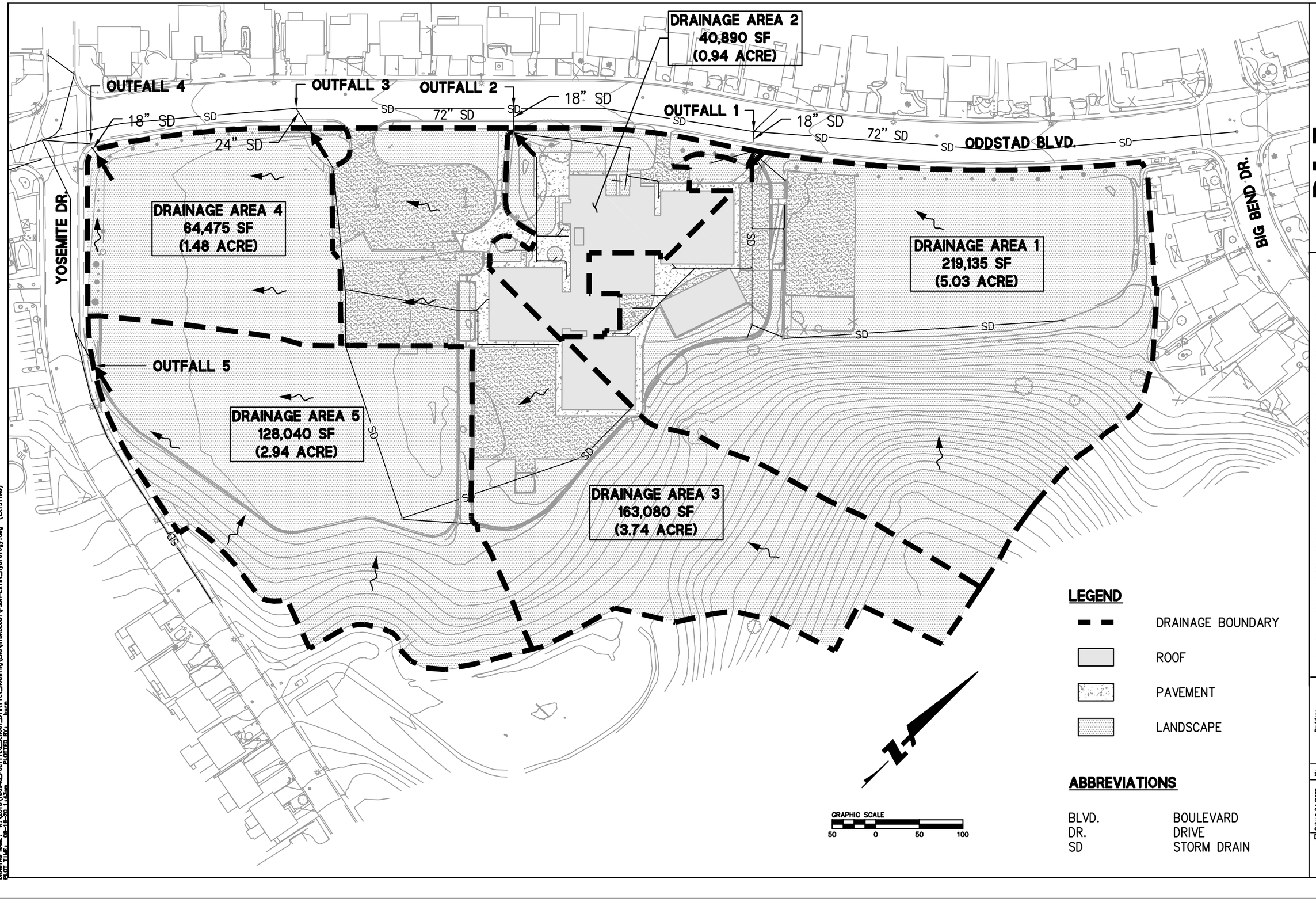
Intensity 100-Year, 10-minute, I= 3.83 in/hr

CONCLUSIONS

The proposed project will increase the imperviousness from the existing conditions and therefore increase the peak flow for the design storms. The peak flow for the 10 year 10 minute will increase by 1.46 cfs and the peak flow for the 100 year 10 minute will increase by 2.21 cfs. In addition, the project is located in a designated Hydromodification Area and is subject to the hydromodification requirements. A preliminary BAHM model was prepared to document hydromodification compliance for the project and can be found in Appendix A. At this preliminary stage of the project, the depth of the bioretention areas located between the existing parking lots and proposed development has been oversized to provide additional storage (12" of ponding). In addition, only two unlined bioretention facilities, BA 3-1 and BA 3-2, were modeled. The overflow structures with orifices will control the flow leaving the site to ensure the project does not increase the peak flow leaving the site.

FIGURES

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LEGEND

- DRAINAGE BOUNDARY
- ROOF
- PAVEMENT
- LANDSCAPE

ABBREVIATIONS

BLVD.	BOULEVARD
DR.	DRIVE
SD	STORM DRAIN

255 SHORELINE DR
SUITE 200
REDWOOD CITY, CA 94065
650-482-6300
650-482-6399 (FAX)

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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING
EXISTING DRAINAGE MAP

No.	Revisions

Date: 9/14/2020
Scale: 1"=100'
Design: TH
Drawn: TH
Approved: TM
Job No: 20180848

Drawing Number:
HYD-1
1 OF 3

DRAWING NAME: K:\2018\18084B_Pacifica_School_District_Housing\ENG\HYDROLOGY\PSDH-Exist_Hydrology.dwg (EXISTING)
PLOT TIME: 09:18:20 1:45pm PLOTTED BY: burn

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SUITE 200
REDWOOD CITY, CA 94065
650-482-6300
650-482-6399 (FAX)

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OUTFALL 4
18" SD
OUTFALL 3
ODDSTAD BLVD.
72" SD
OUTFALL 2
18" SD
DRAINAGE AREA 2
60,568 SF
(1.39 ACRE)
ODDSTAD BLVD.
OUTFALL 1
18" SD
24" SD
BA
BA 3-1
BA 3-2
YOSEMITE DR.
BIG BEND DR.
DRAINAGE AREA 4
63,466 SF
(1.46 ACRE)
STA
21" SD
OUTFALL 5
DRAINAGE AREA 5
125,310 SF
(2.88 ACRE)
DRAINAGE AREA 3
333,950 SF
(7.67 ACRE)
DRAINAGE AREA 1
32,326 SF
(0.74 ACRE)
SD
GS

LEGEND

- DRAINAGE BOUNDARY
- LANDSCAPING
- BIORETENTION AREA
- CONC PAVING
- AC PAVING
- ROOF
- FLOW ARROW

ABBREVIATIONS

BA	BIORETENTION AREA
DMA	DRAINAGE MANAGEMENT AREA
SD	STORM DRAIN
SRA	SELF RETAINING AREA
STA	SELF TREATING AREA

GRAPHIC SCALE
50 0 50 100

PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING
PROPOSED DRAINAGE MAP

No.	Revisions

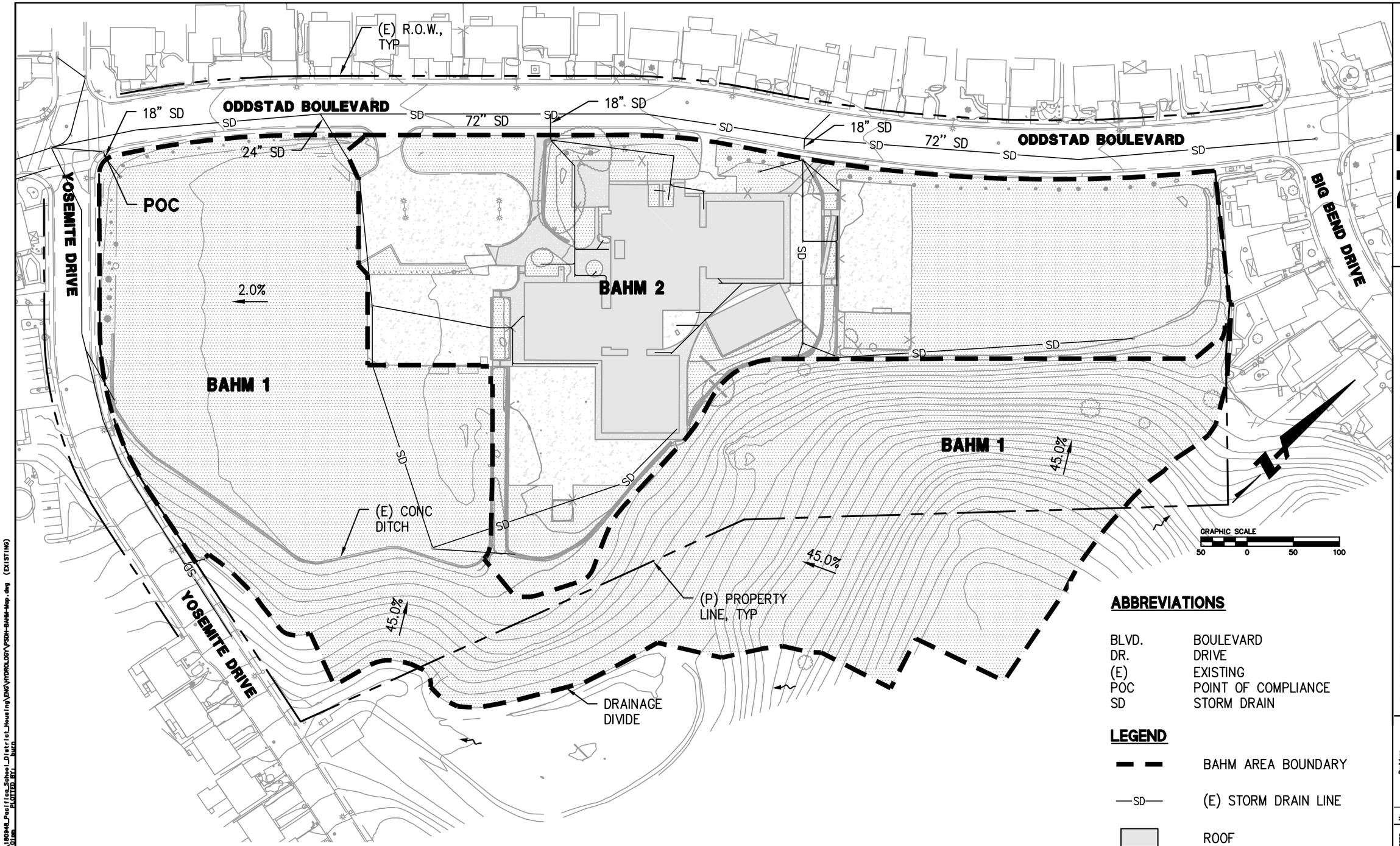
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Design: TH
Drawn: TH
Approved: TM
Job No: 20180948

Drawing Number:
HYD-2
2 OF 3

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PLOT TIME: 09:15:30 1:48pm PLOTTED BY: Sara

APPENDIX A

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ABBREVIATIONS

BLVD.	BOULEVARD
DR.	DRIVE
(E)	EXISTING
POC	POINT OF COMPLIANCE
SD	STORM DRAIN

LEGEND

- BAHM AREA BOUNDARY
- (E) STORM DRAIN LINE
- ROOF
- PAVEMENT
- LANDSCAPE

EXISTING BAHM AREA TABLE

AREA ID	C/D SHRUB >20% (ACRE)	C/D GRASS 0-5% (ACRE)	ROADS 0-5% (ACRE)	ROOF AREA (ACRE)	SIDEWALK 0-5% (ACRE)	PARKING 0-5% (ACRE)	SUB-TOTAL (ACRE)
BAHM 1	5.17	3.17	0.00	0.00	0.04	0.00	8.38
BAHM 2	0.00	2.80	0.80	0.94	0.49	0.72	5.75
TOTAL	**5.17**	**5.97**	**0.80**	**0.94**	**0.53**	**0.72**	**14.13**

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255 SHORELINE DR
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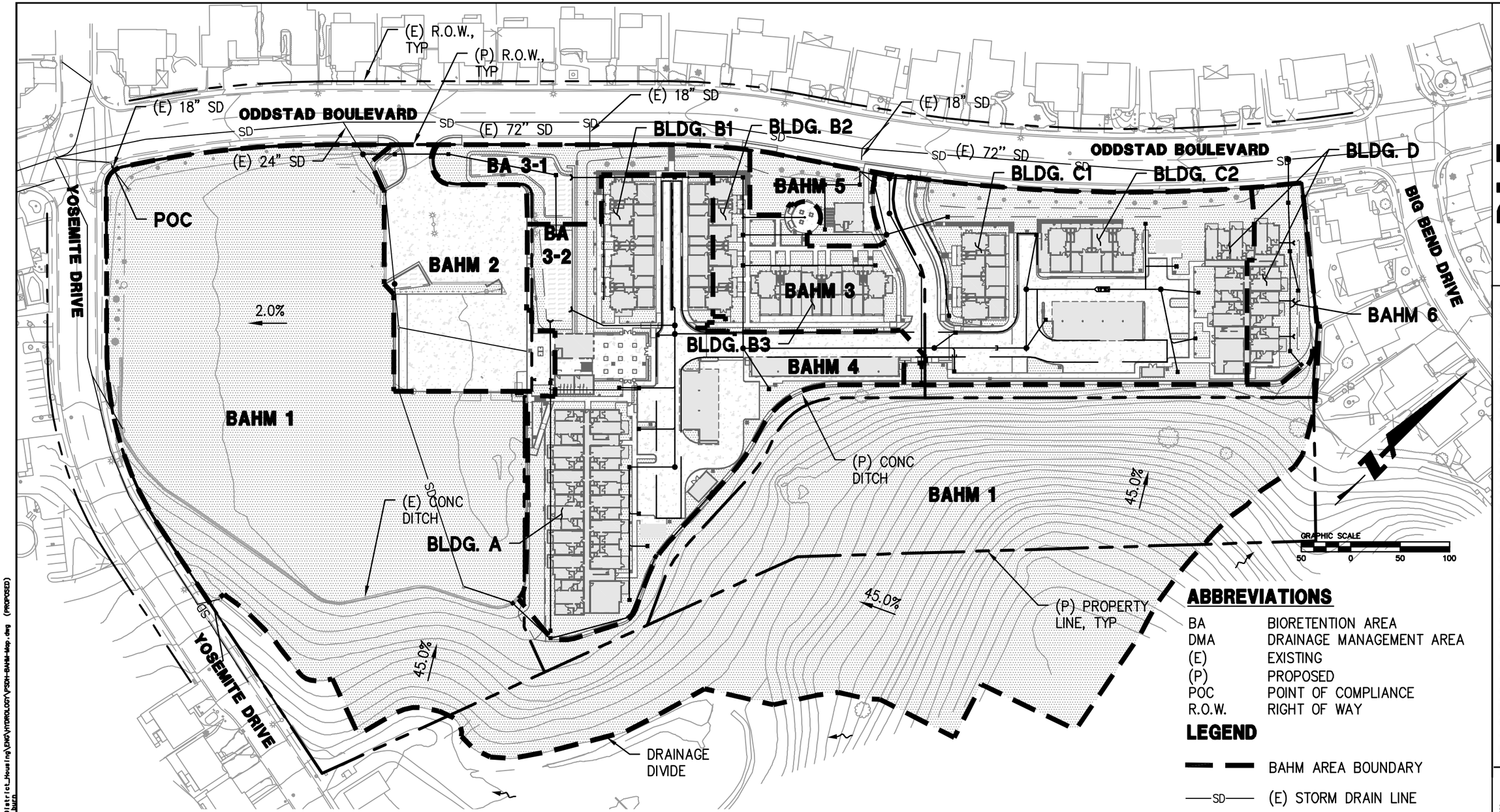
PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING
EXISTING BAHM HYDROLOGY MAP

No.	Revisions
Date: 9/14/2020	
Scale: 1"=100'	
Design: TH	
Drawn: TH	
Approved: TM	
Job No: 20180048	

Drawing Number:
BAHM-1
1 OF 2

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PLOT TIME: 09-18-20 4:01pm PLOTTED BY: burn

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PROPOSED BAHM AREA TABLE

AREA ID	C/D SHRUB >20% (ACRE)	C/D GRASS 0-5% (ACRE)	ROADS 0-5% (ACRE)	ROOF AREA (ACRE)	SIDEWALK 0-5% (ACRE)	PARKING 0-5% (ACRE)	SUB-TOTAL (ACRE)
BAHM 1	5.17	3.17	0.00	0.00	0.04	0.00	8.38
BAHM 2	0.00	0.06	0.00	0.00	0.10	0.66	0.82
BAHM 3*	0.09	0.87	0.21	0.66	0.31	0.30	2.45
BAHM 4*	0.06	0.32	0.24	0.75	0.26	0.26	1.89
BAHM 5	0.00	0.16	0.00	0.02	0.02	0.00	0.20
BAHM 6	0.00	0.28	0.00	0.11	0.02	0.00	0.40
TOTAL	**5.32**	**4.86**	**0.45**	**1.54**	**0.75**	**1.22**	**14.13**

*BA 3-1 AND BA 3-2 ARE THE RETENTION STRUCTURES MODELED FOR BAHM 3 AND BAHM 4 RESPECTIVELY

ABBREVIATIONS

BA	BIORETENTION AREA
DMA	DRAINAGE MANAGEMENT AREA
(E)	EXISTING
(P)	PROPOSED
POC	POINT OF COMPLIANCE
R.O.W.	RIGHT OF WAY

LEGEND

- BAHM AREA BOUNDARY
- SD (E) STORM DRAIN LINE
- (P) STORM DRAIN LINE
- LANDSCAPING
- STORMWATER TREATMENT
- PAVEMENT
- ROOF

255 SHORELINE DR
SUITE 200
REDWOOD CITY, CA 94065
650-482-6300
650-482-6399 (FAX)
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PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING
PROPOSED BAHM HYDROLOGY MAP

Revisions | No.

Date: 9/14/2020
Scale: 1"=100'
Design: TH
Drawn: TH
Approved: TM
Job No: 20180948

Drawing Number:
BAHM-2
2 OF 2

DRAWING NAME: K:\2018\20180948_Pacifica_School_District_Housing\ENGINEERING\HYDROLOGY\PSDH-BAHM-Map.dwg (PROPOSED)
PLOT TIME: 09-18-20 4:01pm PLOTTED BY: burn

BAHM2013
PROJECT REPORT

Project Name: Pacifica-SD-Housing
Site Name: Pacifica SD Housing
Site Address: 930 Oddstad Blvd
City : Pacifica
Report Date: 9/16/2020
Gage : San Francisco
Data Start : 1959/10/01
Data End : 1997/09/30
Precip Scale: 1.61
Version Date: 2020/08/14

Low Flow Threshold for POC 1 : 10 Percent of the 2 Year

High Flow Threshold for POC 1: 10 year

PREDEVELOPED LAND USE

Name : BAHM 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
C D,Shrub,Very(>20%)	5.17
C D,Grass,Flat(0-5%)	3.17
Pervious Total	8.34

Impervious Land Use	acre
Sidewalks,Flat(0-5%)	0.04
Impervious Total	0.04
Basin Total	8.38

Element Flows To:

Surface	Interflow	Groundwater

Name : BAHM 2
Bypass: No

GroundWater: No

Pervious Land Use	acre

C D,Grass,Flat(0-5%)	2.8
Pervious Total	2.8

Impervious Land Use	acre
Roads,Flat(0-5%)	0.8
Roof Area	0.94
Sidewalks,Flat(0-5%)	0.49
Parking,Flat(0-5%)	0.72
Impervious Total	2.95
Basin Total	5.75

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : BAHM 1
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
C D,Grass,Flat(0-5%)	3.17
C D,Shrub,Very(>20%)	5.17
Pervious Total	8.34

Impervious Land Use	acre
Sidewalks,Flat(0-5%)	0.04
Impervious Total	0.04
Basin Total	8.38

Element Flows To:

Surface	Interflow	Groundwater

Name : BAHM 5
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
C D,Grass,Flat(0-5%)	.16
Pervious Total	0.16

Impervious Land Use	acre
Roof Area	0.02
Sidewalks,Flat(0-5%)	0.02
Impervious Total	0.04
Basin Total	0.2

Element Flows To:

Surface	Interflow	Groundwater

Name : BAHM 3
Bypass: No

GroundWater: No

Pervious Land Use	acre
C D,Shrub,Very(>20%)	.09
C D,Grass,Flat(0-5%)	.87
Pervious Total	0.96

Impervious Land Use	acre
Roads,Flat(0-5%)	0.21
Roof Area	0.66
Sidewalks,Flat(0-5%)	0.31
Parking,Flat(0-5%)	0.3
Impervious Total	1.48
Basin Total	2.44

Element Flows To:

Surface	Interflow	Groundwater
Surface BA 3-1	Surface BA 3-1	

Name : BA 3-1
Bottom Length: 40.00 ft.
Bottom Width: 69.25 ft.
Material thickness of first layer: 1.5
Material type for first layer: BAHM 5

Material thickness of second layer: 1
Material type for second layer: GRAVEL
Material thickness of third layer: 0
Material type for third layer: GRAVEL
Infiltration On
Infiltration rate: 0.1
Infiltration safety factor: 0.5
Total Volume Infiltrated (ac-ft.): 21.129
Total Volume Through Riser (ac-ft.): 7.616
Total Volume Through Facility (ac-ft.): 104.294
Percent Infiltrated: 20.26
Total Precip Applied to Facility: 5.057
Total Evap From Facility: 3.022
Underdrain used
Underdrain Diameter (feet): 0.34
Orifice Diameter (in.): 2
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 75.549
Total Outflow (ac-ft.): 104.294
Percent Through Underdrain: 72.44
Discharge Structure
Riser Height: 1 ft.
Riser Diameter: 18 in.

Element Flows To:
Outlet 1 **Outlet 2**

BA 3-1 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0969	0.0000	0.0000	0.0000
0.0440	0.0964	0.0011	0.0000	0.0000
0.0879	0.0957	0.0021	0.0000	0.0000
0.1319	0.0951	0.0032	0.0000	0.0000
0.1758	0.0945	0.0043	0.0000	0.0000
0.2198	0.0938	0.0054	0.0000	0.0000
0.2637	0.0932	0.0065	0.0000	0.0000
0.3077	0.0926	0.0077	0.0000	0.0000
0.3516	0.0920	0.0088	0.0000	0.0000
0.3956	0.0914	0.0099	0.0000	0.0000
0.4396	0.0908	0.0111	0.0032	0.0032
0.4835	0.0901	0.0122	0.0032	0.0032
0.5275	0.0895	0.0134	0.0032	0.0032
0.5714	0.0889	0.0146	0.0032	0.0032
0.6154	0.0883	0.0158	0.0032	0.0032
0.6593	0.0877	0.0170	0.0032	0.0032
0.7033	0.0871	0.0182	0.0032	0.0032
0.7473	0.0865	0.0194	0.0032	0.0032
0.7912	0.0859	0.0206	0.0032	0.0032
0.8352	0.0853	0.0218	0.0032	0.0032
0.8791	0.0847	0.0231	0.0032	0.0032
0.9231	0.0841	0.0243	0.0032	0.0032
0.9670	0.0835	0.0256	0.0032	0.0032
1.0110	0.0829	0.0269	0.0032	0.0032

1.0549	0.0823	0.0282	0.0032	0.0032
1.0989	0.0817	0.0294	0.0032	0.0032
1.1429	0.0811	0.0307	0.0032	0.0032
1.1868	0.0805	0.0321	0.0032	0.0032
1.2308	0.0799	0.0334	0.0032	0.0032
1.2747	0.0793	0.0347	0.0032	0.0032
1.3187	0.0788	0.0360	0.0032	0.0032
1.3626	0.0782	0.0374	0.0032	0.0032
1.4066	0.0776	0.0388	0.0032	0.0032
1.4505	0.0770	0.0401	0.0032	0.0032
1.4945	0.0764	0.0415	0.0032	0.0032
1.5385	0.0759	0.0430	0.0032	0.0032
1.5824	0.0753	0.0446	0.0032	0.0032
1.6264	0.0747	0.0461	0.0032	0.0032
1.6703	0.0741	0.0476	0.0032	0.0032
1.7143	0.0736	0.0492	0.0032	0.0032
1.7582	0.0730	0.0508	0.0032	0.0032
1.8022	0.0724	0.0524	0.0032	0.0032
1.8462	0.0719	0.0540	0.0032	0.0032
1.8901	0.0713	0.0556	0.0032	0.0032
1.9341	0.0708	0.0572	0.0032	0.0032
1.9780	0.0702	0.0588	0.0032	0.0032
2.0220	0.0696	0.0604	0.0032	0.0032
2.0659	0.0691	0.0621	0.0032	0.0032
2.1099	0.0685	0.0637	0.0032	0.0032
2.1538	0.0680	0.0654	0.0032	0.0032
2.1978	0.0674	0.0671	0.0032	0.0032
2.2418	0.0669	0.0688	0.0032	0.0032
2.2857	0.0663	0.0705	0.0032	0.0032
2.3297	0.0658	0.0722	0.0032	0.0032
2.3736	0.0652	0.0740	0.0032	0.0032
2.4176	0.0647	0.0757	0.0032	0.0032
2.4615	0.0641	0.0774	0.0032	0.0032
2.5000	0.0636	0.0790	0.0032	0.0032

Surface BA 3-1 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
2.5000	0.0969	0.0790	0.0000	0.3206	0.0000
2.5440	0.0975	0.0833	0.0000	0.3206	0.0000
2.5879	0.0982	0.0876	0.0000	0.3394	0.0000
2.6319	0.0988	0.0919	0.0000	0.3488	0.0000
2.6758	0.0994	0.0962	0.0000	0.3582	0.0000
2.7198	0.1001	0.1006	0.0000	0.3676	0.0000
2.7637	0.1007	0.1050	0.0000	0.3770	0.0000
2.8077	0.1014	0.1095	0.0000	0.3864	0.0000
2.8516	0.1020	0.1140	0.0000	0.3958	0.0000
2.8956	0.1027	0.1185	0.0000	0.4052	0.0000
2.9396	0.1033	0.1230	0.0000	0.4146	0.0000
2.9835	0.1039	0.1275	0.0000	0.4239	0.0000
3.0275	0.1046	0.1321	0.0000	0.4333	0.0000
3.0714	0.1052	0.1367	0.0000	0.4427	0.0000
3.1154	0.1059	0.1414	0.0000	0.4521	0.0000
3.1593	0.1066	0.1460	0.0000	0.4615	0.0000
3.2033	0.1072	0.1507	0.0000	0.4709	0.0000
3.2473	0.1079	0.1555	0.0000	0.4803	0.0000
3.2912	0.1085	0.1602	0.0000	0.4897	0.0000
3.3352	0.1092	0.1650	0.0000	0.4991	0.0000

3.3791	0.1098	0.1698	0.0000	0.5085	0.0000
3.4231	0.1105	0.1747	0.0000	0.5179	0.0000
3.4670	0.1112	0.1795	0.0000	0.5273	0.0000
3.5110	0.1118	0.1844	0.0000	0.5367	0.0000
3.5549	0.1125	0.1894	0.0000	0.5461	0.0000
3.5989	0.1132	0.1943	0.0000	0.5555	0.0000
3.6429	0.1139	0.1993	0.0000	0.5649	0.0000
3.6868	0.1145	0.2043	0.0000	0.5743	0.0000
3.7308	0.1152	0.2094	0.0000	0.5837	0.0000
3.7747	0.1159	0.2145	0.0000	0.5931	0.0000
3.8187	0.1166	0.2196	0.0000	0.6025	0.0000
3.8626	0.1172	0.2247	0.0141	0.6118	0.0000
3.9066	0.1179	0.2299	0.0215	0.6212	0.0000
3.9505	0.1186	0.2351	0.0269	0.6306	0.0000
3.9945	0.1193	0.2403	0.0314	0.6400	0.0000
4.0000	0.1194	0.2410	0.0353	0.6412	0.0000

Name : Surface BA 3-1

Element Flows To:

Outlet 1	**Outlet 2**
BA 3-1	

Name : BAHM 4
Bypass: No

GroundWater: No

Pervious Land Use	**acre**
C D,Shrub,Very(>20%)	**.06**
C D,Grass,Flat(0-5%)	**.32**
Pervious Total	**0.38**

Impervious Land Use	**acre**
Roads,Flat(0-5%)	**0.24**
Roof Area	**0.75**
Sidewalks,Flat(0-5%)	**0.26**
Parking,Flat(0-5%)	**0.26**
Impervious Total	**1.51**
Basin Total	**1.89**

Element Flows To:

Surface	**Interflow**	**Groundwater**
Surface BA 3-2	Surface BA 3-2	

Name : BA 3-2

Bottom Length: 90.00 ft.
Bottom Width: 30.12 ft.
Material thickness of first layer: 1.5
Material type for first layer: BAHM 5
Material thickness of second layer: 1
Material type for second layer: GRAVEL
Material thickness of third layer: 0
Material type for third layer: GRAVEL
Infiltration On
Infiltration rate: 0.1
Infiltration safety factor: 0.5
Total Volume Infiltrated (ac-ft.): 20.206
Total Volume Through Riser (ac-ft.): 5.067
Total Volume Through Facility (ac-ft.): 95.357
Percent Infiltrated: 21.19
Total Precip Applied to Facility: 4.771
Total Evap From Facility: 2.848
Underdrain used
Underdrain Diameter (feet): 0.34
Orifice Diameter (in.): 2
Offset (in.): 6
Flow Through Underdrain (ac-ft.): 70.084
Total Outflow (ac-ft.): 95.357
Percent Through Underdrain: 73.5
Discharge Structure
Riser Height: 1 ft.
Riser Diameter: 18 in.

