Initial Study

Phelan 20 Project

FEBRUARY 2024

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Printed on 30% post-consumer recycled material.

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
CEQA	California Environmental Quality Act
CIBP	Commercial/Industrial Business Park
City	City of Hesperia
EIR	environmental impact report
I	Interstate
Project	Phelan 20 Project
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SBCFD	San Bernardino County Fire Department
SCAG	Southern California Association of Governments

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1 Introduction

1.1 Project Overview

The City of Hesperia (City) received an application from Cambria 60 Partners LLC (Project Applicant) for the development of the Phelan 20 Project (Project). The Project includes the construction of an industrial warehouse building on an approximately 22.14-acre Project site generally located west of United States (U.S.) Highway 395, east of Los Banos Avenue, and south of Phelan Road. An additional 0.47 acres would be used for off-site improvements. The Project would provide 419,840 square feet of industrial/warehouse building and associated improvements, including loading docks, truck and vehicle parking, an 8-foot tube steel fence along the eastern, western, and southern boundaries of the Project site, and landscaped areas, as further described below.

Implementation of the Project would require the following discretionary actions from the City:

- Conditional Use Permit to permit the construction and operation of a warehousing and distribution center of a size greater than 200,000 square feet in the Commercial/Industrial Business Park zone.

1.2 California Environmental Quality Act Compliance

The California Environmental Quality Act (CEQA) serves as the main framework of environmental law and policy in California. CEQA emphasizes the need for public disclosure and identifying and preventing environmental damage associated with proposed projects. Unless a project is deemed categorically or statutorily exempt, CEQA is applicable to any project that must be approved by a public agency in order to be processed and established. The Project considered herein does not fall under any of the statutory or categorical exemptions listed in the 2018 CEQA Statute and Guidelines (California Public Resources Code, Section 21000 et seq.; 14 CCR 15000 et seq.); therefore, it must meet CEQA requirements.

The intent of this document is to provide an overview and analysis of the environmental impacts associated with the Project by the City, acting as the lead agency. The document is accessible to the public, in accordance with CEQA, in order to receive feedback on the Project's potential impacts and the scope of the Project's environmental impact report (EIR) (14 CCR Section 15121[a]).

1.3 Availability of the Notice of Preparation and Initial Study

The Initial Study/Notice of Preparation for the Project is being distributed directly to agencies, organizations, and interested groups and persons during the scoping period. The Initial Study/Notice of Preparation is also available for review at the City of Hesperia, Planning Department, 9700 Seventh Avenue, Hesperia, California 92345.

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2 Project Description

2.1 Project Location

The 22.14 -acre Project site is located in the western part of the City, which is within the Victor Valley region of San Bernardino County (Figure 1, Project Location). An additional 0.47 acres would be used for off-site improvements. The Project site is located south of Phelan Road, west of U.S. Highway 395, north of Hollister Road and vacant land, and east of Los Banos Avenue and a residential lot and fleet services business. The Project site consists of one parcel: Assessor's Parcel Number 3064-531-06-0000. Regional access to the Project site is provided via Interstate (I)-15 and U.S. Highway 395.

2.2 Environmental Setting

City of Hesperia

The City is approximately 110 square miles in the Victor Valley region of San Bernardino County. The City is located within the Mojave Desert, which is a region containing desert plains, dry lakebeds, and scattered mountains. The southern portion of the City lies at the foothills of the San Bernardino Mountains and National Forest. The City contains a variety of slope conditions, with the foothill areas containing significant slopes and the majority of the City being primarily level. The central and northern portions of the City lie upon a moderate to gentle slope with elevations ranging from 2,900 feet to 4,200 feet above mean sea level. Generally, the City is an urban community with a broad mix of land uses, including housing, commercial, office, industrial, agriculture, and public-serving uses. The eastern and southern portions of the City contain generally rural residential uses. Commercial uses follow Main Street, Bear Valley and Hesperia Roads, and the freeway corridor. Industrial uses are generally divided into two areas: west of I-15 and east of U.S. Highway 395, and the eastern area between the BNSF railroad lines and I Avenue north of Main Street.

The City is bordered by the City of Victorville to the north, the City of Apple Valley to the east, unincorporated San Bernardino County land to the south, and the unincorporated community of Oak Hills to the west. Three highways provide direct access to the City: I-15 runs north–south on the west side of the City, U.S. Highway 395 connects to I-15 on the west side, and State Route 138 passes through the southeastern corner of the City (City of Hesperia 2010a).

Existing Project Site

The Project site is currently vacant undeveloped property bound to the west by a residential lot, fleet services business, and Los Banos Avenue, to the north by Phelan Road, to the east by vacant land and U.S. Highway 395, and to the south by vacant land and Hollister Road. The Project site is located within the Main Street and Freeway Corridor Specific Plan. According to the Main Street and Freeway Corridor Specific Plan, the Project site is located within the U.S. Highway 395/I-15 District and the land use and zoning designations for the Project site are Commercial/Industrial Business Park (CIBP) (City of Hesperia 2010a; City of Hesperia 2021) (see Figure 2, Land Use, and Figure 3, Zoning).

Surrounding Land Uses

Land uses surrounding the Project site primarily consist of vacant land, rural low-density residential, and scattered commercial and industrial. Specific land uses located in the immediate vicinity of the Project site include the following:

- **North:** Phelan Road
- **East:** Vacant land and U.S. Highway 395
- **South:** Vacant land and Hollister Road
- **West:** A residential lot, a fleet services business, and Los Banos Avenue

2.3 Project Characteristics

The Project would include construction of an industrial/warehouse building and associated improvements on approximately 22.61 acres of vacant land. Of the 22.61 acres, 22.14 acres would consist of on-site impacts and 0.47 acres would consist of off-site improvements (see Figure 4, Site Plan). The Project would provide 419,840 square feet of industrial/warehouse building that would include a small office space and associated improvements, including loading docks, truck and vehicle parking, landscaped areas, and an 8-foot tube steel fence along the eastern, western, and southern boundaries of the Project site.

On-Site and Off-Site Improvements

The Project would include improvements along Phelan Road, including frontage landscaping and pedestrian improvements. A variety of trees, shrubs, plants, and land covers would be planted within the Project frontage's landscape setback area, within the landscape areas found around the proposed industrial/warehouse building, and throughout the Project site.

Site Access, Circulation, and Parking

Access to the Project site would be provided by three driveways: one driveway on the northern side of the Project site off Phelan Road and two driveways on the eastern side of the Project site along a new street (New Caliente Road) that would be developed as part of the Project. The Project would include paved passenger vehicle parking areas located north and west of the industrial/warehouse building and tractor-trailer stalls and loading docks located east of the building. In total, the Project would provide approximately 62 loading dock positions, approximately 57 tractor-trailer stalls, roughly 200 passenger vehicle parking spaces (including accessible), and approximately 10.6% landscape area coverage.

Utility Improvements

Given the vacant, undeveloped nature of the Project site, both wet and dry utilities, including domestic water, sanitary sewer, and electricity, would need to be extended onto the Project site from Phelan Road. Stormwater would be managed on site using an underground infiltration/detention system located within the eastern portion of the Project site to capture and treat on-site stormwater.

Operations

Tenants for the Project have not been identified; however, the final layout of the industrial/warehouse building is complete. Business operations would be expected to be conducted within the enclosed building, with the exception of the ingressing and egressing of trucks and passenger vehicles accessing the site, passenger and truck parking, the loading and unloading of trailers within designated truck courts/loading areas, and the internal and external movement of materials around the Project site via forklifts, pallet jacks, yard hostlers, and similar equipment. It is anticipated that the facilities would be operated 24 hours a day, 7 days a week. At this time, the Project Applicant does not anticipate leasing any portion of the building to a tenant that would require refrigerated space and this use is not contemplated in this environmental analysis.

2.4 Project Approvals

As part of the Project, the Project Applicant is requesting approval of the following entitlements:

- **Conditional Use Permit** to permit the construction and operation of a warehousing and distribution center of a size greater than 200,000 square feet in the CIBP zone.
- While not a discretionary action that would be requested of the City, the Project would involve obtaining a **Western Joshua Tree Conservation Act Incidental Take Permit** from the California Department of Fish and Wildlife to authorize removal of western Joshua tree.
- **Street Easement** to permit the construction of New Caliente Road on the east side of the Project site.

Subsequent non-discretionary approvals (which would require separate processing through the City) would include, but may not be limited to, grading permits, building permits, and occupancy permits.

Note that the preceding list of actions and/or approvals is preliminary and may not be comprehensive.

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3 Initial Study Checklist

1. **Project title:**

   Phelan 20 Project

2. **Lead agency name and address:**

   City of Hesperia, Planning Department
   9700 Seventh Avenue
   Hesperia, California 92345

3. **Contact person and phone number:**

   Ryan Leonard, Senior Planner
   City of Hesperia Planning Department
   Phone: 760.947.1651
   Email: rleonard@cityofhesperia.us

4. **Project location:**

   The approximately 22.14-acre Project site is located in the western part of the City, which is within the Victor Valley region of San Bernardino County (Figure 1). An additional 0.47 acres would be used for off-site improvements along Phelan Road (Figure 4). The Project site is located south of Phelan Road, west of U.S. Highway 395, north of Hollister Road and vacant land, and east of Los Banos Avenue, a residential lot, and a fleet services business. The Project site consists of one parcel: Assessor's Parcel Number 3064-531-06-0000. Regional access to the Project site is provided via I-15 and U.S. Highway 395.

5. **Project sponsor's name and address:**

   Cambria 60 Partners LLC
   14180 Dallas Parkway, Suite 730
   Dallas, Texas 75254

6. **General Plan Designation:**

   Main Street/Freeway Corridor Specific Plan – Commercial/Industrial Business Park (CIBP)

7. **Zoning:**

   Commercial/Industrial Business Park (CIBP)

8. **Description of project:**

   The Project would include construction of an industrial/warehouse building and associated improvements on approximately 22.61 acres of vacant land, 22.14 acres of which would consist of on-site impacts and 0.47 acres would consist of off-site improvements (see Figure 4). The Project would provide

419,840 square feet of industrial/warehouse building and include associated improvements, such as loading docks, tractor-trailer stalls, passenger vehicle parking spaces, an 8-foot tube steel fence along the eastern, western, and southern boundaries of the Project site, an underground infiltration/detention system, and landscape areas.

Implementation of the Project would require the issuance of a Conditional Use Permit for the construction and operation of a warehousing and distribution center of a size greater than 200,000 square feet in the CIBP zone.

See Section 2, Project Description, for further Project details.

9. **Surrounding land uses and setting (Briefly describe the project's surroundings):**

Land uses surrounding the Project site primarily consist of vacant land, rural low-density residential, and scattered commercial and industrial. Specific land uses located in the immediate vicinity of the Project site include the following:

- **North:** Phelan Road
- **East:** Vacant land and U.S. Highway 395
- **South:** Vacant land and Hollister Road
- **West:** A single family residential lot, a fleet services business, and Los Banos Avenue

10. **Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):**

No discretionary approvals from other outside agencies are anticipated at this time.

11. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

In accordance with California Assembly Bill 52 requirements, the City will initiate tribal consultation, the results of which will be summarized in the Draft EIR.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

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

Determination

On the basis of this initial evaluation:

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

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

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

☐ I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

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



Signature

2/21/2024

Date

Evaluation of Environmental Impacts

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063l(3)(D). In this case, a brief discussion should identify the following:
    a. Earlier Analysis Used. Identify and state where they are available for review.
    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation Measures. For effects that are "Less Than Significant With Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significance

3.1 Aesthetics

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**AESTHETICS –** Except as provided in Public Resources Code Section 21099, would the Project**:**				
a)	Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b)	Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒	☐	☐	☐
c)	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☒	☐	☐	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

a) Would the Project have a substantial adverse effect on a scenic vista?

b) Would the Project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

c) In non-urbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?

d) Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Potentially Significant Impact. The Project would include construction of an industrial/warehouse building and associated improvements on currently undeveloped, vacant land. In total, the Project would provide 419,840 square feet of industrial/warehouse building and associated improvements, including loading docks, tractor-trailer stalls, passenger vehicle parking spaces, a tube steel fence along the eastern, western, and southern boundaries of the Project site, and landscape areas. Due to this proposed increase in on-site development intensity, there is a potential for the Project to affect public views of scenic vistas or otherwise alter the existing visual character or quality of public views, despite the fact that the Project must

be designed and constructed in accordance with the design standards set forth both the Main Street and Freeway Corridor Specific Plan and the City's Development Code. In addition, implementation of the Project would include the installation of new nighttime lighting, which could potentially adversely affect nighttime views in the area, including drivers on U.S. Highway 395. Such lighting would include lighting for on-site parking and facilities and light generated by vehicles entering and exiting the Project site. Therefore, impacts are potentially significant, and these issues will be analyzed in the Draft EIR.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY RESOURCES – In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

a) Would the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. According to the California Department of Conservation's California Important Farmland Finder, the Project site contains grazing land (CDOC 2018). Grazing land is described as land on which the existing vegetation is suited to the grazing of livestock. Grazing land does not include land designated or previously designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (collectively "Important Farmland"). Therefore, no impacts would occur, and no further analysis is proposed for the Draft EIR.

b) Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. According to the California Department of Conservation's Williamson Act Parcel map for South San Bernardino County, the Project site is not located on or adjacent to any lands under a Williamson Act contract (City of Hesperia 2010b). In addition, the Project site and surrounding area are not zoned for agricultural uses, but instead for Commercial and Industrial Business Park uses (City of Hesperia 2010a). As such, implementation of the Project would not conflict with existing zoning for agricultural use or land under a Williamson Act contract. Therefore, no impacts would occur, and no further analysis is proposed for the Draft EIR.

c) Would the Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. According to the City's Zoning Map, the Project site is not located on or adjacent to forestland, timberland, or timberland zoned timberland production (City of Hesperia 2010a). Therefore, no impacts would occur, and no further analysis is proposed for the Draft EIR.

d) Would the Project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project site is not located on or adjacent to forestland. No private timberlands or public lands with forests are located in the City. Therefore, no impact would occur, and no further analysis is proposed for the Draft EIR.

e) Would the Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The Project site is not located on or adjacent to any parcels identified as Important Farmland or forestland (CDOC 2018). In addition, the Project would not involve changes to the existing environment that would result in the indirect conversion of Important Farmland or forestland located away from the Project site. Therefore, no impacts would occur, and no further analysis is proposed for the Draft EIR.

3.3 Air Quality

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
III.	**AIR QUALITY –** Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the Project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b)	Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	☒	☐	☐	☐
c)	Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
d)	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☒	☐	☐	☐

a) ***Would the Project conflict with or obstruct implementation of the applicable air quality plan?***

b) ***Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?***

c) ***Would the Project expose sensitive receptors to substantial pollutant concentrations?***

d) ***Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

Potentially Significant Impact. Project construction and operations would involve activities that would generate both short-term and long-term criteria pollutant and other emissions. Further air quality analysis is required to determine whether the Project could potentially result in any adverse effects related to air quality. Therefore, these issues will be analyzed in the Draft EIR.

3.4 Biological Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES – Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☒	☐	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☒	☐	☐	☐

a) Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b) Would the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

c) Would the Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Would the Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Potentially Significant Impact. Implementation of the Project would result in construction and operational activities upon a currently undeveloped, vacant site. Such activities could potentially have an adverse effect on candidate, sensitive, or special-status species; sensitive natural communities; migratory wildlife corridors; and protected trees. Further biological resources analysis is required to determine whether the Project could potentially result in any adverse effects related to biological resources. Therefore, these issues will be analyzed further in the Draft EIR.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES – Would the Project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☒	☐	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☒	☐	☐	☐

a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c) Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?

Potentially Significant Impact. Implementation of the Project would result in construction and operational activities upon a currently undeveloped, vacant site. Such activities could potentially have an adverse effect on currently unrecorded, unknown historical, archaeological, or Tribal Cultural Resources. Further cultural resources analysis is required to determine whether the Project could potentially result in any adverse effects related to cultural resources. Therefore, these issues will be analyzed further in the Draft EIR.

3.6 Energy

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY – Would the Project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	☒	☐	☐	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☒	☐	☐	☐

a) Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

b) Would the Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Potentially Significant Impact. Project construction and operations would involve activities that would require the use of energy, including electricity and petroleum. Further energy usage analysis is required to determine whether the Project could potentially result in any adverse effects related to energy consumption. Therefore, these issues will be analyzed in the Draft EIR.

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS – Would the Project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
i) ii) Strong seismic ground shaking?	☐	☐	☒	☐
ii) iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iii) iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☒	☐	☐	☐

a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

No Impact. The Alquist–Priolo Earthquake Zoning Act (Alquist–Priolo Act) requires the delineation of fault zones along active faults in California. The purpose of the Alquist–Priolo Act is to regulate development on or near active fault traces to reduce hazards associated with fault rupture. The Alquist–Priolo Earthquake Fault Zones are the regulatory zones that include surface traces of active faults. According to the California Department of Conservation, the Project site is not located in an Alquist–Priolo Earthquake Fault Zone

(CDOC 2023). Thus, the potential for surface rupture is low on the Project site. Therefore, no impacts would occur, and this issue will not be evaluated further in the Draft EIR.

ii) Strong seismic ground shaking?

Less-Than-Significant Impact. Similar to other areas located in seismically active Southern California, the City is susceptible to strong ground shaking during an earthquake. However, the Project site is not located within an Alquist–Priolo Earthquake Fault Zone, and the site would not be affected by ground shaking more than any other area in this seismic region. Pursuant to Title 15, Buildings and Construction, of the Hesperia Municipal Code, the Project would incorporate the design recommendations included in its geotechnical report, which will be subject to review and approval by City staff prior to issuance of a grading permit. The Project's geotechnical report provides specific design recommendations to ensure the structural integrity of the Project in the event that seismic ground shaking is experienced at the Project site. These recommendations include performing remedial grading, over-excavating existing soils, and recompacting these soils with structured fill, among other technical design recommendations (Appendix A, Geotechnical Investigation). Additionally, the Project's structures would be designed consistent with the most recent version of the California Building Code, which includes universal standards relating to seismic load requirements. Compliance with the recommendations of the geotechnical report is mandated by Section 15.060.040 of the Hesperia Municipal Code, and compliance is subject to inspection by the City Building Official. With implementation of the recommendations of the Project's geotechnical report, impacts associated with strong seismic ground shaking would be less than significant, and no further analysis will be conducted in the Draft EIR.

iii) Seismic-related ground failure, including liquefaction?

Less-Than-Significant Impact. Soil liquefaction is a seismically induced form of ground failure that has been a major cause of earthquake damage in Southern California. Liquefaction is a process by which water-saturated granular soils transform from a solid to a liquid state because of a sudden shock or strain such as an earthquake. The California Geologic Survey has not yet conducted detailed seismic hazards mapping in the area of the Project site. Due to the existing geologically young, loose, unconsolidated sediments throughout the City, liquefaction has the potential to occur within the City. However, according to Exhibit SF-1 of the City's General Plan Safety Element (City of Hesperia 2010a), the Project site is not within an area of the City that has the potential for liquefaction. In addition, the Project's geotechnical report states that based on the San Bernardino County Land Use Plan, General Plan, Geologic Hazard Overlays, Map FH05 for the Baldy Mesa 7.5-Minute Quadrangle indicates that liquefaction is not considered to be a concern for the Project site (Appendix A). With implementation of the recommendations of the Project's geotechnical report, impacts associated with potential seismic-related ground failure, including liquefaction, would be less than significant, and no further analysis will be conducted in the Draft EIR.

iv) Landslides?

No Impact. According to Exhibit SF-1 of the City's General Plan Safety Element (City of Hesperia 2010a), the Project site is not located in an area identified as susceptible to slope instability. The Project site is relatively flat and is not located adjacent to any potentially unstable topographical feature such as a hillside or riverbank. Therefore, no impacts would occur, and no further analysis will be conducted in the Draft EIR.

b) Would the Project result in substantial soil erosion or the loss of topsoil?

Less-Than-Significant Impact. The Project would involve earthwork and other construction activities that would disturb surface soils and temporarily leave exposed soil on the ground's surface. Common causes of soil erosion from construction sites include stormwater, wind, and soil being tracked off site by vehicles. To help curb erosion, Project construction activities must comply with all applicable federal, state, and local regulations for erosion control. The Project would be required to comply with standard regulations, including South Coast Air Quality Management District Rules 402 and 403, which would reduce construction erosion impacts. Rule 402 requires that dust suppression techniques be implemented to prevent dust and soil erosion from creating a nuisance off site (SCAQMD 1976). Rule 403 requires that fugitive dust be controlled with best available control measures so that it does not remain visible in the atmosphere beyond the property line of the emissions source (SCAQMD 2005).

Since Project construction activities would disturb one or more acres, the Project must adhere to the provisions of the National Pollutant Discharge Elimination System Construction General Permit. Construction activities subject to this permit include clearing, grading, and ground disturbances such as stockpiling and excavating. The Construction General Permit requires implementation of a stormwater pollution prevention plan, which would include construction features for the Project (i.e., best management practices) designed to prevent erosion and protect the quality of stormwater runoff. Sediment-control best management practices may include stabilized construction entrances, straw wattles on earthen embankments, sediment filters on existing inlets, or the equivalent. Therefore, impacts would be less than significant, and no further analysis will be conducted in the Draft EIR.

Once developed, the Project site would include an industrial/warehouse building, paved surfaces, and other on-site improvements that would stabilize and help retain on-site soils. The remaining portions of the Project site containing pervious surfaces would primarily consist of landscape areas. These landscape areas would include a mix of trees, shrubs, plants, and groundcover that would help retain on-site soils while preventing wind and water erosion from occurring. Therefore, operational impacts related to soil erosion would be less than significant. No further analysis will be conducted in the Draft EIR.

c) Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less-Than-Significant Impact. As discussed previously, the potential for the Project to result in or be affected by landslides and liquefaction is low, and these issues are not anticipated at the Project site. Project activities may occur on geologically unstable soils such as those susceptible to lateral spreading, subsidence, or collapse. However, the Project would be designed consistent with the specific design recommendations of the Project's geotechnical report, which provides recommendations to perform remedial grading, over-excavate existing soils, and recompact these soils with structured fill, among other technical design recommendations (Appendix A). Implementation of these recommendations would address these potentially hazardous conditions and ensure structural integrity in the event that seismic-related issues are experienced at the Project site. Compliance with the recommendations of the geotechnical report is mandated by Section 15.060.040 of the Hesperia Municipal Code, and compliance is subject to inspection by the City Building Official. With implementation of the recommendations of the Project's geotechnical report, impacts would be less than significant, and no further analysis will be conducted in the Draft EIR.

d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less-Than-Significant Impact. Expansive soils are characterized by their potential shrink/swell behavior. Shrink/swell is the change in volume (expansion and contraction) that occurs in certain fine-grained clay sediments from the cycle of wetting and drying. Clay minerals are known to expand with changes in moisture content. The higher the percentage of expansive minerals present in near-surface soils, the higher the potential for substantial expansion.

