Draft Initial Study
SAM Force Main in Montara Replacement Project

LEAD AGENCY:

Sewer Authority Mid-Coastside
1000 N. Cabrillo Highway
Half Moon Bay, CA 94019

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1 Introduction

1.1 Introduction

The SAM Force Main in Montara Replacement Project (herein referenced as the "project") is proposed for a sewer force main replacement along the alignment of the existing Intertie Pipeline System (IPS). The project is proposed by the Sewer Authority Mid-Coastside (SAM) and includes the construction of a sewer force main segment, starting within the boundaries of the Montara Water and Sewer District along Caltrans State Route 1 (SR-1) with a proposed length of approximately 13,540 feet. An existing 8-inch diameter Princeton force main connects to the project force main approximately 200 feet southwest of Coral Reef Avenue. The project will relocate this connection to the intersection of Coral Reef Avenue and SR-1 in order to avoid the requirement to work to connect the pipelines in sensitive environmental habitats. The project site is located along SR-1 between California Avenue in the community of Moss Beach and Sonora Avenue in the community of El Granada, within unincorporated San Mateo County (County), California. The project traverses the census-designated places of Miramar, El Granada, and Moss Beach. The project site is primarily developed along the paved road and open space.

Following a preliminary review of the project application materials, SAM has determined that the project is subject to the California Environmental Quality Act (CEQA) regulations and guidelines. This Draft Initial Study addresses the direct, indirect, and cumulative environmental impacts associated with implementation of the project.

1.2 Statutory Authority and Requirements

In accordance with CEQA (Public Resources Code Sections 21000-21189.70.10) and pursuant to State CEQA Guidelines Section 15063, the Sewer Authority Mid-Coastside, acting in the capacity of Lead Agency under CEQA, shall prepare an Initial Study to determine if the project may have a significant effect on the environment.

The environmental documentation is intended as an informational document to provide an environmental basis for subsequent discretionary actions upon the project. The resulting documentation is not a policy document, and its approval and/or certification neither presupposes nor mandates any actions on the part of those agencies from whom permits and/or other discretionary approvals would be required.

The environmental documentation is subject to a public review period. During this public review period, written comments on the document related to environmental issues should be addressed to SAM. Following the review of any written comments received, the Authority will consider these comments as a part of the project's environmental review and include them with the Initial Study documentation for consideration by SAM's decision-makers.

1.3 Purpose

State CEQA Guidelines Section 15063 identifies the purpose and specific disclosure requirements for inclusion in an Initial Study. The purposes of an Initial Study are:

1. Provide the Lead Agency with information to decide whether to prepare an Environmental Impact Report (EIR) or a Negative Declaration.
2. Enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a Negative Declaration.
3. Assist in the preparation of an EIR, if one is required, by:
    a. Focusing the EIR on the effects determined to be significant,
    b. Identifying the effects determined not to be significant,

c. Explaining the reasons for determining that potentially significant effects would not be significant and

d. Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.

4. Facilitate environmental assessment early in the design of a project.
5. Provide documentation of the factual basis for the finding in a Negative Declaration that a project will not have a significant effect on the environment.
6. Eliminate unnecessary EIRs.
7. Determine whether a previously prepared EIR could be used with the project.

Pursuant to those requirements, the contents of an Initial Study shall include:

1. The description of the project, including the location of the project.
2. An identification of the environmental setting.
3. Identifying environmental effects using a checklist, matrix, or other method, if entries on a checklist or other form are briefly explained to indicate some evidence to support the entries. The brief explanation may be either through a narrative or a reference to another information source such as an attached map, photographs, or an earlier EIR or negative declaration. A reference to another document should include, where appropriate, a citation to the page or pages where the information is found.
4. Discuss ways to mitigate the significant effects identified, if any.
5. Examine whether the project would be consistent with existing zoning, plans, and other applicable land use controls.
6. The name of the person or persons who prepared or participated in the Initial Study.

1.4 Incorporation by Reference

The following documents were utilized during the preparation of this Initial Study and are incorporated into this document by reference (State CEQA Guidelines Section 15150). The documents are available for review on the County of San Mateo's planning website, https://www.smcgov.org/planning.