Element Flows To:
Outlet 1 **Outlet 2**

BA 3-2 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0907	0.0000	0.0000	0.0000
0.0440	0.0902	0.0010	0.0000	0.0000
0.0879	0.0897	0.0021	0.0000	0.0000
0.1319	0.0891	0.0032	0.0000	0.0000
0.1758	0.0886	0.0042	0.0000	0.0000
0.2198	0.0880	0.0053	0.0000	0.0000
0.2637	0.0875	0.0064	0.0000	0.0000
0.3077	0.0870	0.0075	0.0000	0.0000
0.3516	0.0864	0.0086	0.0000	0.0000
0.3956	0.0859	0.0097	0.0000	0.0000
0.4396	0.0854	0.0108	0.0031	0.0031
0.4835	0.0848	0.0119	0.0031	0.0031
0.5275	0.0843	0.0130	0.0031	0.0031
0.5714	0.0838	0.0142	0.0031	0.0031
0.6154	0.0833	0.0153	0.0031	0.0031
0.6593	0.0827	0.0165	0.0031	0.0031
0.7033	0.0822	0.0176	0.0031	0.0031
0.7473	0.0817	0.0188	0.0031	0.0031
0.7912	0.0812	0.0200	0.0031	0.0031
0.8352	0.0807	0.0212	0.0031	0.0031

0.8791	0.0802	0.0223	0.0031	0.0031
0.9231	0.0796	0.0235	0.0031	0.0031
0.9670	0.0791	0.0248	0.0031	0.0031
1.0110	0.0786	0.0260	0.0031	0.0031
1.0549	0.0781	0.0272	0.0031	0.0031
1.0989	0.0776	0.0284	0.0031	0.0031
1.1429	0.0771	0.0297	0.0031	0.0031
1.1868	0.0766	0.0309	0.0031	0.0031
1.2308	0.0761	0.0322	0.0031	0.0031
1.2747	0.0756	0.0334	0.0031	0.0031
1.3187	0.0751	0.0347	0.0031	0.0031
1.3626	0.0746	0.0360	0.0031	0.0031
1.4066	0.0741	0.0373	0.0031	0.0031
1.4505	0.0736	0.0386	0.0031	0.0031
1.4945	0.0731	0.0399	0.0031	0.0031
1.5385	0.0726	0.0413	0.0031	0.0031
1.5824	0.0721	0.0428	0.0031	0.0031
1.6264	0.0716	0.0443	0.0031	0.0031
1.6703	0.0712	0.0457	0.0031	0.0031
1.7143	0.0707	0.0472	0.0031	0.0031
1.7582	0.0702	0.0487	0.0031	0.0031
1.8022	0.0697	0.0502	0.0031	0.0031
1.8462	0.0692	0.0517	0.0031	0.0031
1.8901	0.0688	0.0532	0.0031	0.0031
1.9341	0.0683	0.0547	0.0031	0.0031
1.9780	0.0678	0.0563	0.0031	0.0031
2.0220	0.0673	0.0578	0.0031	0.0031
2.0659	0.0669	0.0593	0.0031	0.0031
2.1099	0.0664	0.0609	0.0031	0.0031
2.1538	0.0659	0.0625	0.0031	0.0031
2.1978	0.0655	0.0641	0.0031	0.0031
2.2418	0.0650	0.0657	0.0031	0.0031
2.2857	0.0645	0.0673	0.0031	0.0031
2.3297	0.0641	0.0689	0.0031	0.0031
2.3736	0.0636	0.0705	0.0031	0.0031
2.4176	0.0631	0.0721	0.0031	0.0031
2.4615	0.0627	0.0738	0.0031	0.0031
2.5000	0.0622	0.0752	0.0031	0.0031

Surface BA 3-2 Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Wetted Surface
2.5000	0.0907	0.0752	0.0000	0.3138	0.0000
2.5440	0.0912	0.0792	0.0000	0.3138	0.0000
2.5879	0.0918	0.0832	0.0000	0.3321	0.0000
2.6319	0.0923	0.0873	0.0000	0.3413	0.0000
2.6758	0.0929	0.0913	0.0000	0.3505	0.0000
2.7198	0.0934	0.0954	0.0000	0.3597	0.0000
2.7637	0.0940	0.0996	0.0000	0.3689	0.0000
2.8077	0.0945	0.1037	0.0000	0.3781	0.0000
2.8516	0.0951	0.1079	0.0000	0.3873	0.0000
2.8956	0.0957	0.1121	0.0000	0.3965	0.0000
2.9396	0.0962	0.1163	0.0000	0.4057	0.0000
2.9835	0.0968	0.1205	0.0000	0.4149	0.0000
3.0275	0.0973	0.1248	0.0000	0.4241	0.0000
3.0714	0.0979	0.1291	0.0000	0.4333	0.0000
3.1154	0.0985	0.1334	0.0000	0.4425	0.0000
3.1593	0.0990	0.1377	0.0000	0.4517	0.0000

3.2033	0.0996	0.1421	0.0000	0.4609	0.0000
3.2473	0.1002	0.1465	0.0000	0.4701	0.0000
3.2912	0.1008	0.1509	0.0000	0.4792	0.0000
3.3352	0.1013	0.1553	0.0000	0.4884	0.0000
3.3791	0.1019	0.1598	0.0000	0.4976	0.0000
3.4231	0.1025	0.1643	0.0000	0.5068	0.0000
3.4670	0.1031	0.1688	0.0000	0.5160	0.0000
3.5110	0.1037	0.1734	0.0000	0.5252	0.0000
3.5549	0.1042	0.1779	0.0000	0.5344	0.0000
3.5989	0.1048	0.1825	0.0000	0.5436	0.0000
3.6429	0.1054	0.1872	0.0000	0.5528	0.0000
3.6868	0.1060	0.1918	0.0000	0.5620	0.0000
3.7308	0.1066	0.1965	0.0000	0.5712	0.0000
3.7747	0.1072	0.2012	0.0000	0.5804	0.0000
3.8187	0.1078	0.2059	0.0000	0.5896	0.0000
3.8626	0.1084	0.2106	0.0141	0.5988	0.0000
3.9066	0.1090	0.2154	0.0215	0.6080	0.0000
3.9505	0.1096	0.2202	0.0269	0.6172	0.0000
3.9945	0.1102	0.2250	0.0314	0.6264	0.0000
4.0000	0.1102	0.2257	0.0353	0.6275	0.0000

Name : Surface BA 3-2

Element Flows To:
Outlet 1 **Outlet 2**
BA 3-2

Name : BAHM 2
Bypass: Yes

GroundWater: No

Pervious Land Use	**acre**
C D,Grass,Flat(0-5%)	**.06**
Pervious Total	**0.06**

Impervious Land Use	**acre**
Sidewalks,Flat(0-5%)	**0.1**
Parking,Flat(0-5%)	**0.66**
Impervious Total	**0.76**
Basin Total	**0.82**

Element Flows To:
Surface **Interflow** **Groundwater**

Name : BAHM 6
Bypass: Yes

GroundWater: No

Pervious Land Use	acre
C D,Grass,Flat(0-5%)	.27
Pervious Total	**0.27**

Impervious Land Use	acre
Roof Area	0.11
Sidewalks,Flat(0-5%)	0.02
Impervious Total	**0.13**
Basin Total	**0.4**

Element Flows To:

Surface	Interflow	Groundwater

ANALYSIS RESULTS

Predeveloped Landuse Totals for POC #1
Total Pervious Area:11.14
Total Impervious Area:2.99

Mitigated Landuse Totals for POC #1
Total Pervious Area:10.17
Total Impervious Area:3.96

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	4.346668
5 year	8.25544
10 year	9.943694
25 year	13.8487

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	3.240505
5 year	7.277156
10 year	8.966023
25 year	12.43811

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1960	3.653	2.681
1961	2.796	2.089
1962	6.241	4.505
1963	3.815	2.780
1964	3.442	3.274
1965	3.551	2.620
1966	3.251	2.381
1967	5.082	5.037
1968	6.487	4.656
1969	7.935	6.744
1970	9.904	10.019
1971	5.674	4.115
1972	2.581	1.917
1973	6.687	6.532
1974	3.802	2.786
1975	4.057	2.948
1976	0.759	0.415
1977	2.416	1.835
1978	3.412	2.504
1979	3.857	3.209
1980	4.166	3.060
1981	4.393	2.480
1982	7.719	7.636
1983	21.725	18.467
1984	5.048	4.407
1985	6.170	4.385
1986	10.754	8.878
1987	4.375	3.986
1988	9.878	7.272
1989	5.004	3.631
1990	4.320	3.155
1991	2.099	1.582
1992	10.416	8.104
1993	7.036	6.387
1994	3.734	2.535
1995	9.719	10.070
1996	2.148	1.610
1997	9.746	7.300

Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	21.7251	18.4673
2	10.7544	10.0695
3	10.4157	10.0193
4	9.9044	8.8783
5	9.8782	8.1041
6	9.7456	7.6358
7	9.7190	7.3001
8	7.9353	7.2721
9	7.7188	6.7441
10	7.0358	6.5322
11	6.6873	6.3871
12	6.4867	5.0375

13	6.2408	4.6557
14	6.1701	4.5051
15	5.6740	4.4075
16	5.0817	4.3847
17	5.0483	4.1149
18	5.0041	3.9860
19	4.3931	3.6311
20	4.3746	3.2739
21	4.3202	3.2088
22	4.1662	3.1553
23	4.0568	3.0604
24	3.8566	2.9477
25	3.8149	2.7861
26	3.8021	2.7800
27	3.7345	2.6805
28	3.6531	2.6199
29	3.5512	2.5348
30	3.4415	2.5042
31	3.4124	2.4804
32	3.2511	2.3806
33	2.7964	2.0889
34	2.5810	1.9167
35	2.4163	1.8345
36	2.1478	1.6103
37	2.0990	1.5822
38	0.7591	0.4145

POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.4347	2794	2422	86	Pass
0.5307	2363	2002	84	Pass
0.6268	2006	1693	84	Pass
0.7228	1771	1451	81	Pass
0.8189	1566	1227	78	Pass
0.9149	1400	1058	75	Pass
1.0110	1215	895	73	Pass
1.1070	1061	781	73	Pass
1.2031	927	673	72	Pass
1.2991	829	591	71	Pass
1.3952	755	522	69	Pass
1.4912	671	468	69	Pass
1.5873	608	414	68	Pass
1.6833	546	360	65	Pass
1.7794	497	317	63	Pass
1.8754	455	288	63	Pass
1.9715	420	247	58	Pass
2.0675	374	225	60	Pass
2.1636	340	204	60	Pass
2.2596	297	182	61	Pass
2.3557	272	165	60	Pass
2.4517	248	144	58	Pass
2.5478	219	122	55	Pass

2.6438	202	107	52	Pass
2.7399	190	99	52	Pass
2.8359	173	88	50	Pass
2.9320	165	83	50	Pass
3.0280	148	80	54	Pass
3.1241	131	75	57	Pass
3.2201	119	68	57	Pass
3.3162	114	61	53	Pass
3.4122	104	60	57	Pass
3.5083	94	57	60	Pass
3.6043	86	53	61	Pass
3.7004	78	49	62	Pass
3.7964	72	45	62	Pass
3.8925	65	44	67	Pass
3.9885	62	37	59	Pass
4.0846	58	36	62	Pass
4.1806	55	34	61	Pass
4.2767	52	31	59	Pass
4.3727	49	31	63	Pass
4.4688	44	29	65	Pass
4.5649	42	27	64	Pass
4.6609	40	26	65	Pass
4.7570	38	24	63	Pass
4.8530	36	24	66	Pass
4.9491	36	23	63	Pass
5.0451	33	22	66	Pass
5.1412	31	21	67	Pass
5.2372	29	20	68	Pass
5.3333	28	19	67	Pass
5.4293	26	19	73	Pass
5.5254	25	17	68	Pass
5.6214	24	17	70	Pass
5.7175	23	16	69	Pass
5.8135	23	16	69	Pass
5.9096	23	16	69	Pass
6.0056	22	16	72	Pass
6.1017	22	15	68	Pass
6.1977	21	15	71	Pass
6.2938	20	15	75	Pass
6.3898	20	14	70	Pass
6.4859	18	14	77	Pass
6.5819	15	13	86	Pass
6.6780	15	12	80	Pass
6.7740	13	10	76	Pass
6.8701	12	10	83	Pass
6.9661	12	10	83	Pass
7.0622	11	10	90	Pass
7.1582	11	10	90	Pass
7.2543	11	10	90	Pass
7.3503	11	8	72	Pass
7.4464	11	8	72	Pass
7.5424	11	8	72	Pass
7.6385	11	7	63	Pass
7.7345	10	7	70	Pass
7.8306	10	7	70	Pass
7.9266	10	7	70	Pass
8.0227	9	7	77	Pass

8.1187	9	6	66	Pass
8.2148	8	6	75	Pass
8.3108	8	6	75	Pass
8.4069	8	6	75	Pass
8.5029	8	6	75	Pass
8.5990	8	5	62	Pass
8.6950	8	4	50	Pass
8.7911	8	4	50	Pass
8.8871	8	3	37	Pass
8.9832	8	3	37	Pass
9.0792	8	3	37	Pass
9.1753	8	3	37	Pass
9.2713	8	3	37	Pass
9.3674	8	3	37	Pass
9.4634	8	3	37	Pass
9.5595	8	3	37	Pass
9.6555	8	3	37	Pass
9.7516	6	3	50	Pass
9.8476	6	3	50	Pass
9.9437	4	3	75	Pass

Drawdown Time Results

Perlnd and Implnd Changes

No changes have been made.

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APPENDIX 4.8-B: ODDSTAD BOULEVARD DRAINAGE STUDY, PREPARED BY BKF, MAY 18, 2021

BkF 100+ YEARS
ENGINEERS . SURVEYORS . PLANNERS

May 18, 2021

Mr. Ken Klebanoff
Brookwood Advisors
50 California Street, Suite 1500
San Francisco, CA 94111

Subject: Oddstad Boulevard Drainage Study
Pacifica School District – Workforce Housing Project
930 Oddstad Boulevard

Dear Mr. Klebanoff:

OVERVIEW

The Pacifica School District – Workforce Housing project located at 930 Oddstad Boulevard in the City of Pacifica, California is located on the campus of the former Andres F Oddstad School. The proposed development includes the construction of apartments, townhouses, surface parking lots, drive aisles, paths and utilities.

According to the current Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) maps (Map Numbers 06081C0128E and 06081C0129E, effective date 10/16/2012), a portion of Oddstad Boulevard fronting the project site is within "Other Flood Areas Zone X. Other Flood Area Zone X is defined as areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood). See Attachment A. The area in question is not less than 1 square mile or protected from levees, therefore, the area is categorized as Zone X because of the 0.2% annual chance flood or 1% annual chance flood with average depths less than 1 foot.

The scope of this technical memorandum is to analyze the FEMA designation of Zone X along the property frontage and not provide hydraulic calculations to justify or dispute FEMA findings.

EXISTING CONDITIONS

Street Section

Existing Oddstad Boulevard fronting the project site, between Yosemite Drive and Big Bend Drive, is a two-lane two-way street. Street width from curb to curb is approximately 48 feet, with curb, gutter and sidewalk on both sides of the street. The curbs are 6" tall per city standard. The street is crowned with an average cross slope of 2%. See Attachment E for typical cross section.

Topography

Topography of Oddstad Boulevard is continuously sloping down to the south towards Yosemite Drive. The average longitudinal slope along this segment of Oddstad Boulevard is 2.1%. See Attachment B for topography in the area.

Storm Drainage

The existing storm drainage system consists of a City of Pacifica (City) 72-inch RCP, running along Oddstad Boulevard at 1.7% slope (based on City's drainage block maps, See Attachment C). The 72-inch RCP pipe collects runoffs from the street, upstream hillside and pipe flow from adjacent properties.

Hydrology

Hydrology information at the studied area is obtained from the United States Geological Survey (USGS) Streamstats application. The outlet of the 1.2 square mile watershed studied is just north of the intersection of Oddstad Boulevard and Yosemite Drive. Following are the different occurrence year peak flows from the USGS Streamstats generated report:

100-Year Peak Flood – 410 cfs
500-Year Peak Flood – 555 cfs

See Attachment D for Streamstats Report.

ANALYSIS

The analysis is a static state analysis and does not address the potential duration of flooding that may be experienced. Based on the existing pipe characteristics the capacity of the City's 72-inch RCP is 552 cfs when running full using Manning equation (n=0.013) for circular pipe.

The 100-Year Peak Flood (410 cfs) can be conveyed within the 72-inch pipe in which no street flooding would be anticipated. However, it is unlikely all the runoff from the 100-year event would be captured by the inlets and routed to the 72-inch RCP. This is consistent with design standards for various municipalities in the Bay Area.

Because the inlet capture is unknown, we analyzed the capacity of the street to convey flow without topping the curbs on either side of the street. Using the Federal Highway Administration (FHWA) Hydraulic Toolbox version 4.4, the street section was modeled as a channel to determine the flow:

Street Width = 48 feet
Cross Slope = 2.0%
Longitudinal Slope = 2.1%
Mannings Roughness (n) = 0.016
Curb Height = 6 inches
Flow = 55 cfs
$Velocity_{(Ave)}$ = 4.96 f/s
Resulting Flow Capacity = 55 cfs

See Attachment E for FHWA Hydraulic Toolbox generated Hydraulic Analysis Report.

CONCLUSION

The area along the property frontage is designated Other Flood Areas Zone X because of the 0.2% chance flood or the 1% chance flood with depths less than 1 foot. The 72-inch storm drain pipe in Oddstad Boulevard can convey the 100-year design storm event. However, it is unlikely the inlets in the streets are designed to capture the 100-year event, which is consistent with most municipalities in the Bay Area. If an inlet does not capture 100% of the flow in the gutter runoff will bypass the inlet and run down the street to the next inlet. In this scenario, the street can convey up to 55 cfs without topping the curb. We do not anticipate the depth of gutter flow to exceed 6". The top of curb is approximately the same elevation as the crown of the street so the entire street would be flooded at depths varying from 0" to 6". BKF discussed this scenario with the North County Fire Authority and they had little concern regarding emergency vehicle access to the site. Furthermore, the assumed max depth of ponding of 6" would maintain pedestrian access on the sidewalk along the property frontage. Standard passenger vehicles are not recommended to navigate depths of water 6" and deeper without proper equipment and/or training. Ponding of 6" can reach the undercarriage of some cars, can flood the cabin, or cause the vehicle to stall. However, many vehicles can navigate the flooding in the gutter provided the road is in good condition, one drives slowly, and drives toward the center of the road where the flooding is minimal.

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ATTTACHMENT A

(a FIRMette has been provide for simplicity)

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- **SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BFE) *Zone A, V, A99*
  - With BFE or Depth *Zone AE, AO, AH, VE, AR*
  - Regulatory Floodway
- **OTHER AREAS OF FLOOD HAZARD**
  - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
  - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
  - Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
  - Area with Flood Risk due to Levee *Zone D*
- **OTHER AREAS**
  - NO SCREEN Area of Minimal Flood Hazard *Zone X*
  - Effective LOMRs
  - Area of Undetermined Flood Hazard *Zone D*
- **GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- **OTHER FEATURES**
  - 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
  - Coastal Transect
  - 513 Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- **MAP PANELS**
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

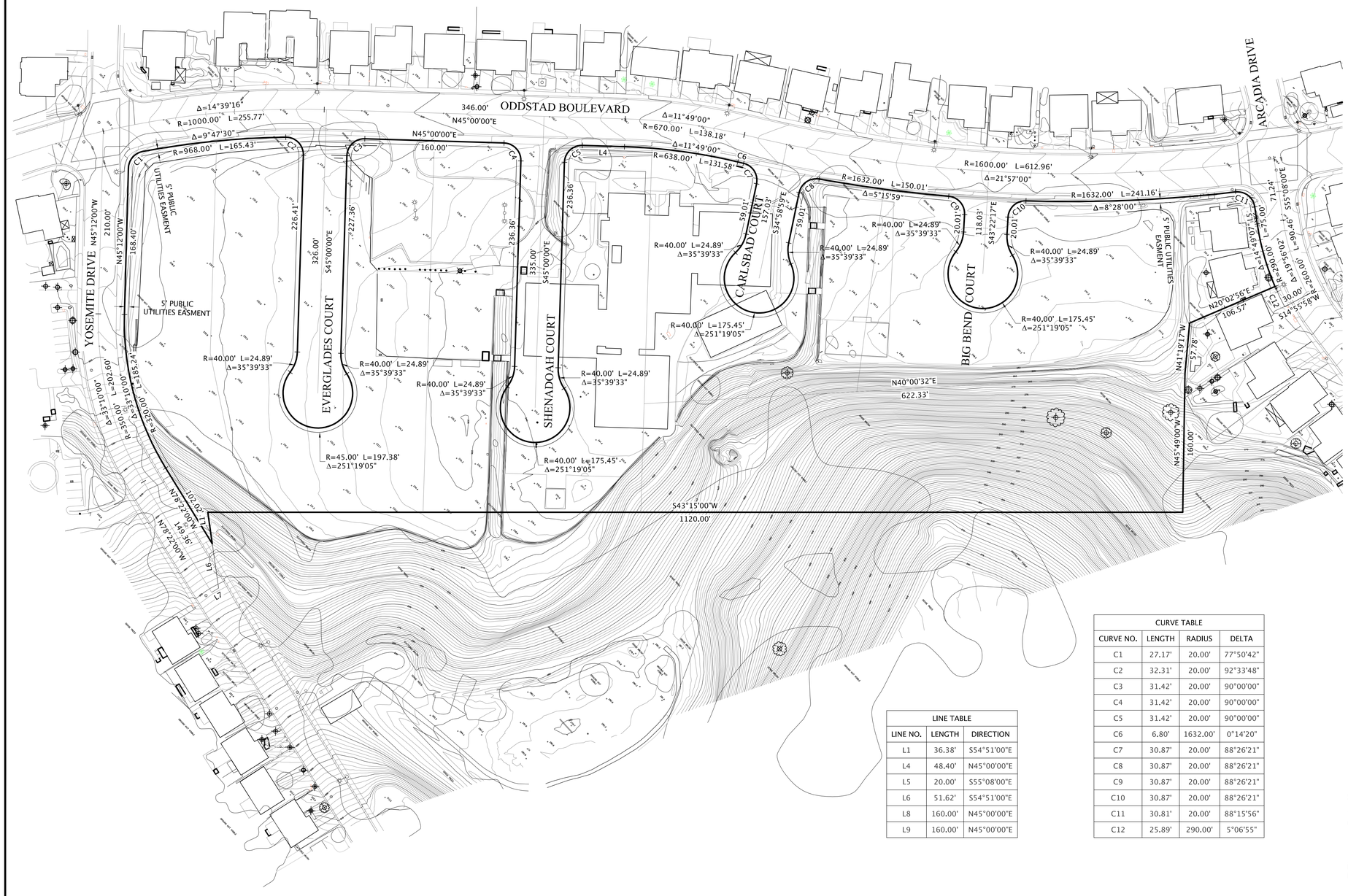
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/10/2020 at 2:45:44 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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ATTTACHMENT B

© BKF Engineers



GRAPHIC SCALE

60 0 60 120

BENCHMARK STATEMENT:

THE ELEVATIONS SHOWN HEREON ARE BASED ON NAVD88 DATUM,

BASIS OF BEARINGS:

THE BEARING OF NORTH 45°12'00" WEST OF CENTERLINE OF YOSEMITE DRIVE, WAS TAKEN AS THE BASIS OF BEARINGS SHOWN ON THIS MAP.

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF PACIFICA, IN THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL ONE:

LOTS 1 THRU 53, INCLUSIVE LOT 56 AND LOTS C AND D, BLOCK 6 AS SAID LOTS AND BLOCK, AS DELINEATED UPON THAT CERTAIN MAP ENTITLED "PARK PACIFICA HIGHLANDS NO. 1, PACIFICA, CALIFORNIA", FILED FOR RECORD IN THE OFFICE OF THE RECORDER OF THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, ON OCTOBER 5TH, 1965 IN BOOK 63 OF MAPS, AT PAGES 13 TO 15.

PARCEL TWO:

BEGINNING AT THE NORTHERLY MOST CORNER OF LOT "C", BLOCK 6, PARK PACIFICA HIGHLANDS NO. 1, AS SHOWN ON THAT MAP ENTITLED, "PARK PACIFICA HIGHLANDS NO. 1, PACIFICA, CALIFORNIA", RECORDED OCTOBER 5, 1965 IN VOLUME 63 OF MAPS ON PAGE 14, RECORDS OF SAN MATEO COUNTY; THENCE ALONG THE BEARING N. 43° 15' 00" E., AS SHOWN AND RECORDED ON SAID MAP OF PARK PACIFICA HIGHLANDS NO. 1, 595.88 FEET; S. 20° 29' 17" W. 528.25 FEET; N. 78° 22' 00" W., 197.71 FEET; N. 54° 51' 00" W., 36.38 FEET TO THE POINT OF BEGINNING. **(NOT PLOTTED)**

AERIAL PHOTO

AERIAL PHOTOGRAMMETRY WAS PROVIDED BY VERTICAL MAPPING RESOURCES IN JUNE OF 2018.

NOTES:

1. ALL ELEVATIONS AND DISTANCES SHOWN ARE IN FEET AND DECIMALS THEREOF.
2. THIS EXHIBIT WAS PREPARED UTILIZING A CHICAGO TITLE PRELIMINARY TITLE REPORT, ORDER NO. 982010119-982-SK-KC, EFFECTIVE DATE OCTOBER 11, 2017.
- A 5' PUBLIC UTILITIES EASEMENT

LINE TABLE		
LINE NO.	LENGTH	DIRECTION
L1	36.38'	S54°51'00"E
L4	48.40'	N45°00'00"E
L5	20.00'	S55°08'00"E
L6	51.62'	S54°51'00"E
L8	160.00'	N45°00'00"E
L9	160.00'	N45°00'00"E

CURVE TABLE			
CURVE NO.	LENGTH	RADIUS	DELTA
C1	27.17'	20.00'	77°50'42"
C2	32.31'	20.00'	92°33'48"
C3	31.42'	20.00'	90°00'00"
C4	31.42'	20.00'	90°00'00"
C5	31.42'	20.00'	90°00'00"
C6	6.80'	1632.00'	0°14'20"
C7	30.87'	20.00'	88°26'21"
C8	30.87'	20.00'	88°26'21"
C9	30.87'	20.00'	88°26'21"
C10	30.87'	20.00'	88°26'21"
C11	30.81'	20.00'	88°15'56"
C12	25.89'	290.00'	5°06'55"

SURVEYORS STATEMENT

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION; IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT.