According to the Project's geotechnical report, laboratory testing performed on a representative sample of the near surface soils indicates that the materials on the Project site possess a non-expansion potential (Appendix A). Therefore, no design considerations related to expansive soils are considered warranted for the Project site. It is recommended that additional expansion index testing be conducted at the completion of rough grading to verify expansion potential of the as-graded building pad. According to the City's General Plan, the City's soils are mostly composed of water-laid sand, silt, and gravel (City of Hesperia 2010a). The U.S. Department of Agriculture's Web Soil Survey does not identify the Project site or surrounding area as containing clay soils, which are typically expansive. 97.1% of the Project site is documented to consist of 0–25 inches of Cajon sand and the remaining 2.9% of the Project site consists of 0–6 inches of Hesperia loamy fine sand, which does not exhibit significant shrink/swell behavior (USDA 2023). Therefore, impacts would be less than significant, and no further analysis will be conducted in the Draft EIR.

e) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact. The Project would connect to the City's municipal sewer lines. The Project would not require septic tanks or alternative wastewater disposal systems. Therefore, no impacts would occur, and no further analysis will be conducted in the Draft EIR.

f) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Potentially Significant Impact. According to the City's General Plan Conservation Element, the City has potential for paleontological finds (City of Hesperia 2010a). As such, development and construction activities associated with the Project have the potential to unearth potentially significant paleontological resources. Therefore, impacts would be potentially significant, and further analysis is proposed in the Draft EIR.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS – Would the Project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

a) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Would the Project generate conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially Significant Impact. Project construction and operations would involve activities that would generate both short-term and long-term greenhouse gas emissions. Further greenhouse gas analysis is required to determine whether the Project could potentially result in any adverse effects related to greenhouse gases. Therefore, these issues will be analyzed in the Draft EIR.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HAZARDS AND HAZARDOUS MATERIALS – Would the Project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☒	☐	☐	☐

a) Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Potentially Significant Impact. Development of the Project would result in the construction of an industrial/warehouse building and associated improvements on currently undeveloped, vacant land. Project implementation could potentially result in impacts related to hazardous materials and wildland fire. Therefore, these issues will be analyzed in the Draft EIR.

b) Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Potentially Significant Impact. Development of the Project would result in the construction of an industrial/warehouse building and associated improvements on currently undeveloped, vacant land. Project implementation could potentially result in impacts related to hazardous materials and wildland fire. Therefore, these issues will be analyzed in the Draft EIR.

c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The nearest school to the Project site is San Joaquin Valley College (9331 Mariposa Road), which is located approximately 1.2 miles southeast of the site. As such, the closest school is located well outside of a 0.25-mile radius around the Project site. Therefore, no impacts would occur, and this issue will not be evaluated further in the Draft EIR.

d) Would the Project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The Hazardous Waste and Substances Sites List (Cortese List) is a planning document providing information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires the California Environmental Protection Agency to develop, at least annually, an updated Cortese List. The Department of Toxic Substances Control is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous materials release information for the Cortese List (CalEPA 2023). A review of Cortese List online data resources does not identify hazardous materials or waste sites on the Project site or immediately surrounding area (DTSC 2023; RWQCB 2023). Therefore, no impacts would occur, and this issue will not be evaluated further in the Draft EIR.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The nearest operational public-use airport to the Project site is the Hesperia Airport, which is located approximately 6 miles to the southeast. The airport is located on the Mesa, west of Antelope Valley wash and south of Ranchero Road. According to the Comprehensive Land Use Plan, the Project site is not located within a runway protection zone or safety zone area, which would have potential safety and noise impacts (San Bernardino County 1991). Therefore, impacts would not occur, and this issue will not be evaluated further in the Draft EIR.

f) Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less-Than-Significant Impact. According to the City's Mitigation Plan, the Project would be required to comply with the City's Emergency Operations Plan (City of Hesperia 2017). The Emergency Operations Plan provides a framework for coordinated response and recovery activities during an emergency (City of Hesperia 2017). In addition, the City's General Plan designates all freeways and arterial roads as emergency evacuation routes. Typically, roadway facilities designated by the City's General Plan Safety Element as major, primary, or secondary highways, as well as other streets with regional access, are assumed to serve as evacuation routes in the event of a regional emergency. As roadways capable of supporting high traffic volumes and providing regional access to other highways, freeways, and neighboring jurisdictions, U.S. Highway 395, Main Street, and I-15 are expected to serve as emergency evacuation routes in the event of an emergency. The Project does not propose any changes to the geometry of these roadways, and thus it follows that these roadways' ability to serve as emergency evacuation routes would

not be compromised. As a result, the Project would not significantly affect emergency response or evacuation activities. Therefore, impacts would be less than significant, and this issue will not be evaluated further in the Draft EIR.

g) Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Potentially Significant Impact. Development of the Project would result in the construction of an industrial/warehouse building and associated improvements on currently undeveloped, vacant land. Project implementation could potentially result in impacts related to hazardous materials and wildland fire. Therefore, these issues will be analyzed in the Draft EIR.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY – Would the Project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☒	☐	☐	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	☒	☐	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on or off site;	☒	☐	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;	☒	☐	☐	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☒	☐	☐	☐
iv) impede or redirect flood flows?	☒	☐	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☒	☐	☐	☐

a) Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

b) Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) result in substantial erosion or siltation on or off site;

ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;

iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv) impede or redirect flood flows?

Potentially Significant Impact. Implementation of the Project would result in construction and operational activities upon a currently undeveloped, vacant site. The Project would include an underground infiltration/detention system within the eastern portion of the Project site. Construction and operational activities could potentially have an adverse effect on existing drainage patterns, which could subsequently impact surface water and groundwater quality, as well as both on-site and local hydrology. Therefore, these issues will be analyzed in the Draft EIR.

d) In flood hazard, tsunami, or seiche zones, would the Project risk release of pollutants due to Project inundation?

Less-Than-Significant Impact. The Project would not be susceptible to flood hazards, tsunami, or seiche. Seiche is generally associated with oscillation of enclosed bodies of water (e.g., reservoirs, lakes) typically caused by ground shaking associated with a seismic event; however, the Project site is not located near an enclosed body of water. Flooding from tsunami conditions is not expected because the Project site is located approximately 63 miles from the Pacific Ocean.

In addition, the Federal Emergency Management Agency Flood Map Service Center identifies the Project site as Zone X, which is classified as an area of minimal flood hazard, outside of the Special Flood Hazard Area (FEMA 2023). As such, the Project would not risk release of pollutants due to inundation. Therefore, impacts associated with seiche, tsunami, or flooding would be less than significant, and this issue will not be evaluated further in the Draft EIR.

e) Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Potentially Significant Impact. Implementation of the Project would result in construction and operational activities upon a currently undeveloped, vacant site. Such activities could potentially have an adverse effect on existing drainage patterns, which could subsequently impact surface water and groundwater quality, as well as both on-site and local hydrology. Therefore, these issues will be analyzed in the Draft EIR.

3.11 Land Use and Planning

		Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI.	**LAND USE AND PLANNING** – Would the Project:				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

a) Would the Project physically divide an established community?

No Impact. The physical division of an established community typically refers to the construction of a linear feature (e.g., a major highway or railroad tracks) or removal of a means of access (e.g., a local road or bridge) that would impair mobility within an existing community or between a community and outlying area.

Under the existing condition, the Project site is vacant land and is not used as a connection between established communities. Instead, connectivity within the area surrounding the Project site is facilitated via local roadways. As such, the Project would not impede movement within the Project area, within an established community, or from one established community to another. Therefore, no impacts would occur, and this issue will not be evaluated further in the Draft EIR.

b) Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less-Than-Significant Impact. The Project would not result in a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, as further discussed below.

City of Hesperia Land Use Plans, Policies, and Regulations

General Plan

Pursuant to state law, Specific Plans establish land use regulations for those areas covered by the Specific Plan. The General Plan designates the Specific Plan to cover all freeway frontages within the City as well as the commercial and industrial areas parallel to the freeway corridor. The goals, policies, and development standards applicable to the Project are found in the Specific Plan.

Main Street and Freeway Corridor Specific Plan

The Specific Plan establishes a framework for the Main Street and freeway corridors and is intended to facilitate and support development and improvements along these corridors. The regulations of the Specific Plan replace those set forth in the planning and zoning provisions of the City's Development Code, and any other applicable ordinances.

The Project site is zoned and designated by the Specific Plan as CIBP (City of Hesperia 2021). The Project site would be developed in accordance with the provisions set forth in this land use designation. The Specific Plan lists CIBP as one of two industrial zones. The CIBP zone is meant to create consolidated areas for employment-creating uses in a business park setting. The zone is intended to provide for service commercial, light industrial, light manufacturing, and industrial support uses, mainly conducted in an enclosed building, to minimize environmental impacts such as noise, vibration, air pollution, glare, or waste disposal. The CIBP zone falls within three land use districts, Main Street/I-15 District, U.S. Highway 395/ I-15 District, and Industrial District. The Main Street/I-15 and U.S. Highway 395/I-15 Districts provide enhanced vehicular, truck, and rail accessibility by taking advantage of their location along the I-15 corridor with its connection to U.S. Highway 395, and its linkage to the Southern California Logistics Airport. The Project site falls within the Main Street/I-15 District. The Main Street/I-15 District takes advantage of regional freeway accessibility and visibility through high-quality development and streetscape enhancements.

Among the permitted uses in the CIBP zone, warehousing and wholesale distribution centers are permitted at 200,000 square feet or less. Warehouses and wholesale distribution centers over 200,000 square feet are conditionally permitted. The Specific Plan states that the maximum gross floor area ratio in CIBP zones is 0.35 (City of Hesperia 2021). Additionally, maximum building height within the zone is 60 feet at the setback line, thereafter height may be increased at a rate of 1 foot in height for every additional 3-foot increase in front yard setback, up to a maximum building height of 150 feet (City of Hesperia 2021).

The Project would include construction of a total of 419,840 square feet of warehousing use, which would require a Conditional Use Permit. As part of the Project approvals, the Project Applicant is requesting approval of a Conditional Use Permit. Assuming that the City's decision makers approve the Conditional Use Permit, the Project would be an allowable use within the CIBP zone. Additionally, the Project plans would be reviewed by City staff to ensure consistency with all applicable development standards and regulations.

The Specific Plan contains several goals and policies that address land use and planning and are applicable to the Project. An analysis of the Project's consistency with these goals and policies is provided in Table 1.

Table 1. Specific Plan Consistency Analysis

Specific Plan Goal or Policy	Consistency Summary
Specific Plan Goal: LU-1b: Provide for continuing growth within the Specific Plan area, with land uses and intensities appropriately designated to meet the needs of anticipated growth and to achieve the community's objectives.	**Consistent.** The Project would include the construction of an industrial/warehouse building. The Project site is designated as CIBP and would support the expansion of regional commercial development. Additionally, the Project would support the City's goal of increasing jobs within the City and balancing the job to housing ratio. Therefore, the Project would be consistent with the goal.

Table 1. Specific Plan Consistency Analysis

Specific Plan Goal or Policy	Consistency Summary
Policy LU-1.1: With the adoption of the Main Street and Freeway Corridor Specific Plan, establish land use districts that have complimentary rather than competitive uses/zones, and maintain the integrity of and interrelationships between these zones.	**Consistent.** The Project site would be located in the Specific Plan's Main Street/I-15 District. The Main Street/I-15 District is intended for mixed-use development to enhance large-scale regional commercial and service uses. The Project would be compatible with the Main Street/I-15 District and be consistent with its land use designation of CIBP. Therefore, the Project would be consistent with the goal.
Goal LU-2: Create a jobs/housing balance in the City.	**Consistent.** For purposes of analyses, employment estimates were calculated using average employment density factors reported by SCAG. SCAG reports that for every 2,111 square feet of warehouse space in San Bernardino County, the median number of jobs supported is one (SCAG 2001). As such, the estimated number of employees required for operation would be approximately 199. According to the City's 2019 SCAG profile, the total number of jobs in the City of Hesperia during 2017 was 22,513 (SCAG 2019). Additionally, in 2018, the total number of housing units in the City was 29,601 (SCAG 2019). As such, jobs generated from the Project would contribute to balancing the jobs/housing ratio. Therefore, the Project would be consistent with the goal.
Policy LU-2.1: Designate land near I-15 and U.S. Highway 395 for freeway-oriented commercial and industrial/business park development.	**Consistent.** The Project is located approximately 1.1 miles west of I-15. Additionally, the Project site is 0.2 miles west of U.S. Highway 395. The Project site and surrounding area to the north and partially to the east and south are designated as CIBP. The Project would include construction of an industrial/warehouse building. Therefore, the Project is consistent with the policy.
Policy LU-2.2: Add to the City's industrial land base where logically and physically possible to do so.	**Consistent.** Under existing conditions, the Project site is vacant, undeveloped land. The Project site is designated as CIBP. As such, the Project would include construction of an industrial/warehouse building with designated office space and associated improvements. Because of the nature of the Project and the size of the Project site, the Project would add to the City's industrial land base, while being physically advantageous. Additionally, the Project site is located 0.2 miles from U.S. Highway 395 and 1.1 miles west of I-15. Therefore, trucks traveling to and from the Project site would have convenient freeway access. Thus, the Project would be consistent with the policy.

Table 1. Specific Plan Consistency Analysis

Specific Plan Goal or Policy	Consistency Summary
Goal LU-6: Make use of vacant sites with the Specific Plan area.	**Consistent.** The Project site is located on vacant land within the Specific Plan area. The Project involves the construction of an industrial/warehouse building. The Project site has a land use designation of CIBP and would comply with provisions associated with development in a CIBP zone outlined in the Specific Plan.

Source: City of Hesperia 2021a.
Notes: LU = Land Use; I = Interstate; City = City of Hesperia; SCAG = Southern California Association of Governments; CIBP = Commercial/Industrial Business Park.

Regional Transportation Plan/Sustainable Communities Strategy

The Southern California Association of Governments 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (SCAG RTP/SCS) (also known as the Connect SoCal Plan) was adopted on October 6, 2022, and presents the land use and transportation vision for the region through the year 2045, providing a long-term investment framework for addressing the region's challenges (SCAG 2022). The RTP/SCS explicitly lays out goals related to housing, transportation, equity, and resilience in order to adequately reflect the increasing importance of these topics in the region, and where possible the goals have been developed to link to potential performance measures and targets. The RTP/SCS development process involved working closely with local governments throughout the region to collect and compile data on land use and growth trends. The core vision of the RTP/SCS is to build upon and expanded land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern.

Analysis of the Project's consistency with the SCAG 2022 RTP/SCS goals is provided in Table 2.

Table 2. Regional Transportation Plan/Sustainable Communities Strategy Consistency Analysis

RTP/SCS Goals	Consistency Summary
RTP/SCS Goal 1. Encourage regional economic prosperity and global competitiveness.	**Consistent.** The Project would involve construction of a 419,840-square-foot industrial/warehouse building. Thus, the Project would generate jobs and tax revenue for the City and its residents. Once operational, the Project would add to the City's business tax base and would employ approximately 199 workers, helping the City better meet its jobs/housing balance, while also providing commercial/industrial business park use that will help the City offer a more balanced array of land uses throughout the broader Project area.
RTP/SCS Goal 2. Improve mobility, accessibility, reliability, and travel safety for people and goods.	**Consistent.** The Project would include construction of an industrial/warehouse building that would be easily and efficiently accessible to U.S. Highway 395, and I-15, which would help to facilitate regional goods movement throughout Southern California.

Table 2. Regional Transportation Plan/Sustainable Communities Strategy Consistency Analysis

RTP/SCS Goals	Consistency Summary
RTP/SCS Goal 3. Enhance the preservation, security, and resilience of the regional transportation system.	**Consistent.** A traffic impact analysis will be conducted to determine the Project's potential impact on the regional and local circulation system. If deemed necessary by this upcoming evaluation, feasible mitigation measures would be required to minimize any adverse effects on the circulation system resulting from the Project to the greatest extent feasible. The findings of this evaluation effort will be included in the Draft EIR.
RTP/SCS Goal 4. Increase person and goods movement and travel choices within the transportation system.	**Consistent.** The Project would include construction and operation of an industrial/warehouse building, which would be easily and efficiently accessible to I-15 and U.S. Highway 395 and would help to facilitate regional goods movement throughout Southern California.
RTP/SCS Goal 5. Reduce greenhouse gas emissions and improve air quality.	**Consistent.** The Project would involve development of an industrial use that inherently involves the emission of GHG and air contaminant emissions. An air quality and GHG analysis will be required to determine whether the Project could potentially result in any adverse effects related to air quality, health risk, and/or GHG emissions, and mitigation measures will be applied, as necessary, to minimize potential impacts. In addition, according to the Southern California Association of Governments Comprehensive Regional Goods Movement Plan and Implementation Strategy (SCAG 2013), the region will run out of suitably zoned vacant land designated for warehouse facilities in or around 2028. Thus, the Project would meet the growing demand for warehousing space and would do so in an area that is proximate to regional highways (I-15 and U.S. Highway 395), thereby reducing the need for longer-distance trips that could result in additional air pollutant and GHG emissions. Additionally, the Project would employ approximately 199 workers, helping the City better meet its jobs/housing balance, which should shorten commute distances of City residents who choose to work on the Project site, which would have a direct positive effect on tailpipe GHG and air contaminant emissions.
RTP/SCS Goal 6. Support healthy and equitable communities.	**Consistent.** The Project would involve development of an industrial use that inherently involves the emission of GHG and air contaminant emissions. An air quality and GHG analysis will be required to determine whether the Project could potentially result in any adverse effects related to air quality, health risk, and/or GHG emissions, and mitigation measures will be applied, as necessary, to minimize potential impacts. In addition, according to the Southern California Association of Governments Comprehensive Regional

Table 2. Regional Transportation Plan/Sustainable Communities Strategy Consistency Analysis

RTP/SCS Goals	Consistency Summary
	Goods Movement Plan and Implementation Strategy, the region will run out of suitably zoned vacant land designated for warehouse facilities in or around 2028 (SCAG 2013). Thus, the Project would meet the growing demand for warehousing space and would do so in an area that is proximate to regional highways (I-15 and U.S. Highway 395), thereby reducing the need for longer-distance that which could result in additional air pollutant and GHG emissions. Additionally, development of the Project at the Project site would provide quick and efficient access to I-15 and U.S. Highway 395, thereby eliminating the need for truck traffic to take longer routes through residential or commercial/retail areas. The Project would also include a number of components that are designed to reduce energy use, such as incorporating energy efficiency design features in compliance with CALGreen standards. By incorporating these measures, the Project would minimize its potential environmental effects on surrounding sensitive receptors to the maximum extent practicable. Thus, the Project would assist in this goal.
RTP/SCS Goal 7. Adapt to a changing climate and support an integrated regional development pattern and transportation network.	**Consistent.** As climate change continues to increase the number of instances of disruption to local and regional systems, it will become increasingly more urgent for local jurisdictions to employ strategies to reduce their individual contributions. The Project would involve development of an industrial use that inherently involves the emission of GHG and air contaminant emissions. An air quality and GHG analysis will be required to determine whether the Project could potentially result in any adverse effects related to air quality, health risk, and/or GHG emissions, and mitigation measures will be applied, as necessary, to minimize potential impacts. In addition, according to the Southern California Association of Governments Comprehensive Regional Goods Movement Plan and Implementation Strategy, the region will run out of suitably zoned vacant land designated for warehouse facilities in or around 2028 (SCAG 2013). Thus, the Project would meet the growing demand warehousing space and would do so in an area that is proximate to regional highways (I-15 and U.S. Highway 395), thereby reducing the need for longer-distance trips that could result in additional GHG emissions.

Table 2. Regional Transportation Plan/Sustainable Communities Strategy Consistency Analysis

RTP/SCS Goals	Consistency Summary
RTP/SCS Goal 8. Leverage new transportation technologies and data-driven solutions that result in more efficient travel.	**Consistent.** Development of the Project at the Project site would provide quick and efficient access to I-15 and U.S. Highway 395, thereby eliminating the need for truck traffic to take longer routes through residential or commercial/retail areas. In addition, according to the Southern California Association of Governments Comprehensive Regional Goods Movement Plan and Implementation Strategy, the region will run out of suitably zoned vacant land designated for warehouse facilities in or around 2028 (SCAG 2013). Thus, the Project would meet the growing demand warehousing space, and would do so in an area that is proximate to regional highways (I-15 and U.S. Highway 395), thereby reducing the need for longer-distance trips that could result in additional air pollutant and GHG emissions.
RTP/SCS Goal 9. Encourage development of diverse housing types in areas that are supported by multiple transportation options.	**Not Applicable.** The Project site is not zoned for housing, but rather industrial, and business uses. Thus, this goal is not applicable.
RTP/SCS Goal 10. Promote conservation of natural and agricultural lands and restoration of habitats.	**Consistent.** The Project would be located on an area zoned for industrial, and business uses. The Project site does not support agriculture.

Source: SCAG 2022.
Notes: RTP/SCS = Southern California Association of Governments Regional Transportation Plan/Sustainable Communities Strategy; City = City of Hesperia; I = Interstate; EIR = Environmental Impact Report; GHG = greenhouse gas.

As described in Tables 1 and 2, the Project would be consistent with the applicable goals and policies set forth by the Specific Plan, General Plan, and SCAG in the RTP/SCS and Regional Comprehensive Plan. Therefore, impacts would be less than significant, and this issue will not be evaluated further in the Draft EIR.

3.12 Mineral Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. MINERAL RESOURCES – Would the Project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☒	☐

a) Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Less-Than-Significant Impact. According to the Department of Conservation Mineral Land Classification Map, the Project site is located within the Mineral Resource Zone (MRZ) MRZ-4, which is designated as an area of no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources (CDOC 1995). These resources are primarily located within wash areas and active stream channels. Although the City has known mineral resources, none are identified as being of value to the region or the residents of the state (City of Hesperia 2010b). Therefore, impacts associated with the loss of a known mineral resource that would be of value to the region would be less than significant, and no further analysis will be conducted in the Draft EIR.

b) Would the Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Less-Than-Significant Impact. According to the Conservation Element in the City's General Plan, mineral resources such as sand, gravel, and stone have been identified within the City (City of Hesperia 2010a). Additionally, several aggregate resources such as gravelly alluvium and sandy alluvium are known to exist within the City. These resources are primarily located within wash areas and active stream channels. Although the City has known mineral resources, none are identified as being of value to the region or the residents of the state (City of Hesperia 2010b). The Project would be located within an area that is not zoned for mineral resource extraction operations, and thus, such activities cannot currently occur on the Project site. Therefore, impacts associated with the loss of availability of a locally important mineral resource recovery site would be less than significant, and no further analysis will be conducted in the Draft EIR.

3.13 Noise

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE – Would the Project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☒	☐	☐	☐

a) Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

b) Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Potentially Significant Impact. Project construction and operations would involve activities that would generate both short-term and long-term noise. Further noise analysis is required to determine whether the Project could potentially result in any adverse effects related to increased noise levels. Therefore, these issues will be analyzed in the Draft EIR.