County of San Mateo General Plan (effective November 18, 1986, amended January 2013). The San Mateo General Plan has been published since November 1986. The General Plan presents the community's vision for San Mateo and consists of the following elements: Vegetative, Water, Fish, and Wildlife Resources; Soil Resources; Mineral Resources; Visual Quality; Historical and Archaeological Resources; Parks and Recreational Resources; General Land Use; Urban Land Use; Rural Land Use; Water Supply; Wastewater; Transportation; Solid Waste; Natural Hazards; Man-Made Hazards; and a Climate Element.

Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport in San Mateo County, California (September 2014). The Airport Land Use Compatibility Plan (ALUCP) for the Half Moon Bay Airport evaluates airport land use compatibility. State law requires that airport land use commissions base their ALUCP's on up-to-date airport master plans. The ALUCP replaces the Half Moon Bay Airport Land Use Plan in Chapter III of the *1996 San Mateo County Comprehensive Airport Land Use Plan*.

County of San Mateo Ordinance Code (Current through Ordinance 4911 and legislation passed through November 11, 2025). The County of San Mateo Ordinance Code (SMOC) provides regulations for government administrative operations, construction, development, infrastructure, public safety, and business operations within the County. Various ordinances are used throughout the analysis to determine levels allowable in resources such as noise, air quality, and greenhouse gases.

Sewer Authority Mid-Coastside Five-Year Capital Improvement Program, Sewer Authority Mid-Coastside (dated October 20, 2024 prepared by William K. Faisst). The proposed five-year (5-yr) Capital Improvement Program (CIP) for SAM for fiscal years (FY) 2024/2025 through FY 2028/2029. The CIP addresses SAM's near-term needs for capital work recognizing priority categories and identifies projects for which implementation may exceed currently targeted funding but are needed to meet regulatory requirements and one project for which SAM seeks grant funding from Federal Emergency Management Agency (FEMA).

2 Project Description

2.1 Project Location

The project site is located along SR-1 between California Avenue within the boundaries of SAM's IPS in the census-designated place of Moss Beach and Sonora Avenue in the census-designated place of El Granada, within unincorporated San Mateo County (County), California. The project traverses the census-designated places of Miramar, El Granada, and Moss Beach. The project site is located approximately 3.4 miles northwest of State Route 92 (SR-92) and approximately 7.2 miles west of Interstate 280 (I-280). The nearest cross streets are Coronado Street to the southeast and California Street to the northwest. Refer to **Exhibit 1, Regional Vicinity Map, and Exhibit 2, Project Boundary**.

2.2 Environmental Setting

The project site is located along SR-1, a highway that is a California Department of Transportation (Caltrans) facility, within the Caltrans right-of-way (ROW). Surrounding existing conditions consist of agricultural land to the east, residential land to the north and south, and the Half Moon Bay Airport to the west.

The project site is primarily developed along the paved road and open space along with ruderal weedy vegetation mixed with Monterey cypress (Hesperocyparis macrocarpa) on the east and west sides of the highway. The elevation ranges from 25 feet above mean sea level (msl) to 100 feet msl. The majority of the project area is relatively flat and comprised of heavily mixed/disturbed surface soils.

The project is east of and runs parallel to the Pacific Ocean. According to the U.S. Fish and Wildlife (USFWS) National Wetlands Inventory (NWI), the project site contains several drainage features, including San Vicente Creek in the northern portion of the site. Based on a review of the FEMA's National Flood Hazard Layer Viewer, the project site is located within Flood Insurance Rate Map (FIRM) Panel Numbers 06081C0119F and 06081C0138F. Specifically, one portion of the project site is located in Zone X and described as an area of minimal flood hazard. Another portion of the project site is located in Zone X and described as a 2% annual chance of a flood hazard. Lastly, a northern portion of the project site is located in Zone AE, defined as areas subject to inundation by the 1-percent-annual-chance (100-year) flood event.

The existing Force Main in Montara is over 40 years old and is proposed to be replaced in kind. The segment of the force main to be replaced by the project extends from project Station 100+00 to project Station 235+40 and runs along SR-1. The length of the force main to be replaced by the project is approximately 13,540 feet.