DAVID JUNGMANN
P.L.S. NO. 9267

LICENSED LAND SURVEYOR DAVID C. JUNGMANN No. 9267 STATE OF CALIFORNIA

06/21/2018
DATE

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255 SHORELINE DR., SUITE 200
REDWOOD CITY, CA 94065
(650) 482-6300
www.bkf.com

PROPERTY EXHIBIT
LANDS OF PACIFICA SCHOOL DISTRICT
930 ODDSTAD BOULEVARD

CITY OF PACIFICA COUNTY OF SAN MATEO CALIFORNIA

No.	Revisions

Date 06/21/2018
Scale 1"=60'
Design RVW
Drawn DCJ
Approved
Job No 20180948

Drawing Number:
180948
1 OF 1

DRAWING NAME: K:\2018\180948_Pacifica_School_District_Housing\SUR\Boundary\180948_V-BNDY.dwg
PLOT DATE: 06-21-18 PLOTTED BY: wadr

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ATTACHMENT C

CITY OF PACIFICA
STORM SYSTEM BLOCK BOOK

SEPT 1
1996

N
0 50
1"=100'

KEY MAP

SEWER LINE
STORM LINE
SEWER MANHOLE
STORM MANHOLE
CATCH BASIN
LEGEND

SOUTH PARK PACIFICA

BK 21 | SHT A1

KING'S CANYON WAY
CARLSBAD CT.
SHE
930 ODDSTAD SCHOOL
2' CONC. GUTTER
8" CMP
2' CONC DITCH, TYP
6' BENCH, 2' CONC. DITCH, ETC.
12" RCP
18" RCP
15" RCP
72" R.C.P. - 235'
DPM1 R=396.89' I=393.89'
DPM2 R=394.49' I=387.49'
DPM3 C=338.0 I=330.21
DPM4
DPL1
DPL2
DPL3
DPL4
DPK1
DPU4
DP01
DP02
DP03
DPN1
DPN2
DPA1-3
R=286.64 I=282.00
R=289.95 I=286.00
R=280.15 I=276.0
R=230.75 I=215.35 219.35
R=292.39 I=285.59 286.09
R=291.84 I=286.9 287.15
691 10
692 9
693 9
661
662
673
623 3
613 3
4
1005 1009 1012 1017 1021 1025 1029
1006 1010 1014 1018 1022 1026
1062 1066 1070 1074 1078 1082 1086 1090 1094 1098 1102 1106
1065 1069 1073 1077 1081 1085 1089 1093 1097 1101 1105 1109 1113
1126 1122 1118 1114 1110
1202 1206 1210 1214 1218 1222 1226 1238
1201 1205 1209
1191 1187 1181 1179 1199
1188 1184 1180 1176
1148 1144
1042 1038 1046 1050 1058 1062 1034 1030 1026
1043 1039 1035
961 957 953 949 945 941 937 933 929 925 921

CITY OF
STORM SYSTEM
SOUTH PARK PACIFICA
BLOCK BOOK

SEPT 1
1998

N
0 50
1"=100'

KEY MAP

SEWER LINE
STORM LINE
SEWER MANHOLE
STORM MANHOLE
CATCH BASIN
LEGEND

SOUTH PARK PACIFICA
BK 21 | SHT B1

SLOPE = 1.7%

CARLSBAD CT.
SHENANDOAH CT.
EVERGLADES CT.
930 ODDSTAD SCHOOL
955 BOYS & GIRLS CLUB
YOSEMITE DRIVE
KINGS CANYON WAY
MUIR WAY
CRATER LAKE WY
YCE CANYON WY
612
613
623
611
671
4
DPO3
DPO4
DPS2
DPS3
DPS4
DPS5
DPA14
DPA15
DPA16
DPA17
DPP5
DPP6
72" RCP
78" RCP
36" RCP
24" RCP
2' CONC. DITCH
10" CMP
15"
18"
12"
50"-12" RCP

CARLSBAD CT.

SHENANDOAH CT.

941

937

935.72'

930 OLDSTAD SCHOOL

672

6

60

2' CONC. DITCH

2' CONC. DITCH

2' CONC. DITCH

10" CMP

10" CMP

DPP5

DPP4

DPP3

949 ①

945 ②

939 ③

935 ④

931 ⑤

927 ⑥

⑦

⑨

N

0 50

1"=100'

SEPT 1
1998

CITY OF PACIFICA
STORM SYSTEM BLOCK BOOK

KEY MAP

SEWER LINE

STORM LINE

SEWER MANHOLE

STORM MANHOLE

CATCH BASIN

LEGEND

SOUTH PARK PACIFICA

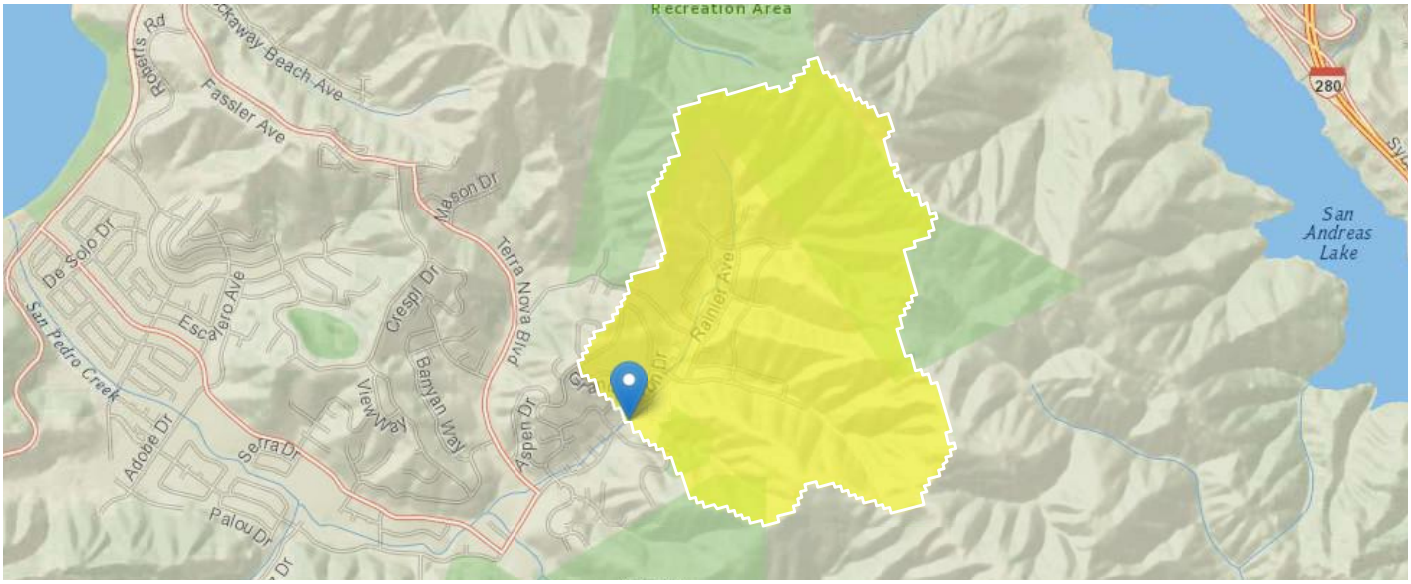
BK	SHT
21	B2

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ATTACHMENT D

StreamStats Report

Region ID: CA
Workspace ID: CA20200730212117147000
Clicked Point (Latitude, Longitude): 37.58686, -122.46868
Time: 2020-07-30 14:20:54 -0700



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	6.11	miles
BSLDEM30M	Mean basin slope computed from 30 m DEM	39.2	percent
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	-2284448.9	meters
CENTROIDY	Basin centroid vertical (y) location in state plane units	1937210.4	meters
DRNAREA	Area that drains to a point on a stream	1.2	square miles
EL6000	Percent of area above 6000 ft	0	percent
ELEV	Mean Basin Elevation	679	feet
ELEVMAX	Maximum basin elevation	1340	feet
FOREST	Percentage of area covered by forest	17.1	percent
JANMAXTMP	Mean Maximum January Temperature	55.85	degrees F
JANMINTMP	Mean Minimum January Temperature	42.21	degrees F
LAKEAREA	Percentage of Lakes and Ponds	0	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	29.1	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	8.5	percent
LFPLENGTH	Length of longest flow path	2	miles
MINBELEV	Minimum basin elevation	203	feet
OUTLETELEV	Elevation of the stream outlet in thousands of feet above NAVD88.	207	feet
PRECIP	Mean Annual Precipitation	35	inches
RELIEF	Maximum - minimum elevation	1138	feet

Parameter Code	Parameter Description	Value	Unit
RELRELF	Basin relief divided by basin perimeter	186	feet per mi

Peak-Flow Statistics Parameters[2012 5113 Region 1 North Coast]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.2	square miles	0.04	3200
PRECIP	Mean Annual Precipitation	35	inches	20	125

Peak-Flow Statistics Flow Report[2012 5113 Region 1 North Coast]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	SEp
2 Year Peak Flood	70.7	ft^3/s	28.7	174	58.6
5 Year Peak Flood	148	ft^3/s	70.2	314	47.4
10 Year Peak Flood	206	ft^3/s	101	421	44.2
25 Year Peak Flood	284	ft^3/s	144	563	42.7
50 Year Peak Flood	345	ft^3/s	174	686	42.7
100 Year Peak Flood	410	ft^3/s	201	835	44.3
200 Year Peak Flood	472	ft^3/s	231	964	44.4
500 Year Peak Flood	555	ft^3/s	265	1160	46

Peak-Flow Statistics Citations

Gotvald, A.J., Barth, N.A., Veilleux, A.G., and Parrett, Charles,2012, Methods for determining magnitude and frequency of floods in California, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2012–5113, 38 p., 1 pl. (http://pubs.usgs.gov/sir/2012/5113/)

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.3.11

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ATTACHMENT E

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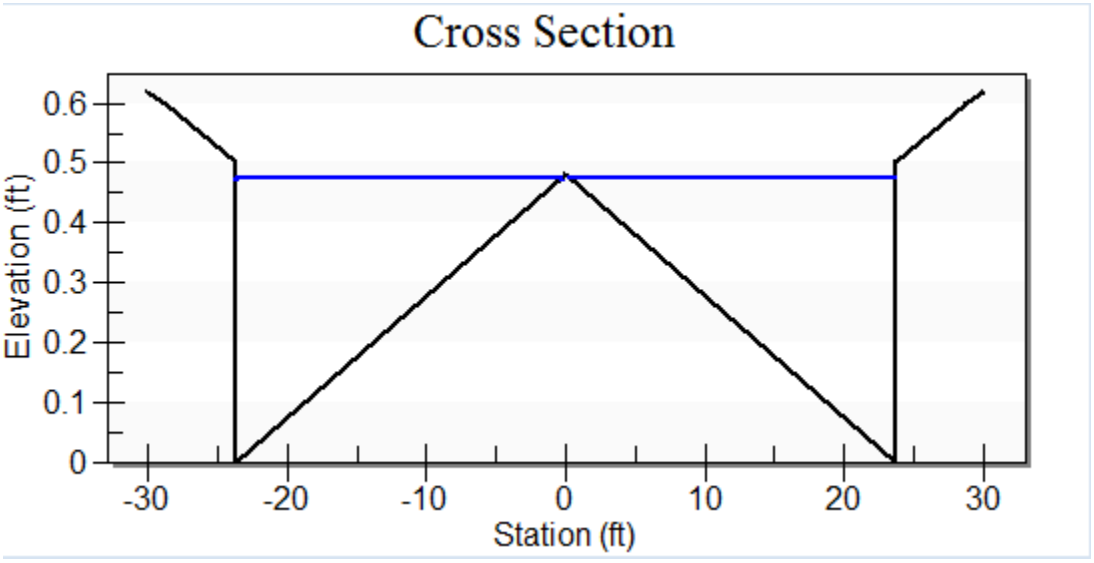
Channel Analysis

Type: Cross Section | Define...

Side Slope 1 (Z1): 0.0 H : 1V
Side Slope 2 (Z2): 0.0 H : 1V
Channel Width (B): 0.0 (ft)
Pipe Diameter (D): (ft)
Longitudinal Slope: 0.02 (ft/ft)
Override Default
Manning's Roughness: 0.0160
Use Lining
Lining Type: Woven Paper Net

Enter Flow: 55.000 (cfs)
Enter Depth: 0.473 (ft)

Parameter	Value	Unit
Flow	55.000	cfs
Depth	0.473	ft
Area of Flow	11.088	sq ft
Wetted Perimeter	47.780	ft
Hydraulic Radius	0.232	ft
Average Velocity	4.960	fps
Top Width (T)	46.846	ft
Froude Number	1.797	
Critical Depth	0.599	ft
Critical Velocity	3.136	fps
Critical Slope	0.00567	ft/ft
Critical Top Width	57.391	ft
Max Shear Stress	0.591	lb/ft^2
Avg Shear Stress	0.290	lb/ft^2
Composite Manning's n Equ...	Lotter ...	
Manning's Roughness	0.0160	



APPENDIX 4.8-C: 930 ODDSTAD BOULEVARD PLANNING REQUEST FOR INFORMATION, PREPARED BY BKF, APRIL 26, 2022

April 26, 2022
BKF No.: 20180948-10

Mr. Shep Heery
Brookwood Advisors
50 California Street, Suite 1500
San Francisco, CA 94111
Transmitted Via Email: kklebanoff@brookwoodgroup.com

Subject: 930 Oddstad Boulevard Planning Request for Information

Dear Mr. Heery:

This response letter was prepared to address the C.3 Review (Entitlement) – Oddstad Drainage Study and Hydrology and Hydraulics Report Technical Memorandum, by CSG dated March 16, 2022. Original comments are in standard text and BKF responses are in blue bold text.

Items Requiring Clarification

Hydrology and Hydraulics Technical Memorandum, prepared by BKF, dated September 14, 2020

1. Provide preliminary sizing calculations for the stormwater treatment measures, or calculate basin sizes per the 4% rule. Confirm that the stormwater measures as drawn meet or exceed the required basin sizes.
   BKF Response: Preliminary sizing calculations are provided on sheet C5.0 of the Pacifica School District Workforce Housing drawings. The note at the bottom of the table references the SMCWPPP design standards. Sizing is based on 4.0% rule.

2. The geotechnical report shows a very low infiltration rate. Confirm that each stormwater measure will have a subdrain allowing treated runoff to drain without the need for infiltration.
   BKF Response: Typical sections are provided on sheet C5.0 of the Pacifica School District Workforce Housing drawings and each basin will be underdrained.

3. Provide a detail for the stormwater/ detention facilities. The bio-swales should be able to absorb and drain the C.3 treatment storm (0.2"/ hour). Runoff the exceeds this rate will overtop the overflow riser and enter the storm drain. Will each bio-swale include a storage pipe and orifice to store and meter flows exceeding the C.3 storm?
   BKF Response: Typical bioretention sections are provided on sheet C5.0 of the Pacifica School District Workforce Housing drawings. The note at the bottom of the table references the SMCWPPP design standards. Sizing is based on 4.0% rule. The BAHM Model output (Appendix A of the Drainage Memo) identifies the characteristics of the overflow/detention structure to satisfy the Hydromodification Requirements for the project. As noted in the Drainage Memo the bioretention basin was oversized to account or the additional storage required to meet the Hydromodification Requirements.

Oddstad Boulevard Drainage Study Technical Memorandum

1. No comments.

If you have any questions regarding our responses to your comments, please feel free to contact us.

Sincerely,



Tim Heffernan, P.E.
Project Manager
BKF Engineers
(650) 482-6427

APPENDIX 4.10-A: CONSTRUCTION NOISE AND VIBRATION ASSESSMENT, PREPARED BY ILLINGWORTH & RODKIN INC, NOVEMBER 17, 2021.

PACIFICA SCHOOL DISTRICT WORKFORCE HOUSING CONSTRUCTION NOISE & VIBRATION ASSESSMENT

Pacifica, California

November 17, 2021

Prepared for:

Krystle Rizzi
Senior Planner
M-Group
499 Humboldt Street
Santa Rosa, CA 95404

Prepared by:

Adwait Ambaskar
Michael S. Thill

ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality
429 East Cotati Avenue
Cotati, CA 94931
(707) 794-0400

Project: 21-138

INTRODUCTION

The purpose of this report is to summarize the assessment of potential construction noise and vibration impacts due to the demolition and re-development of the site at 930 Oddstad Boulevard in the City of Pacifica, California. This report presents a summary of the proposed project, background information on environmental noise and ground-borne vibration, definitions of the technical terms used in the assessment, the applicable regulatory criteria used in the assessment, and an evaluation of construction related noise and vibration impacts.

PROJECT DESCRIPTION

The 7.5-acre project site, currently within the R1-Residential zoning area, is bound by Big Bend Drive to the north, Yosemite Drive to the south, Oddstad Boulevard to the west and Frontierland Park to the east. The planned workforce housing project is proposed to be re-zoned to a Planned Development District (P-D) zoning and shall apply for a General Plan Amendment. The project is to be located in the northern portion of the property extending from the existing school building parking lots to Big Bend Drive. The project shall consist of seven (7) craftsman style two-story residential buildings built in two phases: Phase 1, consisting of 4 buildings with 45 units. Phase 2 consists of 3 buildings comprised of 25 units. The 70 multifamily dwelling units range in size, consisting of 1-bedroom, 2-bedroom, and 3-bedroom flats and townhomes. Four additional 1-story buildings shall serve as the site office, bike storage area and trash staging enclosures associated with the residential use. Two additional 1-story buildings shall serve as a community amenity building with access from the adjoining site.

Figure 1 shows a Google Earth snapshot of the project plan and vicinity.

FIGURE 1 – Project Plan and Vicinity (Source: Google Earth 2021)



SETTING

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (*frequency*) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2.

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 pm and 7:00 am.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 pm to 10:00 pm and after addition of 10 decibels to sound levels measured in the night between 10:00 pm and 7:00 am.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

People are usually more sensitive to noise in the nighttime than they are during the daytime. Two factors contribute to this increased sensitivity. First, during the evening and nighttime, outdoor ambient noise levels are generally lower than in the daytime. Most offices and businesses are closed, and automobile traffic has decreased. Second, as household noise levels decrease during the evening, changes in exterior nighttime noise levels can be more noticeable and annoying than such changes are during the day.

To account for this sensitivity, a calculation called the Community Noise Equivalent Level (CNEL) is used to divide the 24-hour day into three time periods: daytime (7:00 a.m. to 7:00 p.m.), evening (7:00 p.m. to 10:00 p.m.), and nighttime (10:00 p.m. to 7:00 a.m.). The evening sound levels are assigned a five decibel penalty (or weighting) and the nighttime sound levels are assigned a 10 decibel penalty (or weighting) prior to averaging with daytime hourly sound levels. In this way, the CNEL is a noise metric that, if used to regulate noise, provides for a quieter evening and nighttime environment.

Effects of Noise

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA DNL. Typically, the highest steady traffic noise level during the daytime is about equal to the DNL and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA DNL with open windows and 65-70 dBA DNL if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The DNL as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA DNL. At a DNL of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the DNL increases to 70 dBA, the percentage of the population highly annoyed increases to about 25-30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between a DNL of 60-70 dBA. Between a DNL of 70-80 dBA, each decibel increase increases by about 3 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the DNL is 60 dBA, approximately 30-35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each

decibel increase results in about a 4 percent increase in the percentage of the population highly annoyed.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous or frequent intermittent vibration levels produce. The guidelines in Table 3 represent syntheses of vibration criteria for human response and potential damage to buildings resulting from construction vibration.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving, and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to cause damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as paint flaking or minimal extension of cracks in building surfaces; minor, including limited surface cracking; or major, that may threaten the structural integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher. The damage criteria presented in Table 3 include several categories for ancient, fragile, and historic structures, the types of structures most at risk to damage. Most buildings are included within the categories ranging from “Historic and some old buildings” to “Modern industrial/commercial buildings”. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

TABLE 3 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020.

REGULATORY BACKGROUND

Regulatory Background - Noise

Title 5, Chapter 10 of the City of Pacifica Municipal Code makes in unlawful to cause any "loud, disturbing, unnecessary, or unusual noise or any noise which annoys, disturbs, injures, or endangers the comfort, health, repose, peace, or safety of other persons within the City." Title 8, Chapter 1 provides the allowable construction hours for projects within the City of Pacifica. Allowable construction hours are 7:00 am to 7:00 pm on Monday, Tuesday, Wednesday, Thursday and Friday and from 9:00 am to 5:00 pm on Saturday and Sunday.

Regulatory Background – Vibration

The City of Pacifica does not specify any construction vibration limit. For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.25 in/sec PPV for historic and some old buildings. There are no known historical structures in the vicinity. The 0.3 in/sec PPV vibration limit would thus be applicable to properties in the immediate surroundings of the project site.

IMPACTS

Construction Noise Impacts

Construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. A list of typical maximum instantaneous noise levels measured at 50 feet are provided in Table 4. Maximum noise levels typically range from about 80 to 90 dBA L_{max} at 50 feet from the noise source. Typical hourly average construction-generated noise levels for residential housing projects are about 65 to 88 dBA L_{eq} measured at 50 feet from the center of the site during busy construction periods (e.g., earth moving equipment, impact tools, etc.), as shown in Table 5.

Construction is expected to start in January 2022 and the project would be built out over approximately 18-19 months (to be completed by end of July 2023). Construction hours are assumed to be 7:00 a.m. to 7:00 p.m. Monday through Friday and 9:00 a.m. to 5:00 p.m. on Saturday and Sunday, as per the City of Pacifica Municipal Code guidelines. The construction of the proposed project would involve demolition, site preparation, grading/excavation, trenching/foundation, building exterior and interior, and paving as per the supplied construction data sheet. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. These construction activities along with the respective levels expected from each phase of construction are summarized in Table 6 below.

TABLE 4 Construction Equipment 50-foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor[3]	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes:

[1] Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant.

[2] Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

[3] Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

Source: Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances, National Cooperative Highway Research Program, 1999.

TABLE 5 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.
II - Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

The construction noise levels were calculated to range from 78 to 90 dBA L_{max} and from 74 to 88 dBA L_{eq} at 50 feet, using FHWA's Roadway Construction Noise Model (Table 6), which assumes that all of the equipment could be operated simultaneously. These project-specific construction noise levels generally agree with the range of typical maximum and average noise levels presented above. Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional 5 to 10 dBA noise reduction at distant receptors.

Noise sensitive residential land uses are located to the north and east of the project site. Standard methods for acoustical analysis of construction sites are based on the distance from the "acoustical center" or construction activity center of the site to the nearest noise-sensitive receptor. In other words, the proposed pieces of construction equipment are not modeled at the construction area boundary, but rather at the approximate center of the area in which most construction activity is likely to occur. The nearest existing residences are located at a distance of approximately 150 feet north and 100 feet east, from the center of the project site. At the closest residence (100 feet away), maximum noise levels generated by project construction would typically range from about 72 to 84 dBA L_{max}, and hourly average noise levels would typically range from about 68 to 82 dBA L_{eq}.

TABLE 6 Total Calculated L_{max} and L_{eq} Noise Levels from RCNM

Description	Equipment	Quantity	Total Calculated (dBA) at 50 feet	
			L_{max}*	L_{eq}
Demolition	Concrete/Industrial Saw	1	90	86
	Excavators	3		
	Rubber-Tired Dozers	2		
Site Preparation	Rubber-Tired Dozers	3	84	88
	Tractors/Loaders/Backhoes	4		
Grading/Excavation	Excavators	2	85	88
	Graders	1		
	Rubber-Tired Dozers	1		
	Tractors/Loaders/Backhoes	2		
	Scrapers	2		
Trenching/Foundation	Tractors/Loaders/Backhoes	1	84	82
	Excavators	1		
Building - Exterior	Cranes	1	84	86
	Forklifts	3		
	Generator Sets	1		
	Tractors/Loaders/Backhoes	3		
	Welders	1		
Building - Interior/ Architectural Coating	Air compressors	1	78	74
Paving	Pavers	2	80	82
	Paving Equipment	2		
	Rollers	2		

* Total L_{max} is the value for the loudest piece of equipment

Standard construction best management practices can be incorporated into the project specifications to reduce noise levels emanating from the site and to minimize disruption and annoyance at existing noise-sensitive receptors in the project vicinity. Such feasible measures include, but are not limited to, the following controls:

Construction Best Management Practices

- Construction will be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday and 9:00 a.m. to 5:00 p.m. on Saturdays and Sundays. Any work outside of these hours by the construction contractors should require a special permit from the City Engineer. There should be compelling reasons for permitting construction outside of these designated hours.

- The contractor shall use "new technology" power construction equipment with state-of-the-art noise shielding and muffling devices. All internal combustion engines used on the project site shall be equipped with adequate mufflers and shall be in good mechanical condition to minimize noise created by faulty or poorly maintained engines or other components.

- Staging areas and stationary noise-generating equipment shall be located as far as possible from noise-sensitive receptors, such as residential uses (a minimum of 200 feet).

- Ensure that generators, compressors, and pumps are housed in acoustical enclosures.

- Locate cranes as far from adjoining noise-sensitive receptors as possible.

- During final grading, substitute graders for bulldozers, where feasible. Wheeled heavy equipment are quieter than track equipment and should be used where feasible.

- Substitute nail guns for manual hammering and electrically powered tools for noisier pneumatic tools, where feasible.

- The adjacent residences shall be notified early and frequently of the construction activities.

- A "noise disturbance coordinator" shall be designated to respond to any local complaints about construction noise. The disturbance coordinator would determine the cause of the noise complaints (e.g., beginning work too early, bad muffler, etc.) and institute reasonable measures warranted to correct the problem. A telephone number for the disturbance coordinator would be conspicuously posted at the construction site.

Reasonable regulation of the hours of construction, as specified in Pacifica's Municipal Code, as well as regulation of the arrival and operation of heavy equipment and the delivery of construction material, are necessary to protect the health and safety of persons, promote the general welfare of the community, and maintain the quality of life. Implementation of the above standard construction controls would reduce construction noise levels emanating from the site, minimizing disruption

and annoyance. These controls, in combination with the limitations on hours set forth in the Municipal Code, would reduce the impact to a **less-than-significant** level.

Construction Vibration Impacts

Proposed construction phases would include demolition, site preparation, grading/excavation, trenching/foundation, building exterior, and interior, and paving. Perceptible vibration may occur when heavy equipment or impact tools are used in close proximity to sensitive receptors. However, the proposed project would not require pile driving, which can cause excessive vibration.

Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Jackhammers typically generate vibration levels of 0.035 in/sec PPV and drilling typically generates vibration levels of 0.09 in/sec PPV at a distance of 25 feet. Vibration levels are highest close to the source, and then attenuate with increasing distance at the rate $(D_{ref}/D)^{1.1}$, where D is the distance from the source in feet, and D_{ref} is the reference distance of 25 feet. Table 7 presents typical vibration levels that could be expected from construction equipment at 25 feet and summarizes the expected vibration levels at residences bordering the site, the closest being 40 feet away from the project site, for residences in the east. At this distance (40 feet), vibration levels due to construction are conservatively calculated to reach up to 0.125 in/sec PPV for a vibratory roller, which would not exceed the 0.3 in/sec PPV threshold for conventional buildings.

The US Bureau of Mines has analyzed the effects of blast-induced vibration on buildings in USBM RI 8507,[1] and these findings have been applied to vibrations emanating from construction equipment on buildings.[2] Figure 2 presents the damage probability, as reported in USBM RI 8507 and reproduced by Dowding, assuming a maximum vibration level of 0.3 in/sec PPV. Based on the data summarized in Figure 2, there would be no observations of "threshold damage," "minor damage," or "major damage" at buildings of normal conventional construction when vibration levels were 0.3 in/sec PPV or less.

Project-generated vibration levels would fall below the 0.3 in/sec PPV structural damage threshold at all surrounding residential buildings. Neither cosmetic, minor, or major damage would occur beyond 25 feet. At these locations and in other surrounding areas where vibration would not be expected to cause structural damage, vibration levels may still be perceptible. However, as with any type of construction, this would be anticipated and would not be considered significant, given the intermittent and short duration of the phases that have the highest potential of producing vibration. By use of administrative controls, such as notifying neighbors of scheduled construction activities and scheduling construction activities with the highest potential to produce perceptible vibration during hours with the least potential to affect nearby residences, perceptible vibration can be kept to a minimum. **This is a less-than-significant impact**.