3.14 Population and Housing

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING – Would the Project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) Would the Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Less-Than-Significant Impact. The Project would require a temporary construction workforce and a permanent operational workforce, both of which could potentially induce population growth in the Project area. The temporary workforce would be needed to construct the industrial/warehouse building and associated improvements. The number of construction workers needed during any given period would largely depend on the specific stage of construction but would likely range from a dozen to several dozen workers on a daily basis. These short-term positions are anticipated to be filled primarily by construction workers who reside in the Project site's vicinity; therefore, construction of the Project would not generate a permanent increase in population within the Project area.

Because the future tenants are not known yet, the number of jobs that the Project would generate cannot be precisely determined. Thus, for purposes of analyses, employment estimates were calculated using average employment density factors reported by Southern California Association of Governments. Southern California Association of Governments reports that for every 2,111 square feet of warehouse space in San Bernardino County, the median number of jobs supported is one (SCAG 2001). The Project would include 419,840 square feet of industrial/warehouse space, excluding associated improvements. As such, the estimated number of employees required for operation would be approximately 199.

According to the City's General Plan, as of January 2009, the population of the City was approximately 88,184 residents. Upon build-out, the City anticipates growing to more than 243,000 residents (City of Hesperia 2010a). As such, the Project-related increase of approximately 199 employees would represent a nominal percentage of the City's projected future population upon General Plan build-out.[1]

In addition, data provided by the California Employment Development Department in August 2021 found that the unemployment rate for San Bernardino County is at 4.3%, which is slightly higher than the state average 4.1% (EDD 2023). As such, the Project's temporary and permanent employment requirements could likely be met by the City's existing labor force without people needing to relocate into the Project region, and the Project would not stimulate population growth or a population concentration above what is assumed in local and regional land use plans. Therefore, impacts would be less than significant, and no further analysis will be conducted in the Draft EIR.

b) Would the Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project site is currently vacant and contains no housing or other residential uses. Given that no residential uses are located on site, it follows that the site does not support a residential population. Therefore, no impacts would occur, and no further analysis will be conducted in the Draft EIR.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES				
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
iv) Fire protection?	☐	☐	☒	☐
v) Police protection?	☐	☐	☒	☐
vi) Schools?	☐	☐	☐	☒
vii) Parks?	☐	☐	☐	☒
viii) Other public facilities?	☐	☐	☐	☒

[1] Note that this represents a conservative approach, as this finding assumes that all future employees will have relocated to the City as a result of the Project from outside of the City, and that no future employees are already residents of the City.

a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

Less-Than-Significant Impact. Fire protection and emergency response services for the Project site are provided by the San Bernardino County Fire Department (SBCFD). SBCFD operates three fire stations within the City, with Fire Station 305 (8331 Caliente Road) located approximately 1.5 miles south of the Project site, Fire Station 304 (15660 Eucalyptus Street) is located approximately 5.1 miles northeast and Fire Station 302 (17288 Olive Street) is located approximately 6.7 miles east (SBCFD 2023).

According to the City's General Plan Safety Element, the average response time within the City is approximately 7 minutes 16 seconds (City of Hesperia 2010a). If needed, fire stations from adjacent cities, such as Victorville and Apple Valley, may respond to emergency calls in Hesperia. Based on the proximity of the Project site to the existing SBCFD facilities, the average response times in the Project area, the ability for nearby cities to respond to emergency calls, and the fact that the Project site is already located within SBCFD's service area, the Project could be adequately served by the SBCFD without the construction of new, or the expansion of existing, facilities.

In addition, as previously analyzed in response 3.14(a), the Project would not directly or indirectly induce unplanned population growth in the City. Although the Project could potentially result in an incremental increase in calls for service to the Project site compared to existing conditions, this increase is expected to be nominal (as opposed to new residential or commercial/retail land uses, which do result in greater increase in calls for service) and would not result in the need for new fire protection facilities.

Overall, it is anticipated that the Project would be adequately served by existing SBCFD facilities, equipment, and personnel. Therefore, impacts would be less than significant, and no further analysis will be conducted in the Draft EIR.

Police protection?

Less-Than-Significant Impact. Police protection and emergency response services for the Project site are provided by the San Bernardino County Sheriff's Department. The sheriff's department operates one station within the City, Hesperia Police Department (15840 Smoke Tree Street), which is located approximately 4.9 miles east of the Project site. Hesperia Police Department is composed of approximately 58 law enforcement personnel, including 1 captain, 1 lieutenant, 7 sergeants, 5 detectives, and 44 deputy sheriffs. There are also twenty professional staff employees who handle various administrative, clerical, and technical duties (City of Hesperia 2023).

As previously addressed, the Project would not directly or indirectly induce unplanned population growth in the City. Although the Project could potentially result in a slight incremental increase in calls for service to the Project site compared to existing conditions, this increase is expected to be nominal (as opposed to new residential or commercial/retail land uses, which do result in greater increase in calls for service) and would not result in the need for new police protection facilities.

Overall, it is anticipated that the Project would be adequately served by existing San Bernardino County Sheriff's Department facilities, equipment, and personnel. Therefore, impacts would be less than significant, and no further analysis will be conducted in the Draft EIR.

Schools?

No Impact. As previously discussed, the Project would not directly or indirectly induce unplanned population growth in the City. Although the Project would require employees to construct and operate the Project, these short-term and long-term employees would likely already reside within the broader Project area. As such, it is not anticipated that many people would relocate to the City as a result of the Project, and an increase in school-age children requiring public education is not expected to occur as a result.

Similar to other development projects in the City, the Project would be subject to Senate Bill 50, which requires payment of mandatory impact fees to offset any impact to school services or facilities. The provisions of Senate Bill 50 are deemed to provide full and complete mitigation of school facilities impacts, notwithstanding any contrary provisions in CEQA or other state or local laws (Government Code Section 65996). In accordance with Senate Bill 50, the Project Applicant would pay its fair share of impact fees based on the Project's square footage per Government Code Section 65995(h). These impact fees are required of most residential, commercial, and industrial development projects in the City. Therefore, no impacts would occur, and no further analysis will be conducted in the Draft EIR.

Parks?

No Impact. The Project would construct an industrial/warehouse building in the City. The Project does not propose any residential uses and would not directly or indirectly induce unplanned population growth in the City. As such, the Project would not increase the use of existing neighborhood parks or regional parks in the City and surrounding area. Therefore, no impacts would occur, and no further analysis will be conducted in the Draft EIR.

Other public facilities?

No Impact. Given industrial nature of the Project and the lack of population growth that would result from the Project, it is unlikely that the Project would increase the use of libraries and other public facilities. Therefore, no impacts would occur, and no further analysis will be conducted in the Draft EIR.

3.16 Recreation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION				
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a) ***Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?***

b) ***Does the Project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?***

No Impact. The Project would construct an industrial/warehouse building and associated improvements. The Project does not propose any residential uses and would not directly or indirectly result in a substantial and unplanned increase in population growth within the Project area. As such, the Project would not increase the use of existing neighborhood parks or regional parks in the City and surrounding area. In addition, as an industrial use, the Project does not propose recreational facilities or require the construction or expansion of recreational facilities. Therefore, no impacts would occur, and no further analysis will be conducted in the Draft EIR.

3.17 Transportation

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION – Would the Project:				
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☒	☐	☐	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☒	☐	☐	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
d) Result in inadequate emergency access?	☒	☐	☐	☐

a) Would the Project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

b) Would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

c) Would the Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

d) Would the Project result in inadequate emergency access?

Potentially Significant Impact. Project operations would involve industrial/warehouse activities that would generate truck and passenger vehicle traffic that may conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, or otherwise result in both localized and broader transportation impacts. Further traffic impact analysis is required to determine whether the Project could potentially result in any adverse effects related the local and regional circulation system. Therefore, these issues will be analyzed in the Draft EIR.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES				
Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☒	☐	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☒	☐	☐	☐

Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a) ***Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?***

b) ***A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?***

Potentially Significant Impact. Implementation of the Project would result in construction and operational activities upon a currently undeveloped, vacant site. Such activities could potentially have an adverse effect on currently unrecorded, unknown, historical, archaeological, or Tribal Cultural Resources. Further cultural resources analysis is required to determine whether the Project could potentially result in any adverse effects related to cultural resources. Therefore, these issues will be analyzed further in the Draft EIR.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS – Would the Project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☒	☐	☐	☐
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☒	☐	☐	☐
c) Result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☒	☐	☐	☐
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☒	☐	☐	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☒	☐	☐	☐

a) Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

b) Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?

c) Would the Project result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?

d) Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e) Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Potentially Significant Impact. Project construction and operations would involve activities that would require the use of energy and would generate the need for domestic water, sanitary sewer, stormwater, and solid waste disposal. Given the vacant, undeveloped nature of the Project site, these, and likely other dry and wet utilities and services would need to be extended onto the Project site. Further analysis is required to determine whether the Project could potentially result in any adverse effects related to utilities and services systems and to determine whether the Project would have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. Therefore, these issues will be analyzed in the Draft EIR.

3.20 Wildfire

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE – If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☒	☐	☐	☐

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☒	☐	☐	☐
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☒	☐	☐	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☒	☐	☐	☐

a) Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

b) Due to slope, prevailing winds, and other factors, would the Project exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

c) Would the Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

d) Would the Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Potentially Significant Impact. According to California Department of Forestry and Fire Protection's 2023 Local Response Area map for the City, the Project site is partially located in a High Fire Hazard Severity Zone (CAL FIRE 2023). The Project site is located less than a mile away from a Moderate Fire Hazard Severity Zone to the west, and the nearest Very High Fire Hazard Severity Zone is located approximately 2.5 miles south of the Project site. Given the location of the Project site, further wildfire risk analysis is required to determine whether the Project could potentially result in any adverse effects related to wildfire. Therefore, these issues will be analyzed in the Draft EIR.

3.21 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact With Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐
c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

a) ***Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?***

Potentially Significant Impact. The Project has the potential to degrade the quality of the environment, reduce the habitat of a plant or wildlife species, cause a plant or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal (see Section 3.4, Biological Resources). In addition, the Project may have the potential to eliminate important examples of California history or prehistory during grading activities due to the potential for unanticipated cultural resources (see Section 3.5, Cultural Resources). Therefore, impacts are considered potentially significant, and this issue will be analyzed in the Draft EIR.

b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Potentially Significant Impact. The Project could have impacts that are individually limited but cumulatively considerable. The EIR will analyze past, present, and reasonably foreseeable projects in the vicinity of the Project site. Therefore, impacts are considered potentially significant, and this issue will be analyzed in the Draft EIR.

c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Potentially Significant Impact. The Project could have environmental effects that could cause substantial adverse effects on human beings. Therefore, impacts are considered potentially significant, and this issue will be analyzed in the Draft EIR.

4 References and Preparers

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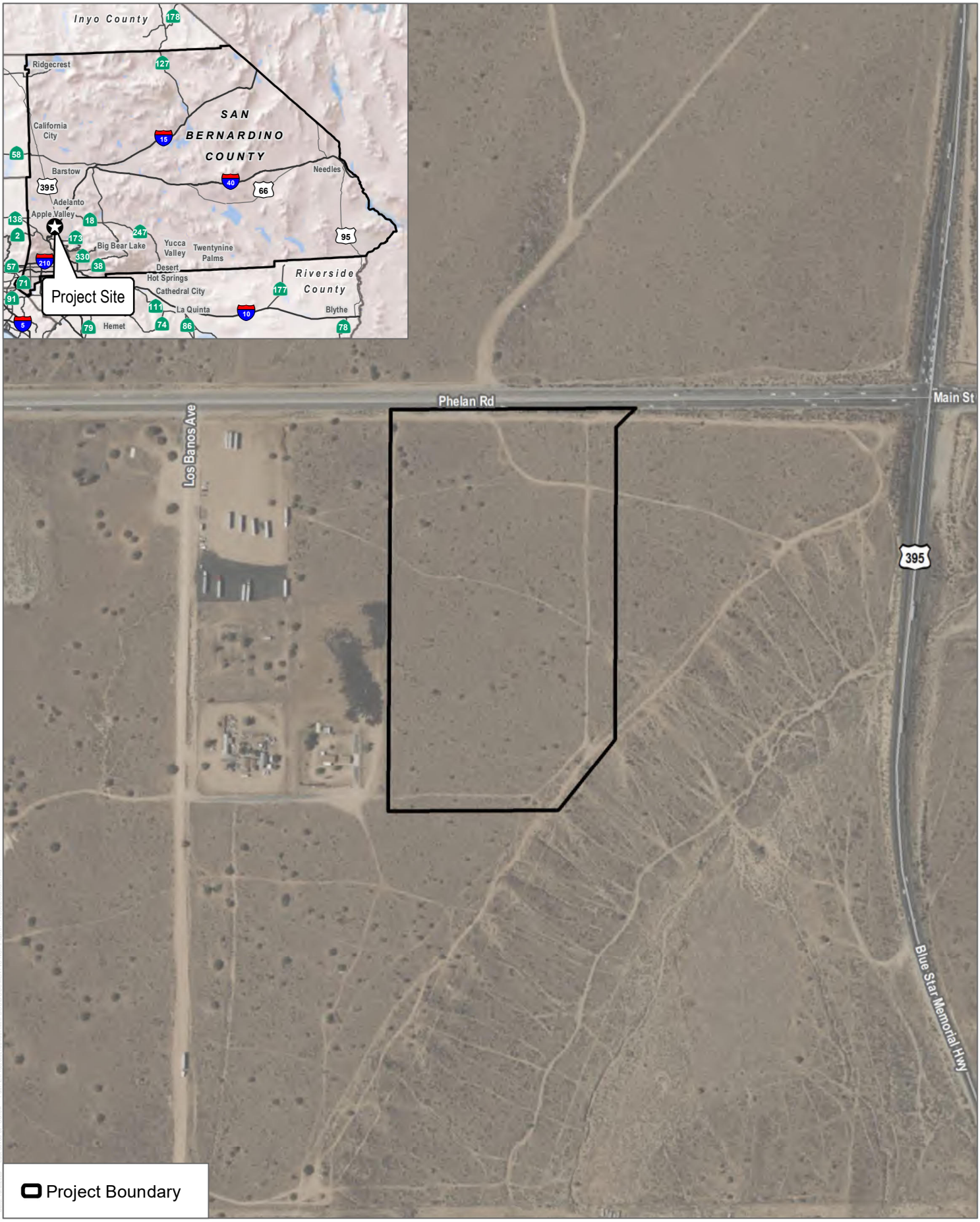
4.2 List of Preparers

City of Hesperia

Ryan Leonard, Senior Planner

Dudek (Environmental Consultant)

Carey Fernandes, Principal
Chelsea Ohanesian, Project Manager
Tracy Ortega, Environmental Planner
Olana Chow, GIS Analyst



SOURCE: Bing Imagery 2022

DUDEK

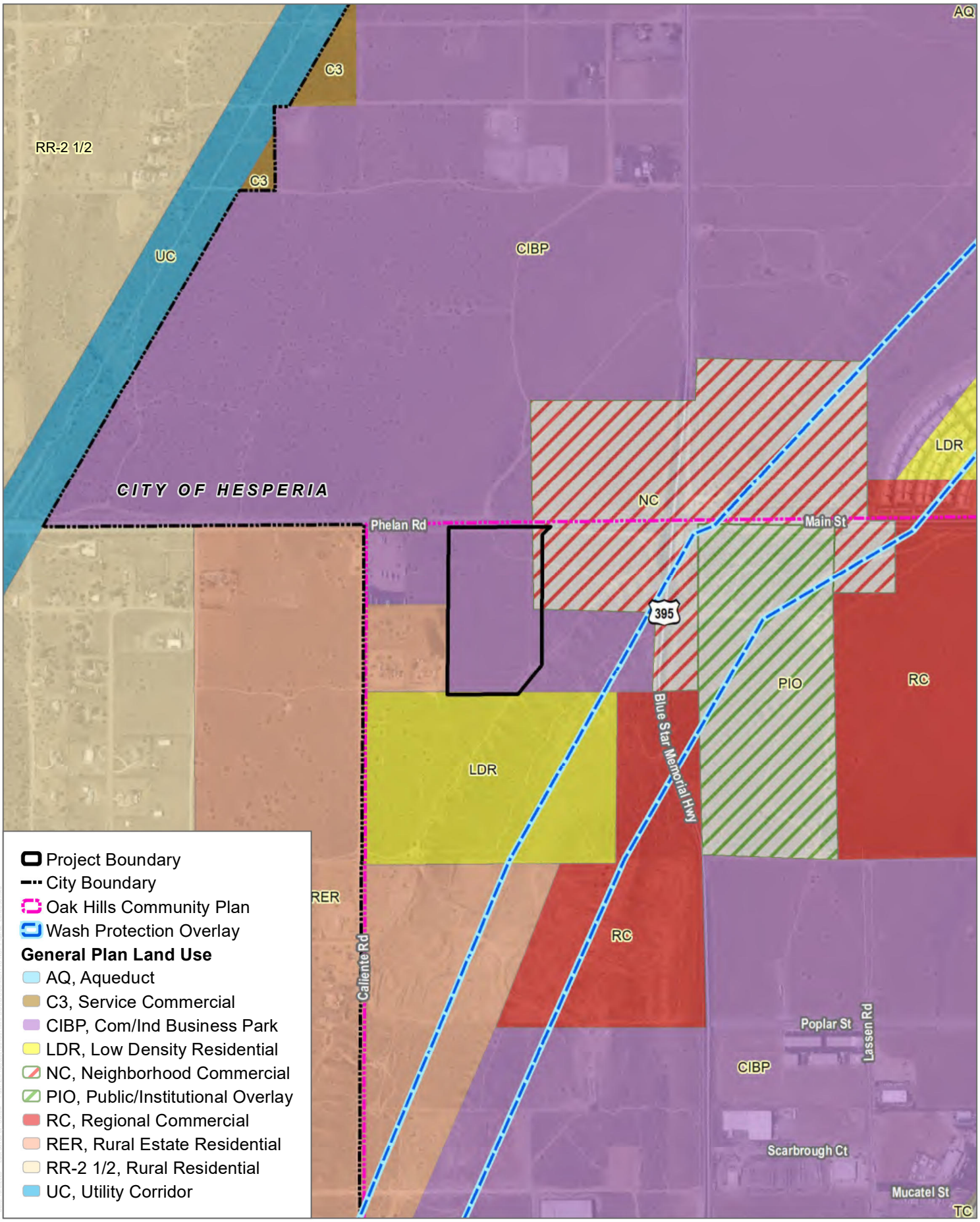
0 200 400 Feet

FIGURE 1

Project Location

Phelan 20 Project

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SOURCE: Bing Imagery 2022, City of Hesperia 2019

DUDEK

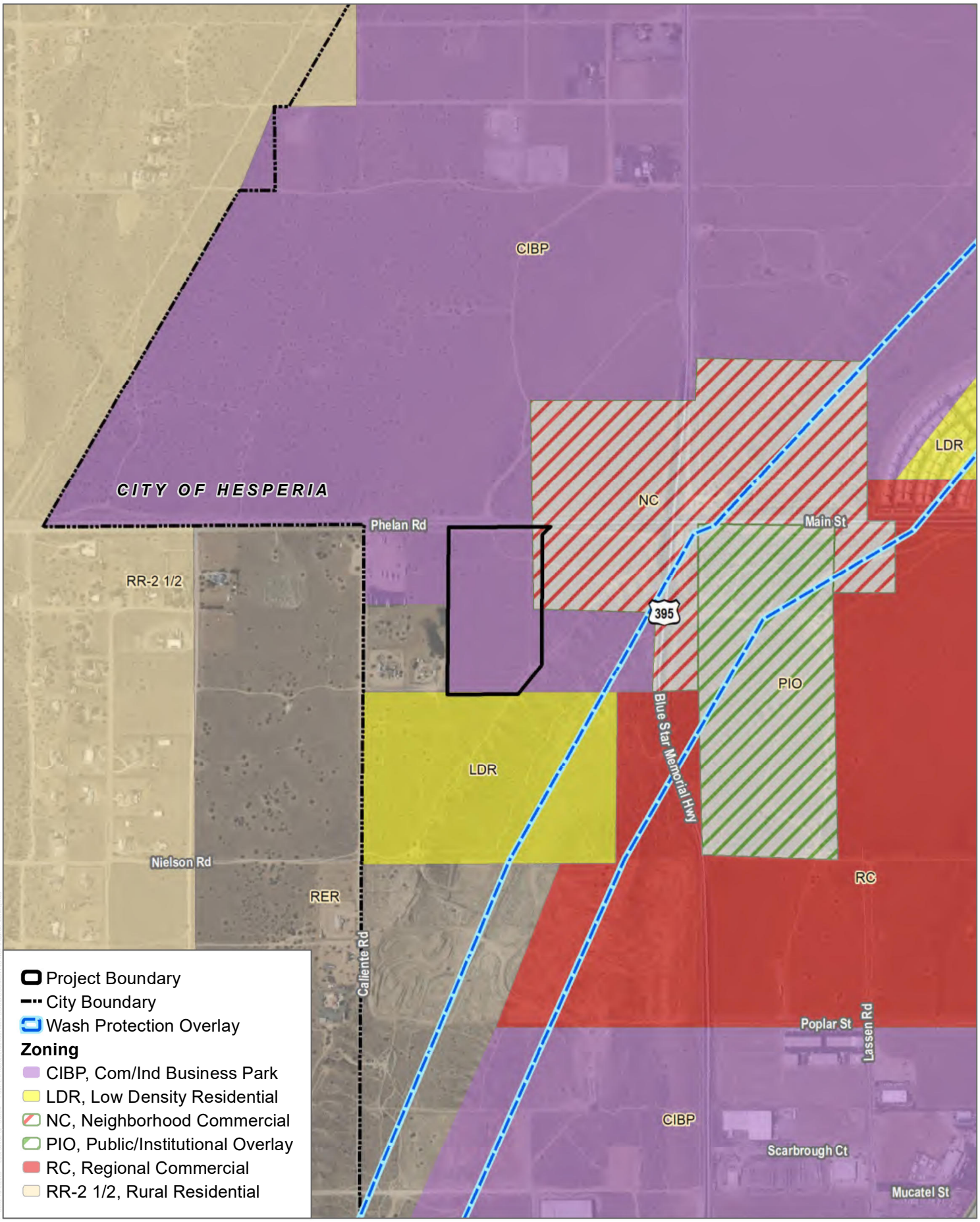
0 475 950 Feet

FIGURE 2

Land Use

Phelan 20 Project

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SOURCE: Bing Imagery 2022, City of Hesperia 2019

DUDEK

0 475 950 Feet

FIGURE 3

Zoning

Phelan 20 Project

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SOURCE: Bing Imagery 2022

DUDEK

0 80 160 Feet

FIGURE 4

Site Plan

Phelan 20 Project

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Appendix A
Geotechnical Investigation

GEOTECHNICAL INVESTIGATION
PHELAN 20 INDUSTRIAL BUILDING

Phelan Road, 650± feet East of Los Banos Avenue
Hesperia, California
for
Cambria 60 Partners LLC

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

May 23, 2023

Cambria 60 Partners LLC
14180 Dallas Parkway, Suite 730
Dallas, Texas 75254

Attention: Mr. Ron Rakunas

Project No.: **23G131-1**

Subject: **Geotechnical Investigation**
Phelan 20 Industrial Building
Phelan Road, 650± feet east of Los Banos Avenue
Hesperia, California

Mr. Rakunas:

In accordance with your request, we have conducted a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Pablo Montes Jr.
Project Engineer

Robert G. Trazo, M.Sc., GE 2655
Principal Engineer



Distribution: (1) Addressee

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APPENDICES

A Plate 1: Site Location Map
Plate 2: Boring Location Plan
B Boring Logs
C Laboratory Test Results
D Grading Guide Specifications
E Seismic Design Parameters

1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Site Preparation Recommendations

- Site stripping will be necessary to remove the dense native grass and shrub growth which is present throughout the majority of the site. Trees and their associated root masses should be removed in their entirety. All vegetation and any organic topsoil should be removed during site stripping.
- The soils encountered at the boring locations consist of younger native alluvium, underlain by older alluvium. The near-surface younger alluvium generally possesses varying densities and low strengths. The results of laboratory testing indicate that some of the near-surface alluvium possesses unfavorable consolidation/collapse characteristics. Based on these considerations, remedial grading is recommended to be performed within the proposed building area in order to remove a portion of the near-surface native alluvium and replace these materials as compacted structural fill.
- The existing soils within the proposed building area should be overexcavated to a depth of 5 feet below existing grades and to a depth of 3 feet below proposed pad grades. The proposed foundation influence zones should be overexcavated to a depth of at least 3 feet below proposed foundation bearing grade. The overexcavation should also extend to a sufficient depth to remove any variability in the soils.
- After overexcavation has been completed, the resulting subgrade soils should be evaluated by the geotechnical engineer to identify any additional soils that should be overexcavated. The resulting soils should be scarified and moisture conditioned to achieve a moisture content of 0 to 4 percent above optimum moisture, to a depth of at least 12 inches. The overexcavation subgrade soils should then be recompacted under the observation of the geotechnical engineer. The previously excavated soils may then be replaced as compacted structural fill.
- The new pavement and flatwork subgrade soils are recommended to be scarified to a depth of 12± inches, thoroughly moisture conditioned and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundation Recommendations

- Spread footing foundations, supported in newly placed structural fill soils.
- Maximum, net allowable soil bearing pressure: 3,000 lbs/ft^2.
- Reinforcement consisting of at least two (2) No. 5 rebars (1 top and 1 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slab Recommendations

- Conventional Slab on Grade, at least 6 inches thick
- Modulus of Subgrade Reaction: k = 150 psi/in
- Reinforcement is not considered to be necessary for geotechnical considerations.
- The actual thickness and reinforcement of the floor slab should be determined by the structural engineer, based on the imposed slab loading.