The existing point of connection of the Princeton force main pipeline is located in an environmentally sensitive area. To avoid work in a sensitive habitat area, the project will relocate a portion of the existing 8-inch-diameter Princeton force main pipeline. The existing Princeton pump station force main connects to the existing project force main approximately 200 linear feet (LF) downstream (southeast) from the intersection of the centerline of Coral Reef Avenue. The relocation will include installation of approximately 300 LF of new 8-inch force main including a trenchless auger bore crossing with steel casing of Caltrans' SR-1 ROW to allow for a connection within the previously disturbed paved roadway of Coral Reef Avenue. At the point of connection of the project

force main with the re-aligned Princeton pump station force main pipeline, an underground utility vault will be constructed to house the connection and associated air release / air vacuum valve. The connection point will be approximately 20 feet deep and located in the paved roadway of Coral Reef Avenue to allow for ease of future maintenance access.

2.2.1 General Plan Land Use and Zoning

Project construction will take place almost entirely within Caltrans ROW on SR-1, and therefore is almost entirely designated as a ROW. The project traverses the census-designated places of Miramar, El Granada, and Moss Beach. The project site's surrounding existing land use designation is Medium Density Residential, Airport, Open Space, and Agriculture. The project site's existing zoning designation is R-1 (One Family Residential District), S-17 (Residential Density District 17), DR (Design Review District), CD (Coastal Development District), M-1 (Light Industrial District), EG (Community Open Space Conservation District), and CCR (Coastside Commercial Recreation District).

2.2.2 Surrounding Land Use Characteristics

The immediate surrounding area is primarily agricultural or developed, consisting of the Half Moon Bay Airport and residential properties. Surrounding uses include single-family homes, farmland, open space, and commercial. The southern portion of the project in El Granada is surrounded by open space and residential lands. Once the project approaches the Half Moon Bay Airport, the land is open space to the east and the airport to the west. The northern portion of the project approaching Moss Beach is once again surrounded by mostly open space and residential properties. Land use designations surrounding the site include Medium Density Residential, Airport, Open Space, and Agriculture. Zoning designations surrounding the site include R-1 (One Family Residential District), S-17 (Residential Density District 17), DR (Design Review District), CD (Coastal Development District), M-1 (Light Industrial District), EG (Community Open Space Conservation District), and CCR (Coastside Commercial Recreation District).

2.3 Project Characteristics

The project is proposed by SAM and includes the construction of a replacement IPS sewer force main segment along SR-1 between the community of Moss Beach and the community of El Granada, with a proposed length of approximately 13,540 feet. The existing force main has experienced several leaks in the past and must be replaced to protect the public health and the environment. The project alignment will be located south and north of SR-1 and will involve replacement in-kind of the existing sewer force main within Caltrans ROW. The project alignment begins near the intersection of SR-1 and Virginia Avenue in the community of Moss Beach. The replacement alignment is located mostly within the force main alignment that is being replaced and will transect or be constructed adjacent to the following streets:

- Virginia Avenue
- Vermont Avenue
- Lancaster Boulevard
- Terrace Avenue
- Cypress Avenue
- Marine Boulevard
- Coral Reef Avenue
- Capistrano Road
- Easements on private property
- Ellendale Street

- Airport Street
- Cornell Avenue
- California Avenue
- Broadway
- Prospect Way
- Avenue Alhambra

The entirety of the sewer force main alignment will be constructed within Caltrans ROW. The project's conceptual engineering plan is shown in **Exhibit 3, Conceptual Engineering**. The following describes the individual segments of the proposed project.