3 Siskind, D.E., M.S. Stagg, J.W. Kopp, and C.H. Dowding, Structure Response and Damage Produced by Ground Vibration form Surface Mine Blasting, RI 8507, Bureau of Mines Report of Investigations, U.S. Department of the Interior Bureau of Mines, Washington, D.C., 1980.

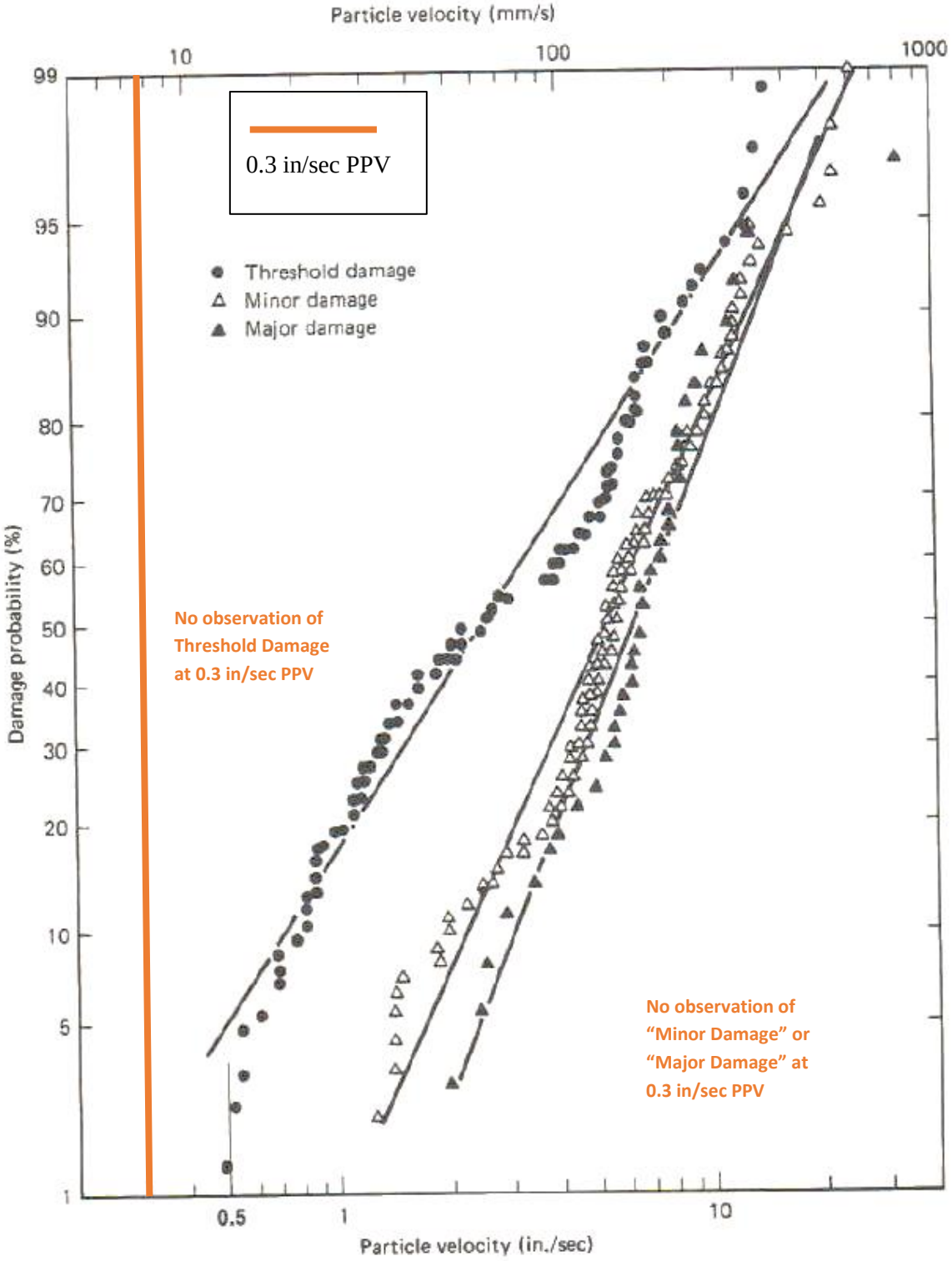
2 Dowding, C.H., Construction Vibrations, Prentice Hall, Upper Saddle River, 1996.

TABLE 7 Construction Vibration Levels at Nearby Buildings

Equipment		PPV (in/sec)	
		Source Level (25 ft)	**East Residences (40 ft)**
Clam shovel drop		0.202	0.120
Hydromill (slurry wall)	in soil	0.008	0.005
	in rock	0.017	0.010
Vibratory Roller		0.210	0.125
Hoe Ram		0.089	0.053
Large bulldozer		0.089	0.053
Caisson drilling		0.089	0.053
Loaded trucks		0.076	0.045
Jackhammer		0.035	0.021
Small bulldozer		0.003	0.002

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, FTA Report No. 0123, September 2018, as modified by Illingworth & Rodkin, Inc., October 2021.

FIGURE 2 Probability of Cracking and Fatigue from Repetitive Loading



Source: Dowding, C.H., Construction Vibrations, Prentice Hall, Upper Saddle River, 1996 as modified by Illingworth & Rodkin, Inc., October 2021.

APPENDIX 4.13-A: TRAFFIC ANALYSIS FOR THE ODDSTAD WORKFORCE HOUSING IN PACIFICA, CA, PREPARED BY HEXAGON TRANSPORTATION CONSULTANTS, INC., JULY 27, 2022

Hexagon Transportation Consultants, Inc.

Memorandum

Date: July 27, 2022

To: Shepherd Heery, Brookwood Group

From: Gary Black, AICP; Kai-ling Kuo., PE

Subject: Traffic Analysis for the Oddstad Workforce Housing in Pacifica, CA

Hexagon Transportation Consultants, Inc. has completed a traffic study for the proposed Oddstad Workforce Housing project in Pacifica, California. The site is located in the southeastern portion of Pacifica, along Oddstad Boulevard adjacent to Big Bend Drive and Yosemite Drive (see Figure 1). The site is the location of the former Oddstad Elementary School. The school buildings have had various tenants since the school closed, but they are now being used only for storage. The project would remove the existing buildings and build 70 residential units (26 townhome units and 44 apartment units). The project would provide 142 parking spaces on site accessed by a driveway off Oddstad Boulevard. The existing sports fields on the site would be retained along with their associated parking lots (see Figure 2).

The intent of the Pacifica School District (PSD) is that 45 dwelling units in the project will be leased to below market rate tenants including 44 by PSD (or a PSD affiliated entity) faculty and staff and their families, and one below market rate dwelling unit to an onsite property manager, with the remaining 25 dwelling units leased to market rate tenants for purposes of securing project financing and to assure the delivery of no less than 45 below market rate units.

Vehicle Miles Traveled

According to California Environmental Quality Act (CEQA) guidelines published in 2018 and becoming mandatory in 2020, transportation impacts of new development should be evaluated using vehicle miles traveled (VMT). The goal is to reduce VMT, which reduces the overall burden on the transportation system and reduces greenhouse gas emissions. To help guide lead agencies, the Office of Planning and Research (OPR) published Technical Advisory on Evaluating Transportation Impacts in CEQA in December 2018.

100 Century Center Court, Suite 501 · San Jose, California 95112 · phone 408.971.6100 · fax 408.971.6102 · www.hextrans.com



Figure 1
Project Site Location



Figure 2
Site Plan

NORTH
Not to Scale

The City of Pacifica has not established standards regarding VMT. OPR recommends that new developments should utilize a threshold that is 15% below baseline (existing) conditions. Baseline conditions may be defined as the existing regional VMT per resident/capita, County VMT per capita, or city VMT per capita. For the purposes of this study, it is assumed that the target threshold for new developments is 15% below baseline conditions within the City of Pacifica.

The VMT analysis for the project was conducted by comparing the daily VMT estimated for the proposed development to the average VMT for the site and to demonstrate whether the proposed development would generate VMT 15% below the citywide VMT. Based on the City/County Association of Governments of San Mateo County (C/CAG) VMT Estimation Tool, the project area has an average VMT level of 19.1 per capita, while the City average VMT is 15.81 per capita. Therefore, the VMT threshold is 13.44 per capita (15% below the citywide VMT).

Project VMT Estimates

The project's VMT was estimated based on home-based trips as described in the OPR recommendations. The OPR's Technical Advisory states that the VMT thresholds "can be applied to either household (i.e., tour-based) VMT or home-based (i.e., trip-based) VMT assessments." In simple terms, tour-based analyses capture all types of trips persons make in a day, including various stops on a trip, whereas trip-based analyses focus on the primary trip (generally commuting). As excerpted above, the advisory allows for assessment using either methodology. Because it is known that a majority of the residents' daily primary trips would be commute trips to the PSD schools and nearby schools, the trip-based analysis is most appropriate for this project.

The project would have a minimum of 44 units leased to PSD employees. The average round trip length from the site to the PSD schools is about 7.4 miles. Based on the site plan, the project would have one unit to house the on-site property manager. Therefore, the manager would not need to make commute trips.

Table 1
Project VMT Estimates

Land Use	Number of Units[1]	Daily VMT per Capita	Total Daily VMT	Daily VMT per Capita Assumption
Housing to PSD Employees	**44**			
- To PSD Sites		7.4	325.6	Round trip distance between the site and PSD school sites[2].
- Non PSD Destination		17.2	756.4	10% lower than the average site VMT for affordable housing, according to research[3].
General Public	**25**			
- Other Destination		19.1	477.5	
- Other Destination		19.1	477.5	Existing VMT per capita of the site.
On-Site Property Manager	**1**			
- Manager		0.0	0.0	On-site manager working at the site.
- Other Destination		19.1	19.1	Existing VMT per capita of the site.
Total	*70*		*2,056.1*	
Average VMT for the Development		***14.69***		
Existing Citywide Average VMT per capita		15.81		
VMT Threshold (15% below Pacifica Average VMT)		**13.44**		

Notes:
1. Each unit was assumed to have two residents making commute trips on typical weekdays.
2. Based on the average distance to8 schools in the PSD.
3. Income, Location Efficiency, and VMT: Affordable Housing as a Climate Strategy, by Gregory L. Newmark, Ph.D. and Meter M. Haas Ph.D. from the Center for Neighborhood Technology, December 2015.

To provide project funding, 25 units would be leased to the general public, which presents a worst-case analysis for VMT. The 25 market-rate units can be assumed to have a VMT equal to the zone average of 19.1 daily VMT per resident. The resulting VMT for the project is 14.69 per resident, which exceeds the threshold and constitutes a significant impact. Mitigation is required.

Mitigation

It would be difficult to reduce trips for the 25 units under the market-rate scenario. The location is not well-served by transit, and the project is not large enough to generate a sufficient number of carpool pairings to offset the VMT increase. Unbundled parking would not be successful due to the amount of free on-street parking in the area. The City of Pacifica does not have a program to pay for or construct off-site multimodal infrastructure to reduce VMT citywide. However, the Pacifica School District could implement programs to reduce trips to its schools, which could partially offset the VMT impact of the 25 market-rate units. The School District plans to implement or consider the following measures which could reduce VMT district-wide:

- Safe Routes to School. The District is pursuing grants to make improvements around its schools to make walking and bicycling to school safer for students and staff. This is expected to result in an increase in those modes for school access.
- More Bike Racks. The District is researching the need for more bike racks and will install them as needed.

- E-bike Charging Stations. The District is considering installing E-bike charging systems in secure bike parking facilities at the schools. This will encourage staff and also students to bike to school.
- Samtrans Flex Services. The District works with Samtrans to establish fixed-route services to schools. They also plan to explore Flex services (like dial-a-ride) with Samtrans to serve schools that have lower demand that doesn't justify fixed-route service.
- Shuttle Services. The District will investigate partnering with the Jefferson Union School District to fund shuttle services to Pacifica Schools.

It is not known which of the above programs actually will be implemented by the District and how much the District's alternative mode programs will reduce VMT in the future. Many of the programs are designed to encourage staff and students to bike to school or use transit; however, the level of staff and student participation in these programs is unknown and whether the programs will be successful in achieving reductions.

Some of the above strategies are complementary such as Safe Routes to School, More Bike Racks, and E-bike Charging Stations which makes isolating their effectiveness difficult. Nonetheless, measures that make alternative transportation easier can help reduce VMT. Other programs may result in increased bus or shuttle service to the schools, but there is no assurance of implementation. Therefore, a conservative assumption is that the VMT of the market-rate units will not be entirely offset, and this potential project impact would be significant and unavoidable.

The District is committed to reducing VMT where possible and will investigate the financial feasibility of the above measures for implementation districtwide and will pursue grants from available funding sources. In addition to the measures above, the District will evaluate the possibility of adopting policies or capital improvement programs to support bicycle and pedestrian infrastructure, and encourage transit access and usage or other shared modes.

Existing Roadway Network

Oddstad Boulevard is a two-lane residential collector street that serves the southeast residential areas of Pacifica. Oddstad Boulevard provides access to numerous residential streets and connects to Everglades Drive to the north, and Terra Nova Boulevard and Linda Mar Boulevard to the south. Two-lane residential streets, such as Oddstad Boulevard, typically have a maximum capacity of about 12,000 vehicles per day. Given its location in a single-family residential area and without any adjacent high traffic-generating land uses, Oddstad Boulevard is assumed to be operating substantially below its capacity. Oddstad Boulevard has on-street parking along both sides of the street.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear were estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic traveling to and from the proposed residential development was estimated for the AM and PM peak hours. As part of the project trip distribution, the directions to and from which the project trips would travel were estimated. In the project trip assignment, the project trips were assigned to specific streets and intersections. These procedures are described below.

Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by common land uses. The research is compiled in a reference book published by the Institute of Transportation Engineers' (ITE) entitled *Trip Generation, 11th Edition (*2021). The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The trip generation rates for Land Single Family Attached Housing (Land Use 215) and Multifamily Housing (Low-Rise) (Land Use 220) were used for this study.

As shown in Table 2, the project is estimated to generate approximately 484 daily trips with 30 trips during the morning peak commute hour and 37 trips during the evening peak commute hour. This equates to one new trip on Oddstad Boulevard every 2 minutes. It is unlikely that such a small number of added trips would be noticeable to existing residents.

Table 2
Project Trip Generation Estimates

			Daily		AM Peak Hour				PM Peak Hour			
Land Use	**Size**		**Rate**	**Trips**	**Rate**	**In**	**Out**	**Total**	**Rate**	**In**	**Out**	**Total**
Townhomes[1]	26	d.u.	7.20	187	0.48	4	8	12	0.57	9	6	15
Apartments[2]	44	d.u.	6.74	297	0.40	4	14	18	0.51	14	8	22
Total	**70**			**484**		**8**	**22**	**30**		**23**	**14**	**37**

Notes:
d.u. = dwelling units
1. Trip generation rates are based on the ITE's Trip Generation Manual, 11th Edition rates for Land Use Code 215 "Single Family Attached Housing in a General Urban/Suburban area."
2. Trip generation rates are based on the ITE's Trip Generation Manual, 11th Edition rates for Land Use Code 220 "Multifamily Housing (Low-Rise) - Not Close to Rail Transit in a General Urban/Suburban area."

It should be noted that because the project site was previously occupied by the Oddstad Elementary School, trips generated from the site will not be new to the neighborhood. The trips formerly generated by the school when it was open were estimated using the school's previously recorded enrollment of 310 students. Based on the average trip generation rates for an Elementary School (ITE Land Use 520), the former school generated 704 daily trips with 229 AM peak hour trips and 50 PM peak hour trips. Thus, the proposed project would generate substantially fewer trips than the school when it was open.

The existing sports fields on the site would be retained along with their associated parking lots and the driveway. The project would not change the access and use of the sport fields. Therefore, trips associated with the sport fields are part of the existing traffic and would remain.

Trip Distribution and Assignment

The trip distribution pattern (see Figure 3) for the project was estimated based on the existing travel patterns on the surrounding roadway network, the locations of complementary land uses, and the locations of PSD office and schools. The peak-hour trips generated by the project were assigned to the roadway system based on the trip distribution pattern, directions of approach and departure, the roadway network connections, and the location of project driveway (see Figure 3).

Project Traffic Effect on Oddstad Boulevard

With an estimated 484 daily trips, the project would add traffic equal to only about four percent of the capacity of Oddstad Boulevard. Thus, when project trips are combined with the existing single-family residential traffic, the road would continue to operate substantially below capacity.

Project Traffic Effect on Intersection Operations

Scope of Analysis

The study analyzes the traffic effects of the project on the key intersections in the vicinity of the site during the weekday AM and PM peak hours of commute traffic. Traffic conditions were evaluated for the following four unsignalized intersections in the vicinity of the project site (see Figure 1)

1. Oddstad Boulevard & Linda Mar Boulevard (Two-way Stop)
2. Oddstad Boulevard & Terra Nova Boulevard (All-way Stop)
3. Oddstad Boulevard & Yosemite Drive (All-way Stop)
4. Oddstad Boulevard & Big Bend Drive (All-way Stop)

Traffic conditions at the study locations were analyzed for the weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) commute peak hours. These periods represent the most congested traffic conditions on the surrounding street network during a typical weekday.

Intersection traffic conditions were evaluated for the following scenarios:

- ***Existing Conditions.*** Existing AM and PM peak-hour traffic volumes were obtained from new turning-movement counts conducted in February and March 2022 (included in Appendix A).
- ***Existing Plus Project Conditions.*** Existing traffic volumes with the project were estimated by adding to existing traffic volumes the additional traffic generated by the project.
- ***Background Conditions.*** Background traffic volumes were estimated by adding to existing traffic volumes the projected volumes from nearby planned developments in the vicinity of the project. A list of pending developments was obtained from the City of Pacifica.
- ***Background Plus Project Conditions.*** Background plus project traffic volumes were estimated by adding the additional traffic generated by the project. Background plus project conditions were evaluated relative to background conditions in order to determine potential project adverse effects.

Methodology

This section presents the methods used to determine traffic conditions at the study intersections and the traffic effects of the project. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

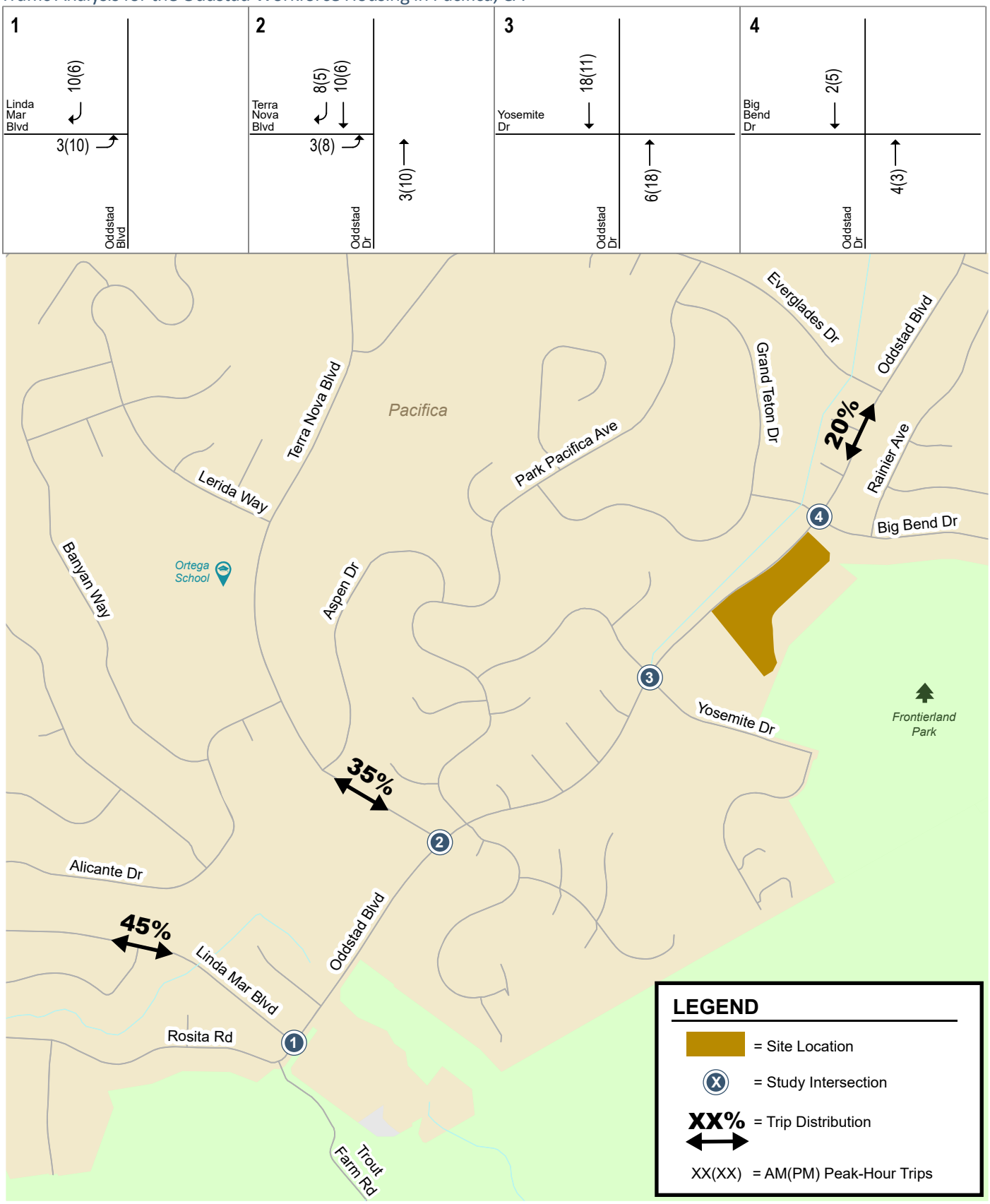


Figure 3
Project Trip Distribution and Assignment

Data Requirements

The data required for the analysis were obtained from traffic counts and Google Earth. The following data were collected from these sources:

- Peak hour intersection turning-movement volumes and
- Lane configurations

Intersection Level of Service Analysis Methodology

Traffic conditions at the study intersections were evaluated using level of service (LOS). Level of service is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays.

Level of service analysis at unsignalized intersections is generally used to determine the need for modification in the type of intersection control (i.e., all-way stop or signalization). As part of the evaluation, traffic volumes, and delays are evaluated to determine if the existing intersection control is appropriate.

For unsignalized intersections, level of service depends on the average delay experienced by vehicles on the stop-controlled approaches. Thus, for all-way stop controlled intersections, level of service is determined by the average delay for all movements through the intersection. For side street stop-controlled intersections (two-way or T-intersections), operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets. For side street stop-controlled intersections, the level of service is reported based on the average delay for the worst approach. The level of service definitions for unsignalized intersections is shown in Table 3. This study utilizes Synchro software to determine intersection levels of service based on the *Highway Capacity Manual (HCM)* methodology for unsignalized intersection.

Table 3
Unsignalized Intersection Level of Service Definitions Based on Average Delay

Level of Service	Description	Average Delay Per Vehicle (Sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, *2000 Highway Capacity Manual* (Washington, D.C., 2000) p17-2.

Intersection Level of Service Standards

The City of Pacifica do not have an adopted level of service standard for unsignalized intersections. However, LOS D is typically considered acceptable for operational conditions.

Intersection Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections were obtained from Google Earth (see Figure 4).

Existing Traffic Volumes

Existing AM and PM peak-hour traffic volumes were obtained from new traffic count data, collected in February and March 2022 (see Appendix A). New traffic counts were also conducted at a nearby intersection (Seville Drive/Adobe Drive and Linda Mar Boulevard) with recent pre-Covid counts conducted in June 2019. Based on the comparison of the new and previous counts, the existing volumes are greater than the pre-Covid traffic volumes. Therefore, it can be assumed that the traffic conditions in the study area have returned to normal (pre-Covid conditions) and no adjustments were made to the new counts. The existing volumes are shown in Figure 5.

Background Traffic Volumes

Background AM and PM peak-hour traffic volumes (see Figure 6) were estimated by adding to existing traffic volumes the trips generated by nearby planned developments in the vicinity of the project. Based on a list of planned developments in the City of Pacifica, there are two planned residential projects in the Linda Mar area, approximately 2.2 miles southwest of the site: Hillside Meadows Subdivision with up to 36 townhome units and Higgins Subdivision with up to 125 single family housing units. The trips generated by the Hillside Meadows Subdivision and Higgins Subdivision projects were assigned to the study intersections based on the trip generation rates and distribution pattern presented in the traffic impact analysis for the developments. Trip generation estimates for the background developments are included in Appendix B.

Project Traffic Volumes

Project trips were added to existing and background traffic volumes to obtain existing plus project traffic volumes (see Figure 7) and background plus project traffic volumes (see Figure 8). The estimates of traffic volumes for all scenarios are tabulated in Appendix B.

Intersection Levels of Service

The results of intersection level of service analysis (see Table 4) show that all study intersections would operate at an acceptable level of service under existing, background, and project conditions. The intersection levels of service calculation sheets are included in Appendix C.

Vehicular Site Access and On-Site Circulation

The site access and circulation evaluations are based on the site plan prepared by Seidel Architects dated May 11, 2021 (see Figure 2). Site access was evaluated to determine the adequacy of the site's driveway. On-site vehicular circulation and parking layout were reviewed in accordance with generally accepted traffic engineering standards and transportation planning principles.

Vehicular Site Access

As proposed, vehicular access to the project site would be provided via a new driveway located 100 feet north of the existing driveway for the school on Oddstad Boulevard. The project plans to eliminate the existing driveway.