Pavements

ASPHALT PAVEMENTS (R=40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS (R=40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 23P122R2, dated March 30, 2023. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located on the south side of Phelan Road, 650± feet east of Los Banos Avenue in Hesperia, California. The site is bounded to the north by Phelan Road, to the west by a vacant lot and a single-family residence, and to the south and east by vacant parcels. The Oro Grande Wash is located to the southeast of the property. The general location of the site is illustrated on the Site Location Map, included as Plate 1 of this report.

The site consists of a rectangular-shaped parcel, 19.3± acres in size. The site is vacant and undeveloped. Ground surface cover throughout the site consists of exposed soils with moderate to heavy native grass, weed and shrub growth. Small trees are also present throughout the site in sparse concentration.

Detailed topographic information was obtained from a schematic site plan, prepared by RGA. Based on the elevation data provided on that plan, the overall site topography generally slopes downward to the northeast at a gradient of 2± percent. The Oro Grande Wash is located to the southeast of the property. The bottom of the Oro Grande Wash extends approximately 50 to 60± feet below the adjacent site grades. A descending slope extends from the site downward to the wash at an inclination of approximately 4h:1v (horizontal to vertical).

3.2 Proposed Development

Based on the site plan that was provided to our office, the site will be developed with one (1) industrial building, 420,000± ft² in size. The building will be located in the west-central area of the site, with dock-high doors along a portion of the east building wall. The building will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, Portland cement concrete pavements in the truck court, and areas of concrete flatwork and landscape planters.

Detailed structural information has not been provided. It is assumed that the new building will be a single-story structure of tilt-up concrete construction, typically supported on a conventional shallow foundation with a concrete slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 100 kips and 4 to 7 kips per linear foot, respectively.

No significant amounts of below-grade construction, such as basements or crawl spaces, are expected to be included in the proposed development. Based on the existing site topography, cuts and fills of 7 to 15± feet will be necessary to achieve the proposed site grades. It is expected that cut slopes and fill slopes along with new retaining walls will be required in order to achieve the new site grades.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration performed for this project consisted of seven (7) borings (identified as Boring Nos. B-1 through B-7) advanced to depths of 15 to 25± feet below the existing site grades. All of the borings were logged during drilling by a member of our staff.

The borings were advanced with hollow-stem augers, by a conventional truck-mounted drilling rig. Representative bulk and relatively undisturbed soil samples were taken during drilling. Relatively undisturbed samples were taken with a split barrel "California Sampler" containing a series of one-inch-long, 2.416± inch diameter brass rings. This sampling method is described in ASTM Test Method D-3550. Samples were also taken using a 1.4±-inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. Both of these samplers are driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content. The relatively undisturbed ring samples were placed in molded plastic sleeves that were then sealed and transported to our laboratory.

The approximate locations of the borings are indicated on the Boring Location Plan, included as Plate 2 in Appendix A of this report. The Boring Logs, which illustrate the conditions encountered at the boring locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Younger Alluvium

All of the borings encountered native younger alluvial soils at the ground surface, extending to depths ranging from 5½ to 12± feet below existing site grades. These soils generally consist of very loose to medium dense silty fine sands, varying medium to coarse sand, clay and gravel content.

Older Alluvium

Native older alluvium was encountered beneath the younger alluvium at all of the boring locations, extending to at least the maximum explored depth of 25± feet below existing site grades. The older alluvial soils consist of medium dense to very dense silty fine to coarse sands with occasional clayey fine to coarse sands, with varying gravel content. Some of the samples of the older alluvial soils were weakly cemented.

Groundwater

Free water was not encountered during the drilling of any of the borings. Based on the lack of any water within the borings and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 30± feet at the time of the subsurface exploration.

As part of our research, we also reviewed recent groundwater data available for wells within the vicinity of the site. Recent water level data was obtained from the California Department of Water Resources website, http://www.water.ca.gov/waterdatalibrary/. The nearest monitoring well with available records in this database is located 800 feet to the southeast, adjacent to the Oro Grande Wash. Water level readings within this monitoring well indicates a groundwater level of 658± feet below the ground surface in September 2022.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Boring Logs and are periodically referenced throughout this report.

Density and Moisture Content

The density has been determined for selected relatively undisturbed ring samples. These densities were determined in general accordance with the method presented in ASTM D-2937. The results are recorded as dry unit weight in pounds per cubic foot. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring Logs.

Consolidation

Selected soil samples have been tested to determine their consolidation potential, in accordance with ASTM D-2435. The testing apparatus is designed to accept either natural or remolded samples in a one-inch-high ring, approximately 2.416 inches in diameter. Each sample is then loaded incrementally in a geometric progression and the resulting deflection is recorded at selected time intervals. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The samples are typically inundated with water at an intermediate load to determine their potential for collapse or heave. The results of the consolidation testing are plotted on Plates C-1 through C-8 in Appendix C of this report.

Maximum Dry Density and Optimum Moisture Content

One representative bulk sample of the near-surface soils has been tested to determine its maximum dry density and optimum moisture content. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557 and are presented on Plate C-9 in Appendix C of this report. This test is generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Expansion Index

The expansion potential of the on-site soils was determined in general accordance with ASTM D-4829. The testing apparatus is designed to accept a 4-inch diameter, 1-in high, remolded sample. The sample is initially remolded to 50± 1 percent saturation and then loaded with a surcharge

equivalent to 144 pounds per square foot. The sample is then inundated with water and allowed to swell against the surcharge. The resultant swell or consolidation is recorded after a 24-hour period. The results of the EI testing are as follows:

Sample Identification	Expansion Index	Expansive Potential
B-7 @ 1 to 5 feet	0	Non-Expansive

Soluble Sulfates

A representative sample of the near-surface soils has been submitted to a subcontracted analytical laboratory for evaluation of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The result of the soluble sulfate testing is presented below, and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Severity
B-1 @ 1 to 5 feet	<0.001	Not Applicable (S0)

Corrosivity Testing

A representative bulk sample of the near-surface soils was submitted to a subcontracted corrosion engineering laboratory to determine if the near-surface soils possess corrosive characteristics with respect to common construction materials. The corrosivity testing included a determination of the electrical resistivity, pH, and chloride and nitrate concentrations of the soils, as well as other tests. The results of some of these tests are presented below.

Sample Identification	Minimum Resistivity (ohm-cm)	pH	Chlorides (mg/kg)	Nitrates (mg/kg)	Sulfides (mg/kg)	Redox Potential (mV)
B-1 @ 1 to 5 feet	13,400	8.2	14.5	9.0	1.3	140

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site-specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to the structure may be unavoidable during large earthquakes. The proposed structure should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Furthermore, SCG did not identify any evidence of faulting during the geotechnical investigation. Therefore, the possibility of significant fault rupture on the site is considered to be low.

The potential for other geologic hazards such as seismically induced settlement, lateral spreading, tsunamis, inundation, seiches, flooding, and subsidence affecting the site is considered low.

Seismic Design Parameters

The 2022 California Building Code (CBC) provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters presented below are based on the soil profile and the proximity of known faults with respect to the subject site. Based on the anticipated adoption of the 2022 California Building Code (CBC) on January 1, 2023, we expect that the proposed development will be designed in accordance with the 2022 CBC.

The 2022 CBC Seismic Design Parameters have been generated using the SEAOC/OSHPD Seismic Design Maps Tool, a web-based software application available at the website www.seismicmaps.org. This software application calculates seismic design parameters in accordance with several building code reference documents, including ASCE 7-16, upon which the 2022 CBC is based. The application utilizes a database of risk-targeted maximum considered earthquake (MCE_R) site accelerations at 0.01-degree intervals for each of the code documents. The table below was created using data obtained from the application. The output generated from this program is attached to this letter.

The 2022 CBC states that for Site Class D sites with a mapped S1 value greater than 0.2, a site-specific ground motion analysis may be required in accordance with Section 11.4.8 of ASCE 7-16. Supplement 3 to ASCE 7-16 modifies Section 11.4.8 of ASCE 7-16 and states that "a ground motion hazard analysis is not required where the value of the parameter SM1 determined by Eq. (11.4-2) is increased by 50% for all applications of SM1 in this Standard. The resulting value of the parameter SD1 determined by Eq. (11.4-4) shall be used for all applications of SD1 in this Standard."

The seismic design parameters presented in the table below were calculated using the site coefficients (Fa and Fv) from Tables 1613.2.3(1) and 1613.2.3(2) presented in Section 16.4.4 of the 2022 CBC. It should be noted that the site coefficient Fv and the parameters SM1 and SD1 were not included in the SEAOC/OSHPD Seismic Design Maps Tool output for the ASCE 7-16 standard. We calculated these parameters-based on Table 1613.2.3(2) in Section 16.4.4 of the 2022 CBC using the value of S1 obtained from the Seismic Design Maps Tool. **The values of SM1 and SD1 tabulated below** were evaluated using equations 11.4-2 and 11.4-4 of ASCE 7-16 (Equations 16-20 and 16-23, respectively, of the 2022 CBC) and **do not include a 50 percent increase.** As discussed above, if a ground motion hazard analysis has not been performed, SM1 and SD1 must be increased by 50 percent for all applications with respect to ASCE 7-16.

2022 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	1.500
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.600
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	1.500
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	1.020*
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.000
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.680*

*Note: These values must be increased by 50 percent if a site-specific ground motion hazard analysis has not been performed. However, this increase is not expected to affect the design of the structure type proposed for this site. This assumption should be confirmed by the project structural engineer. The values presented in the table above do not include a 50-percent increase.

Liquefaction

Liquefaction is the loss of the strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and grain size characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Clayey (cohesive) soils or soils which possess clay particles (d<0.005mm) in excess of 20 percent (Seed and Idriss, 1982) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The California Geological Survey (CGS) has not yet conducted detailed seismic hazards mapping in the area of the subject site. The general liquefaction susceptibility of the site was determined by research of the San Bernardino County Land Use Plan, General Plan, Geologic Hazard Overlays. Map FH05 for the Baldy Mesa 7.5-Minute Quadrangle indicates that the subject site is not located within an area of liquefaction susceptibility. Based on the mapping performed by the county of San Bernardino, the subsurface profile identified in this report, which includes moderate to high strength older alluvium, and the lack of a historic high groundwater table within the upper 50± feet, liquefaction is not considered to be a design concern for this project.

6.2 Geotechnical Design Considerations

General

The near-surface soils encountered at the boring locations consist of native younger alluvium, which possesses variable densities and strengths. The results of laboratory testing indicate that some of the near-surface soils possess unfavorable consolidation/collapse characteristics. Based on their variable strengths and densities and their potential for collapse, the near-surface younger

alluvial soils, in their present condition, are not considered suitable for the support of the new foundations and floor slab. The younger alluvial soils are underlain by moderate strength older alluvium which possesses more favorable consolidation/collapse characteristics. Remedial grading is recommended within the area of the proposed building, in order to remove and replace a portion of the near-surface younger alluvial soils as compacted structural fill.

Settlement

Laboratory testing indicates that some samples of soils taken from the near-surface native alluvial soils possess a minor collapse potential when exposed to moisture infiltration. The proposed remedial grading will remove the near-surface collapsible native soils from within the proposed building area. Therefore, following completion of the recommended grading, post-construction settlements are expected to be within tolerable limits.

Expansion

Laboratory testing performed on a representative sample of the near surface soils indicates that these materials possess a non-expansion potential (EI = 0). Therefore, no design considerations related to expansive soils are considered warranted for this site. It is recommended that additional expansion index testing be conducted at the completion of rough grading to verify the expansion potential of the as-graded building pad.

Soluble Sulfates

The result of the soluble sulfate testing indicates that the tested soil sample possesses a level of soluble sulfates that is considered to be "not applicable" (S0) with respect to the American Concrete Institute (ACI) Publication 318-14 Building Code Requirements for Structural Concrete and Commentary, Section 4.3. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building expansion area.

Corrosion Potential

The results of laboratory testing indicate that the tested sample of the on-site soils possesses a minimum resistivity of 13,400 ohm-cm, and a pH value of 8.2. These soils possess a redox potential of 140 mV and a sulfide concentration of about 1.3 parts per million. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Resistivity, pH, sulfide concentration, redox potential, and moisture content are the five factors that enter into the evaluation procedure. Based on these factors, the on-site soils are not considered to be corrosive to ferrous materials. Therefore, corrosion protection is not expected to be required for cast iron or ductile iron pipes.

A low concentration (14.5 mg/kg) of chlorides was detected in the sample submitted for corrosivity testing. In general, soils possessing chloride concentrations in excess of 500 parts per million (ppm) are considered to be corrosive with respect to steel reinforcement within reinforced

concrete. Based on these test results, the site is considered to have a C1 chloride exposure in accordance with the American Concrete Institute (ACI) Publication 318 Building Code Requirements for Structural Concrete and Commentary. Therefore, a specialized concrete mix design for reinforced concrete for protection against chloride exposure is not considered warranted.

Nitrates present in soil can be corrosive to copper tubing at concentrations greater than 50 mg/kg. The tested sample possesses a nitrate concentration of 9.0 mg/kg. Based on this test result, the on-site soils are not considered to be corrosive to copper pipe.

It should be noted that SCG does not practice in the field of corrosion engineering. Therefore, the client may wish to contact a corrosion engineer to provide a more thorough evaluation.

Shrinkage/Subsidence

Removal and recompaction of the near-surface alluvial soils is estimated to result in an average shrinkage of 3 to 11± percent, based on the results of density testing and the assumption that the onsite soils will be compacted to about 92 percent of the ASTM D-1557 maximum dry density. However, the estimated shrinkage of the individual soil layers at the site is highly variable, locally ranging from a minimum shrinkage value of 0 percent to a maximum shrinkage of 16 percent at varying sample depths and locations. It should be noted that the potential shrinkage estimate is based on dry density testing performed on small-diameter samples taken at the boring locations. If a more accurate and precise shrinkage estimate is desired, SCG can perform a shrinkage study involving several excavated test-pits where in-place densities are evaluated using in-situ testing methods instead of laboratory density testing on small-diameter samples. Please contact SCG for details and a cost estimate regarding a shrinkage study, if desired.

Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.1± feet. This estimate may be used for grading in areas that are underlain by native alluvial soils.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Slope Stability

Newly constructed fill slopes, comprised of properly compacted engineered fill, at inclinations of 2h:1v will possess adequate gross stability. Cut slopes excavated within the existing granular alluvial soils may be subject to surficial instability due to the lack of cohesion within these materials. Therefore, stability fills may be required within these areas. This condition may affect the proposed cut slopes at the site. The need for stability fills should be determined by SCG as part of the future detailed grading plan review.

Grading and Foundation Plan Review

No grading or foundation plans were available at the time of this report. It is therefore recommended that we be provided with copies of the preliminary plans, when they become

available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping

Vegetation including grasses, shrubs, and weeds on the site should be stripped and disposed of off-site. Stripping should include any organic soils and any root masses from trees. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered.

Treatment of Existing Soils: Building Pad

Remedial grading should be performed within the proposed building area in order to remove a portion of the near-surface native alluvial soils. Based on conditions encountered at the boring locations, the existing soils within the proposed building area are recommended to be overexcavated to a depth of at least 5 feet below existing grade and to a depth of at least 3 feet below proposed building pad subgrade elevation, whichever is greater.

Additional overexcavation should be performed within the influence zones of the new foundations, to provide for a new layer of compacted structural fill extending to a depth of 3 feet below proposed foundation bearing grade.

The overexcavation area should extend at least 5 feet beyond the building foundations and perimeters. If the proposed structure incorporates any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the building area should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrade, as well as to support the foundation loads of the new structure. This evaluation should include proofrolling and probing to identify any soft, loose, or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if loose, porous, or low-density native soils are encountered at the base of the overexcavation.

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches, moisture conditioned to achieve a moisture content of 0 to 4 percent above optimum moisture content. The moisture conditioning of the overexcavation subgrade soils should be verified by the geotechnical engineer. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Cut and Fill Slopes

New cut and fill slopes are expected to be constructed around the perimeter of the project. All slopes should be at a maximum inclination of 2h:1v. A keyway should be excavated at the toe of new fill slopes which are not located in fill areas. The keyway should be at least 15 feet wide and 3 feet deep. The recommended width of the keyway is based on 1.5 times the width of typical grading equipment. If smaller equipment is utilized, a smaller keyway may be suitable, at the discretion of the geotechnical engineer. The base of the keyway should slope at least 1 foot downward into the slope. Following completion of the keyway cut, the subgrade soils should be evaluated by the geotechnical engineer to verify that the keyway is founded into competent materials. The resulting subgrade soils should then be scarified to a depth of 10 to 12 inches, moisture conditioned to 0 to 4 percent above optimum moisture content and recompacted. During construction of the new fill slope, the existing slope should be benched in accordance with the detail presented on Plate D-4. Benches less than 4 feet in height may be used at the discretion of the geotechnical engineer.

Stability fills for cut slopes will provide a more uniform appearance and allow landscaping on the slope. Should a stability fill for cut slope be necessary, the recommendations for the stability fill will be the same as the recommendations for the fill slopes, mentioned above.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of any proposed retaining walls and non-retaining site walls should be overexcavated to a depth of 3 feet below foundation bearing grade and replaced as compacted structural fill, as discussed above for the proposed building pad. Any undocumented fill soils within any of these foundation areas should be removed in their entirety. The overexcavation areas should extend at least 5 feet beyond the foundation perimeters, and to an extent equal to the depth of fill below the new foundations. Any erection pads used to construct the walls are considered to be part of the foundation system with respect to these remedial grading recommendations. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning, and recompacting the upper 12 inches of exposed subgrade soils. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Parking and Drive Areas

Based on economic considerations, overexcavation of the existing variable strength alluvium soils in the new parking and drive areas is not considered warranted, with the exception of areas where lower strength or unstable soils are identified by the geotechnical engineer during grading.

Subgrade preparation in the new parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations. The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. The subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 0 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength alluvial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking and drive areas assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking areas. The grading recommendations presented above do not completely mitigate the extent of existing fill soils and loose native soils in the parking areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the resulting soils replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to within 0 to 4 percent above the optimum moisture content, and compacted.
- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the 2022 CBC and the grading code of the city of Hesperia.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. It is recommended that materials in excess of 3 inches in size not be used for utility trench backfill. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by city of Hesperia. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

6.4 Construction Considerations

Moisture Sensitive Subgrade Soils

Occasional samples of the near-surface soils consist predominately of silty sands. These soils may become unstable if exposed to significant moisture infiltration or disturbance by construction traffic. If grading occurs during a period of relatively wet weather, an increase in subgrade instability in localized areas should also be expected. The site should, therefore, be graded to prevent ponding of surface water and to prevent water from running into excavations.

Excavation Considerations

The near surface soils are predominately granular in composition. These materials will likely be subject to caving within shallow excavations. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. On a preliminary basis, the inclination of temporary slopes should not exceed 2h:1v. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Groundwater

Based on the conditions encountered at the boring locations, the static groundwater table at this site is considered to exist at a depth greater than 25± feet. Therefore, groundwater is not expected to impact the grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pad will be underlain by structural fill soils used to replace the upper portion of the existing variable strength alluvial soils. These new structural fill soils are expected to extend to depths of at least 3 feet below proposed foundation bearing grade. Based on this subsurface profile, the proposed structure may be supported on conventional shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 3,000 lbs/ft^2.
- Minimum wall/column footing width: 14 inches/24 inches.
- Minimum longitudinal steel reinforcement within strip footings: Two (2) No. 5 rebars (1 top and 1 bottom).
- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 18 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.

- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressure presented above may be increased by one-third when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 0 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 50-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 2,500 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slab should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floor of the new structure may be constructed as a conventional slab-on-grade supported on newly placed structural fill soils. These fill soils are expected to extend to a depth of at least 3 feet below finished pad grade. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 6 inches.
- Modulus of Subgrade Reaction: k = 150 psi/in
- Minimum slab reinforcement: Reinforcement is not required for geotechnical conditions. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading.
- Slab underlayment: If moisture sensitive floor coverings will be used the minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area where such moisture sensitive floor coverings are anticipated. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as a 15 mil. Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview.
- Moisture condition the floor slab subgrade soils to 0 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.
- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Small retaining walls are expected to be necessary in the area of the new truck loading docks and may also be required to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the soil conditions encountered at the boring locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. The near-surface soils generally consist of well-silty sands and clayey sands. Based on the results of laboratory testing, these materials re expected to possess an internal angle of friction of at least 32 degrees when compacted to 90 percent of the ASTM D-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		**Soil Type**
		On-Site Silty Sands
Internal Friction Angle (ϕ)		32°
Unit Weight		133 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	41 lbs/ft^3
	Active Condition (2h:1v backfill)	63 lbs/ft^3
	At-Rest Condition (level backfill)	63 lbs/ft^3

The walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed structural fill. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Seismic Lateral Earth Pressures

In accordance with the 2022 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. The recommended seismic pressure distribution is triangular in shape, assumed to occur at the top of the wall, decreasing to 0 at the base of the wall. For a level backfill condition behind the top of the wall, the seismic lateral earth pressure is 18H lbs/ft^2, where H is the overall height of the wall. Where the ground surface above the wall consists of a 2h:1v (horizontal to vertical) sloping condition, the seismic lateral earth pressure is 57H lbs/ft^2. The seismic pressure distribution is based on the Mononobe-Okabe equation, utilizing a design acceleration of 0.368g. The 2022 CBC does not provide definitive guidance on determination of the design acceleration to be used in generating the seismic lateral earth pressure. In accordance with standard geotechnical practice, we have calculated the design acceleration as $^2/_3$ of the PGA_M. However, for combinations of high ground motion and steep slopes above the wall, the Mononobe-Okabe equation gives unrealistic high estimates of active earth pressures. Therefore, the seismic earth pressure for the sloping condition presented above was derived using a design acceleration equal to 50% of the PGA_M.

Backfill Material

On-site soils may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back-wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls, be placed against the face on the back side of the retaining walls. This material should extend from the top of the retaining wall footing to within 1 foot of the ground surface on the back side of the retaining wall. A 12-inch-thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils.

All retaining wall backfill should be placed and compacted under engineering-controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557-91). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent drainage system will be necessary in conjunction with the appropriate backfill material. Subsurface drainage may consist of either:

- A weep hole drainage system typically consisting of a series of 4-inch diameter holes in the wall situated slightly above the ground surface elevation on the exposed side of the wall and at an approximate 8-foot on-center spacing. The weep holes should include a 2 cubic foot pocket of open graded gravel, surrounded by an approved geotextile fabric, at each weep hole location.

- A 4-inch diameter perforated pipe surrounded by 2 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be extended to daylight or tied into a storm drainage system.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The on-site soils generally consist of silty sands, with varying gravel and clay content. Based on their classification, these materials are expected to possess good to excellent pavement support characteristics, with R-values in the range of 40 to 50. Since R-value testing was not included in the scope of services for this project, the subsequent pavement design is based upon an assumed R-value of 40. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering-controlled conditions. It is recommended that R-value testing be performed after completion of rough grading. Depending upon the results of the R-value testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20-year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R=40)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	4	6	7	8	10
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS (R=40)				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	5½	6½	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. Any reinforcement within the PCC pavements should be determined by the project structural engineer. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness.

7.0 GENERAL COMMENTS

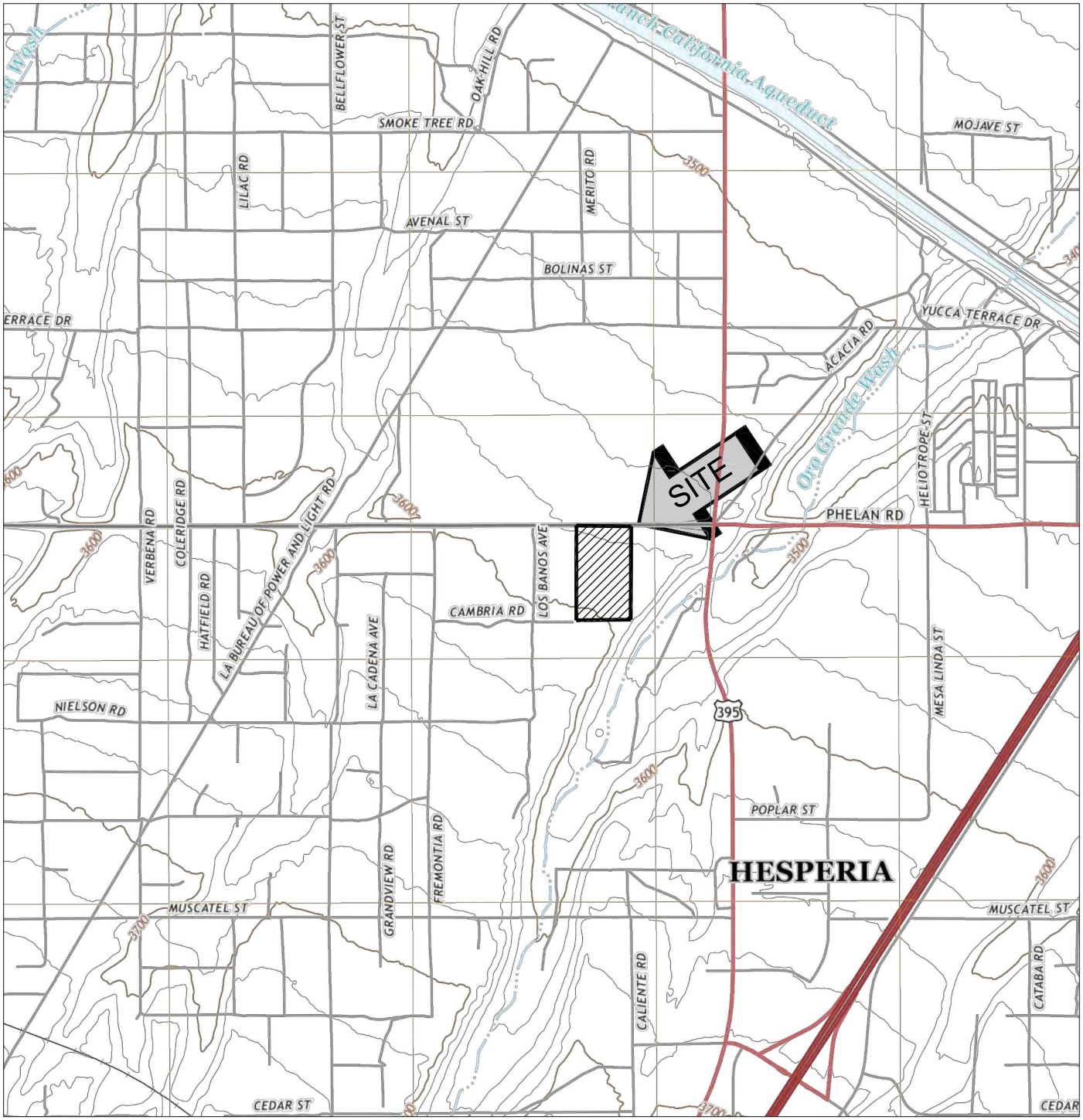
This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

APPENDIX A



SOURCE: USGS TOPOGRAPHIC MAP OF THE BALDY MESA QUADRANGLE, SAN BERNARDINO COUNTY, CALIFORNIA, 2021.

SITE LOCATION MAP

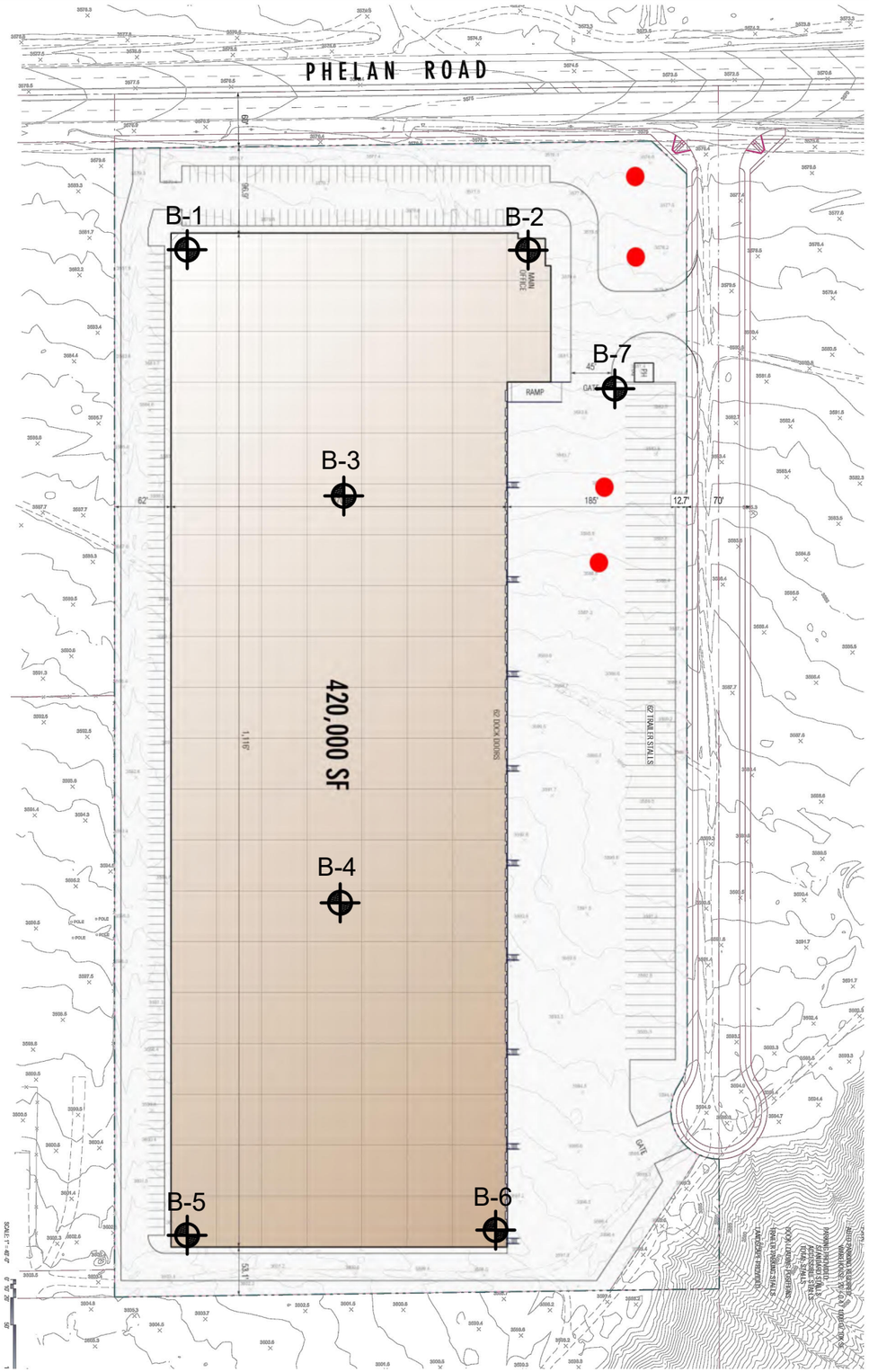
PHELAN 20 INDUSTRIAL BUILDING

HESPERIA, CALIFORNIA

SCALE: 1" = 2000'	
DRAWN: MK CHKD: RGT	
SCG PROJECT 23G131-1	
PLATE 1	

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



NORTH

SoCalGeo

GEOTECHNICAL LEGEND

APPROXIMATE BORING LOCATION

NOTE: CONCEPTUAL SITE PLAN PROVIDED BY RGA, OFFICE OF ARCHITECTURAL DESIGN

BORING LOCATION PLAN

PHELAN 20 INDUSTRIAL BUILDING

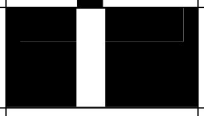
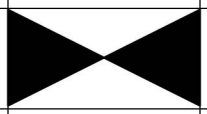
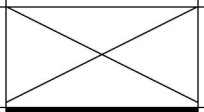
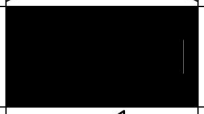
HESPERIA, CALIFORNIA

SCALE: 1" = 150'	
DRAWN: MK CHKD: RGT	
SCG PROJECT 23G131-1	
PLATE 2	

SoCalGeo SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

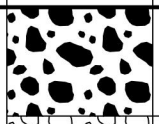
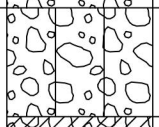
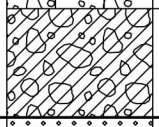
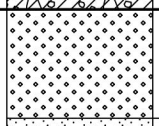
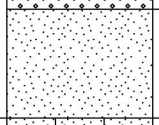
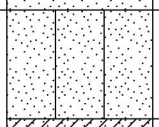
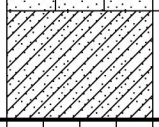
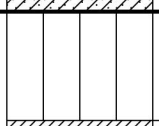
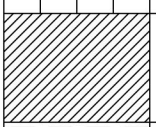
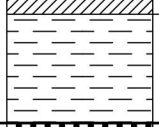
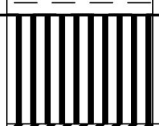
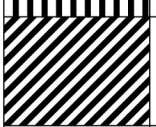
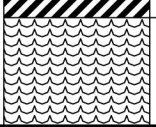
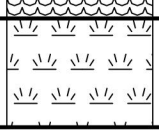
LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 23G131-1
PROJECT: Phelan 20 Industrial Building
LOCATION: Hesperia, California

DRILLING DATE: 4/18/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Michelle Krizek

WATER DEPTH: Dry
CAVE DEPTH: 19 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		5			ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, trace fine root fibers, very loose to loose-damp	115	6					
		13				115	5					
5		17			Light Brown Silty fine to coarse Sand, trace to little fine Gravel, medium dense-dry		2					Disturbed Sample
		50/5"			OLDER ALLUVIUM: Light Red Brown Silty fine to coarse Sand, trace fine Gravel, trace Clay, medium dense to very dense-dry to damp	109	3					
10		25				114	1					
15		42			@ 13½ feet, trace to little Clay		4					
20		35					3					
25		39					3					
					Boring Terminated at 25 feet							

TBL 23G131-1.GPJ SOCALGEO.GDT 5/23/23

TEST BORING LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 23G131-1
PROJECT: Phelan 20 Industrial Building
LOCATION: Hesperia, California

DRILLING DATE: 4/18/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Michelle Krizek

WATER DEPTH: Dry
CAVE DEPTH: 16 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		8			ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine to coarse Gravel, loose-damp	119	5					
		12			@ 3 feet, Light Brown, trace Clay	118	6					
5		15			Light Brown Silty fine to coarse Sand, trace fine Gravel, medium dense-dry to damp	116	3					
		26			OLDER ALLUVIUM: Light Red Brown Silty fine Sand, little medium Sand, trace Clay, medium dense-damp @ 7 feet, Light Red Brown, trace Clay	120	5					
10		27				121	3					
		27			Red Brown Silty fine to coarse Sand, trace fine Gravel, trace to little Clay, medium dense to dense-damp		5					
15												
		30					4					
20					Boring Terminated at 20 feet							

TBL 23G131-1.GPJ SOCALGEO.GDT 5/23/23

TEST BORING LOG

PLATE B-2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 23G131-1
PROJECT: Phelan 20 Industrial Building
LOCATION: Hesperia, California

DRILLING DATE: 4/18/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Michelle Krizek

WATER DEPTH: Dry
CAVE DEPTH: 10 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		3			ALLUVIUM: Dark Brown Silty fine Sand, little medium to coarse Sand, trace fine Gravel, trace fine root fibers, very loose to loose-damp		6					
		8					3					
5		31			OLDER ALLUVIUM: Light Red Brown Silty fine to medium Sand, little coarse Sand, trace Clay, trace to little fine Gravel, medium dense to dense-damp		3					
		39					4					
10												
		26					5					
15					Boring Terminated at 15 feet							

TBL 23G131-1.GPJ SOCALGEO.GDT 5/23/23

TEST BORING LOG **PLATE B-3**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-4

JOB NO.: 23G131-1
PROJECT: Phelan 20 Industrial Building
LOCATION: Hesperia, California

DRILLING DATE: 4/18/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Michelle Krizek

WATER DEPTH: Dry
CAVE DEPTH: 16 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		14			ALLUVIUM: Dark Brown Silty fine Sand, little medium to coarse Sand, trace Clay, trace fine root fibers, loose to medium dense-damp	125	7					
		24			@ 3 feet, trace fine Gravel	123	8					
5		25			Light Brown Silty fine to coarse Sand, trace to little fine Gravel, medium dense-dry to damp	115	4					
		23				115	2					
		15				112	3					
10												
		18			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace Clay, trace to little coarse Sand, trace fine to coarse Gravel, medium dense-damp		7					
15												
		26					7					
20					Boring Terminated at 20 feet							

TBL 23G131-1.GPJ SOCALGEO.GDT 5/23/23

TEST BORING LOG

PLATE B-4

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-5

JOB NO.: 23G131-1
PROJECT: Phelan 20 Industrial Building
LOCATION: Hesperia, California

DRILLING DATE: 4/18/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Michelle Krizek

WATER DEPTH: Dry
CAVE DEPTH: 11 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		3			ALLUVIUM: Dark Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, trace fine root fibers, very loose-damp to moist		7					
		8			Light Red Brown Silty fine to coarse Sand, trace fine Gravel, loose-dry to damp		3					
5		8					3					
		24			OLDER ALLUVIUM: Red Brown Silty fine to medium Sand, trace to little coarse Sand, trace to little fine Gravel, trace to little Clay, medium dense to dense-damp		3					
10												
		32					7					
15					Boring Terminated at 15 feet							

TBL 23G131-1.GPJ SOCALGEO.GDT 5/23/23

TEST BORING LOG **PLATE B-5**

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-6

JOB NO.: 23G131-1
PROJECT: Phelan 20 Industrial Building
LOCATION: Hesperia, California

DRILLING DATE: 4/18/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Michelle Krizek

WATER DEPTH: Dry
CAVE DEPTH: 17 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		8			ALLUVIUM: Dark Brown Silty fine to medium Sand, trace coarse Sand, trace fine Gravel, trace fine root fibers, loose-damp	119	6					
		10				118	7					
5		10			Red Brown Silty fine to coarse Sand, little fine Gravel, loose-damp	105	5					
		17			OLDER ALLUVIUM: Red Brown fine to coarse Sand, trace Silt, little fine Gravel, medium dense-dry	115	1					
10		25				102	1					
		14					2					
15					Red Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, trace Clay, weakly cemented, very dense-damp							
		59					4					
20												
		63					5					
25					Boring Terminated at 25 feet							

TBL 23G131-1.GPJ SOCALGEO.GDT 5/23/23

TEST BORING LOG

PLATE B-6

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-7

JOB NO.: 23G131-1
PROJECT: Phelan 20 Industrial Building
LOCATION: Hesperia, California

DRILLING DATE: 4/18/23
DRILLING METHOD: Hollow Stem Auger
LOGGED BY: Michelle Krizek

WATER DEPTH: Dry
CAVE DEPTH: 14 feet
READING TAKEN: At Completion

FIELD RESULTS					DESCRIPTION	LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
		9			ALLUVIUM: Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel, trace Clay, loose to medium dense-damp		7					EI = 0 @ 1 to 5 feet
		27					4					
5												
		8			Light Red Brown Silty fine to coarse Sand, trace fine Gravel, loose-damp		3					
		24			OLDER ALLUVIUM: Light Red Brown Silty fine to medium Sand, little coarse Sand, little Clay, little Calcareous nodules, weakly cemented, medium dense-damp		4					
10												
		60			Red Brown Clayey fine to medium Sand, little coarse Sand, trace fine Gravel, little Silt, weakly cemented, very dense-damp to moist		8					
15												
		23			Red Brown Silty fine to medium Sand, trace coarse Sand, trace Clay, trace fine to coarse Gravel, medium dense-damp		5					
20					Boring Terminated at 20 feet							