2.3.1 Sewer Force Main

The project alignment begins in a residential area within the community of Moss Beach and traverses southwest through agricultural fields and adjacent to the Half Moon Bay Airport to the west, terminating near Sonora Avenue within the community of El Granada. Installation at creek crossings, through areas with sensitive habitats, and crossing SR-1 will be completed utilizing trenchless construction methods, with open trench construction utilized in open space and within existing roadways. A majority of the project alignment will remove and replace the existing force main with a new force main the same horizontal and vertical alignment. Where the existing pipeless crosses sensitive habitat, the replacement pipeline will be installed trenchless adjacent to the existing force main. While expected to be refined during the design process, construction of the force main work is expected to include a DR 11, 14- and 16-inch diameter high-density polyethylene (HDPE) pipe; 30-inch diameter steel casings with end seals will be used as a conduit through which the sewer force main will be installed at Highway ROW crossings. The Princeton force main extension will include a 10-inch DR 11 HDPE pipe. At the SR-1 crossing, the pipe will be installed in a 20-inch steel casing by auger bore construction. Construction of the force main also includes installation of blow offs at pipeline low points, installation of air release valves at pipeline high points, as well as installation of valves, fittings, appurtenances, and bypass vaults; the construction work includes launching and receiving pits, traffic control, road reconstruction, and tie-ins and connections.

To comply with regulatory requirements and prudent maintenance of existing assets, over the next five years SAM will spend most of its capital investment on replacing the Sewer Force Main in Montara, a Category 1 project developed to meet regulatory requirements. The project is a portion of the Sewer Authority Mid-Coastside Intertie Pipeline System and due to multiple sewer spills from the Project, the pipeline is required to be replaced as part of a binding legal Consent Decree with Ecological Rights Foundation (ERF) by June 30, 2027.

2.3.1.1 Connection Point at Virginia Avenue

The proposed alignment will include a bypass valve vault (Bypass Vault #1, Station 101+25) at the intersection of SR-1 and Virginia Avenue, which will allow wastewater to flow through either the force main or an above ground bypass pipeline during construction or during future pipeline repairs. This approach will allow the existing force main to be taken out of service (bypassed) during construction and replaced in place. This also provides flexibility for future rehabilitation of the force main pipeline, if needed. Bypass of the sewer is required because open cut trenching will be utilized from Virginia Avenue to Cypress Avenue.

2.3.1.2 Cypress Avenue to San Vicente Creek

The force main segment from approximately 63 feet southeast of Cypress Avenue, extending southeast to 300 LF past the limits of the San Vicente Creek will be installed utilizing horizontal directional drilling (HDD) over a total length of 1,355 LF. To install the pipeline using the HDD trenchless method, the Construction Contractor will lay the HDPE pipeline out on the ground surface for approximately 1,355 LF southeast beginning from 300 LF past the limits of the San Vicente Creek prior to installation.

2.3.1.3 Vicente Creek to Cabrillo Farm Entrance

Open cut trenching construction will be utilized southeast of the San Vicente Creek from Station 125+56 to Station 133+16. Beginning at Station 133+16 an additional 1,522 LF of HDD construction will continue southeasterly, including two setbacks from sensitive habitat of 100 LF. This HDD construction reach is proposed to avoid impact to sensitive habitat as well as existing trees.

The force main will be installed trenchlessly from Station 148+68 to Station 149+16 by auger bore construction and installed within a steel casing pipeline crossing Caltrans' SR 1. On either side of the highway crossing, bypass vaults (Bypass Vault #2 and Bypass Vault #3) will be installed to allow bypassing of wastewater on the east and west sides of Highway 1.

Extending southeast of Station 148+68 the Construction Contractor will stage approximately 1,522 LF of HDPE pipeline on the ground surface, just west of SR 1 to complete the trenchless construction between Station 133+16 and 148+56.

2.3.1.4 Cabrillo Farm Field Entrance to Capistrano Road

Open cut construction will continue north of SR 1 in a southeasterly direction within the previously disturbed Cabrillo Farm Field from Station 149+16 to Station 194+46. From Station 194+06 to Station 198+68 the pipeline will be installed by HDD construction, approximately 426 LF in length, with two setbacks from sensitive habitat of 100 LF to avoid impacts to Denniston Creek. Bypass Vault #4 is proposed to be constructed at Station 192+50. The above ground HDPE pipe layout reach will extend southeasterly from this HDD installation segment, passing proposed Bypass Vault #4 within the previously disturbed farm field.

Between Station 198+31 and Station 203+56 the pipeline will be installed by open cut construction.