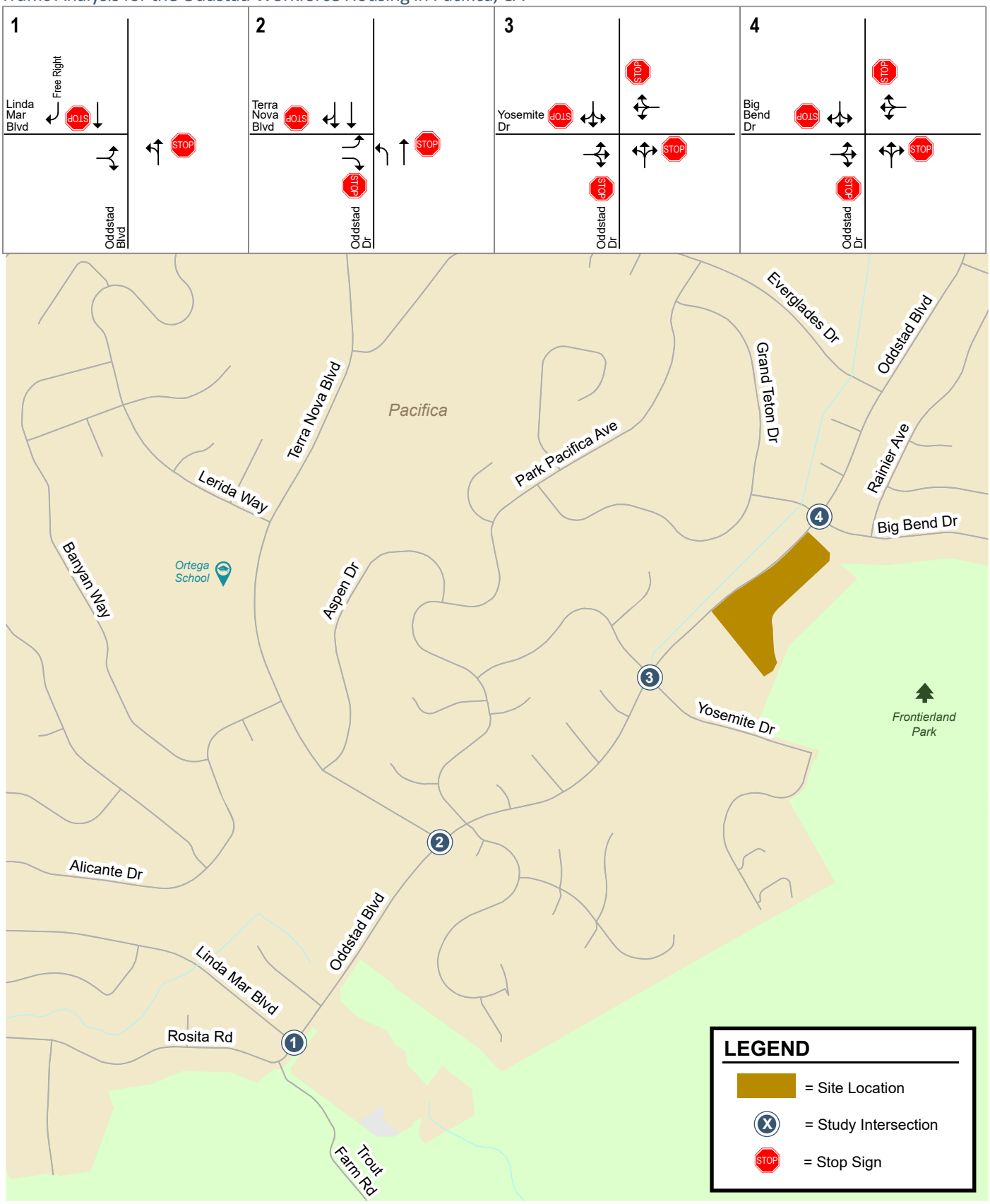


Figure 4
Existing Lane Configurations

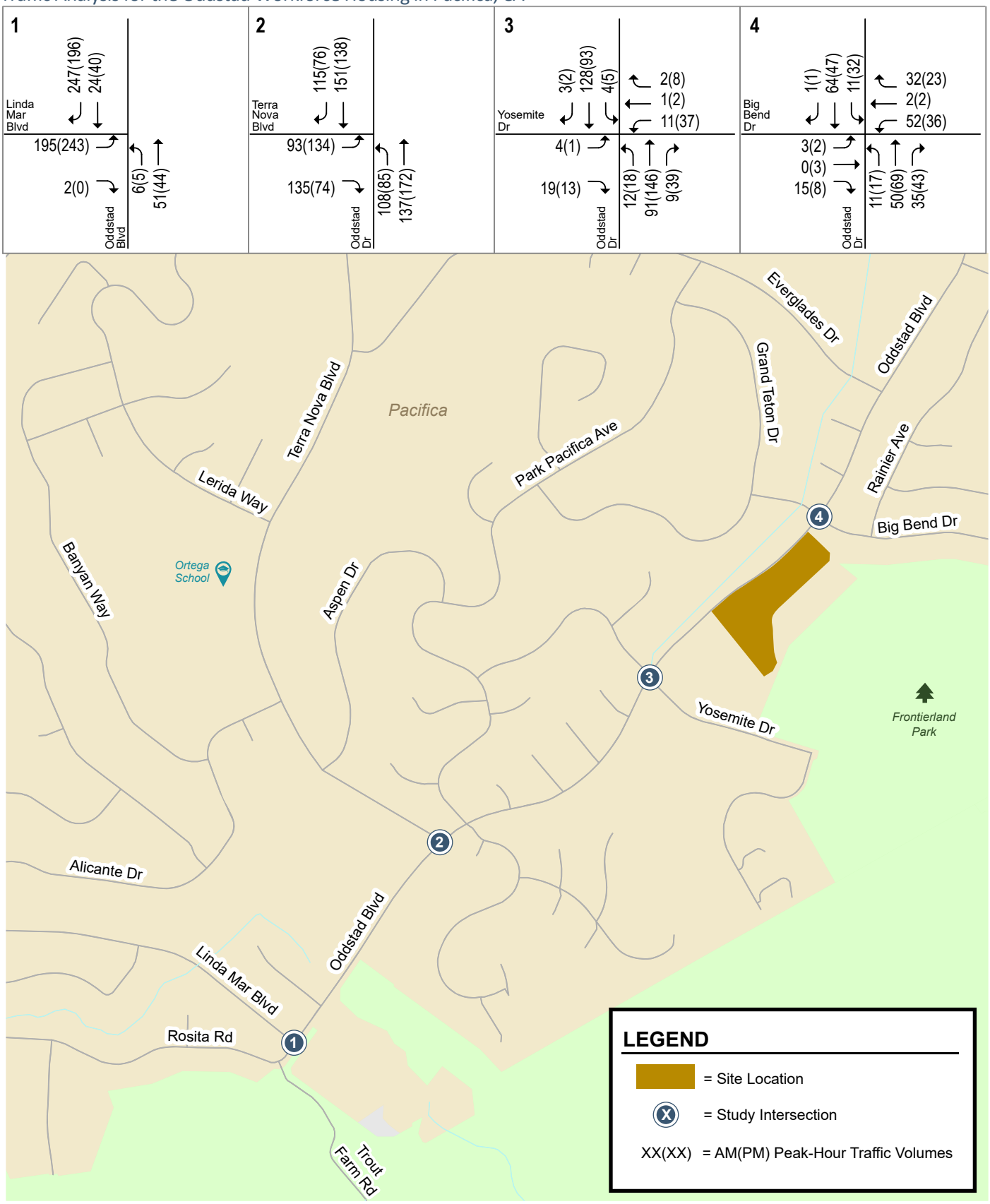


Figure 5
Existing Traffic Volumes

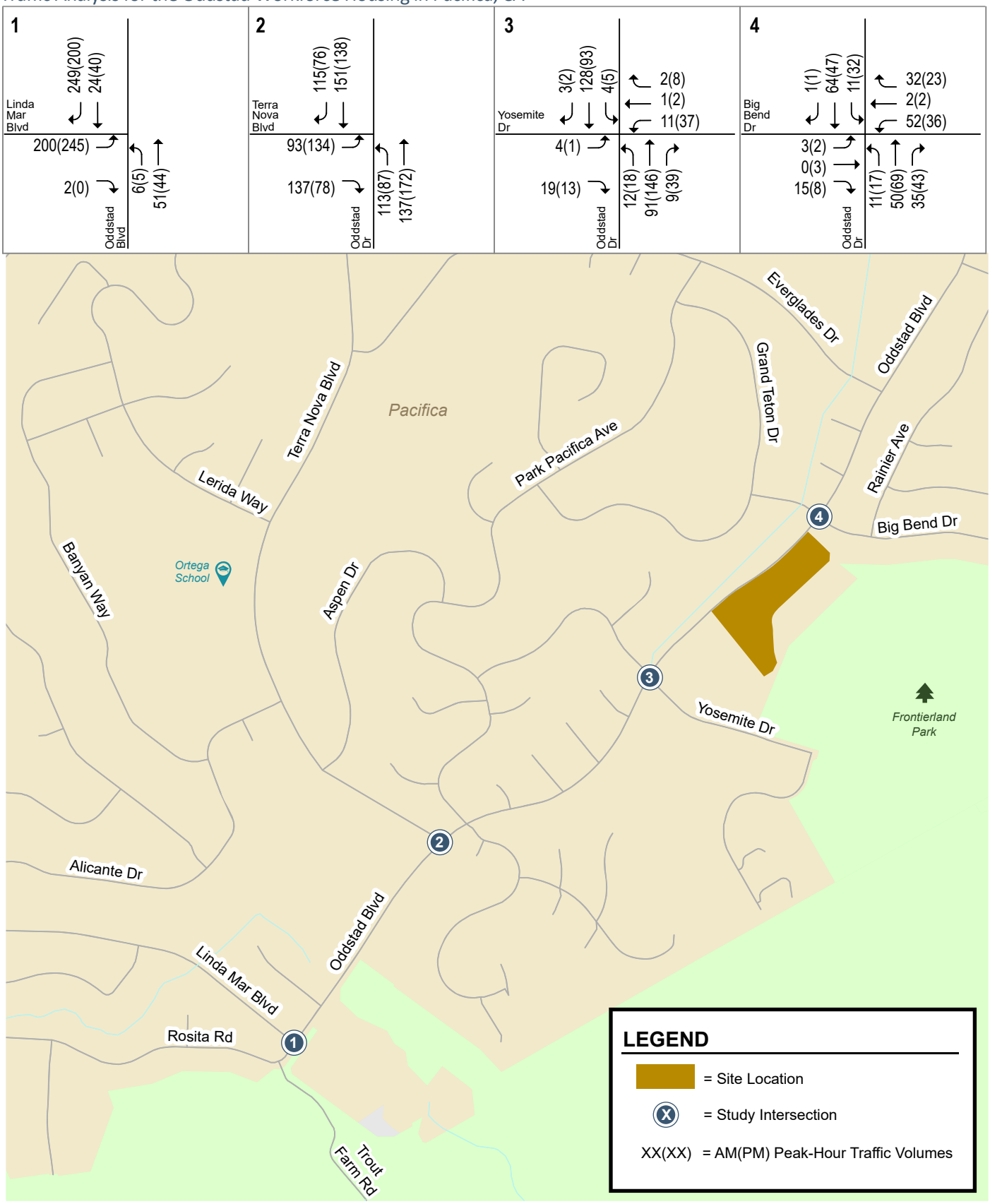


Figure 6
Background Traffic Volumes

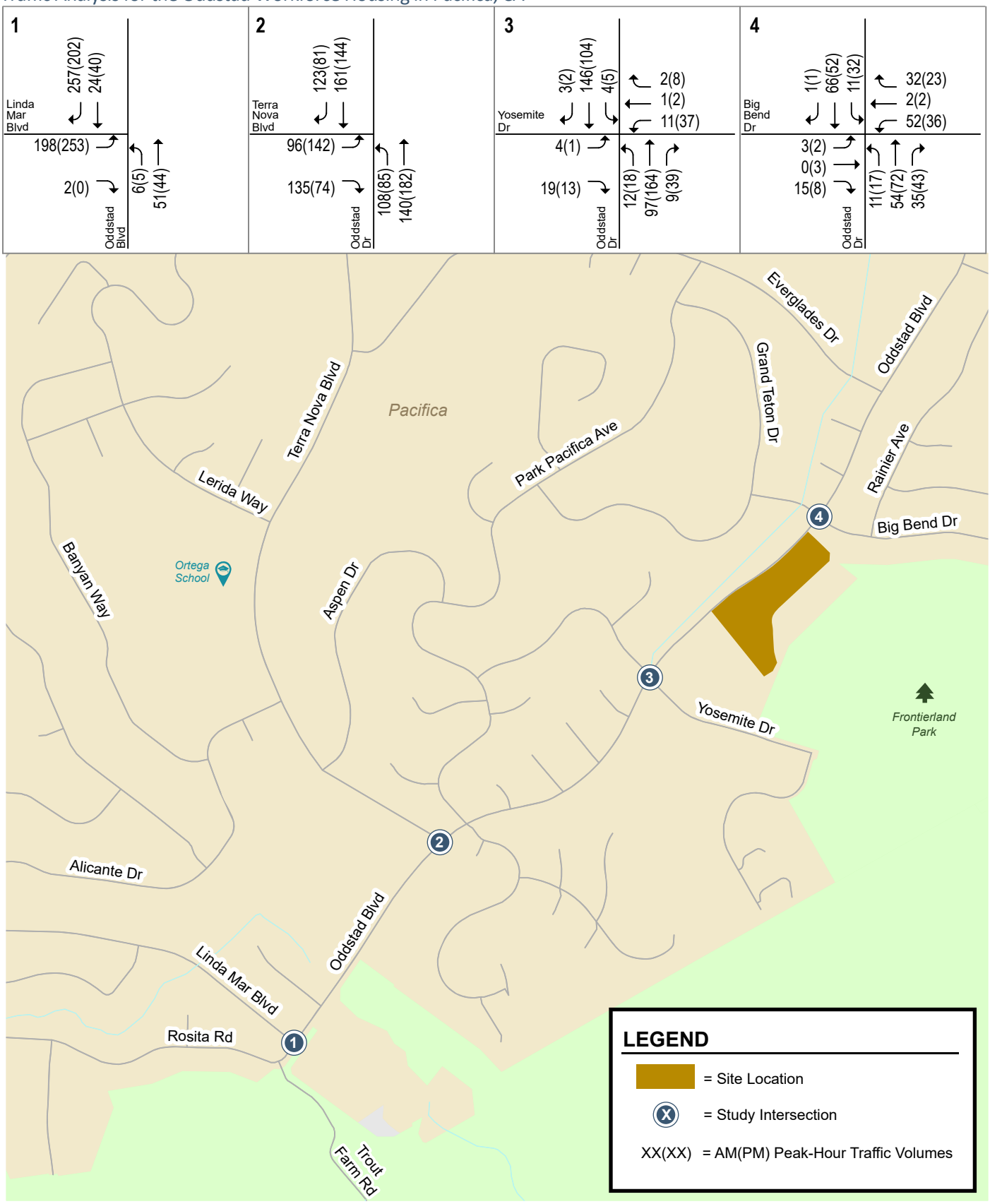


Figure 7
Existing Plus Project Traffic Volumes

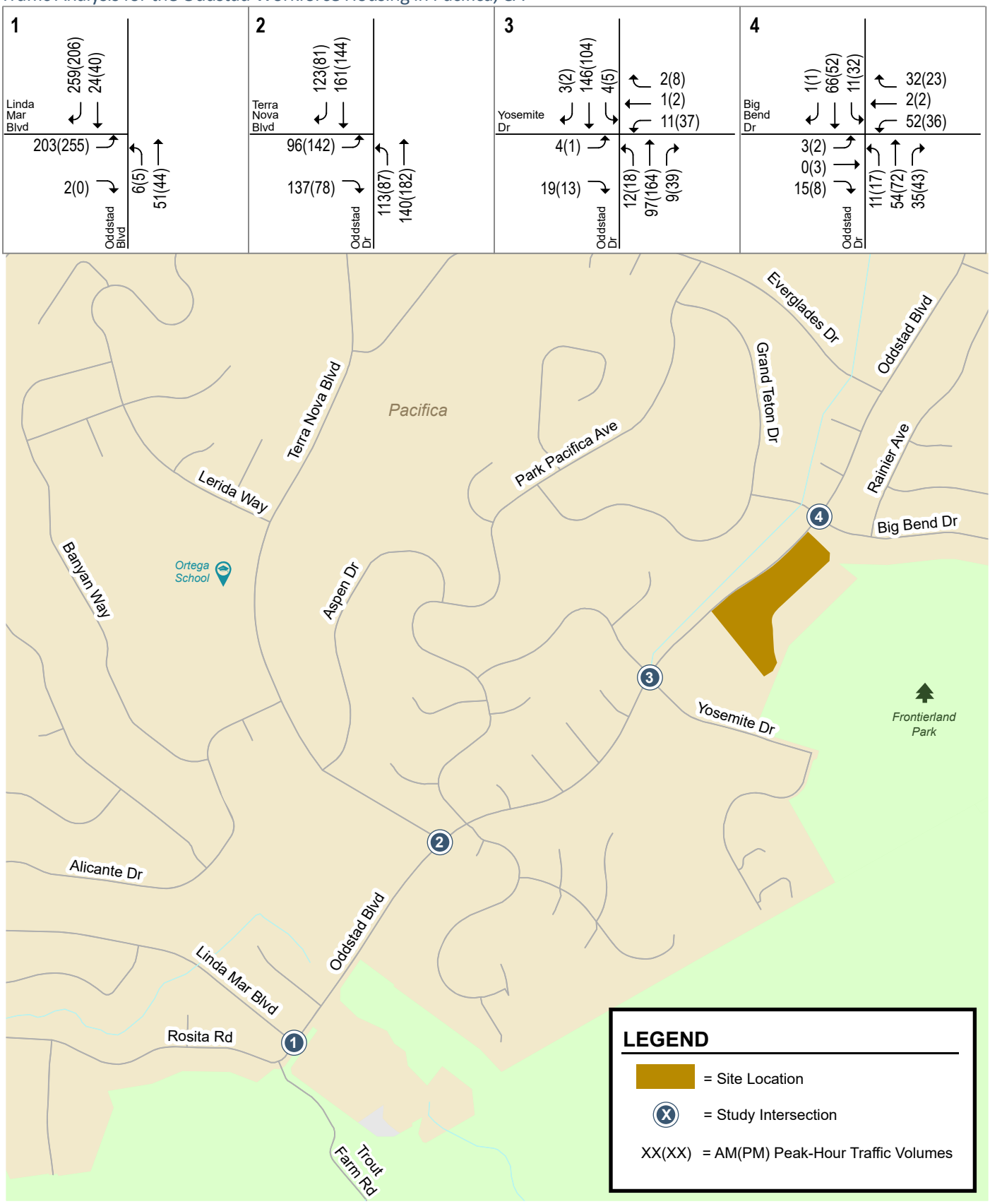


Figure 8
Background Plus Project Traffic Volumes

Table 4
Intersection Level of Service Summary

#	Intersection	Control	Peak Hour	Existing No Project Avg. Delay (sec)	LOS	Existing Plus Project Avg. Delay (sec)	LOS	Incr. in Delay (sec)	Background No Project Avg. Delay (sec)	LOS	Background Plus Project Avg. Delay (sec)	LOS	Incr. in Delay (sec)
1	Oddstad Blvd & Linda Mar Blvd	TWSC	AM	10.1	B	10.1	B	0.0	10.1	B	10.1	B	0.0
			PM	10.3	B	10.4	B	0.1	10.4	B	10.5	B	0.1
2	Oddstad Blvd & Terra Nova Blvd	AWSC	AM	9.8	A	9.9	A	0.1	9.8	A	9.9	A	0.1
			PM	9.8	A	10.0	A	0.2	9.8	A	10.1	A	0.3
3	Oddstad Blvd & Yosemite Dr	AWSC	AM	7.8	A	8.0	A	0.2	7.8	A	8.0	A	0.2
			PM	8.2	A	8.4	A	0.2	8.2	A	8.4	A	0.2
4	Oddstad Blvd & Big Bend Dr	AWSC	AM	7.7	A	7.7	A	0.0	7.7	A	7.7	A	0.0
			PM	7.8	A	7.8	A	0.0	7.8	A	7.8	A	0.0

Notes:
AWSC = all-way stop control, TWSC = two-way stop control

According to the City of Pacifica municipal code, driveways serving two or more units shall be a minimum of 10 feet in width for one-way traffic and 20 feet in width for two-way traffic. The driveway is shown to be 25 feet wide for two-way traffic, which meets this requirement.

Sight Distance at the Driveway

The project driveway should be free and clear of any obstructions to provide adequate sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and vehicles and bicycles traveling Oddstad Boulevard. Any landscaping and signage should be located in such a way to ensure an unobstructed view for drivers exiting the site. Providing the appropriate sight distance reduces the likelihood of a collision at a driveway or intersection and provides drivers with the ability to exit a driveway or locate sufficient gaps in traffic. The minimum acceptable sight distance is considered the Caltrans stopping sight distance. Sight distance requirements vary depending on roadway speeds. For driveways on Oddstad Boulevard, which has a posted speed limit of 30 mph, the Caltrans stopping sight distance is 250 feet (based on a design speed of 35 mph). Thus, a driver must be able to see 250 feet both ways along Oddstad Boulevard in order to stop and avoid a collision. According to the site plan, the project plans to keep the existing trees near the proposed driveway. These trees are tall and would not be an obstruction for sight distance. Also, there is no other existing landscaping or other visual obstructions along the project frontage that could obscure sight distance at the project driveways. The site plan also shows that no new landscaping would be added along the project frontage on Oddstad Boulevard. On-street parking is allowed on Oddstad Boulevard. Hexagon recommends painting 30 feet of red curb to the left (south) of the driveway in order to prevent vehicles from parking near the driveway and causing an obstruction of view.

On-Site Circulation

The driveway would provide access to the drive aisle that loops around the parking spaces of the project site. The 90-degree parking spaces measure 9 feet wide by 19 feet long for standard parking spaces and 7.5 feet wide by 16.5 to 19 feet for compact spaces. The City's standards require 90-degree full-size parking spaces be 9 feet wide by 19 feet long and compact spaces to be 7.5 feet wide and 16 feet long. The parking spaces meet these standards.

According to the site plan, the two-way drive aisle within the parking lot measures 25 feet wide. The City's standard minimum width for two-way drive aisles is 25 feet where 90-degree parking is

provided. Therefore, the drive aisle would provide adequate on-site circulation and meet the City's drive aisle width requirement.

The parking lots are designed for efficient circulation. The site plan shows two dead-end courts extending from the main circulation aisle. These courts serve motor courts in front of some of the units and also provide emergency vehicle access to the front of the units. These dead-end motor courts do not serve circulation through the site, and, therefore, would not present a problem for on-site circulation.

Truck Access and Circulation

The project site plan was reviewed for truck access using truck turning-movement templates for a SU-30 truck type (single unit trucks), which represents small emergency vehicles, garbage trucks, and small to medium delivery trucks. The site plan shows two trash enclosures toward the back of the parking lots. Based on the site plan, there would be adequate space for garbage trucks to maneuver within the site to access the trash enclosures. Maneuverability within the site also is adequate for emergency vehicles.

Pedestrian and Bicycle Access and Circulation

Pedestrian access to the project site would be provided via the existing sidewalks along the project frontage on Oddstad Boulevard and the crosswalks at the adjacent intersections at Yosemite Drive, Big Bend Drive, and Terra Nova Boulevard. Within the site, sidewalks would be provided throughout the site and along the drive aisles. At the project driveway, the site plan does not show whether curb ramps would be provided. The project should provide curb ramps that meet current ADA standards.

Bicycle access would be provided via bike lanes on Oddstad Boulevard, Terra Nova Boulevard, and Linda Mar Boulevard in the project vicinity. Within the site, the project would provide secure bicycle storage in the north and south ends of the site for residents. The project would also provide two bicycle racks (4 short-term bicycle spaces) in front of the office building for visitors.

The nearest school, Ortega Elementary School, is located 0.8 mile from the project site. It can be accessed by foot via the sidewalks on Oddstad Boulevard and Terra Nova Boulevard and the crosswalks at the Oddstad Boulevard/Terra Nova Boulevard intersection. Terra Nova High School is located 1.2 miles from the project site. Although it is not within a typical walking distance, continuous bike lanes are presented on Oddstad Boulevard and Terra Nova Boulevard between the site and the school.

There are also bus stops and a strip mall located at the at the Oddstad Boulevard/Terra Nova Boulevard intersection, approximately 0.5 mile from the project site. They can be accessed by foot via the sidewalks on Oddstad Boulevard and the crosswalks at the Oddstad Boulevard/Terra Nova Boulevard intersection.

Overall, continuous pedestrian facilities are present between the site and the surrounding land uses, including schools, restaurants, retail stores, and bus stops in the area.

Parking

The Pacifica parking code requires 1.5 spaces for each one-bedroom unit, 2.0 spaces for each two or three-bedroom unit, and 0.25 guest spaces per unit. The project proposes 32 one-bedroom units and 38 two-/three-bedroom units. This calculates to a parking requirement of 142 spaces. The

project proposes to provide 142 parking spaces in the residential area, which meets the parking requirement.

Pacifica does not have a standard for bicycle parking. The project proposes to provide two bicycle storage areas that can accommodate 36 bicycles. The townhome units could store bicycles within their parking garages. The project would also provide a storage room within each apartment building, which could be used to store bicycles. The provided long-term bicycle storage would encourage residents to own bikes. Some residents may choose to bicycle to work, as some of the schools are within reasonable biking distance. The project would also provide two bicycle racks (4 short-term bicycle spaces) in front of the office building for visitors.

Restriped Parking Lot Analysis

In addition to the project site, the project proposes to restripe the existing parking lots adjacent to the play fields. The site plan shows that the existing parking lots would be restriped to have 55 45-degree parking spaces and one-way drive aisle circulation with no dead-ends. The newly striped parking lots would continue to utilize the existing driveway on Oddstad Boulevard. Currently, the existing driveway does not have curb ramps connecting to the sidewalks, making it non-compliant with ADA standards. The driveway should be rebuilt to meet current ADA standards.

The City's standard size for 45-degree parking spaces is 9 feet wide by 19 feet long with a 15-foot wide drive aisle. The proposed restriped parking spaces measure 9 feet wide by 22 feet long with a 19-foot wide drive aisle. Thus, the design meets the City standard.

Conclusions

The proposed Oddstad Workforce Housing development would generate fewer than 40 trips during the AM and PM peak hours. The number of added trips to Oddstad Boulevard would be minimal and unlikely to be noticed by existing residents. The added project trips would not create a noticeable change in intersection operations at the nearby intersections. Also, the project trips would be fewer than the previously occupied Oddstad Elementary School. Parking would be adequate as it would provide a sufficient number of parking spaces to meet the City requirement.

Because the units are intended to be occupied by employees working in Pacifica schools and Pacifica, the project could reduce regional vehicle miles traveled. However, a worst-case assumption is that 25 of the residential units are leased to the general public. In that case, the VMT impact would be significant and unavoidable.

According to the site plan, the vehicular site access would be adequate. There would be no issues regarding sight distance provided some red curb is painted. The parking stall dimensions are shown to meet City standards. There are no issues that would arise with the current design of the parking spaces adjacent to the site. However, Hexagon does make the following recommendations resulting from the vehicle site access and circulation and the restriped parking lot.

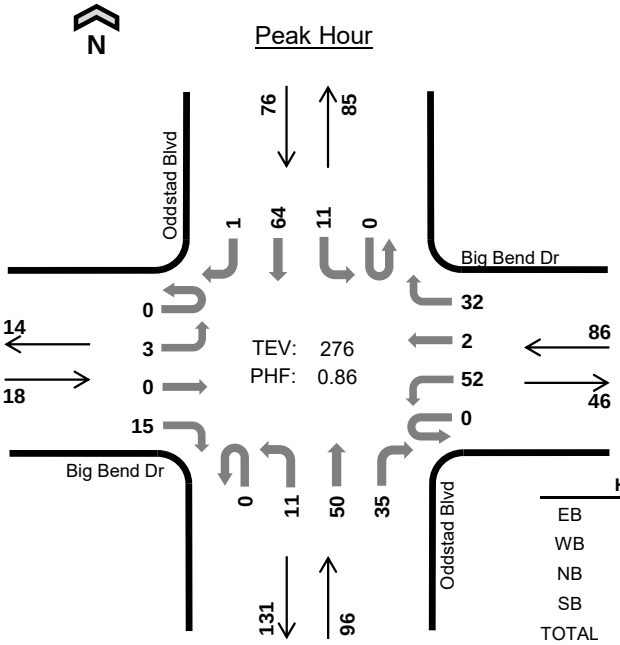
- Provide painted red curb 30 feet to the left (south) of the proposed driveway on Oddstad Boulevard to ensure sufficient sight distance.
- Install curb ramps that meet current ADA standards at the project driveway and the existing driveway to the play field parking lots.