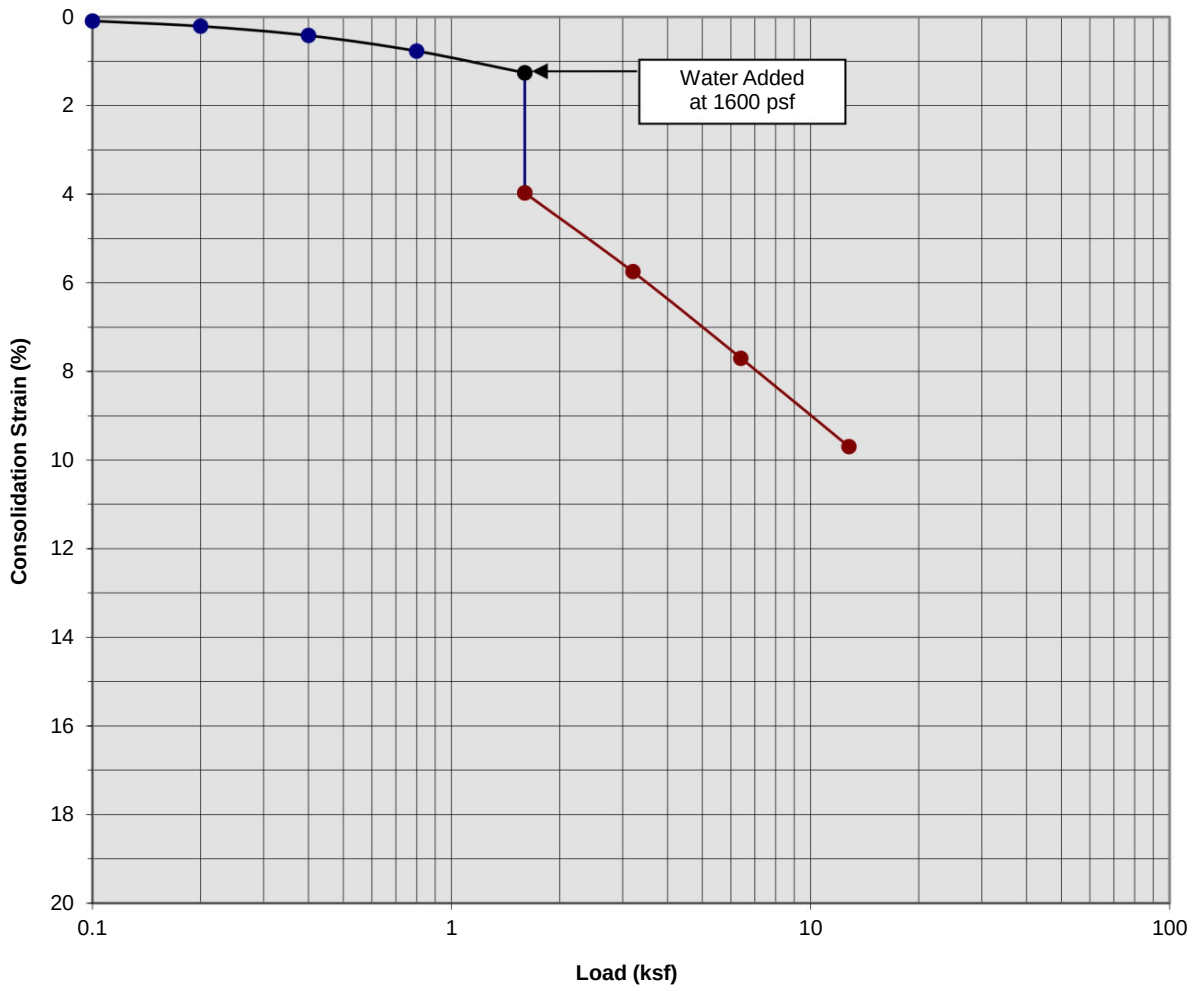
TBL 23G131-1.GPJ SOCALGEO.GDT 5/23/23

TEST BORING LOG

PLATE B-7

APPENDIX C

Consolidation/Collapse Test Results



Classification: Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel

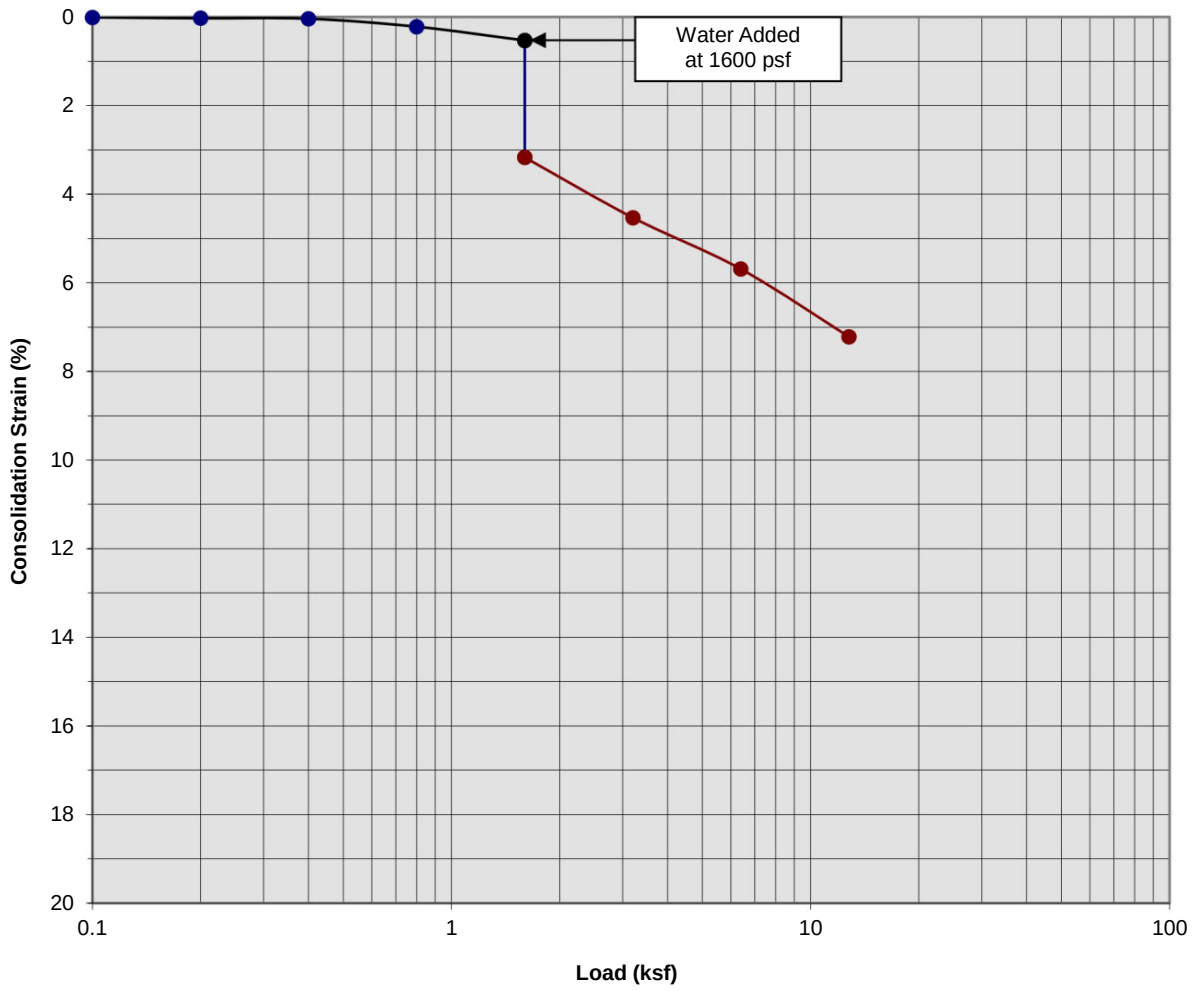
Boring Number:	B-2	Initial Moisture Content (%)	6
Sample Number:	---	Final Moisture Content (%)	11
Depth (ft)	3 to 4	Initial Dry Density (pcf)	118.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	130.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.71

Phelan 20 Industrial Building
Hesperia, California
Project No. 23G131-1

PLATE C- 1

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Light Brown Silty fine to coarse Sand, trace fine Gravel

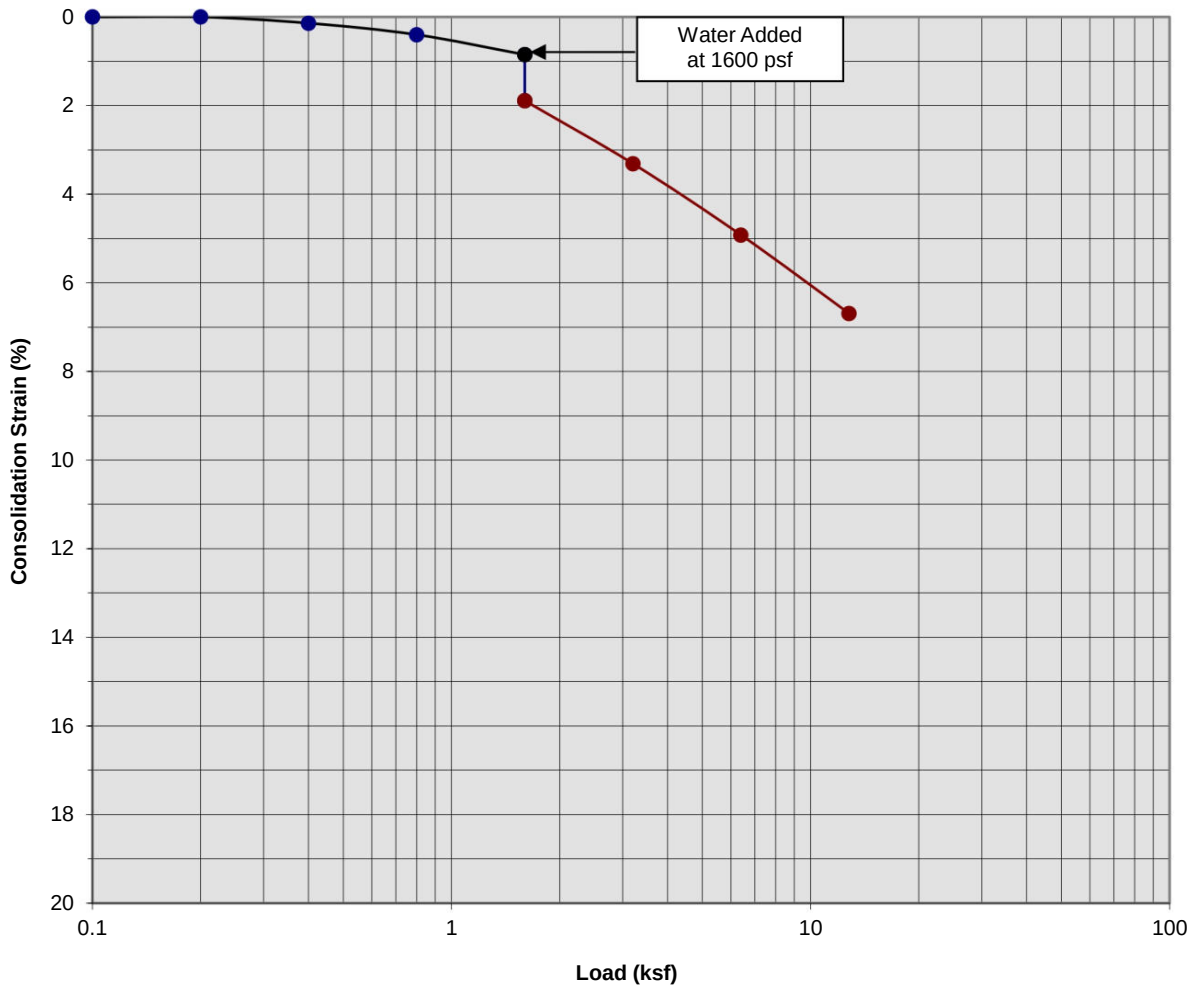
Boring Number:	B-2	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	5 to 6	Initial Dry Density (pcf)	116.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	125.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	2.64

Phelan 20 Industrial Building
Hesperia, California
Project No. 23G131-1

PLATE C- 2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Light Red Brown Silty fine Sand, little medium Sand, trace Clay

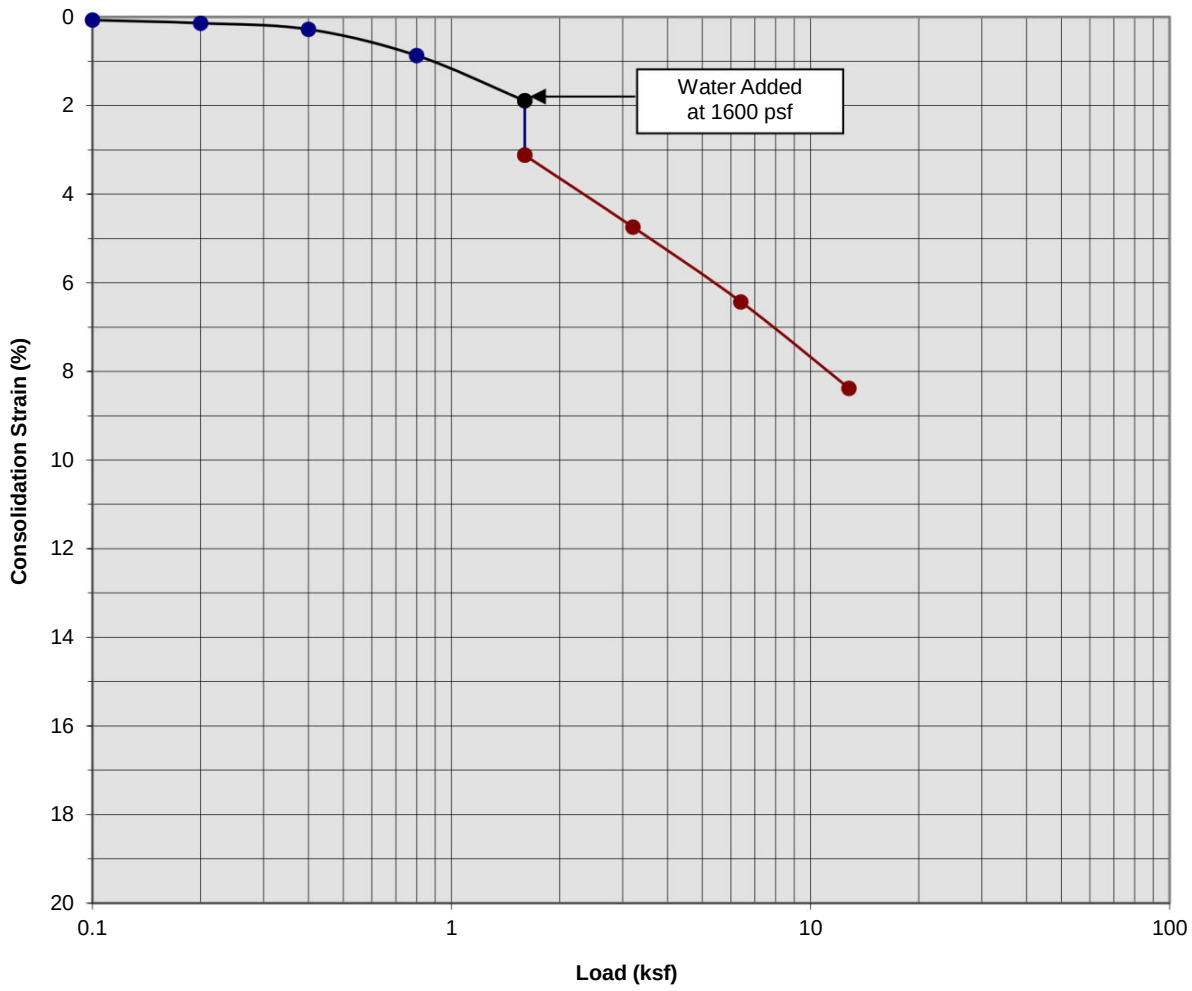
Boring Number:	B-2	Initial Moisture Content (%)	5
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	7 to 8	Initial Dry Density (pcf)	120.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	128.5
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.04

Phelan 20 Industrial Building
Hesperia, California
Project No. 23G131-1

PLATE C- 3

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Light Red Brown Silty fine Sand, little medium Sand, trace Clay

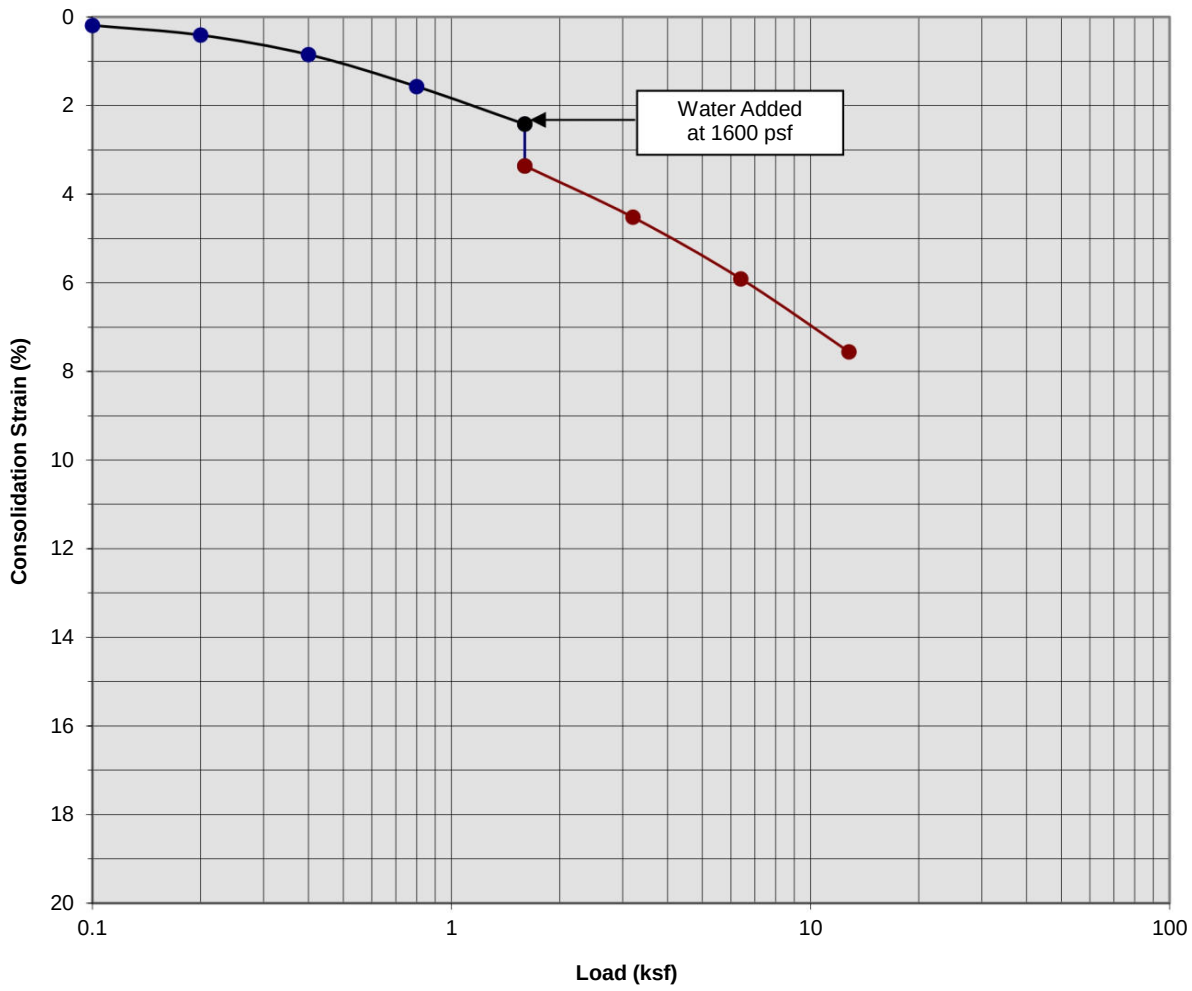
Boring Number:	B-2	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	12
Depth (ft)	9 to 10	Initial Dry Density (pcf)	121.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	132.1
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.23

Phelan 20 Industrial Building
Hesperia, California
Project No. 23G131-1

PLATE C- 4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Dark Brown Silty fne Sand, little medium to coarse Sand, trace Clay

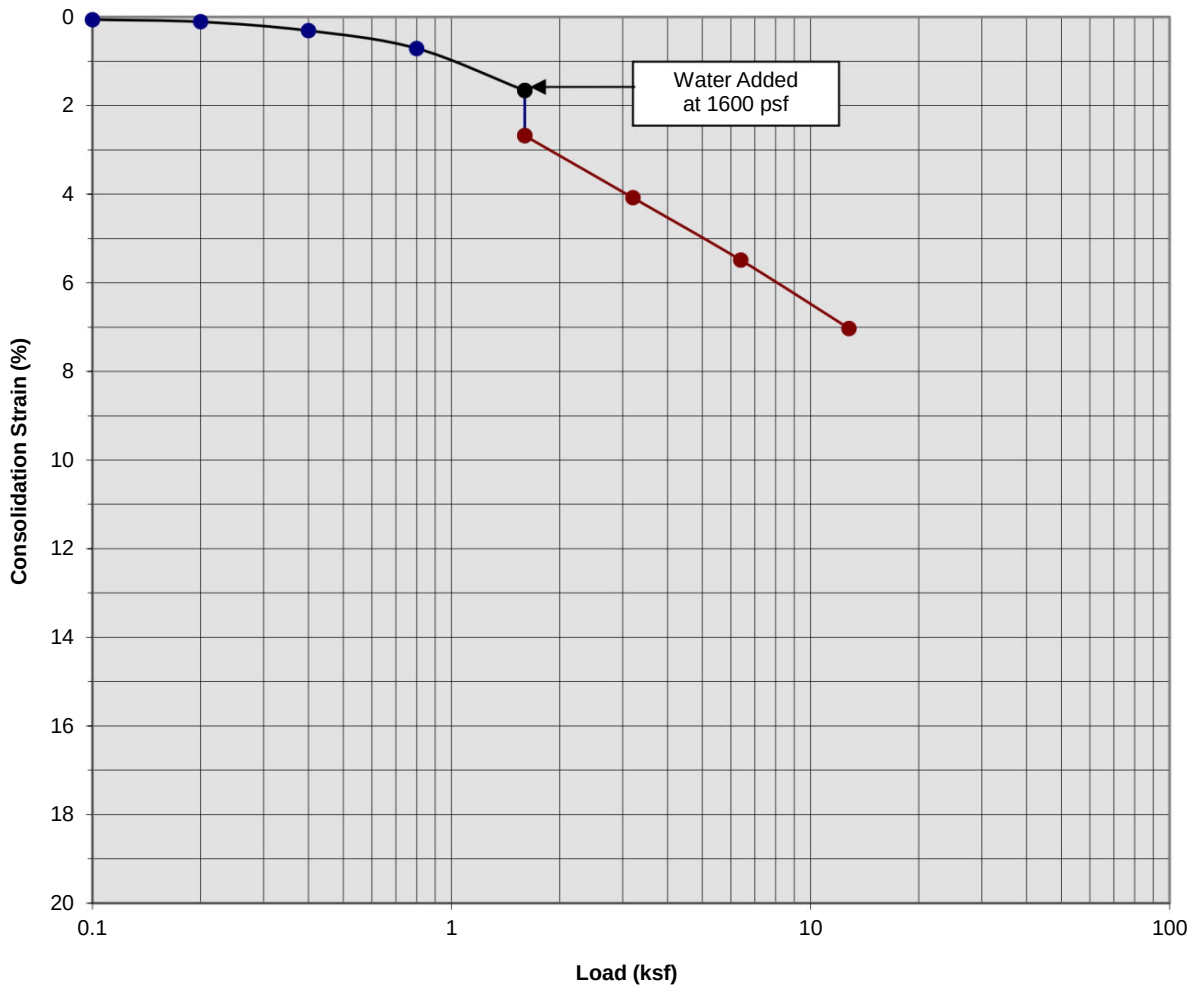
Boring Number:	B-4	Initial Moisture Content (%)	8
Sample Number:	---	Final Moisture Content (%)	10
Depth (ft)	3 to 4	Initial Dry Density (pcf)	123.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	132.9
Specimen Thickness (in)	1.0	Percent Collapse (%)	0.94

Phelan 20 Industrial Building
Hesperia, California
Project No. 23G131-1

PLATE C- 5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Light Brown Silty fine to coarse Sand, trace to little fine Gravel

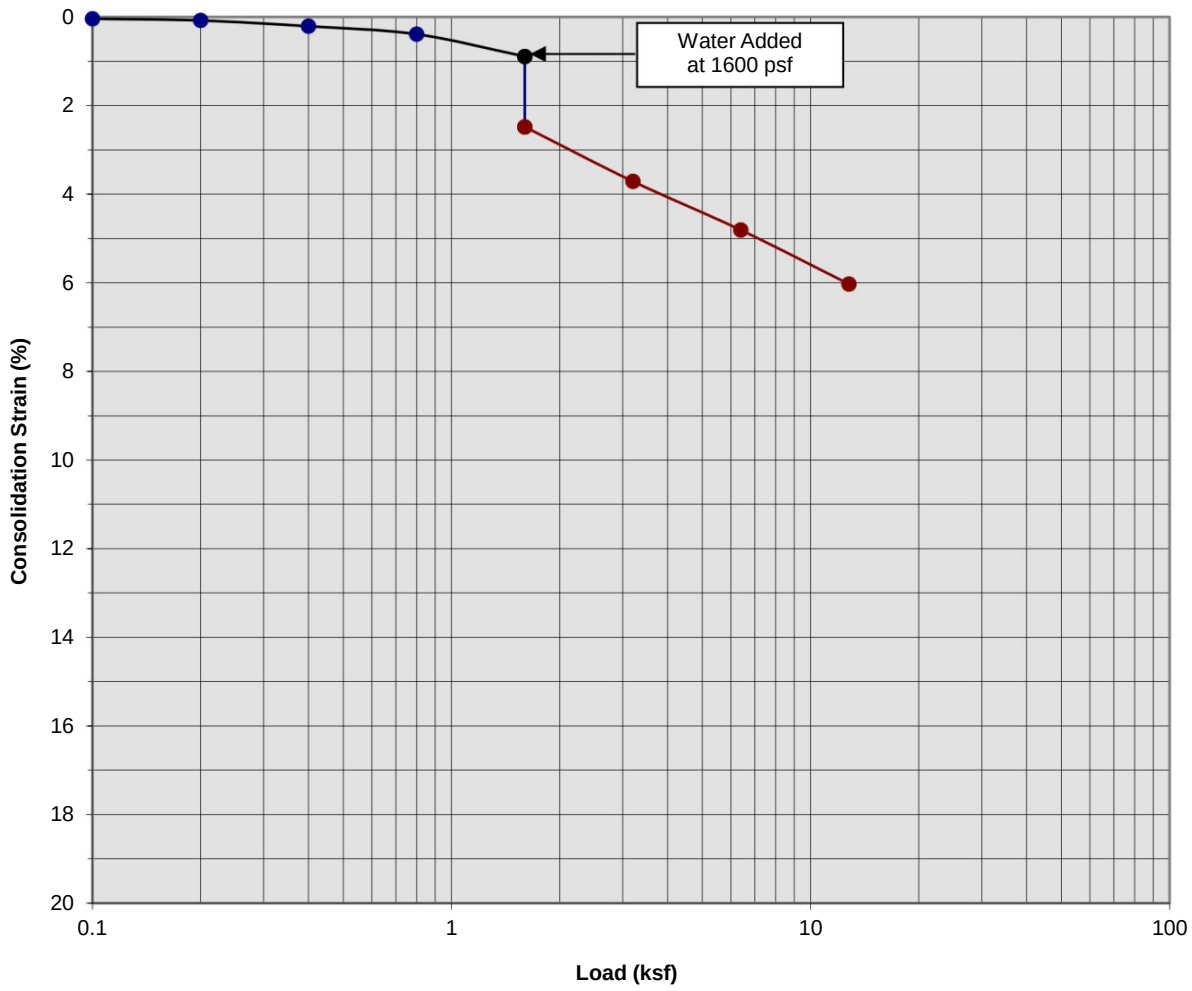
Boring Number:	B-4	Initial Moisture Content (%)	4
Sample Number:	---	Final Moisture Content (%)	11
Depth (ft)	5 to 6	Initial Dry Density (pcf)	115.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	123.0
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.02