Between Station 203+18 and 218+61 the pipeline will be installed by HDD construction. One hundred LF setbacks are proposed from sensitive habitat at the upstream and downstream portions of the HDD construction to avoid impacts to sensitive habitat. At Coral Reef Avenue, a tie-in will be constructed to connect the Princeton force main to the project force main. At this location a utility vault will be constructed for access to an isolation valve and an air relief / air vacuum valve associated with the Princeton force main which will tie into the project force main at this location. All surface disturbance work at Coral Reef Avenue will be completed within the existing distributed paved roadway.

Open cut construction is proposed between Station 218+18 and 223+00.

2.3.1.5 Capistrano Road to Station 235+40 (End of Project)

The force main crosses Capistrano Road, within Caltrans right of way and Caltrans requires utilities installed within the road to be installed perpendicular to the roadway and within a steel casing. The project will install

the force main within a steel casing underneath Capistrano Road between Station 222+92 and Station 223+88. This work is proposed to be installed by open cut construction.

From Station 223+88 to Station 231+45 the force main will be installed by open cut construction (approximately 757 LF).

From Station 230+96 and Station 235+45 (449 LF) the force main will be installed by HDD construction crossing underneath Deer Creek. HDD construction will begin with setbacks of 100 LF from the sensitive habitat of Deer Creek.

The force main will be installed by open cut construction from Station 234+94 to Station 235+35 where a junction structure will be constructed on the existing gravity sewer portion of the IPS to connect the force main to the gravity portion of the IPS. This will be the termination point of the project work.

2.3.1.6 Princeton Force Main Extension

The existing Princeton force main is constructed of 8-inch diameter ductile iron pipe and currently connects to the project force main at approximately Station 208+82. The existing point of connection is located within a sensitive habitat that supports a protected species. At this location the project force main will be installed by HDD construction at a depth of approximately 30 feet. To avoid a deep excavation within sensitive habitat, the discharge of the Princeton force main will be rerouted by the project to connect to the project force main at Coral Reef Avenue. The portion of the Princeton force main being rerouted initiates on the west side of SR-1 at the northern terminus of Capistrano Road. The alignment will extend north by open cut construction approximately 150 LF along the west side of SR-1. From this point the Princeton Force Main will be installed trenchlessly using auger bore construction within a 24 inch diameter steel casing across Caltrans' SR-1 terminating at Coral Reef Avenue, where the force main will discharge to the project force main approximately 20 feet below grade surface.

2.4 Phasing/Construction

As shown in **Exhibit 4, Staging Areas**, a total of five (5) construction staging areas are proposed along the project site, three of which are located east of SR-1 and two of which are located west of SR-1. No construction staging would occur within sensitive habitat. Furthermore, the project Construction Contractor will be required to comply with applicable project-specific mitigation measures as specified in this Initial Study/Mitigated Negative Declaration (IS/MND), to ensure potential environmental impacts would be reduced to a less than significant level.

To remove and replace the project force main in the alignment of the existing force main, bypassing of flow within the existing pipeline will be required. Four bypass vaults are proposed to be constructed that will allow the Construction Contractor to bypass segments of the existing force main during pipeline replacement. The four proposed bypass vaults are spaced such that temporary HDPE bypass piping can be installed both above ground and below ground by the Construction Contractor. Each bypass segment is approximately 5,000 LF in length. The bypass piping w be installed above ground, parallel to, and adjacent to the project force main to be replaced. Where the piping crosses critical roadways, the line will be installed below ground to lessen vehicle impacts. Where the piping crosses areas identified as environmentally sensitive, the bypass will be routed to be near to or within the paved shoulder of the Caltrans SR-1 ROW. If required by Caltrans, K-Rails (parabolic concrete barrier used for roadside construction and traffic control) would be installed by

the Construction Contractor to protect the bypass line from vehicle traffic. The proposed temporary bypass will be installed entirely within Caltrans ROW.

Temporary traffic control measures would be implemented as detailed by a Traffic Control Plan if deemed necessary, as determined by the County of San Mateo and Caltrans. The proposed project construction will occur within the Caltrans ROW and construction traffic control would impact County ROW. Upon completion of a construction shift, the project Construction Contractor will be responsible for backfilling and/or plating open excavations, as well as cleaning, removing barricades, and removing equipment from the roadway.