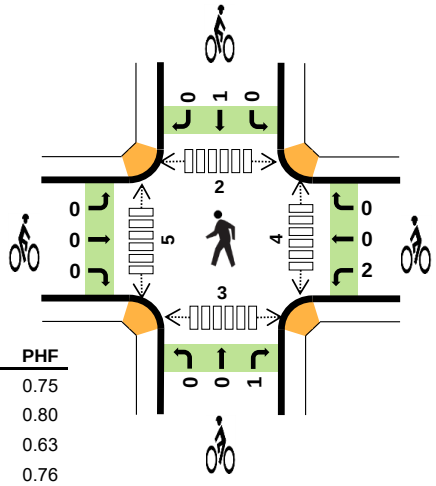
Appendix A

Traffic Counts

Oddstad Blvd
Big Bend Dr

Date: 02-08-2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	0.0%	0.75
WB	0.0%	0.80
NB	3.1%	0.63
SB	1.3%	0.76
TOTAL	1.4%	0.86

Two-Hour Count Summaries

Interval Start	Big Bend Dr Eastbound				Big Bend Dr Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	3	0	5	0	4	0	0	9	2	0	1	7	1	32	0
7:15 AM	0	1	1	3	0	6	0	11	0	0	6	3	0	3	0	0	34	0
7:30 AM	0	2	0	4	0	5	0	17	0	2	2	0	0	0	4	0	36	0
7:45 AM	**0**	**0**	**0**	**4**	**0**	**14**	**1**	**12**	**0**	**2**	**3**	**1**	**0**	**3**	**15**	**0**	**55**	157
8:00 AM	**0**	**1**	**0**	**1**	**0**	**16**	**0**	**7**	**0**	**2**	**10**	**8**	**0**	**1**	**15**	**0**	**61**	186
8:15 AM	**0**	**1**	**0**	**5**	**0**	**17**	**1**	**7**	**0**	**5**	**17**	**10**	**0**	**0**	**17**	**0**	**80**	232
8:30 AM	**0**	**1**	**0**	**5**	**0**	**5**	**0**	**6**	**0**	**2**	**20**	**16**	**0**	**7**	**17**	**1**	**80**	**276**
8:45 AM	0	0	0	2	0	8	0	8	0	1	7	5	0	6	11	0	48	269
Count Total	0	6	1	27	0	76	2	72	0	14	74	45	0	21	86	2	426	0
Peak Hour All	**0**	**3**	**0**	**15**	**0**	**52**	**2**	**32**	**0**	**11**	**50**	**35**	**0**	**11**	**64**	**1**	**276**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**0**	**4**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**4%**	**3%**	**-**	**0%**	**2%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	1	*1*	0	0	0	0	*0*	2	1	0	2	*5*
7:15 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	2	0	1	*3*
7:30 AM	1	0	0	0	*1*	0	0	0	0	*0*	1	2	0	3	*6*
7:45 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**1**	*1*
8:00 AM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***	**3**	**2**	**2**	**1**	*8*
8:15 AM	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**1**	**0**	***3***	**1**	**1**	**0**	**0**	*2*
8:30 AM	**0**	**0**	**3**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**1**	***3***
8:45 AM	0	1	0	0	*1*	0	0	0	0	*0*	2	1	3	0	*6*
Count Total	1	1	4	2	*8*	0	2	1	1	*4*	9	11	5	9	*34*
Peak Hour	**0**	**0**	**3**	**1**	***4***	**0**	**2**	**1**	**1**	***4***	**4**	**5**	**2**	**3**	***14***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Big Bend Dr				Big Bend Dr				Oddstad Blvd				Oddstad Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
7:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	3
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**3**	**4**
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	5
Count Total	0	0	0	1	0	1	0	0	0	0	3	1	0	0	1	1	8	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**0**	**4**	**0**

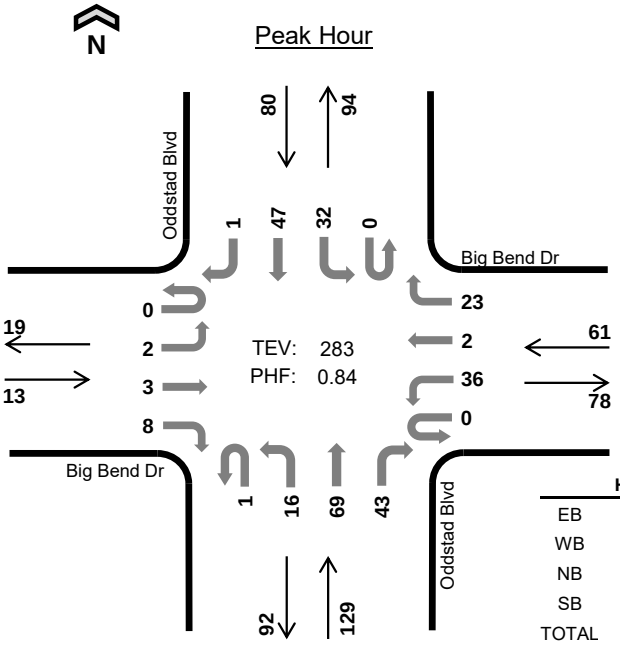
Two-Hour Count Summaries - Bikes

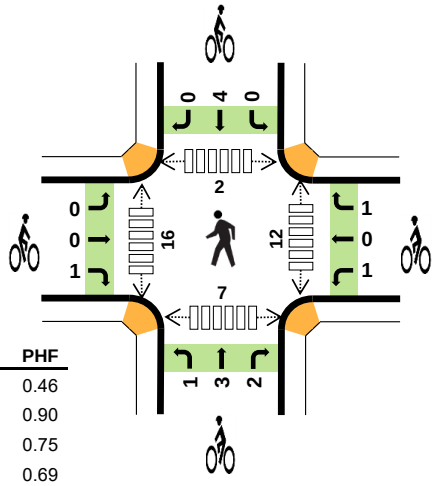
Interval Start	Big Bend Dr			Big Bend Dr			Oddstad Blvd			Oddstad Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	4
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	0	0	2	0	0	0	0	1	0	1	0	4	0
Peak Hour	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Oddstad Blvd
Big Bend Dr

Date: 02-08-2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.0%	0.46
WB	0.0%	0.90
NB	0.0%	0.75
SB	0.0%	0.69
TOTAL	0.0%	0.84

Two-Hour Count Summaries

Interval Start	Big Bend Dr Eastbound				Big Bend Dr Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	0	4	0	9	0	2	0	7	17	13	0	11	9	0	73	0
4:15 PM	**0**	**1**	**0**	**2**	**0**	**8**	**0**	**9**	**0**	**3**	**24**	**8**	**0**	**12**	**16**	**1**	**84**	0
4:30 PM	**0**	**0**	**0**	**1**	**0**	**8**	**0**	**7**	**0**	**3**	**18**	**10**	**0**	**10**	**9**	**0**	**66**	0
4:45 PM	**0**	**1**	**3**	**3**	**0**	**11**	**2**	**4**	**0**	**3**	**9**	**8**	**0**	**3**	**10**	**0**	**57**	280
5:00 PM	**0**	**0**	**0**	**2**	**0**	**9**	**0**	**3**	**1**	**7**	**18**	**17**	**0**	**7**	**12**	**0**	**76**	**283**
5:15 PM	0	0	0	1	0	8	1	1	0	0	12	8	0	8	11	0	50	249
5:30 PM	0	1	0	5	0	9	1	3	0	3	22	17	0	8	12	0	81	264
5:45 PM	0	0	0	2	0	8	0	4	1	4	15	21	0	7	10	1	73	280
Count Total	0	4	3	20	0	70	4	33	2	30	135	102	0	66	89	2	560	0
Peak Hour All	**0**	**2**	**3**	**8**	**0**	**36**	**2**	**23**	**1**	**16**	**69**	**43**	**0**	**32**	**47**	**1**	**283**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	1	0	*1*	5	1	0	1	*7*
4:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**3**	***5***	**3**	**5**	**2**	**0**	*10*
4:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**3**	*6*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**4**	**0**	***7***	**5**	**2**	**0**	**1**	*8*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***	**2**	**8**	**0**	**3**	***13***
5:15 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	2	0	1	*3*
5:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	3	4	1	2	*10*
5:45 PM	0	0	0	0	*0*	0	0	1	1	*2*	3	5	0	0	*8*
Count Total	0	0	0	0	*0*	1	2	8	5	*16*	23	28	3	11	*65*
Peak Hour	**0**	**0**	**0**	**0**	***0***	**1**	**2**	**6**	**4**	***13***	**12**	**16**	**2**	**7**	***37***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Big Bend Dr Eastbound				Big Bend Dr Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

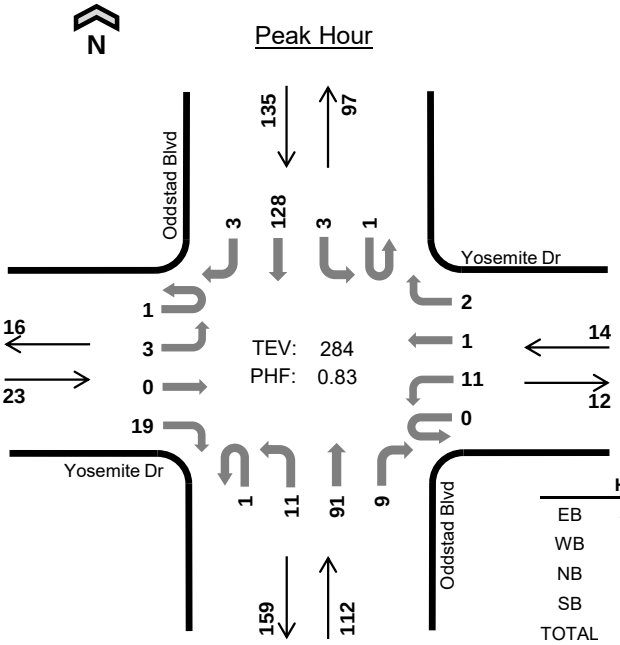
Two-Hour Count Summaries - Bikes

Interval Start	Big Bend Dr Eastbound			Big Bend Dr Westbound			Oddstad Blvd Northbound			Oddstad Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**3**	**0**	**5**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**1**	**1**	**0**	**1**	**1**	**2**	**1**	**0**	**0**	**0**	**7**	13
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**13**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	8
5:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	3
Count Total	0	0	1	1	0	1	1	5	2	0	5	0	16	0
Peak Hour	**0**	**0**	**1**	**1**	**0**	**1**	**1**	**3**	**2**	**0**	**4**	**0**	**13**	**0**

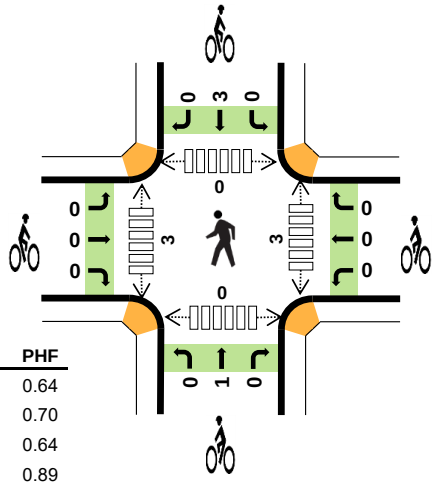
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Oddstad Blvd
Yosemite Dr

Date: 02-08-2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	4.3%	0.64
WB	7.1%	0.70
NB	2.7%	0.64
SB	0.7%	0.89
TOTAL	2.1%	0.83



Two-Hour Count Summaries

Interval Start		Yosemite Dr Eastbound				Yosemite Dr Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	2	0	2	0	2	0	0	0	2	8	2	0	1	12	0	31	0
7:15 AM		0	0	0	2	0	4	0	0	0	1	7	1	0	0	11	0	26	0
7:30 AM		0	1	0	4	0	2	0	2	0	2	2	3	0	0	12	2	30	0
7:45 AM		**1**	**0**	**0**	**4**	**0**	**4**	**0**	**0**	**0**	**2**	**6**	**1**	**0**	**0**	**32**	**0**	**50**	137
8:00 AM		**0**	**2**	**0**	**7**	**0**	**3**	**0**	**0**	**0**	**2**	**15**	**3**	**1**	**0**	**33**	**1**	**67**	173
8:15 AM		**0**	**1**	**0**	**6**	**0**	**1**	**1**	**0**	**1**	**3**	**33**	**2**	**0**	**2**	**35**	**1**	**86**	233
8:30 AM		**0**	**0**	**0**	**2**	**0**	**3**	**0**	**2**	**0**	**4**	**37**	**3**	**0**	**1**	**28**	**1**	**81**	**284**
8:45 AM		0	0	1	3	0	2	0	2	0	2	12	4	0	0	21	1	48	282
Count Total		1	6	1	30	0	21	1	6	1	18	120	19	1	4	184	6	419	0
Peak Hour	**All**	**1**	**3**	**0**	**19**	**0**	**11**	**1**	**2**	**1**	**11**	**91**	**9**	**1**	**3**	**128**	**3**	**284**	**0**
	HV	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**0**	**6**	**0**
	HV%	**100%**	**0%**	**-**	**0%**	**-**	**0%**	**0%**	**50%**	**0%**	**0%**	**2%**	**11%**	**0%**	**0%**	**1%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	1	0	*1*	0	0	0	0	*0*	0	1	0	0	*1*
7:15 AM	0	1	1	0	*2*	0	0	0	0	*0*	1	2	1	0	*4*
7:30 AM	0	0	0	1	*1*	0	0	0	0	*0*	1	3	0	0	*4*
7:45 AM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
8:15 AM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**2**	***3***	**2**	**2**	**0**	**0**	*4*
8:30 AM	**0**	**1**	**2**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**0**	**0**	***1***
8:45 AM	0	0	1	1	*2*	0	0	0	0	*0*	3	1	0	0	*4*
Count Total	1	2	6	3	*12*	0	0	1	3	*4*	8	10	1	0	*19*
Peak Hour	**1**	**1**	**3**	**1**	***6***	**0**	**0**	**1**	**3**	***4***	**3**	**3**	**0**	**0**	***6***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Yosemite Dr				Yosemite Dr				Oddstad Blvd				Oddstad Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	2	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
7:45 AM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	6
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**6**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2	7
Count Total	1	0	0	0	0	1	0	1	0	0	3	3	0	0	2	1	12	0
Peak Hour	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**1**	**0**	**6**	**0**

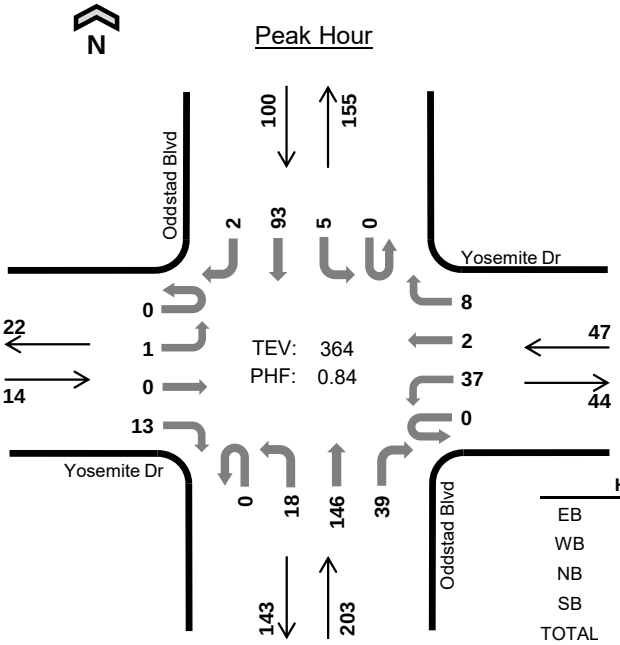
Two-Hour Count Summaries - Bikes

Interval Start	Yosemite Dr			Yosemite Dr			Oddstad Blvd			Oddstad Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	1
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**3**	4
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Count Total	0	0	0	0	0	0	0	1	0	0	3	0	4	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**4**	**0**

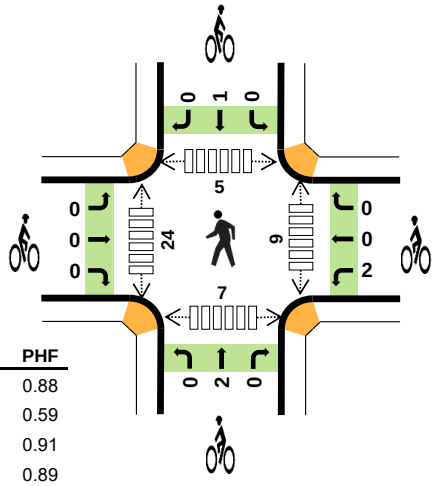
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Oddstad Blvd
Yosemite Dr

Date: 02-08-2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.0%	0.88
WB	0.0%	0.59
NB	0.0%	0.91
SB	0.0%	0.89
TOTAL	0.0%	0.84



Two-Hour Count Summaries

Interval Start	Yosemite Dr Eastbound				Yosemite Dr Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	1	0	3	0	1	0	4	39	7	0	0	22	1	78	0
4:15 PM	0	0	0	3	0	11	0	0	1	3	38	10	0	0	21	0	87	0
4:30 PM	0	1	2	6	0	6	0	2	0	3	31	9	0	1	23	1	85	0
4:45 PM	0	1	1	1	0	7	3	2	0	5	16	4	0	5	18	0	63	313
5:00 PM	**0**	**0**	**0**	**4**	**0**	**8**	**1**	**2**	**0**	**5**	**41**	**8**	**0**	**3**	**23**	**0**	**95**	330
5:15 PM	**0**	**0**	**0**	**2**	**0**	**3**	**1**	**2**	**0**	**1**	**26**	**10**	**0**	**0**	**20**	**2**	**67**	310
5:30 PM	**0**	**1**	**0**	**3**	**0**	**8**	**0**	**2**	**0**	**5**	**44**	**7**	**0**	**1**	**23**	**0**	**94**	319
5:45 PM	**0**	**0**	**0**	**4**	**0**	**18**	**0**	**2**	**0**	**7**	**35**	**14**	**0**	**1**	**27**	**0**	**108**	**364**
Count Total	0	3	3	24	0	64	5	13	1	33	270	69	0	11	177	4	677	0
Peak Hour All	**0**	**1**	**0**	**13**	**0**	**37**	**2**	**8**	**0**	**18**	**146**	**39**	**0**	**5**	**93**	**2**	**364**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	1	1	*2*	0	2	1	0	*3*
4:15 PM	0	0	0	0	*0*	0	0	1	2	*3*	2	2	3	0	*7*
4:30 PM	1	0	0	0	*1*	0	0	0	0	*0*	2	2	0	0	*4*
4:45 PM	0	0	0	0	*0*	2	2	4	2	*10*	2	4	1	0	*7*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**3**	**3**	**2**	**0**	*8*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	***2***	**1**	**7**	**1**	**2**	*11*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	***2***	**0**	**2**	**1**	**0**	*3*
5:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***	**5**	**12**	**1**	**5**	***23***
Count Total	1	0	0	0	*1*	2	4	8	6	*20*	15	34	10	7	*66*
Peak Hour	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**2**	**1**	***5***	**9**	**24**	**5**	**7**	***45***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Yosemite Dr Eastbound				Yosemite Dr Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

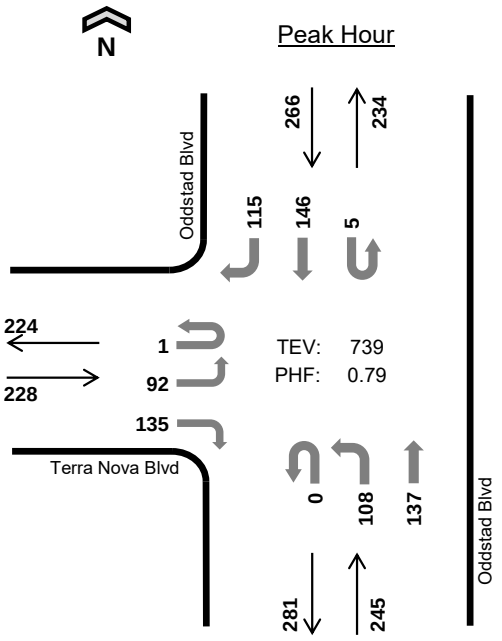
Two-Hour Count Summaries - Bikes

Interval Start	Yosemite Dr Eastbound			Yosemite Dr Westbound			Oddstad Blvd Northbound			Oddstad Blvd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	2	0	3	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	2	0	0	1	0	1	0	3	1	0	2	0	10	15
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	13
5:15 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	12
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	14
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**5**
Count Total	2	0	0	3	0	1	0	7	1	0	6	0	20	0
Peak Hour	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**5**	**0**

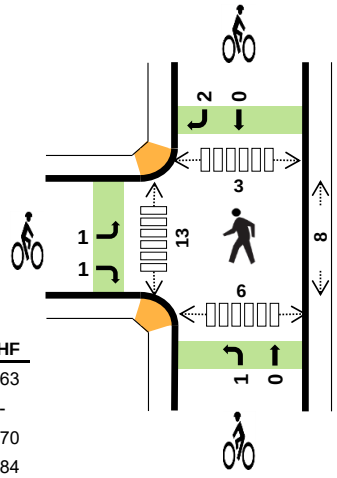
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Oddstad Blvd
Terra Nova Blvd

Date: 02-08-2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	4.4%	0.63
WB	-	-
NB	1.6%	0.70
SB	1.1%	0.84
TOTAL	2.3%	0.79



Two-Hour Count Summaries

Interval Start	Terra Nova Blvd Eastbound				n/a Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	6	0	2	0	0	0	0	0	6	12	0	0	0	16	18	60	0
7:15 AM	0	1	0	7	0	0	0	0	1	13	11	0	1	0	22	13	69	0
7:30 AM	0	9	0	7	0	0	0	0	0	16	10	0	0	0	16	21	79	0
7:45 AM	0	3	0	8	0	0	0	0	0	12	9	0	0	0	44	34	110	318
8:00 AM	**0**	**12**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**46**	**24**	**0**	**2**	**0**	**42**	**33**	**176**	434
8:15 AM	**0**	**22**	**0**	**45**	**0**	**0**	**0**	**0**	**0**	**32**	**56**	**0**	**1**	**0**	**33**	**45**	**234**	599
8:30 AM	**1**	**39**	**0**	**50**	**0**	**0**	**0**	**0**	**0**	**16**	**32**	**0**	**1**	**0**	**34**	**21**	**194**	714
8:45 AM	**0**	**19**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**14**	**25**	**0**	**1**	**0**	**37**	**16**	**135**	**739**
Count Total	1	111	0	159	0	0	0	0	1	155	179	0	6	0	244	201	1,057	0
Peak Hour All	**1**	**92**	**0**	**135**	**0**	**0**	**0**	**0**	**0**	**108**	**137**	**0**	**5**	**0**	**146**	**115**	**739**	**0**
Peak Hour HV	**0**	**2**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**1**	**2**	**17**	**0**
Peak Hour HV%	**0%**	**2%**	**-**	**6%**	**-**	**-**	**-**	**-**	**-**	**2%**	**1%**	**-**	**0%**	**-**	**1%**	**2%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	1	0	0	0	*1*	0	0	0	0	*0*	1	0	0	1	*2*
7:15 AM	1	0	1	0	*2*	1	0	0	1	*2*	3	0	2	1	*6*
7:30 AM	1	0	0	1	*2*	0	0	0	0	*0*	3	0	0	1	*4*
7:45 AM	1	0	0	0	*1*	0	0	0	1	*1*	1	2	0	1	*4*
8:00 AM	**2**	**0**	**2**	**1**	***5***	**0**	**0**	**1**	**0**	***1***	**1**	**6**	**2**	**0**	*9*
8:15 AM	**3**	**0**	**0**	**2**	***5***	**2**	**0**	**0**	**2**	***4***	**2**	**2**	**0**	**4**	*8*
8:30 AM	**2**	**0**	**2**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**3**	**3**	**1**	**0**	*7*
8:45 AM	**3**	**0**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**2**	**2**	**0**	**2**	***6***
Count Total	14	0	5	4	*23*	3	0	1	4	*8*	16	15	5	10	*46*
Peak Hr	**10**	**0**	**4**	**3**	***17***	**2**	**0**	**1**	**2**	***5***	**8**	**13**	**3**	**6**	***30***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Terra Nova Blvd				n/a				Oddstad Blvd				Oddstad Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	2	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	6
8:00 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**5**	10
8:15 AM	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**5**	13
8:30 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**4**	15
8:45 AM	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**17**
Count Total	0	4	0	10	0	0	0	0	0	2	3	0	0	0	2	2	23	0
Peak Hour	**0**	**2**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**1**	**2**	**17**	**0**

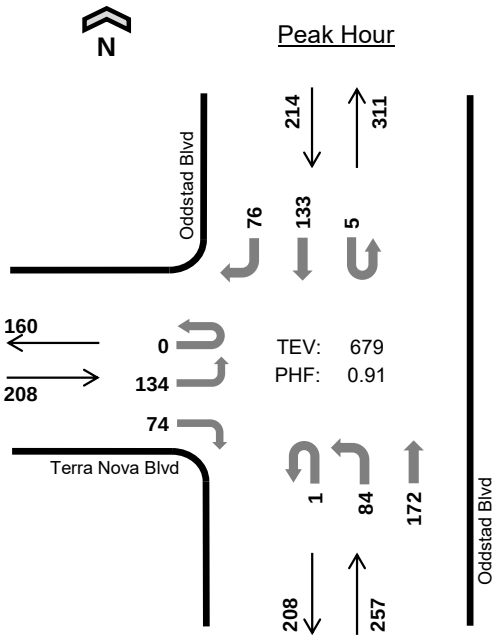
Two-Hour Count Summaries - Bikes

Interval Start	Terra Nova Blvd			n/a			Oddstad Blvd			Oddstad Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0	0	0	1	0	2	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	3
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	4
8:15 AM	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	6
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
Count Total	1	0	2	0	0	0	1	0	0	0	1	3	8	0
Peak Hour	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**5**	**0**

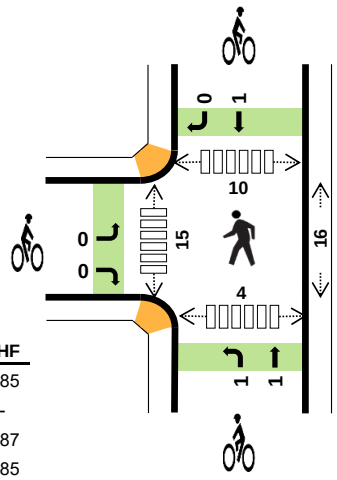
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Oddstad Blvd
Terra Nova Blvd

Date: 02-08-2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.5%	0.85
WB	-	-
NB	0.0%	0.87
SB	0.0%	0.85
TOTAL	0.1%	0.91



Two-Hour Count Summaries

Interval Start	Terra Nova Blvd Eastbound				n/a Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	27	0	23	0	0	0	0	1	22	42	0	0	0	24	26	165	0
4:15 PM	0	31	0	25	0	0	0	0	0	21	47	0	3	0	24	23	174	0
4:30 PM	0	30	0	18	0	0	0	0	0	22	36	0	0	0	33	22	161	0
4:45 PM	0	24	0	28	0	0	0	0	0	21	27	0	1	0	32	12	145	645
5:00 PM	**0**	**41**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**30**	**44**	**0**	**0**	**0**	**33**	**18**	**186**	666
5:15 PM	**0**	**22**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**20**	**34**	**0**	**2**	**0**	**28**	**13**	**140**	632
5:30 PM	**0**	**36**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**19**	**48**	**0**	**3**	**0**	**31**	**23**	**176**	647
5:45 PM	**0**	**35**	**0**	**17**	**0**	**0**	**0**	**0**	**1**	**15**	**46**	**0**	**0**	**0**	**41**	**22**	**177**	**679**
Count Total	0	246	0	168	0	0	0	0	2	170	324	0	9	0	246	159	1,324	0
Peak Hour All	**0**	**134**	**0**	**74**	**0**	**0**	**0**	**0**	**1**	**84**	**172**	**0**	**5**	**0**	**133**	**76**	**679**	**0**
Peak Hour HV	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
Peak Hour HV%	**-**	**0%**	**-**	**1%**	**-**	**-**	**-**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**-**	**0%**	**0%**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	0	0	1	*1*	1	0	1	1	*3*	5	6	2	1	*14*
4:15 PM	2	0	0	1	*3*	0	0	1	1	*2*	7	6	7	6	*26*
4:30 PM	0	0	0	0	*0*	0	0	0	0	*0*	3	2	4	2	*11*
4:45 PM	1	0	0	0	*1*	0	0	4	3	*7*	7	0	6	4	*17*
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**1**	***1***	**4**	**2**	**3**	**0**	*9*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**0**	***2***	**4**	**6**	**2**	**2**	*14*
5:30 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**2**	**4**	**1**	**2**	*9*
5:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**6**	**3**	**4**	**0**	***13***
Count Total	4	0	0	2	*6*	1	0	8	6	*15*	38	29	29	17	*113*
Peak Hr	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**2**	**1**	***3***	**16**	**15**	**10**	**4**	***45***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Terra Nova Blvd				n/a				Oddstad Blvd				Oddstad Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	3	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	5
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
5:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
Count Total	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	2	6	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

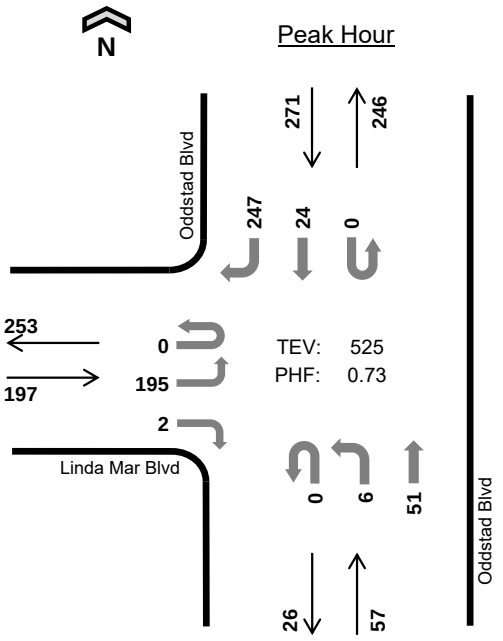
Two-Hour Count Summaries - Bikes

Interval Start	Terra Nova Blvd			n/a			Oddstad Blvd			Oddstad Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	1	0	0	0	0	1	3	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	4	0	0	3	0	7	12
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	10
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	10
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	10
5:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
Count Total	0	0	1	0	0	0	2	6	0	0	5	1	15	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**3**	**0**