Phelan 20 Industrial Building
Hesperia, California
Project No. 23G131-1

PLATE C- 6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Light Brown Silty fine to coarse Sand, trace to little fine Gravel

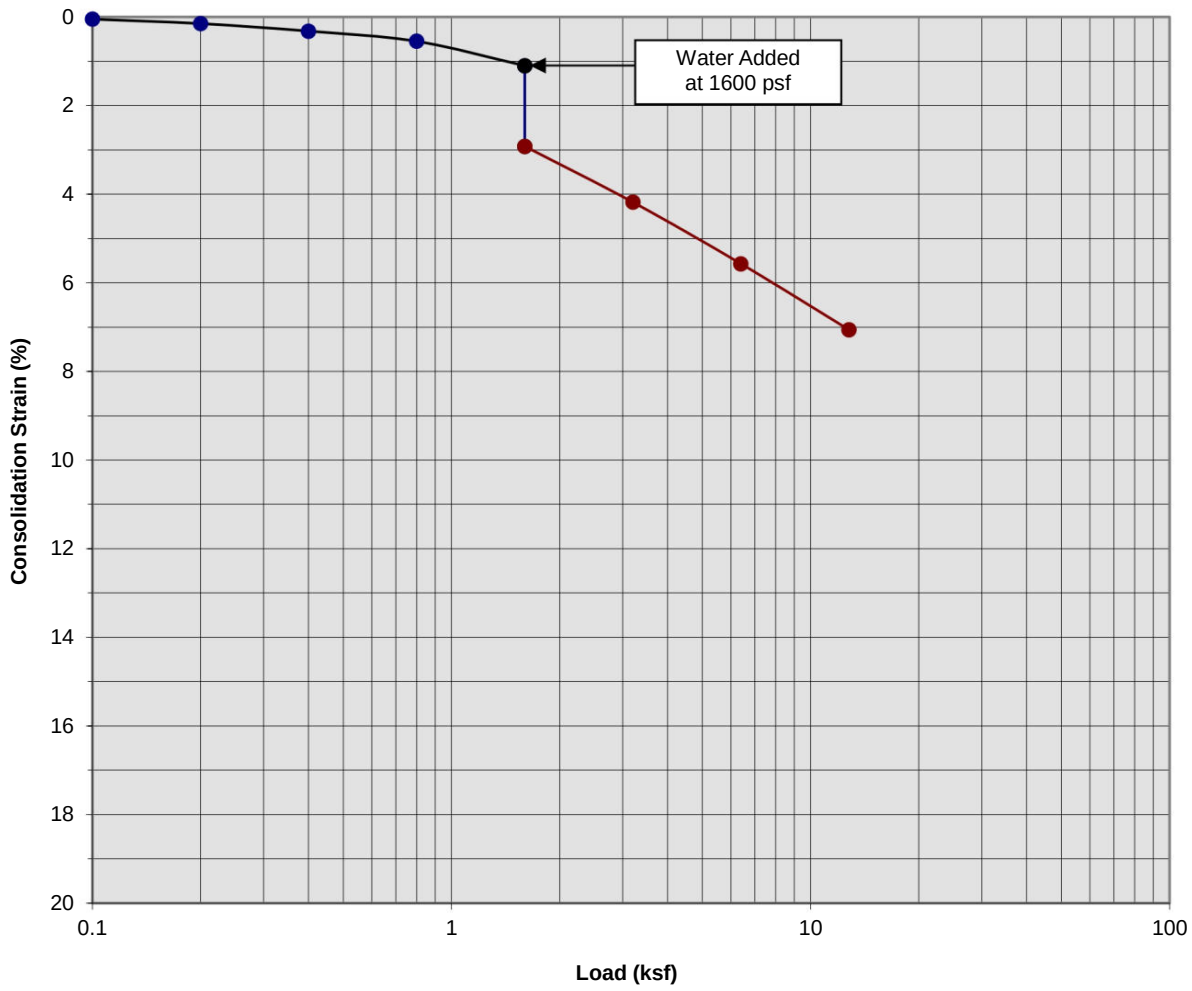
Boring Number:	B-4	Initial Moisture Content (%)	2
Sample Number:	---	Final Moisture Content (%)	13
Depth (ft)	7 to 8	Initial Dry Density (pcf)	115.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	122.2
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.59

Phelan 20 Industrial Building
Hesperia, California
Project No. 23G131-1

PLATE C- 7

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Consolidation/Collapse Test Results



Classification: Light Brown Silty fine to coarse Sand, trace to little fine Gravel

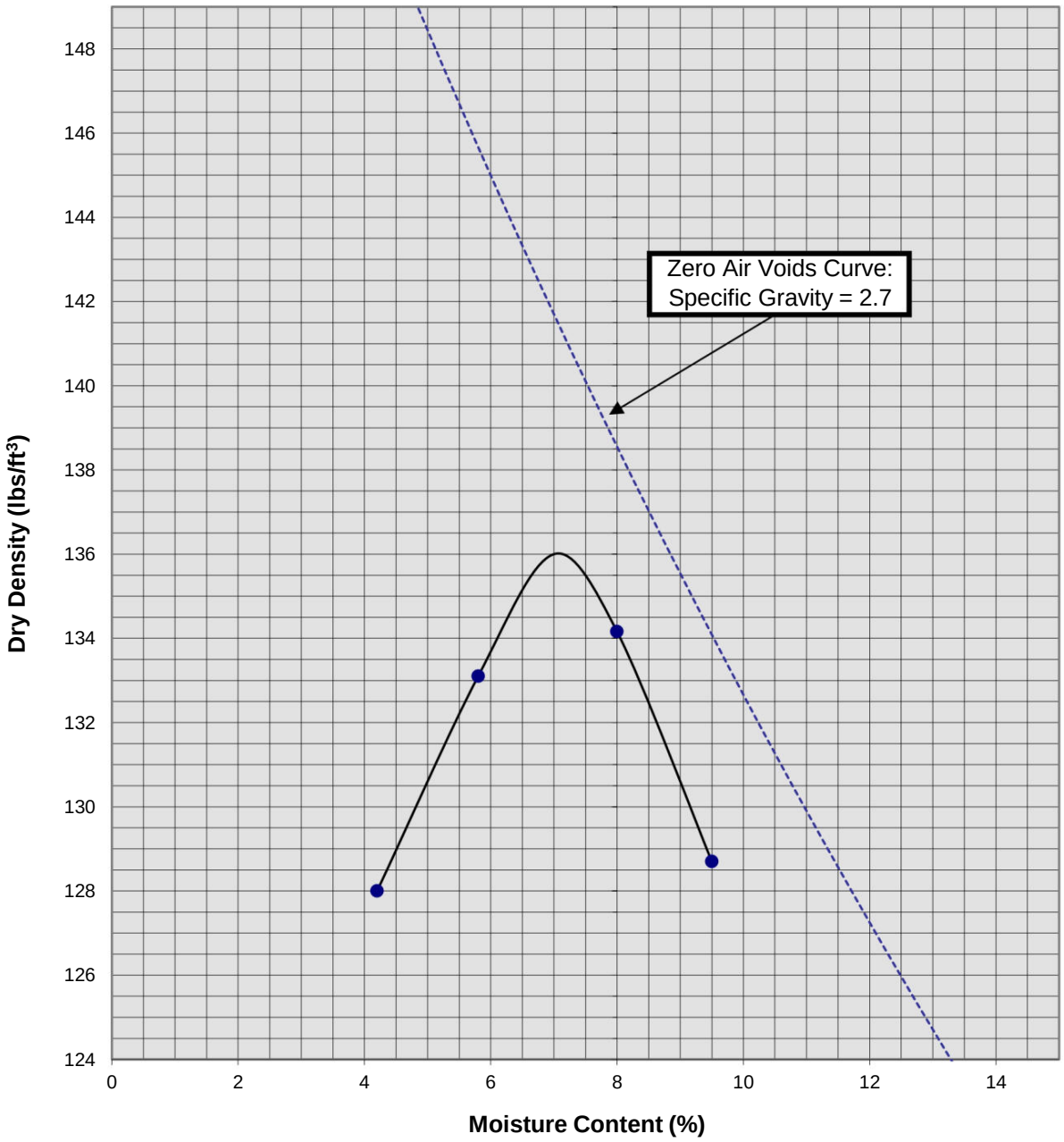
Boring Number:	B-4	Initial Moisture Content (%)	3
Sample Number:	---	Final Moisture Content (%)	14
Depth (ft)	9 to 10	Initial Dry Density (pcf)	112.0
Specimen Diameter (in)	2.4	Final Dry Density (pcf)	120.4
Specimen Thickness (in)	1.0	Percent Collapse (%)	1.82

Phelan 20 Industrial Building
Hesperia, California
Project No. 23G131-1

PLATE C- 8

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Moisture/Density Relationship
ASTM D-1557



Soil ID Number	B-1 @ 1-5'
Optimum Moisture (%)	7
Maximum Dry Density (pcf)	136
Soil Classification	Brown Silty fine to medium Sand, little coarse Sand, trace fine Gravel

Phelan 20 Industrial Building
Hesperia, California
Project No. 23G131-1

PLATE C-9

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

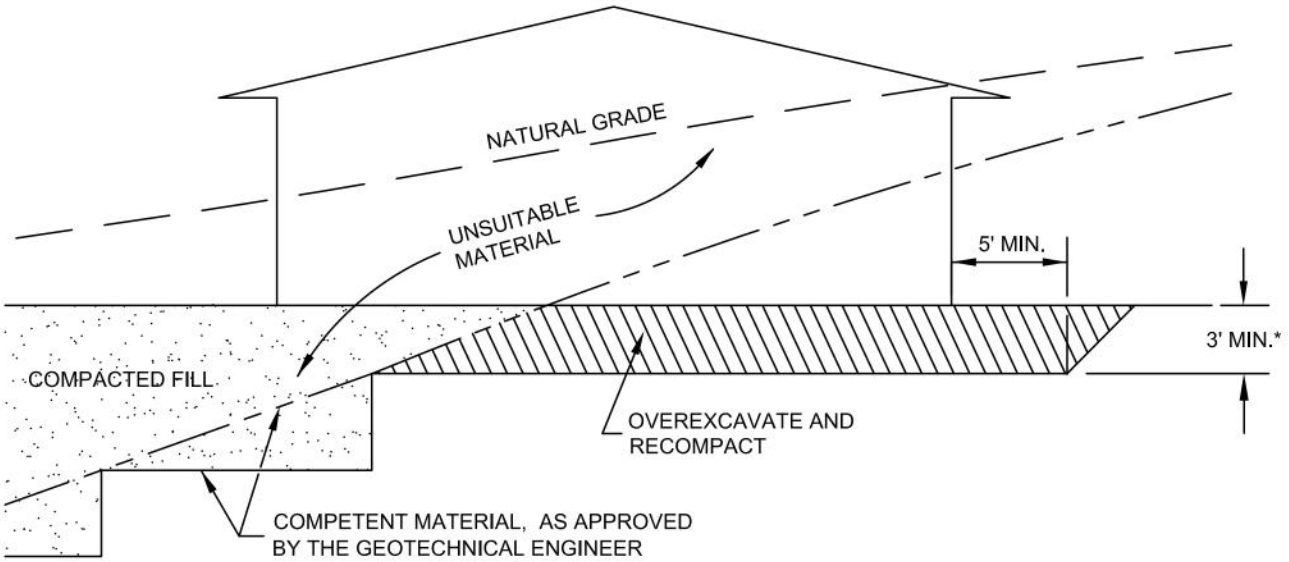
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

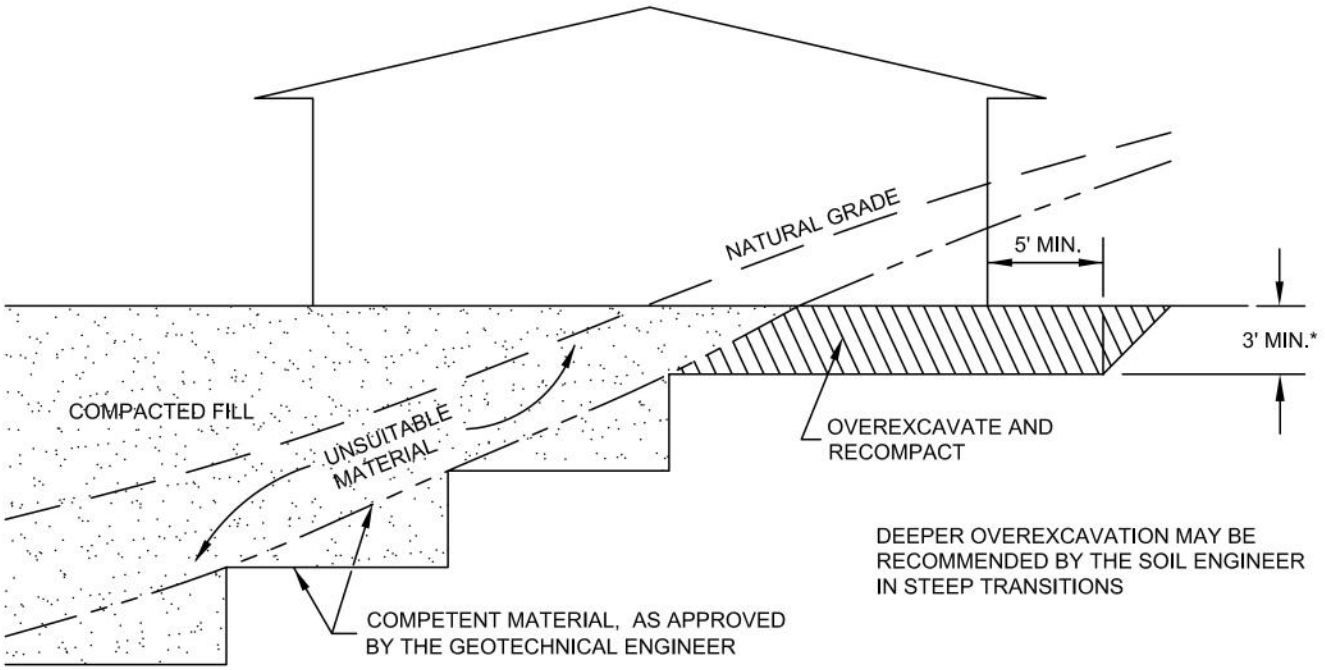
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

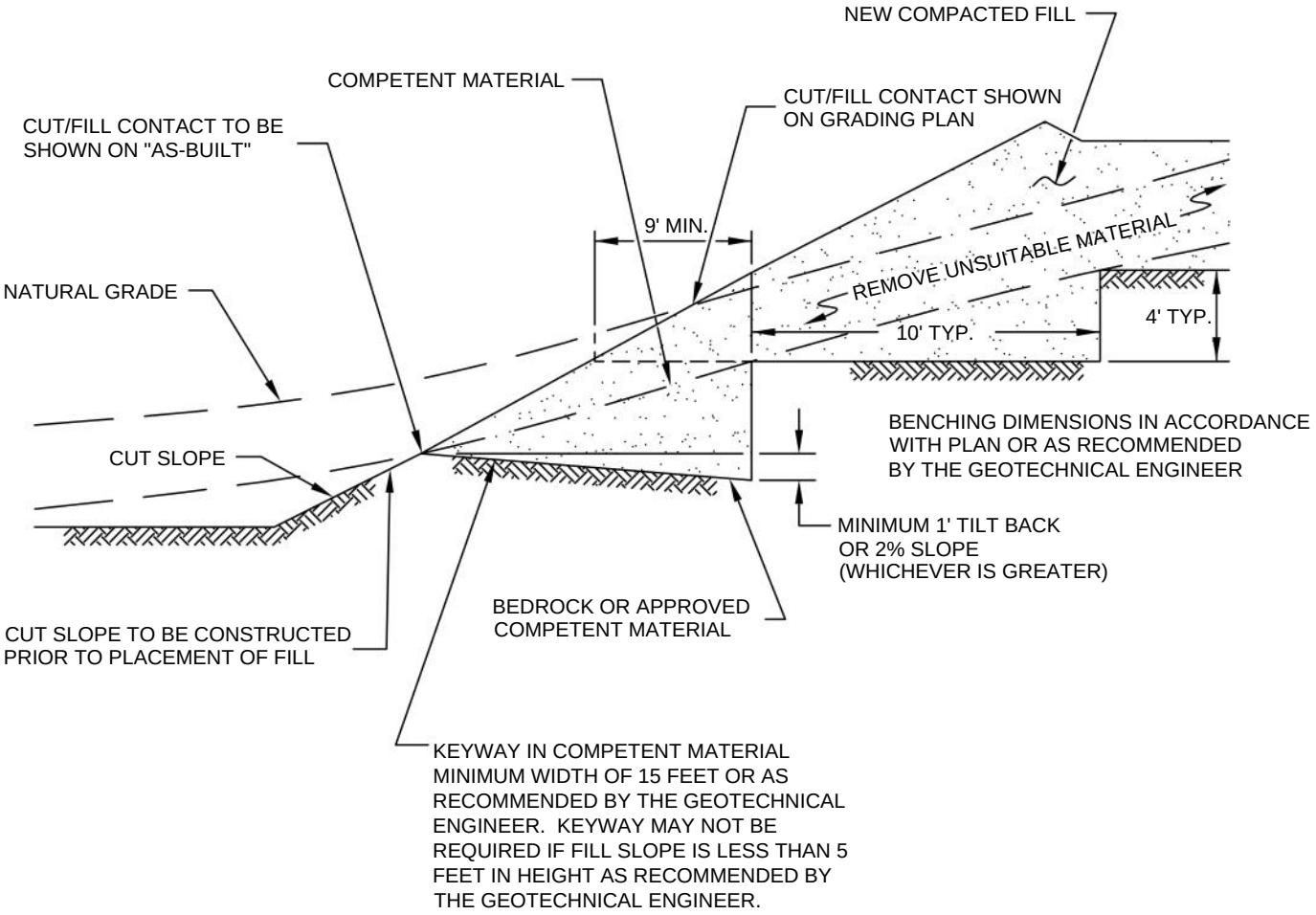
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

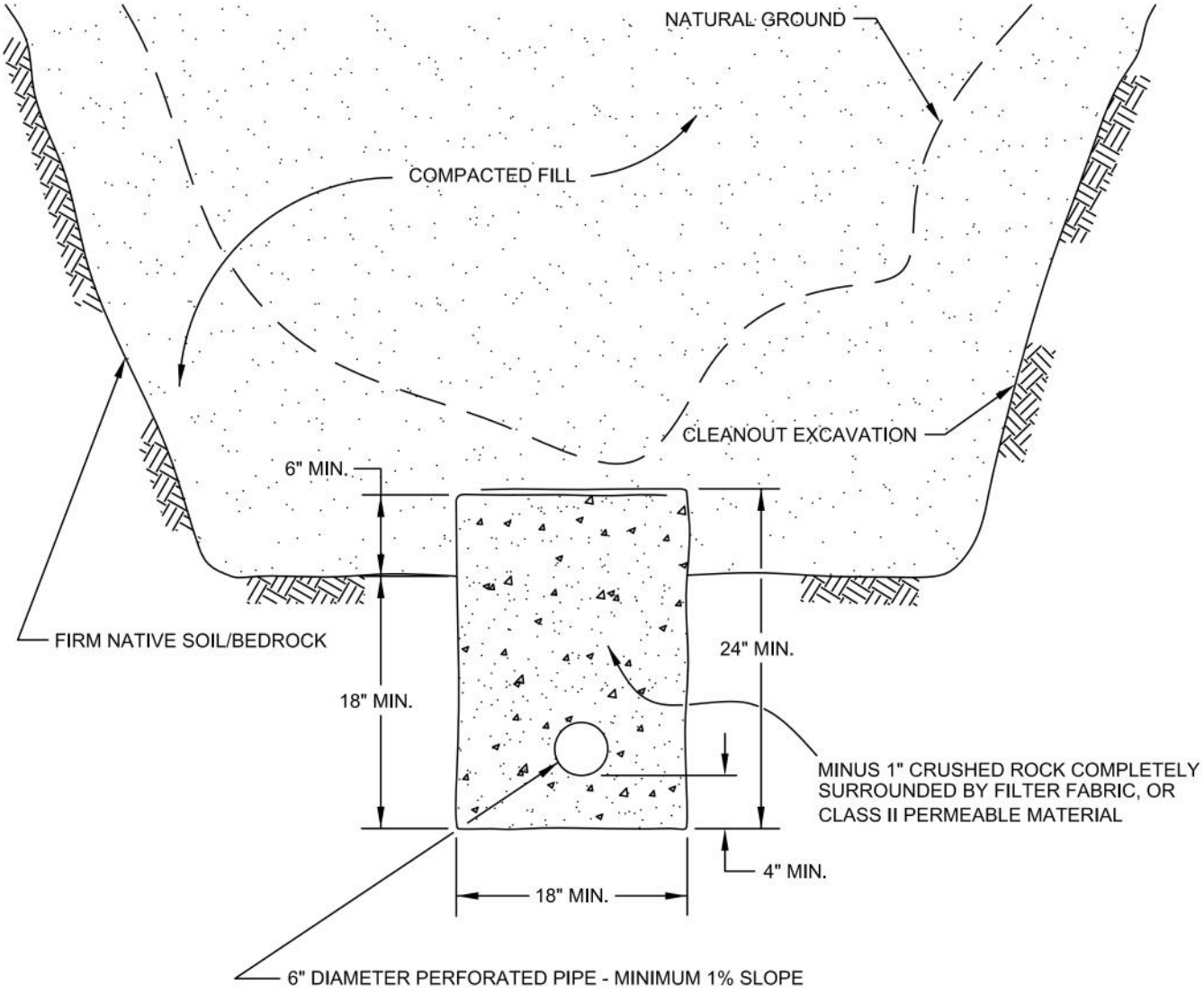
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL

GRADING GUIDE SPECIFICATIONS

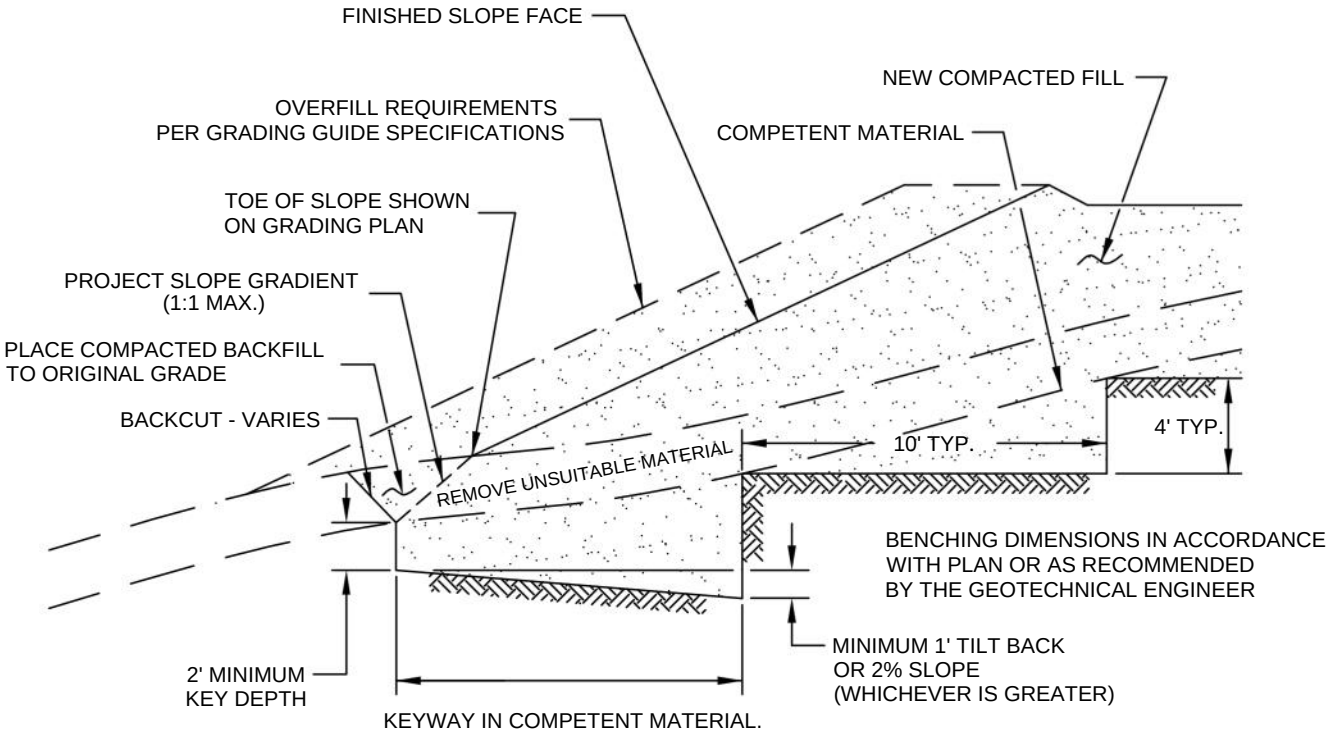
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-3

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED WHEN NATURAL SLOPES ARE EQUAL TO OR STEEPER THAN 5:1 OR WHEN RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

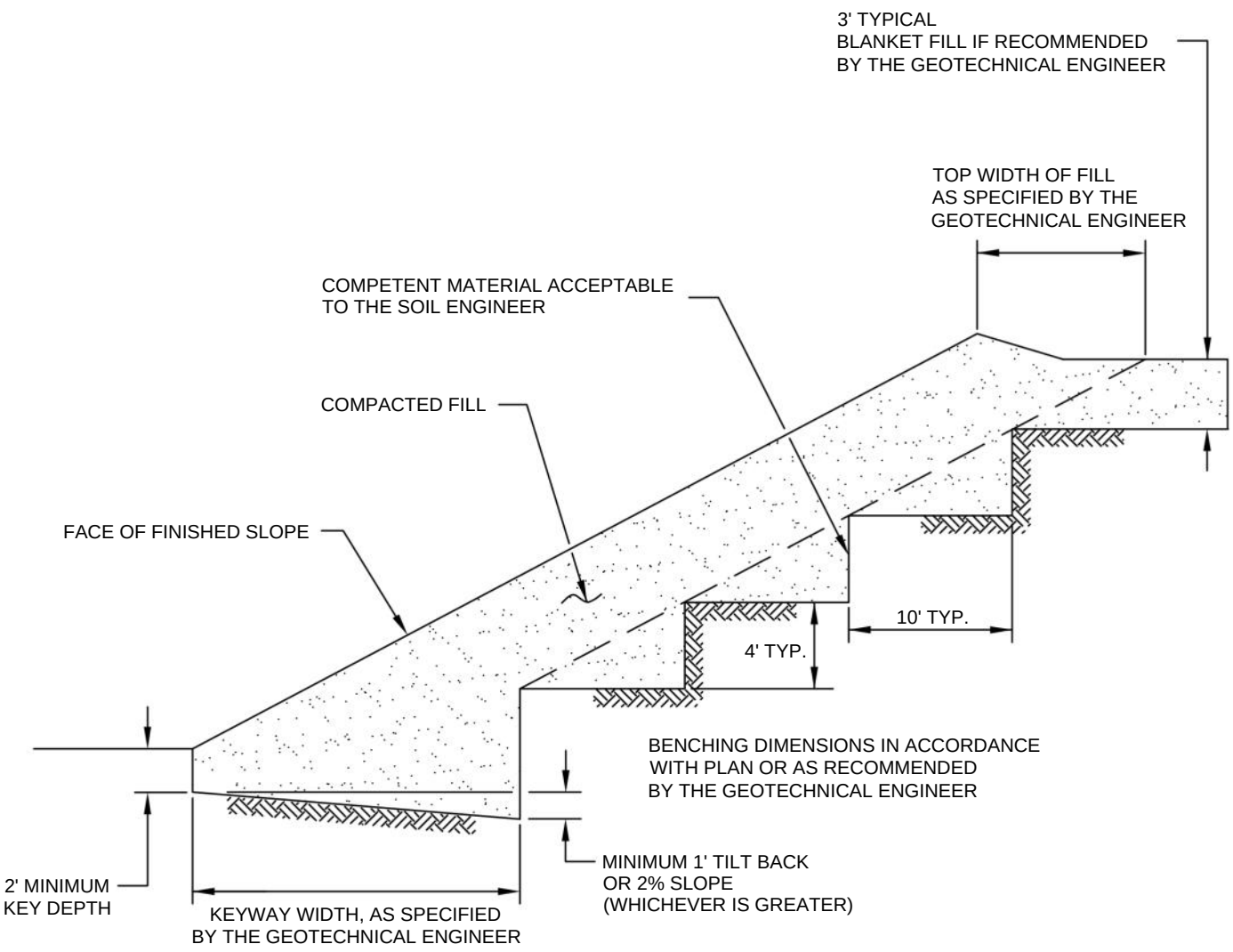
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

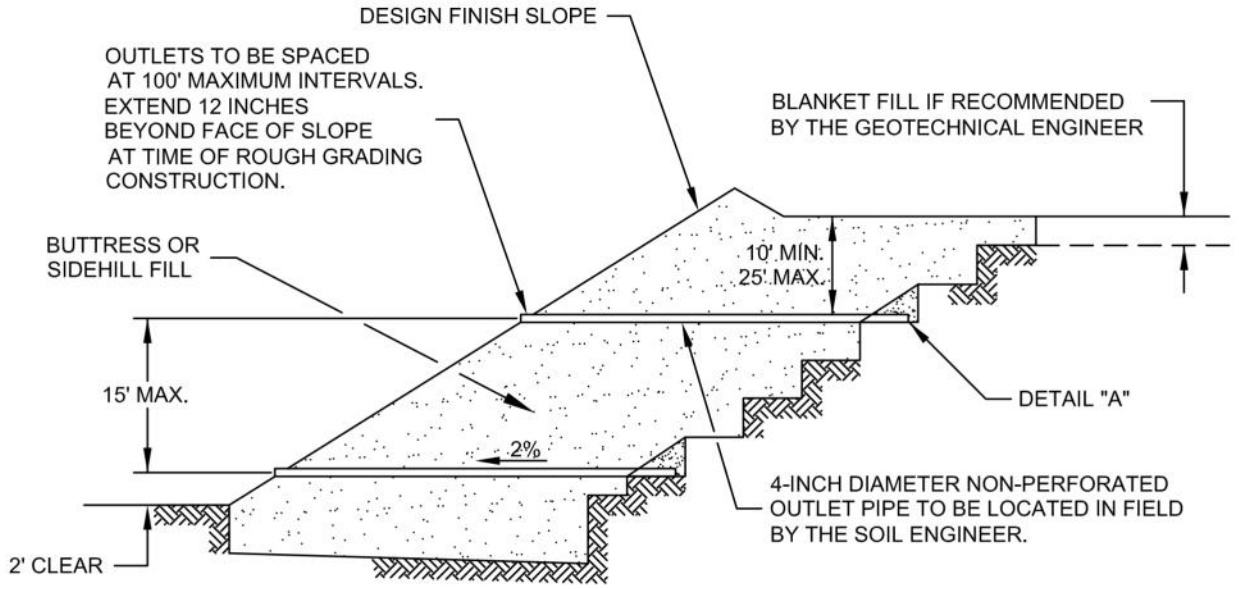
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



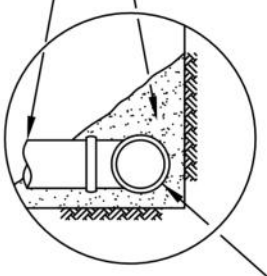
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

FILTER MATERIAL - MINIMUM OF FIVE CUBIC FEET PER FOOT OF PIPE. SEE ABOVE FOR FILTER MATERIAL SPECIFICATION.

ALTERNATIVE: IN LIEU OF FILTER MATERIAL FIVE CUBIC FEET OF GRAVEL PER FOOT OF PIPE MAY BE ENCASED IN FILTER FABRIC. SEE ABOVE FOR GRAVEL SPECIFICATION.

FILTER FABRIC SHALL BE MIRAFI 140 OR EQUIVALENT. FILTER FABRIC SHALL BE LAPPED A MINIMUM OF 12 INCHES ON ALL JOINTS.

MINIMUM 4-INCH DIAMETER PVC SCH 40 OR ABS CLASS SDR 35 WITH A CRUSHING STRENGTH OF AT LEAST 1,000 POUNDS, WITH A MINIMUM OF 8 UNIFORMLY SPACED PERFORATIONS PER FOOT OF PIPE INSTALLED WITH PERFORATIONS ON BOTTOM OF PIPE. PROVIDE CAP AT UPSTREAM END OF PIPE. SLOPE AT 2 PERCENT TO OUTLET PIPE.

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

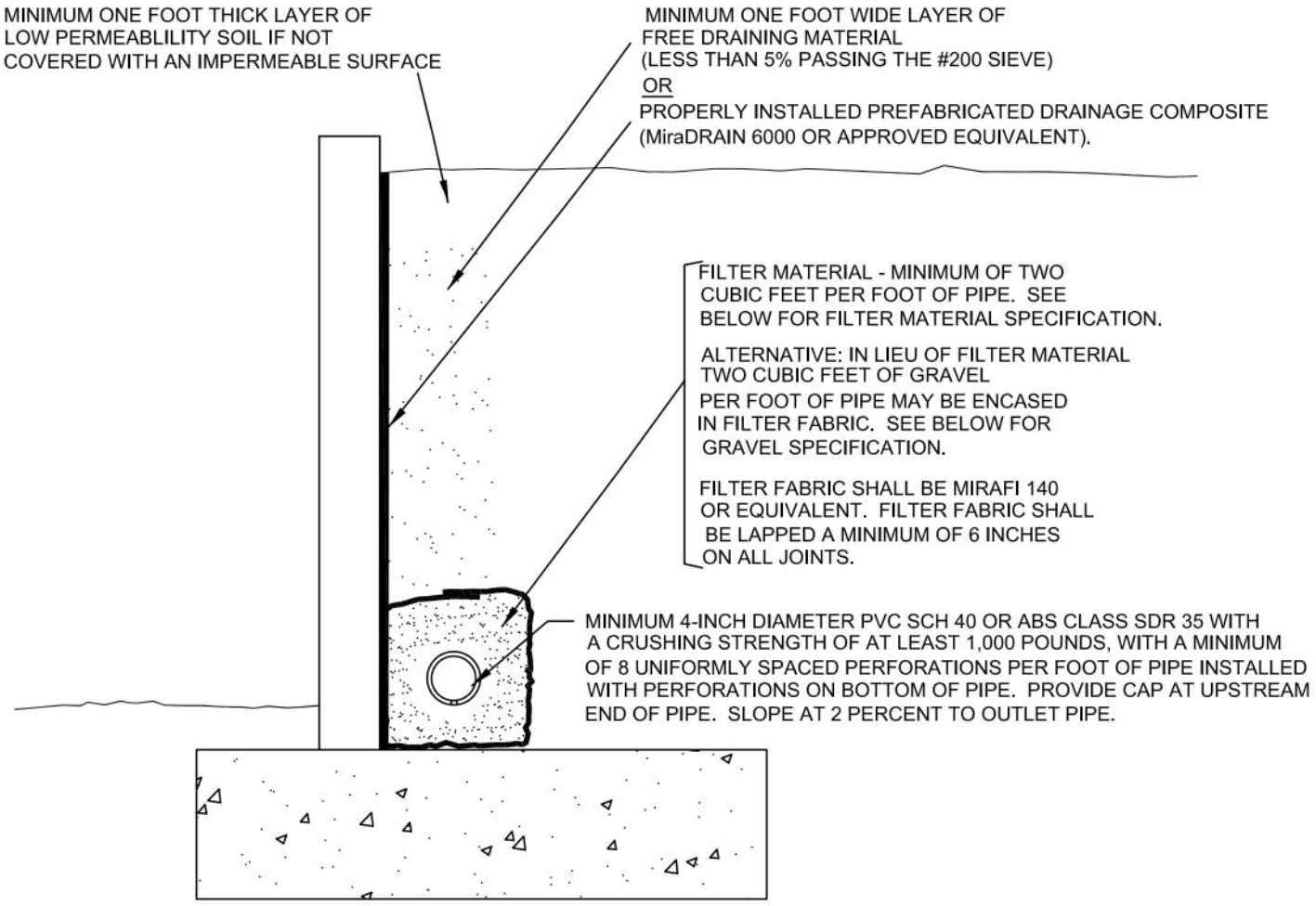
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

GRADING GUIDE SPECIFICATIONS

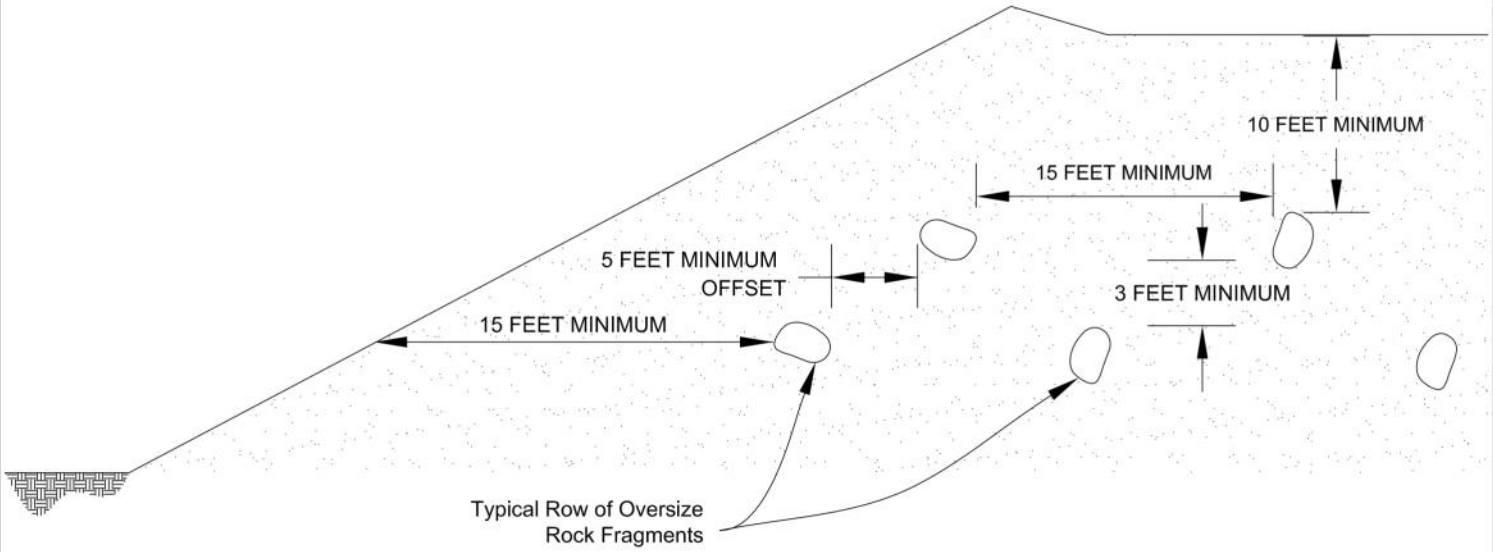
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

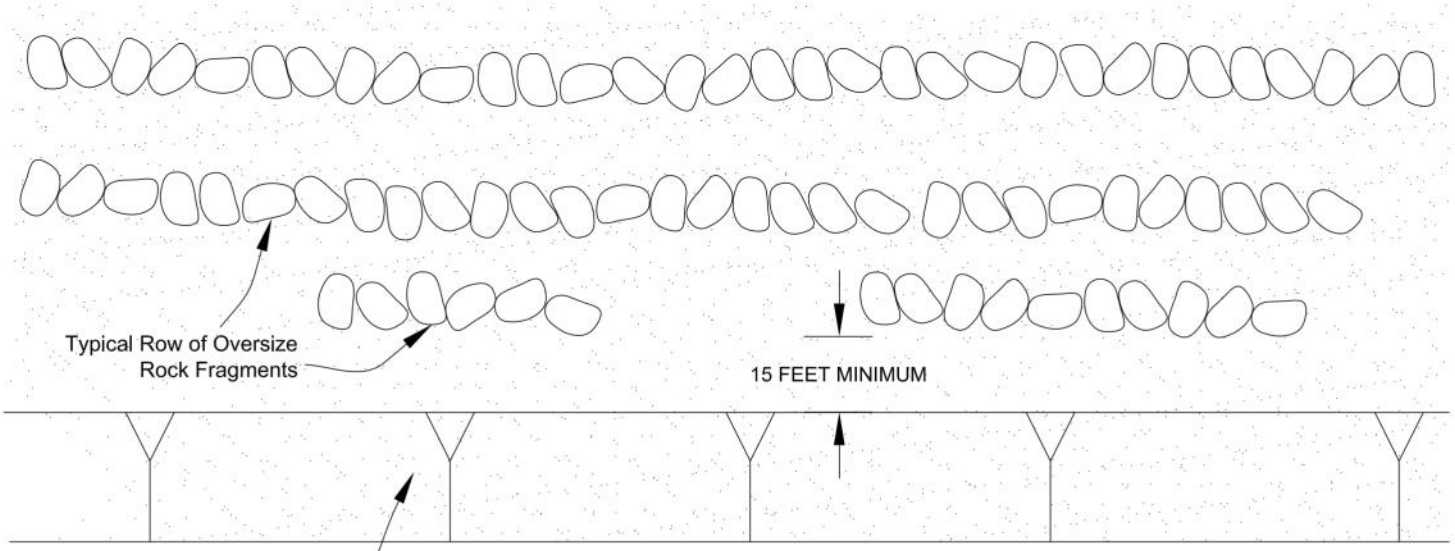
PLATE D-7

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

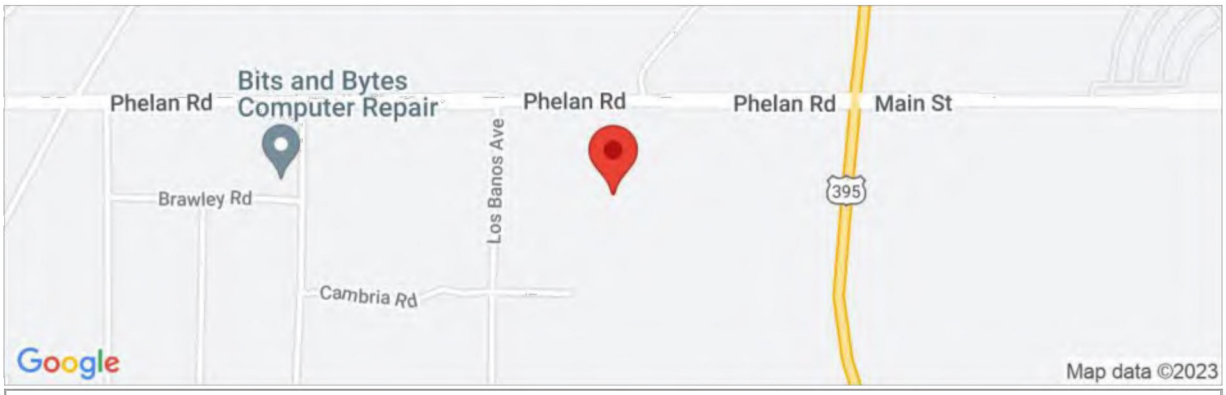
PLATE D-8

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

Latitude, Longitude: 34.42497086, -117.40549142



Date	4/25/2023, 3:48:24 PM
Design Code Reference Document	ASCE7-16
Risk Category	III
Site Class	D - Stiff Soil

Type	Value	Description
S_S	1.5	MCE_R ground motion. (for 0.2 second period)
S_1	0.6	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.5	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.502	MCE_G peak ground acceleration
F_{PGA}	1.1	Site amplification factor at PGA
PGA_M	0.552	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	1.581	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.706	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.616	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.68	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.502	Factored deterministic acceleration value. (Peak Ground Acceleration)
PGA_{UH}	0.677	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.927	Mapped value of the risk coefficient at short periods
C_{R1}	0.905	Mapped value of the risk coefficient at a period of 1 s
C_V	1.4	Vertical coefficient

SOURCE: SEAOC/OSHPD Seismic Design Maps Tool
<https://seismicmaps.org/>

SEISMIC DESIGN PARAMETERS - 2022 CBC

PHELAN 20 INDUSTRIAL BUILDING

HESPERIA, CALIFORNIA

DRAWN: MK
CHKD: RGT

SCG PROJECT
23G131-1

PLATE E-1

SOUTHERN CALIFORNIA GEOTECHNICAL