The proposed project will be installed utilizing open-trench and trenchless construction methods. Open-cut trench construction has potential to impact existing channels/waterways, underground utilities, culverts, or bridges along the alignment. Where open-cut trenching would result in impacts to channels/waterways or Caltrans ROW, trenchless construction is proposed to be utilized to avoid these impacts. Auger boring construction, also referred to as jack-and-bore construction, is suitable for the trenchless construction undercrossing along SR-1, Caltrans ROW.

2.4.1 Construction Duration

Field construction activities for the project are scheduled to be completed following regulatory and right of way permitting over a single continuous period beginning in the summer of 2026 and ending in the summer of 2027.

2.4.2 Project Operation

Post construction, the force main would operate substantially similar to that of the existing facility. Project operations for the force main involve operational activities to ensure the proper maintenance and inspection of the sewer system improvements. These would be intermittent and infrequent. Operational activities for the proposed facilities include operating, exercising isolation valves, maintaining air release valves, and general upkeep and maintenance of accessible facilities.

2.4.3 Project Objectives

The following project objectives are applicable to the proposed project:

- Replace the aging and/or deteriorating sewer infrastructure to ensure safety, reliability, and service continuity
- Extend the useful life of the existing sewer system
- Eliminate risks associated with the aged ductile iron pipe of the existing Montara force main.
- Develop a comprehensive project design that takes into consideration the existing topographic, geologic, hydrologic, biological, and environmental opportunities and constraints and is sensitive to the environment, provides for the protection of health and safety, and promotes the community, the County and the region.

2.5 Anticipated Agreements, Permits, and Approvals

SAM is the Lead Agency with responsibility for approving the proposed project under CEQA. **Table 1, Required Permits and Approvals**, shows the actions that will be required to implement the proposed project.

Table 1: Required Permit and Approvals

Agency	Permit/Approval Required
FEDERAL	
US Army Corps of Engineers San Francisco District	404 Authorization
US Department of Fish and Wildlife Region 8	Biological Opinion
STATE	
California Department of Fish and Wildlife, Region 3	Section 1602 Streambed Alteration Agreement
California Department of Transportation, Caltrans District 4	Traditional Encroachment Permit
REGIONAL	
Regional Water Quality Control Board Region 2	401 Water Quality Certification
LOCAL	
San Mateo County Local Coastal Plan	Coastal Development Permit or an Exemption
San Mateo County	Encroachment Permit
Sewer Authority Mid-Coastside	Adoption of the Mitigated Negative Declaration and Board Approval