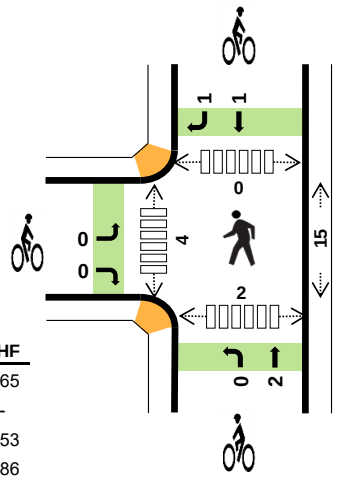
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Oddstad Blvd
Linda Mar Blvd

Date: 03/09/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	2.5%	0.65
WB	-	-
NB	0.0%	0.53
SB	3.3%	0.86
TOTAL	2.7%	0.73



Two-Hour Count Summaries

Interval Start	Linda Mar Blvd Eastbound				N/A Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	15	0	0	0	0	0	0	0	1	5	0	0	0	2	30	53	0
7:15 AM	0	15	0	0	0	0	0	0	0	0	4	0	0	0	2	36	57	0
7:30 AM	0	20	0	2	0	0	0	0	0	0	6	0	0	0	3	24	55	0
7:45 AM	**0**	**31**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**7**	**0**	**0**	**0**	**5**	**46**	**92**	257
8:00 AM	**0**	**55**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**13**	**0**	**0**	**0**	**6**	**59**	**136**	340
8:15 AM	**0**	**76**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**26**	**0**	**0**	**0**	**8**	**68**	**179**	462
8:30 AM	**0**	**33**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	**0**	**0**	**0**	**5**	**74**	**118**	**525**
8:45 AM	0	29	0	0	0	0	0	0	0	1	5	0	0	0	1	46	82	515
Count Total	0	274	0	4	0	0	0	0	0	8	71	0	0	0	32	383	772	0
Peak Hour All	**0**	**195**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**6**	**51**	**0**	**0**	**0**	**24**	**247**	**525**	**0**
Peak Hour HV	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**14**	**0**
Peak Hour HV%	**-**	**3%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**0%**	**0%**	**-**	**-**	**-**	**0%**	**4%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	0	*0*	0	0	1	0	*1*	2	0	0	0	*2*
7:15 AM	0	0	0	1	*1*	0	0	0	0	*0*	2	0	0	1	*3*
7:30 AM	1	0	0	1	*2*	0	0	0	0	*0*	3	2	0	0	*5*
7:45 AM	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**1**	**2**	***3***	**2**	**0**	**0**	**0**	*2*
8:00 AM	**1**	**0**	**0**	**3**	***4***	**0**	**0**	**1**	**0**	***1***	**5**	**1**	**0**	**0**	*6*
8:15 AM	**2**	**0**	**0**	**4**	***6***	**0**	**0**	**0**	**0**	***0***	**4**	**1**	**0**	**0**	*5*
8:30 AM	**2**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**4**	**2**	**0**	**2**	***8***
8:45 AM	0	0	0	4	*4*	0	0	0	0	*0*	1	0	0	0	*1*
Count Total	6	0	0	15	*21*	0	0	3	2	*5*	23	6	0	3	*32*
Peak Hr	**5**	**0**	**0**	**9**	***14***	**0**	**0**	**2**	**2**	***4***	**15**	**4**	**0**	**2**	***21***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Linda Mar Blvd				N/A				Oddstad Blvd				Oddstad Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	5
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**4**	9
8:15 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**6**	14
8:30 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**14**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	16
Count Total	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	15	21	0
Peak Hour	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**14**	**0**

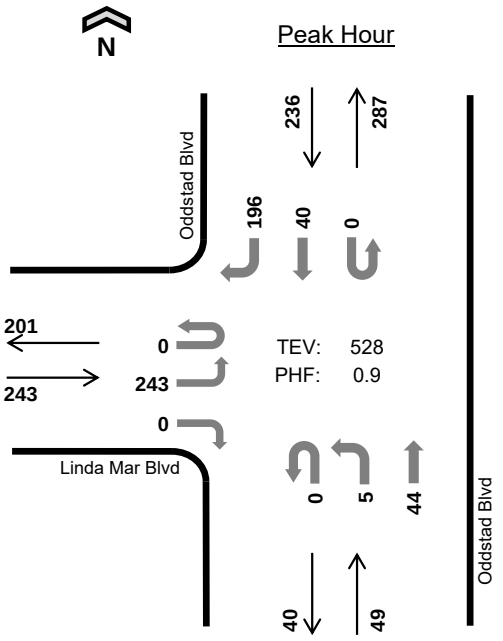
Two-Hour Count Summaries - Bikes

Interval Start	Linda Mar Blvd			N/A			Oddstad Blvd			Oddstad Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**3**	4
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	4
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Count Total	0	0	0	0	0	0	0	3	0	0	1	1	5	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**4**	**0**

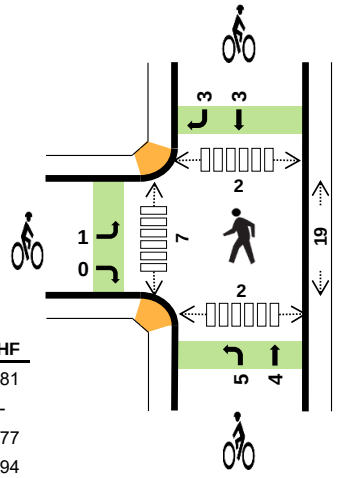
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Oddstad Blvd
Linda Mar Blvd

Date: 03/09/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	0.8%	0.81
WB	-	-
NB	0.0%	0.77
SB	0.4%	0.94
TOTAL	0.6%	0.90



Two-Hour Count Summaries

Interval Start	Linda Mar Blvd Eastbound				N/A Westbound				Oddstad Blvd Northbound				Oddstad Blvd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	53	0	0	0	0	0	0	0	1	16	0	0	0	7	49	126	0
4:15 PM	0	45	0	0	0	0	0	0	0	1	7	0	0	0	8	49	110	0
4:30 PM	**0**	**56**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**14**	**0**	**0**	**0**	**9**	**51**	**132**	0
4:45 PM	**0**	**57**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**9**	**0**	**0**	**0**	**4**	**53**	**124**	492
5:00 PM	**0**	**55**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**12**	**0**	**0**	**0**	**11**	**45**	**125**	491
5:15 PM	**0**	**75**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**16**	**47**	**147**	**528**
5:30 PM	0	60	0	0	0	0	0	0	0	1	3	0	0	0	7	42	113	509
5:45 PM	0	61	0	0	0	0	0	0	0	1	4	0	0	0	5	32	103	488
Count Total	0	462	0	0	0	0	0	0	0	9	74	0	0	0	67	368	980	0
Peak Hour All	**0**	**243**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**44**	**0**	**0**	**0**	**40**	**196**	**528**	**0**
Peak Hour HV	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**0**
Peak Hour HV%	**-**	**1%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0%**	**0%**	**-**	**-**	**-**	**0%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	3	0	1	0	*4*	6	2	0	1	*9*
4:15 PM	0	0	0	1	*1*	2	0	0	2	*4*	10	0	0	1	*11*
4:30 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***	**3**	**4**	**0**	**0**	*7*
4:45 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**4**	**2**	***6***	**2**	**0**	**0**	**1**	*3*
5:00 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**3**	**4**	***7***	**7**	**0**	**0**	**1**	*8*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**2**	**0**	***3***	**7**	**3**	**2**	**0**	***12***
5:30 PM	0	0	0	1	*1*	2	0	2	0	*4*	13	2	0	0	*15*
5:45 PM	0	0	0	0	*0*	0	0	4	1	*5*	5	0	0	1	*6*
Count Total	2	0	0	3	*5*	8	0	16	9	*33*	53	11	2	5	*71*
Peak Hr	**2**	**0**	**0**	**1**	***3***	**1**	**0**	**9**	**6**	***16***	**19**	**7**	**2**	**2**	***30***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Linda Mar Blvd				N/A				Oddstad Blvd				Oddstad Blvd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	3
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0
Peak Hour	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**0**

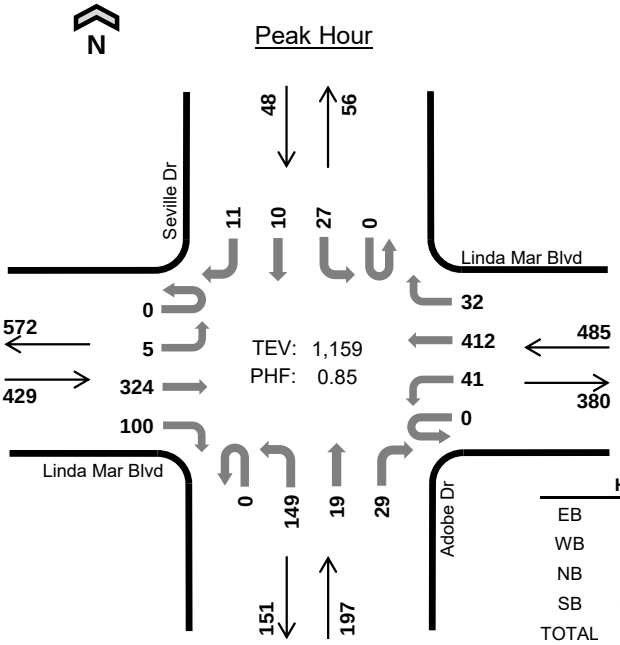
Two-Hour Count Summaries - Bikes

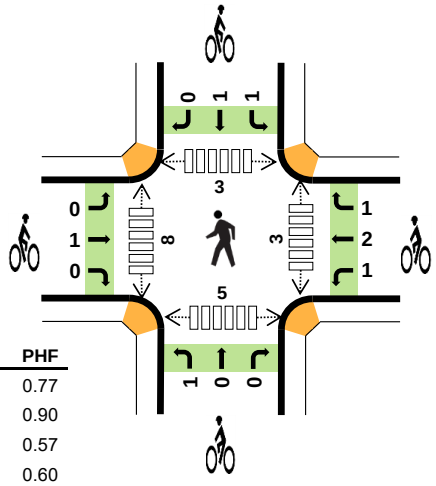
Interval Start	Linda Mar Blvd			N/A			Oddstad Blvd			Oddstad Blvd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	3	0	0	0	0	0	0	1	0	0	0	0	4	0
4:15 PM	2	0	0	0	0	0	0	0	0	0	2	0	4	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**0**	**2**	**6**	14
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**3**	**1**	**7**	17
5:15 PM	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**3**	**16**
5:30 PM	2	0	0	0	0	0	2	0	0	0	0	0	4	20
5:45 PM	0	0	0	0	0	0	2	2	0	0	1	0	5	19
Count Total	8	0	0	0	0	0	9	7	0	0	6	3	33	0
Peak Hour	**1**	**0**	**0**	**0**	**0**	**0**	**5**	**4**	**0**	**0**	**3**	**3**	**16**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Seville Dr
Linda Mar Blvd

Date: 03/09/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM





	HV %:	PHF
EB	1.4%	0.77
WB	1.9%	0.90
NB	2.0%	0.57
SB	4.2%	0.60
TOTAL	1.8%	0.85

Two-Hour Count Summaries

Interval Start	Linda Mar Blvd Eastbound				Linda Mar Blvd Westbound				Adobe Dr Northbound				Seville Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	16	3	0	2	62	2	0	19	0	2	0	2	1	0	111	0
7:15 AM	0	2	27	5	0	3	73	3	0	22	0	2	0	3	0	2	142	0
7:30 AM	0	1	41	17	0	3	79	2	0	31	0	3	0	2	0	3	182	0
7:45 AM	0	4	53	15	0	4	68	2	0	47	0	7	0	5	1	2	208	643
8:00 AM	**0**	**0**	**75**	**23**	**0**	**7**	**112**	**16**	**0**	**57**	**14**	**16**	**0**	**14**	**3**	**3**	**340**	872
8:15 AM	**0**	**2**	**109**	**28**	**0**	**11**	**102**	**10**	**0**	**29**	**1**	**7**	**0**	**11**	**5**	**2**	**317**	1,047
8:30 AM	**0**	**0**	**69**	**26**	**0**	**15**	**116**	**4**	**0**	**29**	**3**	**4**	**0**	**2**	**1**	**3**	**272**	1,137
8:45 AM	**0**	**3**	**71**	**23**	**0**	**8**	**82**	**2**	**0**	**34**	**1**	**2**	**0**	**0**	**1**	**3**	**230**	**1,159**
Count Total	0	14	461	140	0	53	694	41	0	268	19	43	0	39	12	18	1,802	0
Peak Hour All	**0**	**5**	**324**	**100**	**0**	**41**	**412**	**32**	**0**	**149**	**19**	**29**	**0**	**27**	**10**	**11**	**1,159**	**0**
Peak Hour HV	**0**	**0**	**6**	**0**	**0**	**1**	**6**	**2**	**0**	**3**	**0**	**1**	**0**	**1**	**0**	**1**	**21**	**0**
Peak Hour HV%	**-**	**0%**	**2%**	**0%**	**-**	**2%**	**1%**	**6%**	**-**	**2%**	**0%**	**3%**	**-**	**4%**	**0%**	**9%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	1	0	*1*
7:15 AM	0	1	0	0	*1*	0	0	0	0	*0*	0	3	0	1	*4*
7:30 AM	1	2	0	0	*3*	0	0	0	0	*0*	0	0	0	4	*4*
7:45 AM	1	2	0	0	*3*	1	0	0	0	*1*	1	3	0	6	*10*
8:00 AM	**2**	**2**	**0**	**0**	***4***	**0**	**3**	**0**	**0**	***3***	**0**	**3**	**1**	**1**	*5*
8:15 AM	**3**	**4**	**1**	**1**	***9***	**0**	**0**	**0**	**2**	***2***	**0**	**1**	**0**	**0**	*1*
8:30 AM	**0**	**1**	**3**	**0**	***4***	**1**	**0**	**1**	**0**	***2***	**1**	**2**	**0**	**0**	*3*
8:45 AM	**1**	**2**	**0**	**1**	***4***	**0**	**1**	**0**	**0**	***1***	**2**	**2**	**2**	**4**	***10***
Count Total	8	14	4	2	*28*	2	4	1	2	*9*	4	14	4	16	*38*
Peak Hour	**6**	**9**	**4**	**2**	***21***	**1**	**4**	**1**	**2**	***8***	**3**	**8**	**3**	**5**	***19***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Linda Mar Blvd Eastbound				Linda Mar Blvd Westbound				Adobe Dr Northbound				Seville Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
7:45 AM	0	0	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3	7
8:00 AM	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	11
8:15 AM	**0**	**0**	**3**	**0**	**0**	**1**	**2**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**9**	19
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	20
8:45 AM	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**21**
Count Total	0	0	8	0	0	3	9	2	0	3	0	1	0	1	0	1	28	0
Peak Hour	**0**	**0**	**6**	**0**	**0**	**1**	**6**	**2**	**0**	**3**	**0**	**1**	**0**	**1**	**0**	**1**	**21**	**0**

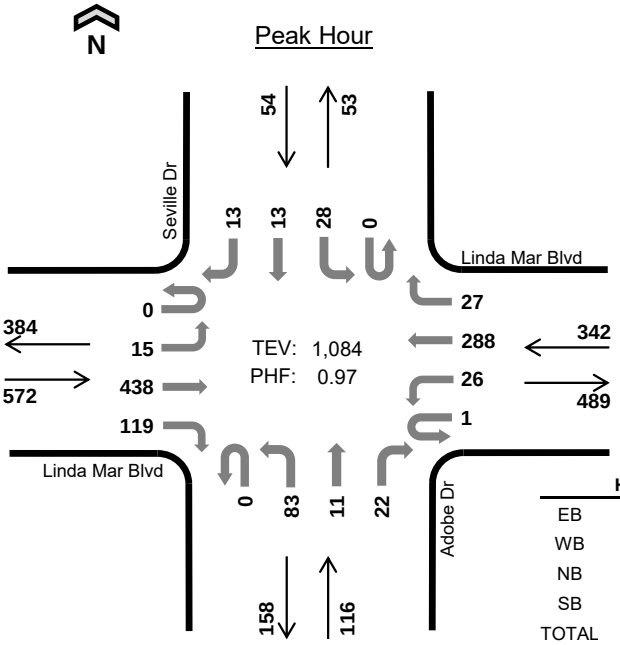
Two-Hour Count Summaries - Bikes

Interval Start	Linda Mar Blvd Eastbound			Linda Mar Blvd Westbound			Adobe Dr Northbound			Seville Dr Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	1
8:00 AM	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	4
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**	6
8:30 AM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	8
8:45 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**8**
Count Total	0	2	0	1	2	1	1	0	0	1	1	0	9	0
Peak Hour	**0**	**1**	**0**	**1**	**2**	**1**	**1**	**0**	**0**	**1**	**1**	**0**	**8**	**0**

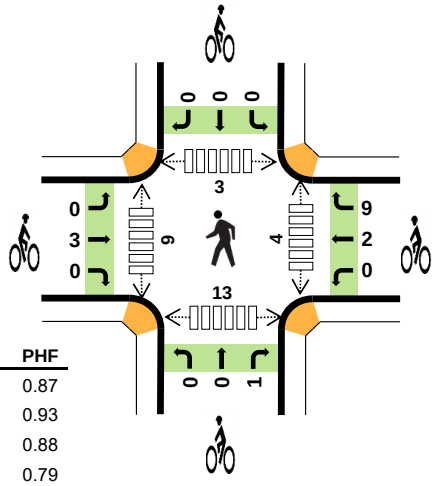
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Seville Dr
Linda Mar Blvd

Date: 03/09/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.3%	0.87
WB	0.3%	0.93
NB	0.9%	0.88
SB	1.9%	0.79
TOTAL	0.5%	0.97



Two-Hour Count Summaries

Interval Start	Linda Mar Blvd Eastbound				Linda Mar Blvd Westbound				Adobe Dr Northbound				Seville Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	6	89	38	0	3	70	5	0	33	1	8	0	7	3	7	270	0
4:15 PM	0	3	99	30	0	6	77	4	0	23	1	10	0	6	1	2	262	0
4:30 PM	0	0	91	24	0	11	63	4	0	32	4	9	0	6	4	6	254	0
4:45 PM	**0**	**3**	**101**	**33**	**0**	**7**	**78**	**6**	**0**	**18**	**7**	**8**	**0**	**4**	**3**	**3**	**271**	1,057
5:00 PM	**0**	**5**	**105**	**26**	**0**	**8**	**73**	**7**	**0**	**21**	**1**	**5**	**0**	**9**	**4**	**4**	**268**	1,055
5:15 PM	**0**	**5**	**133**	**26**	**0**	**4**	**59**	**8**	**0**	**23**	**1**	**7**	**0**	**8**	**3**	**2**	**279**	1,072
5:30 PM	**0**	**2**	**99**	**34**	**1**	**7**	**78**	**6**	**0**	**21**	**2**	**2**	**0**	**7**	**3**	**4**	**266**	**1,084**
5:45 PM	0	2	115	27	0	6	60	2	0	10	4	1	0	1	3	3	234	1,047
Count Total	0	26	832	238	1	52	558	42	0	181	21	50	0	48	24	31	2,104	0
Peak Hour All	**0**	**15**	**438**	**119**	**1**	**26**	**288**	**27**	**0**	**83**	**11**	**22**	**0**	**28**	**13**	**13**	**1,084**	**0**
Peak Hour HV	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**5**	**0**
Peak Hour HV%	**-**	**7%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**-**	**1%**	**0%**	**0%**	**-**	**0%**	**8%**	**0%**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	0	1	*2*	0	4	0	1	*5*	0	2	0	1	*3*
4:15 PM	0	3	1	0	*4*	1	0	2	0	*3*	8	2	0	3	*13*
4:30 PM	1	1	0	0	*2*	1	3	0	0	*4*	0	2	0	4	*6*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**1**	**0**	***4***	**0**	**1**	**0**	**1**	*2*
5:00 PM	**1**	**1**	**1**	**0**	***3***	**0**	**3**	**0**	**0**	***3***	**1**	**3**	**1**	**3**	*8*
5:15 PM	**1**	**0**	**0**	**1**	***2***	**0**	**2**	**0**	**0**	***2***	**2**	**2**	**2**	**4**	*10*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**3**	**3**	**0**	**0**	***6***	**1**	**3**	**0**	**5**	***9***
5:45 PM	0	1	0	0	*1*	0	2	1	0	*3*	0	4	1	1	*6*
Count Total	4	6	2	2	*14*	5	20	4	1	*30*	12	19	4	22	*57*
Peak Hour	**2**	**1**	**1**	**1**	***5***	**3**	**11**	**1**	**0**	***15***	**4**	**9**	**3**	**13**	***29***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Linda Mar Blvd Eastbound				Linda Mar Blvd Westbound				Adobe Dr Northbound				Seville Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	2	0
4:15 PM	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	4	0
4:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	8
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	9
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	7
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	6
Count Total	0	1	2	1	0	0	6	0	0	2	0	0	0	1	1	0	14	0
Peak Hour	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**5**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Linda Mar Blvd Eastbound			Linda Mar Blvd Westbound			Adobe Dr Northbound			Seville Dr Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	2	2	0	0	0	0	0	1	0	5	0
4:15 PM	0	1	0	0	0	0	0	0	2	0	0	0	3	0
4:30 PM	0	1	0	0	3	0	0	0	0	0	0	0	4	0
4:45 PM	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**4**	16
5:00 PM	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	14
5:15 PM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	13
5:30 PM	**0**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**15**
5:45 PM	0	0	0	0	0	2	0	1	0	0	0	0	3	14
Count Total	0	5	0	2	7	11	0	1	3	0	1	0	30	0
Peak Hour	**0**	**3**	**0**	**0**	**2**	**9**	**0**	**0**	**1**	**0**	**0**	**0**	**15**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix B

Volume Summary

Intersection Number: 1
Traffix Node Number: 1
Intersection Name: Oddstad Boulevard and Linda Mar Boulevard
Peak Hour: AM
Date of Analysis: 03/11/22
Count Date: 03/11/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	247	24	0	0	0	0	0	51	6	2	0	195	*525*
Background Developments	2	0	0	0	0	0	0	0	0	0	0	5	*7*
Background Conditions	249	24	0	0	0	0	0	51	6	2	0	200	*532*
Proposed Project Trips	*10*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*3*	*13*
Existing + Project Conditions	257	24	0	0	0	0	0	51	6	2	0	198	*538*
Background + Project Conditions	259	24	0	0	0	0	0	51	6	2	0	203	*545*

Intersection Number: 2
Traffix Node Number: 2
Intersection Name: Oddstad Boulevard and Terra Nova Boulevard
Peak Hour: AM
Date of Analysis: 03/11/22
Count Date: 02/04/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	115	151	0	0	0	0	0	137	108	135	0	93	*739*
Background Developments	0	0	0	0	0	0	0	0	5	2	0	0	*7*
Background Conditions	115	151	0	0	0	0	0	137	113	137	0	93	*746*
Proposed Project Trips	*8*	*10*	*0*	*0*	*0*	*0*	*0*	*3*	*0*	*0*	*0*	*3*	*24*
Existing + Project Conditions	123	161	0	0	0	0	0	140	108	135	0	96	*763*
Background + Project Conditions	123	161	0	0	0	0	0	140	113	137	0	96	*770*

Intersection Number: 3
Traffix Node Number: 3
Intersection Name: Oddstad Boulevard and Yosemite Drive
Peak Hour: AM
Date of Analysis: 03/11/22
Count Date: 02/04/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	3	128	4	2	1	11	9	91	12	19	0	4	*284*
Background Developments	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Background Conditions	3	128	4	2	1	11	9	91	12	19	0	4	*284*
Proposed Project Trips	*0*	*18*	*0*	*0*	*0*	*0*	*0*	*6*	*0*	*0*	*0*	*0*	*24*
Existing + Project Conditions	3	146	4	2	1	11	9	97	12	19	0	4	*308*
Background + Project Conditions	3	146	4	2	1	11	9	97	12	19	0	4	*308*

Intersection Number: 4
Traffix Node Number: 4
Intersection Name: Oddstad Boulevard and Big Bend Drive
Peak Hour: AM
Date of Analysis: 03/11/22
Count Date: 02/04/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	1	64	11	32	2	52	35	50	11	15	0	3	*276*
Background Developments	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Background Conditions	1	64	11	32	2	52	35	50	11	15	0	3	*276*
Proposed Project Trips	*0*	*2*	*0*	*0*	*0*	*0*	*0*	*4*	*0*	*0*	*0*	*0*	*6*
Existing + Project Conditions	1	66	11	32	2	52	35	54	11	15	0	3	*282*
Background + Project Conditions	1	66	11	32	2	52	35	54	11	15	0	3	*282*

Intersection Number: 1
Traffix Node Number: 1
Intersection Name: Oddstad Boulevard and Linda Mar Boulevard
Peak Hour: PM
Count Date: 03/11/22
Date of Analysis: 03/11/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	196	40	0	0	0	0	0	44	5	0	0	243	*528*
Background Developments	4	0	0	0	0	0	0	0	0	0	0	2	*6*
Background Conditions	200	40	0	0	0	0	0	44	5	0	0	245	*534*
Proposed Project Trips	*6*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*10*	*16*
Existing + Project Conditions	202	40	0	0	0	0	0	44	5	0	0	253	*544*
Background + Project Conditions	206	40	0	0	0	0	0	44	5	0	0	255	*550*

Intersection Number: 2
Traffix Node Number: 2
Intersection Name: Oddstad Boulevard and Terra Nova Boulevard
Peak Hour: PM
Count Date: 02/04/22
Date of Analysis: 03/11/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	76	138	0	0	0	0	0	172	85	74	0	134	*679*
Background Developments	0	0	0	0	0	0	0	0	2	4	0	0	*6*
Background Conditions	76	138	0	0	0	0	0	172	87	78	0	134	*685*
Proposed Project Trips	*5*	*6*	*0*	*0*	*0*	*0*	*0*	*10*	*0*	*0*	*0*	*8*	*29*
Existing + Project Conditions	81	144	0	0	0	0	0	182	85	74	0	142	*708*
Background + Project Conditions	81	144	0	0	0	0	0	182	87	78	0	142	*714*

Intersection Number: 3
Traffix Node Number: 3
Intersection Name: Oddstad Boulevard and Yosemite Drive
Peak Hour: PM
Count Date: 02/04/22
Date of Analysis: 03/11/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	2	93	5	8	2	37	39	146	18	13	0	1	*364*
Background Developments	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Background Conditions	2	93	5	8	2	37	39	146	18	13	0	1	*364*
Proposed Project Trips	*0*	*11*	*0*	*0*	*0*	*0*	*0*	*18*	*0*	*0*	*0*	*0*	*29*
Existing + Project Conditions	2	104	5	8	2	37	39	164	18	13	0	1	*393*
Background + Project Conditions	2	104	5	8	2	37	39	164	18	13	0	1	*393*

Intersection Number: 4
Traffix Node Number: 4
Intersection Name: Oddstad Boulevard and Big Bend Drive
Peak Hour: PM
Count Date: 02/04/22
Date of Analysis: 03/11/22

Scenario	Movements												
	Southbound Approach			Westbound Approach			Northbound Approach			Eastbound Approach			
	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	*Total*
Existing Conditions	1	47	32	23	2	36	43	69	17	8	3	2	*283*
Background Developments	0	0	0	0	0	0	0	0	0	0	0	0	*0*
Background Conditions	1	47	32	23	2	36	43	69	17	8	3	2	*283*
Proposed Project Trips	*0*	*5*	*0*	*0*	*0*	*0*	*0*	*3*	*0*	*0*	*0*	*0*	*8*
Existing + Project Conditions	1	52	32	23	2	36	43	72	17	8	3	2	*291*
Background + Project Conditions	1	52	32	23	2	36	43	72	17	8	3	2	*291*

Volume Comparison

Name: Seville Drive/Adobe Drive and Linda Mar Boulevard
Peak Hour: AM

Scenario:	Count Date	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Int. Total
Old Counts	06/05/19	132	19	29	27	14	8	5	244	62	35	355	19	949
New Counts	03/09/22	149	19	29	27	10	11	5	324	100	41	412	32	1,159
Difference (New - Old)		17	0	0	0	-4	3	0	80	38	6	57	13	210
% Change (New/Old)														122%

Volume Comparison

Name: Seville Drive/Adobe Drive and Linda Mar Boulevard
Peak Hour: PM

Scenario:	Count Date	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Int. Total
Old Counts	06/05/19	86	11	31	21	7	16	16	428	129	27	245	21	1,038
New Counts	03/09/22	83	11	22	28	13	13	15	438	119	27	288	27	1,084
Difference (New - Old)		-3	0	-9	7	6	-3	-1	10	-10	0	43	6	46
% Change (New/Old)														104%

Oddstad Teacher Housing Background Trip Generation Estimates

Land Use		Size	AM Peak Hour Rate	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour Rate	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Hillside Meadows Subdivision[1]	36	d.u.	0.52	4	15	19	0.72	16	10	26
Higgins Subdivision[2]	125	d.u.	0.77	24	72	96	1.03	81	48	129
Total	**161**			**28**	**87**	**115**		**97**	**58**	**155**

Notes:
d.u. = dwelling units
1. Trip generation rates used in the Traffic Impact Analysis of the project for Land Use Code 220 "Multifamily Housing (Low-Rise)"
2. Trip generations rates used in the Traffic Impact Analysis of the project for Land Use Code 210 "Single Family Detached Housing"

Trip Distribution of Background Trips

Based on these developments' TIA, 6% and 4% of the AM and PM peak-hour trips are assumed to travel to the schools on Terra Nova Blvd.