Exhibit 1: Regional Vicinity Map

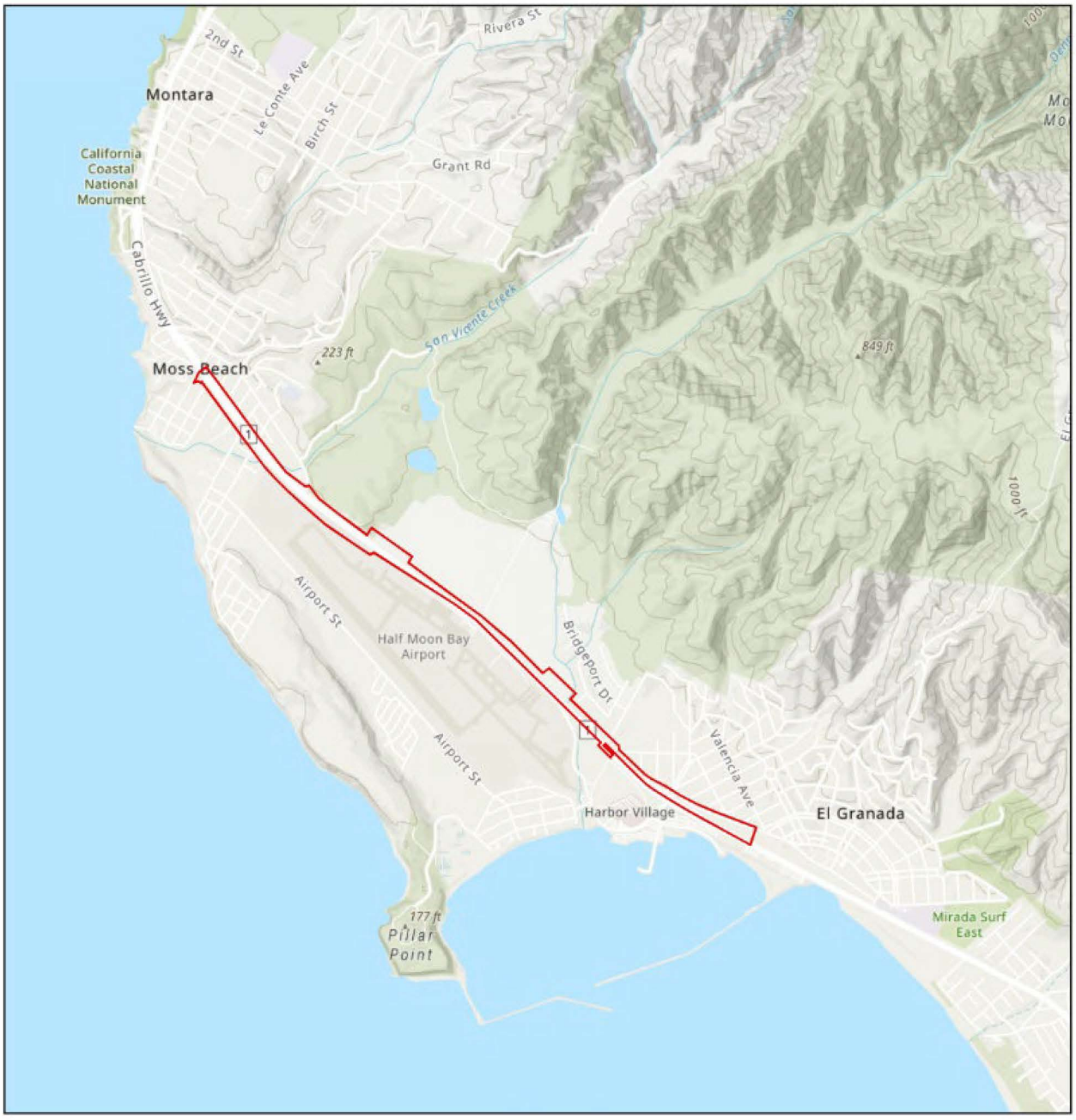

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Exhibit 2: Project Boundary

SAM FORCE MAIN IN MONTARA REPLACEMENT PROJECT
EXHIBIT 2: PROJECT BOUNDARY

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0 1,000 2,000 Feet
0 0.25 0.5 Miles

PROJECT BOUNDARY

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Exhibit 3: Conceptual Engineering

SAM FORCE MAIN IN MONTARA REPLACEMENT PROJECT

EXHIBIT 3: CONCEPTUAL ENGINEERING

TRENCHLESS CONSTRUCTION
OPEN CUT CONSTRUCTION
PROJECT BOUNDARY

0 1,500 3,000 Feet
0 0.25 0.5 Miles

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Exhibit 4: Staging Areas

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3 Initial Study Checklist

Project Title	SAM Force Main in Montara Replacement Project
Lead Agency	Sewer Authority Mid-Coastside 1000 N. Cabrillo Highway Half Moon Bay, CA 94019
Lead Agency Contact	Kishen Prathivadi General Manager (650) 726-0124 EXT.106 SAMFMMontara@samcleanswater.org
Project Location	The project site is located along SR-1 between California Avenue in the census-designated place of Moss Beach and Sonora Avenue in the census-designated place of El Granada, within unincorporated San Mateo County (County), California. The project site is located approximately 3.4 miles northwest of State Route 92 (SR-92) and approximately 7.2 miles west of Interstate 280 (I-280). The nearest cross streets are Coronado Street to the southeast and California Street to the northwest.
Project Applicant Contact	Wade Schell McGuire and Hester 9009 Railroad Avenue Oakland, CA 94603
General Plan Land Use	The County of San Mateo has pre-designated surrounding land use as Medium Density Residential to the north, Agriculture to the east, Airport, Agriculture, and Public Recreation to the west, and Open Space and Medium Residential to the south.
Zoning	The County of San Mateo has pre-designated surrounding zoning as Medium Density Residential to the north, Agriculture to the east, Airport, Agriculture, and Public Recreation to the west, and Open Space and Medium Residential to the south.
Description of Project	Refer to Section 2.4, *Project Characteristics.*
Other Required Public Agency Approvals	