Appendix C

Level of Service Calculations

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	2	24	247	6	51
Future Vol, veh/h	195	2	24	247	6	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	212	2	26	268	7	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	214	0	533	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	320	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1356	-	507	827
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	736	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1356	-	497	827
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	773	-	-	1356	-
HCM Lane V/C Ratio	0.08	-	-	0.019	-
HCM Control Delay (s)	10.1	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	93	135	108	137	151	115
Future Vol, veh/h	93	135	108	137	151	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	147	117	149	164	125
Number of Lanes	1	1	1	1	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.8	10.1	9.5
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	30%
Vol Right, %	0%	0%	0%	100%	0%	70%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	137	93	135	101	165
LT Vol	108	0	93	0	0	0
Through Vol	0	137	0	0	101	50
RT Vol	0	0	0	135	0	115
Lane Flow Rate	117	149	101	147	109	180
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.196	0.228	0.179	0.21	0.167	0.25
Departure Headway (Hd)	6.005	5.5	6.36	5.151	5.507	5.016
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	593	648	560	690	646	710
Service Time	3.788	3.283	4.145	2.936	3.289	2.797
HCM Lane V/C Ratio	0.197	0.23	0.18	0.213	0.169	0.254
HCM Control Delay	10.3	9.9	10.5	9.3	9.4	9.5
HCM Lane LOS	B	A	B	A	A	A
HCM 95th-tile Q	0.7	0.9	0.6	0.8	0.6	1

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	19	11	1	2	12	91	9	4	128	3
Future Vol, veh/h	4	0	19	11	1	2	12	91	9	4	128	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	21	12	1	2	13	99	10	4	139	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.7	7.8	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	17%	79%	3%
Vol Thru, %	81%	0%	7%	95%
Vol Right, %	8%	83%	14%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	23	14	135
LT Vol	12	4	11	4
Through Vol	91	0	1	128
RT Vol	9	19	2	3
Lane Flow Rate	122	25	15	147
Geometry Grp	1	1	1	1
Degree of Util (X)	0.138	0.028	0.02	0.167
Departure Headway (Hd)	4.088	4.071	4.615	4.089
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	870	885	780	872
Service Time	2.144	2.072	2.616	2.138
HCM Lane V/C Ratio	0.14	0.028	0.019	0.169
HCM Control Delay	7.8	7.2	7.7	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.1	0.6

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	52	2	32	11	50	35	11	64	1
Future Vol, veh/h	3	0	15	52	2	32	11	50	35	11	64	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	16	57	2	35	12	54	38	12	70	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.8	7.6	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	17%	60%	14%
Vol Thru, %	52%	0%	2%	84%
Vol Right, %	36%	83%	37%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	18	86	76
LT Vol	11	3	52	11
Through Vol	50	0	2	64
RT Vol	35	15	32	1
Lane Flow Rate	104	20	93	83
Geometry Grp	1	1	1	1
Degree of Util (X)	0.116	0.022	0.108	0.097
Departure Headway (Hd)	3.997	3.976	4.168	4.232
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	885	906	846	836
Service Time	2.077	1.976	2.262	2.312
HCM Lane V/C Ratio	0.118	0.022	0.11	0.099
HCM Control Delay	7.6	7.1	7.8	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.4	0.3

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	243	0	40	196	5	44
Future Vol, veh/h	243	0	40	196	5	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	0	43	213	5	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	264	0	563	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	299	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1300	-	487	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1300	-	471	775
Mov Cap-2 Maneuver	-	-	-	-	471	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	727	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	727	-	-	1300	-
HCM Lane V/C Ratio	0.073	-	-	0.033	-
HCM Control Delay (s)	10.3	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	134	74	85	172	138	76
Future Vol, veh/h	134	74	85	172	138	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	146	80	92	187	150	83
Number of Lanes	1	1	1	1	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.2	10.1	9.1
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	38%
Vol Right, %	0%	0%	0%	100%	0%	62%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	172	134	74	92	122
LT Vol	85	0	134	0	0	0
Through Vol	0	172	0	0	92	46
RT Vol	0	0	0	74	0	76
Lane Flow Rate	92	187	146	80	100	133
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.152	0.281	0.253	0.113	0.152	0.186
Departure Headway (Hd)	5.92	5.416	6.265	5.057	5.489	5.048
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	602	660	569	702	649	705
Service Time	3.689	3.184	4.045	2.836	3.259	2.819
HCM Lane V/C Ratio	0.153	0.283	0.257	0.114	0.154	0.189
HCM Control Delay	9.8	10.3	11.2	8.5	9.3	9
HCM Lane LOS	A	B	B	A	A	A
HCM 95th-tile Q	0.5	1.2	1	0.4	0.5	0.7

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	13	37	2	8	18	146	39	5	93	2
Future Vol, veh/h	1	0	13	37	2	8	18	146	39	5	93	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	14	40	2	9	20	159	42	5	101	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	8.1	8.5	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	7%	79%	5%
Vol Thru, %	72%	0%	4%	93%
Vol Right, %	19%	93%	17%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	203	14	47	100
LT Vol	18	1	37	5
Through Vol	146	0	2	93
RT Vol	39	13	8	2
Lane Flow Rate	221	15	51	109
Geometry Grp	1	1	1	1
Degree of Util (X)	0.247	0.018	0.067	0.127
Departure Headway (Hd)	4.035	4.166	4.719	4.216
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	878	864	763	836
Service Time	2.113	2.168	2.72	2.313
HCM Lane V/C Ratio	0.252	0.017	0.067	0.13
HCM Control Delay	8.5	7.2	8.1	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.1	0.2	0.4

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	3	8	36	2	23	17	69	43	32	47	1
Future Vol, veh/h	2	3	8	36	2	23	17	69	43	32	47	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	9	39	2	25	18	75	47	35	51	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.7	7.8	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	15%	59%	40%
Vol Thru, %	53%	23%	3%	59%
Vol Right, %	33%	62%	38%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	13	61	80
LT Vol	17	2	36	32
Through Vol	69	3	2	47
RT Vol	43	8	23	1
Lane Flow Rate	140	14	66	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.155	0.016	0.08	0.103
Departure Headway (Hd)	3.967	4.164	4.335	4.255
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	893	865	831	833
Service Time	2.037	2.165	2.335	2.33
HCM Lane V/C Ratio	0.157	0.016	0.079	0.104
HCM Control Delay	7.8	7.2	7.7	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0	0.3	0.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	198	2	24	257	6	51
Future Vol, veh/h	198	2	24	257	6	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	215	2	26	279	7	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	217	0	547	216
Stage 1	-	-	-	-	216	-
Stage 2	-	-	-	-	331	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1353	-	498	824
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	728	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1353	-	489	824
Mov Cap-2 Maneuver	-	-	-	-	489	-
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	769	-	-	1353	-
HCM Lane V/C Ratio	0.081	-	-	0.019	-
HCM Control Delay (s)	10.1	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	96	135	108	140	161	123
Future Vol, veh/h	96	135	108	140	161	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	147	117	152	175	134
Number of Lanes	1	1	1	1	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.9	10.1	9.6
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	30%
Vol Right, %	0%	0%	0%	100%	0%	70%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	140	96	135	107	177
LT Vol	108	0	96	0	0	0
Through Vol	0	140	0	0	107	54
RT Vol	0	0	0	135	0	123
Lane Flow Rate	117	152	104	147	117	192
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.197	0.234	0.186	0.212	0.179	0.268
Departure Headway (Hd)	6.039	5.534	6.407	5.198	5.525	5.033
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	589	642	555	682	643	707
Service Time	3.83	3.324	4.198	2.989	3.312	2.819
HCM Lane V/C Ratio	0.199	0.237	0.187	0.216	0.182	0.272
HCM Control Delay	10.3	10	10.7	9.4	9.5	9.7
HCM Lane LOS	B	A	B	A	A	A
HCM 95th-tile Q	0.7	0.9	0.7	0.8	0.6	1.1

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	19	11	1	2	12	97	9	4	146	3
Future Vol, veh/h	4	0	19	11	1	2	12	97	9	4	146	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	21	12	1	2	13	105	10	4	159	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.8	7.9	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	17%	79%	3%
Vol Thru, %	82%	0%	7%	95%
Vol Right, %	8%	83%	14%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	118	23	14	153
LT Vol	12	4	11	4
Through Vol	97	0	1	146
RT Vol	9	19	2	3
Lane Flow Rate	128	25	15	166
Geometry Grp	1	1	1	1
Degree of Util (X)	0.146	0.029	0.02	0.189
Departure Headway (Hd)	4.104	4.127	4.672	4.095
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	866	873	771	870
Service Time	2.166	2.128	2.673	2.148
HCM Lane V/C Ratio	0.148	0.029	0.019	0.191
HCM Control Delay	7.9	7.3	7.8	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.1	0.7

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	52	2	32	11	54	35	11	66	1
Future Vol, veh/h	3	0	15	52	2	32	11	54	35	11	66	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	16	57	2	35	12	59	38	12	72	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.8	7.7	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	17%	60%	14%
Vol Thru, %	54%	0%	2%	85%
Vol Right, %	35%	83%	37%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	18	86	78
LT Vol	11	3	52	11
Through Vol	54	0	2	66
RT Vol	35	15	32	1
Lane Flow Rate	109	20	93	85
Geometry Grp	1	1	1	1
Degree of Util (X)	0.121	0.022	0.109	0.1
Departure Headway (Hd)	4.006	3.993	4.179	4.235
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	882	902	843	835
Service Time	2.09	1.993	2.277	2.318
HCM Lane V/C Ratio	0.124	0.022	0.11	0.102
HCM Control Delay	7.7	7.1	7.8	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.4	0.3

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	253	0	40	202	5	44
Future Vol, veh/h	253	0	40	202	5	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	275	0	43	220	5	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	275	0	581	275
Stage 1	-	-	-	-	275	-
Stage 2	-	-	-	-	306	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1288	-	476	764
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	747	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1288	-	460	764
Mov Cap-2 Maneuver	-	-	-	-	460	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	722	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	716	-	-	1288	-
HCM Lane V/C Ratio	0.074	-	-	0.034	-
HCM Control Delay (s)	10.4	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	142	74	85	182	144	81
Future Vol, veh/h	142	74	85	182	144	81
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	154	80	92	198	157	88
Number of Lanes	1	1	1	1	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.5	10.3	9.2
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	37%
Vol Right, %	0%	0%	0%	100%	0%	63%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	85	182	142	74	96	129
LT Vol	85	0	142	0	0	0
Through Vol	0	182	0	0	96	48
RT Vol	0	0	0	74	0	81
Lane Flow Rate	92	198	154	80	104	140
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.153	0.3	0.271	0.114	0.16	0.198
Departure Headway (Hd)	5.964	5.46	6.317	5.109	5.532	5.088
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	597	653	565	694	643	698
Service Time	3.743	3.238	4.105	2.896	3.314	2.869
HCM Lane V/C Ratio	0.154	0.303	0.273	0.115	0.162	0.201
HCM Control Delay	9.8	10.6	11.5	8.6	9.4	9.1
HCM Lane LOS	A	B	B	A	A	A
HCM 95th-tile Q	0.5	1.3	1.1	0.4	0.6	0.7

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	13	37	2	8	18	164	39	5	104	2
Future Vol, veh/h	1	0	13	37	2	8	18	164	39	5	104	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	14	40	2	9	20	178	42	5	113	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	8.1	8.7	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	7%	79%	5%
Vol Thru, %	74%	0%	4%	94%
Vol Right, %	18%	93%	17%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	221	14	47	111
LT Vol	18	1	37	5
Through Vol	164	0	2	104
RT Vol	39	13	8	2
Lane Flow Rate	240	15	51	121
Geometry Grp	1	1	1	1
Degree of Util (X)	0.27	0.018	0.068	0.145
Departure Headway (Hd)	4.051	4.237	4.789	4.335
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	874	848	751	832
Service Time	2.138	2.245	2.795	2.335
HCM Lane V/C Ratio	0.275	0.018	0.068	0.145
HCM Control Delay	8.7	7.3	8.1	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.1	0.2	0.5

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	3	8	36	2	23	17	72	43	32	52	1
Future Vol, veh/h	2	3	8	36	2	23	17	72	43	32	52	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	9	39	2	25	18	78	47	35	57	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.7	7.8	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	15%	59%	38%
Vol Thru, %	55%	23%	3%	61%
Vol Right, %	33%	62%	38%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	132	13	61	85
LT Vol	17	2	36	32
Through Vol	72	3	2	52
RT Vol	43	8	23	1
Lane Flow Rate	143	14	66	92
Geometry Grp	1	1	1	1
Degree of Util (X)	0.158	0.016	0.08	0.109
Departure Headway (Hd)	3.976	4.181	4.352	4.254
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	891	861	828	833
Service Time	2.047	2.183	2.352	2.328
HCM Lane V/C Ratio	0.16	0.016	0.08	0.11
HCM Control Delay	7.8	7.3	7.7	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0	0.3	0.4

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	2	24	249	6	51
Future Vol, veh/h	200	2	24	249	6	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	2	26	271	7	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	219	0	541	218
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	323	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1350	-	502	822
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1350	-	492	822
Mov Cap-2 Maneuver	-	-	-	-	492	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	720	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	768	-	-	1350	-
HCM Lane V/C Ratio	0.081	-	-	0.019	-
HCM Control Delay (s)	10.1	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	93	137	113	137	151	115
Future Vol, veh/h	93	137	113	137	151	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	149	123	149	164	125
Number of Lanes	1	1	1	1	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	9.9	10.1	9.5
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	30%
Vol Right, %	0%	0%	0%	100%	0%	70%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	113	137	93	137	101	165
LT Vol	113	0	93	0	0	0
Through Vol	0	137	0	0	101	50
RT Vol	0	0	0	137	0	115
Lane Flow Rate	123	149	101	149	109	180
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.205	0.228	0.179	0.214	0.168	0.251
Departure Headway (Hd)	6.011	5.506	6.371	5.163	5.52	5.028
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	592	646	559	688	644	706
Service Time	3.798	3.293	4.161	2.951	3.304	2.812
HCM Lane V/C Ratio	0.208	0.231	0.181	0.217	0.169	0.255
HCM Control Delay	10.4	9.9	10.6	9.4	9.4	9.5
HCM Lane LOS	B	A	B	A	A	A
HCM 95th-tile Q	0.8	0.9	0.6	0.8	0.6	1

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	19	11	1	2	12	91	9	4	128	3
Future Vol, veh/h	4	0	19	11	1	2	12	91	9	4	128	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	21	12	1	2	13	99	10	4	139	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.7	7.8	8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	17%	79%	3%
Vol Thru, %	81%	0%	7%	95%
Vol Right, %	8%	83%	14%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	23	14	135
LT Vol	12	4	11	4
Through Vol	91	0	1	128
RT Vol	9	19	2	3
Lane Flow Rate	122	25	15	147
Geometry Grp	1	1	1	1
Degree of Util (X)	0.138	0.028	0.02	0.167
Departure Headway (Hd)	4.088	4.071	4.615	4.089
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	870	885	780	872
Service Time	2.144	2.072	2.616	2.138
HCM Lane V/C Ratio	0.14	0.028	0.019	0.169
HCM Control Delay	7.8	7.2	7.7	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.1	0.6

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	52	2	32	11	50	35	11	64	1
Future Vol, veh/h	3	0	15	52	2	32	11	50	35	11	64	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	16	57	2	35	12	54	38	12	70	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.8	7.6	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	17%	60%	14%
Vol Thru, %	52%	0%	2%	84%
Vol Right, %	36%	83%	37%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	96	18	86	76
LT Vol	11	3	52	11
Through Vol	50	0	2	64
RT Vol	35	15	32	1
Lane Flow Rate	104	20	93	83
Geometry Grp	1	1	1	1
Degree of Util (X)	0.116	0.022	0.108	0.097
Departure Headway (Hd)	3.997	3.976	4.168	4.232
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	885	906	846	836
Service Time	2.077	1.976	2.262	2.312
HCM Lane V/C Ratio	0.118	0.022	0.11	0.099
HCM Control Delay	7.6	7.1	7.8	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.4	0.3

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	245	0	40	200	5	44
Future Vol, veh/h	245	0	40	200	5	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	266	0	43	217	5	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	266	0	569	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	303	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1298	-	484	773
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	749	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1298	-	468	773
Mov Cap-2 Maneuver	-	-	-	-	468	-
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	724	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	725	-	-	1298	-
HCM Lane V/C Ratio	0.073	-	-	0.033	-
HCM Control Delay (s)	10.4	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	134	78	87	172	138	76
Future Vol, veh/h	134	78	87	172	138	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	146	85	95	187	150	83
Number of Lanes	1	1	1	1	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.2	10.1	9.1
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	38%
Vol Right, %	0%	0%	0%	100%	0%	62%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	172	134	78	92	122
LT Vol	87	0	134	0	0	0
Through Vol	0	172	0	0	92	46
RT Vol	0	0	0	78	0	76
Lane Flow Rate	95	187	146	85	100	133
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.156	0.282	0.254	0.119	0.153	0.186
Departure Headway (Hd)	5.931	5.426	6.272	5.064	5.5	5.06
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	601	658	569	701	647	703
Service Time	3.703	3.198	4.053	2.845	3.276	2.836
HCM Lane V/C Ratio	0.158	0.284	0.257	0.121	0.155	0.189
HCM Control Delay	9.8	10.3	11.2	8.5	9.3	9
HCM Lane LOS	A	B	B	A	A	A
HCM 95th-tile Q	0.5	1.2	1	0.4	0.5	0.7

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	13	37	2	8	18	146	39	5	93	2
Future Vol, veh/h	1	0	13	37	2	8	18	146	39	5	93	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	14	40	2	9	20	159	42	5	101	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	8.1	8.5	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	7%	79%	5%
Vol Thru, %	72%	0%	4%	93%
Vol Right, %	19%	93%	17%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	203	14	47	100
LT Vol	18	1	37	5
Through Vol	146	0	2	93
RT Vol	39	13	8	2
Lane Flow Rate	221	15	51	109
Geometry Grp	1	1	1	1
Degree of Util (X)	0.247	0.018	0.067	0.127
Departure Headway (Hd)	4.035	4.166	4.719	4.216
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	878	864	763	836
Service Time	2.113	2.168	2.72	2.313
HCM Lane V/C Ratio	0.252	0.017	0.067	0.13
HCM Control Delay	8.5	7.2	8.1	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1	0.1	0.2	0.4

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	3	8	36	2	23	17	69	43	32	47	1
Future Vol, veh/h	2	3	8	36	2	23	17	69	43	32	47	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	9	39	2	25	18	75	47	35	51	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.7	7.8	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	15%	59%	40%
Vol Thru, %	53%	23%	3%	59%
Vol Right, %	33%	62%	38%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	13	61	80
LT Vol	17	2	36	32
Through Vol	69	3	2	47
RT Vol	43	8	23	1
Lane Flow Rate	140	14	66	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.155	0.016	0.08	0.103
Departure Headway (Hd)	3.967	4.164	4.335	4.255
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	893	865	831	833
Service Time	2.037	2.165	2.335	2.33
HCM Lane V/C Ratio	0.157	0.016	0.079	0.104
HCM Control Delay	7.8	7.2	7.7	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0	0.3	0.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	203	2	24	259	6	51
Future Vol, veh/h	203	2	24	259	6	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	221	2	26	282	7	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	223	0	556	222
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	334	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1346	-	492	818
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1346	-	483	818
Mov Cap-2 Maneuver	-	-	-	-	483	-
Stage 1	-	-	-	-	815	-
Stage 2	-	-	-	-	711	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	762	-	-	1346	-
HCM Lane V/C Ratio	0.081	-	-	0.019	-
HCM Control Delay (s)	10.1	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	96	137	113	140	161	123
Future Vol, veh/h	96	137	113	140	161	123
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	104	149	123	152	175	134
Number of Lanes	1	1	1	1	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10	10.2	9.6
HCM LOS	A	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	30%
Vol Right, %	0%	0%	0%	100%	0%	70%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	113	140	96	137	107	177
LT Vol	113	0	96	0	0	0
Through Vol	0	140	0	0	107	54
RT Vol	0	0	0	137	0	123
Lane Flow Rate	123	152	104	149	117	192
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.206	0.234	0.186	0.216	0.179	0.269
Departure Headway (Hd)	6.045	5.541	6.421	5.212	5.538	5.046
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	588	641	554	681	642	705
Service Time	3.838	3.333	4.213	3.003	3.327	2.834
HCM Lane V/C Ratio	0.209	0.237	0.188	0.219	0.182	0.272
HCM Control Delay	10.4	10	10.7	9.5	9.5	9.7
HCM Lane LOS	B	A	B	A	A	A
HCM 95th-tile Q	0.8	0.9	0.7	0.8	0.6	1.1

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	19	11	1	2	12	97	9	4	146	3
Future Vol, veh/h	4	0	19	11	1	2	12	97	9	4	146	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	21	12	1	2	13	105	10	4	159	3
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.8	7.9	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	17%	79%	3%
Vol Thru, %	82%	0%	7%	95%
Vol Right, %	8%	83%	14%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	118	23	14	153
LT Vol	12	4	11	4
Through Vol	97	0	1	146
RT Vol	9	19	2	3
Lane Flow Rate	128	25	15	166
Geometry Grp	1	1	1	1
Degree of Util (X)	0.146	0.029	0.02	0.189
Departure Headway (Hd)	4.104	4.127	4.672	4.095
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	866	873	771	870
Service Time	2.166	2.128	2.673	2.148
HCM Lane V/C Ratio	0.148	0.029	0.019	0.191
HCM Control Delay	7.9	7.3	7.8	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.1	0.7

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	15	52	2	32	11	54	35	11	66	1
Future Vol, veh/h	3	0	15	52	2	32	11	54	35	11	66	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	16	57	2	35	12	59	38	12	72	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.1	7.8	7.7	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	11%	17%	60%	14%
Vol Thru, %	54%	0%	2%	85%
Vol Right, %	35%	83%	37%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	18	86	78
LT Vol	11	3	52	11
Through Vol	54	0	2	66
RT Vol	35	15	32	1
Lane Flow Rate	109	20	93	85
Geometry Grp	1	1	1	1
Degree of Util (X)	0.121	0.022	0.109	0.1
Departure Headway (Hd)	4.006	3.993	4.179	4.235
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	882	902	843	835
Service Time	2.09	1.993	2.277	2.318
HCM Lane V/C Ratio	0.124	0.022	0.11	0.102
HCM Control Delay	7.7	7.1	7.8	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.4	0.3

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	255	0	40	206	5	44
Future Vol, veh/h	255	0	40	206	5	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	277	0	43	224	5	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	277	0	587	277
Stage 1	-	-	-	-	277	-
Stage 2	-	-	-	-	310	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1286	-	472	762
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	744	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1286	-	456	762
Mov Cap-2 Maneuver	-	-	-	-	456	-
Stage 1	-	-	-	-	770	-
Stage 2	-	-	-	-	719	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	713	-	-	1286	-
HCM Lane V/C Ratio	0.075	-	-	0.034	-
HCM Control Delay (s)	10.5	-	-	7.9	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	142	78	87	182	144	81
Future Vol, veh/h	142	78	87	182	144	81
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	154	85	95	198	157	88
Number of Lanes	1	1	1	1	2	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	2	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	2	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	2
HCM Control Delay	10.5	10.4	9.3
HCM LOS	B	B	A

Lane	NBLn1	NBLn2	EBLn1	EBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	0%	100%	37%
Vol Right, %	0%	0%	0%	100%	0%	63%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	182	142	78	96	129
LT Vol	87	0	142	0	0	0
Through Vol	0	182	0	0	96	48
RT Vol	0	0	0	78	0	81
Lane Flow Rate	95	198	154	85	104	140
Geometry Grp	7	7	7	7	7	7
Degree of Util (X)	0.157	0.301	0.271	0.12	0.161	0.199
Departure Headway (Hd)	5.975	5.471	6.324	5.116	5.547	5.103
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	596	651	563	693	642	697
Service Time	3.755	3.25	4.115	2.906	3.328	2.884
HCM Lane V/C Ratio	0.159	0.304	0.274	0.123	0.162	0.201
HCM Control Delay	9.9	10.6	11.5	8.6	9.4	9.2
HCM Lane LOS	A	B	B	A	A	A
HCM 95th-tile Q	0.6	1.3	1.1	0.4	0.6	0.7

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	0	13	37	2	8	18	164	39	5	104	2
Future Vol, veh/h	1	0	13	37	2	8	18	164	39	5	104	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	14	40	2	9	20	178	42	5	113	2
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	8.1	8.7	8.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	7%	79%	5%
Vol Thru, %	74%	0%	4%	94%
Vol Right, %	18%	93%	17%	2%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	221	14	47	111
LT Vol	18	1	37	5
Through Vol	164	0	2	104
RT Vol	39	13	8	2
Lane Flow Rate	240	15	51	121
Geometry Grp	1	1	1	1
Degree of Util (X)	0.27	0.018	0.068	0.145
Departure Headway (Hd)	4.051	4.237	4.789	4.335
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	874	848	751	832
Service Time	2.138	2.245	2.795	2.335
HCM Lane V/C Ratio	0.275	0.018	0.068	0.145
HCM Control Delay	8.7	7.3	8.1	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.1	0.1	0.2	0.5

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	3	8	36	2	23	17	72	43	32	52	1
Future Vol, veh/h	2	3	8	36	2	23	17	72	43	32	52	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	3	9	39	2	25	18	78	47	35	57	1
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.3	7.7	7.8	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	15%	59%	38%
Vol Thru, %	55%	23%	3%	61%
Vol Right, %	33%	62%	38%	1%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	132	13	61	85
LT Vol	17	2	36	32
Through Vol	72	3	2	52
RT Vol	43	8	23	1
Lane Flow Rate	143	14	66	92
Geometry Grp	1	1	1	1
Degree of Util (X)	0.158	0.016	0.08	0.109
Departure Headway (Hd)	3.976	4.181	4.352	4.254
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	891	861	828	833
Service Time	2.047	2.183	2.352	2.328
HCM Lane V/C Ratio	0.16	0.016	0.08	0.11
HCM Control Delay	7.8	7.3	7.7	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0	0.3	0.4

APPENDIX 4.15-A: VEGETATION MANAGEMENT PLAN MEMORANDUM, PREPARED BY RICHARD JOHNSON, RETIRED FIRE MARSHAL NORTH COUNTY FIRE AUTHORITY, FEBRUARY 28, 2022

See Appendix 4.7-B