US Army Corps of Engineers, San Francisco District - 404 Authorization

US Department of Fish and Wildlife, Region 8 – Biological Opinion

California Department of Fish and Wildlife, Region 3 - Section 1602 Streambed Alteration Agreement

California Department of Transportation, District 4 - Traditional Encroachment Permit

Regional Water Quality Control Board Region 2 - 401 Water Quality Certification

San Mateo County Local Coastal Plan - Coastal Development Permit or an Exemption

San Mateo County - Traditional Encroachment Permit

Sewer Authority Mid-Coastside - Adoption of the Mitigated Negative Declaration and Board Approval

Have California Native American Tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3? If so, has consultation begun?

Yes. Tribal consultation has been initiated and will be completed prior to approval of the IS/MND for the project. Inquiry letters to Native American tribal members on the contact list provided by the NAHC were sent out on August 8, 2025. These Native American Tribes include Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, Indian Canyon Mutsun Band of Costanoan, Costanoan Rumsen Carmel Tribe, Muwekma Ohlone Tribe of the SF Bay Area, The Ohlone Indian Tribe, and Wuksachi Indian Tribe/Eshom Valley Band. AB 52 consultation letters were sent to the same tribal members listed above on January 8, 2026. Currently, no responses from any known Native American Tribe in the project area have been provided. Currently, AB 52 consultation is ongoing. Refer to Section 5.18, *Tribal Cultural Resources*, for details regarding Tribal consultation.

4 Determination

4.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact requiring mitigation to be reduced to a level that is less than significant as indicated in the checklist on the following pages.

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

4.2 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 EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Kishen Prathivadi
General Manager

Date

5 Environmental Analysis

This section analyzes the potential environmental impacts associated with the proposed project. The issue areas evaluated in this Initial Study include:

- 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

The environmental analysis in this section is patterned after the State CEQA Guidelines, Appendix G Initial Study Checklist and utilized in the environmental review process. For the preliminary environmental assessment undertaken as part of this Initial Study's preparation, a determination that there is a potential for significant effects indicates the need to analyze the development's impacts more fully and to identify mitigation.

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The environmental analysis considers the long-term, direct, indirect, and cumulative impacts of the development. To each question, there are four possible responses:

- *No Impact*. The development will not have any measurable environmental impact on the environment.
- *Less Than Significant Impact*. The development will have the potential for impacting the environment, although this impact will be below established thresholds that are considered to be significant.
- *Less Than Significant Impact With Mitigation Incorporated*. The development will have the potential to generate impacts which may be considered as a significant effect on the environment, although mitigation measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- *Potentially Significant Impact*. The development will have impacts which are considered significant, and additional analysis is required to identify mitigation measures that could reduce these impacts to less than significant levels.

Where potential environmental impacts are anticipated to be significant, mitigation measures shall be required to avoid or reduce any such impact.

5.1 Aesthetics

Would the proposed project:					
Issues		**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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)	Substantially degrade the existing visual character or quality of the site and its surroundings?			✓	
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			✓	

a) Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. A scenic vista is a view of undisturbed natural lands exhibiting a unique or unusual feature that comprises a significant or dominant portion of the viewshed. Scenic vistas may also be represented by a particular distant view that provides visual relief from less attractive views of nearby features. Other designated Federal and State lands, and local open space or recreational areas may also offer scenic vistas if they represent a valued aesthetic view within the surrounding landscape.

Scenic vistas and view corridors in the County of San Mateo are identified in the Visual Quality Policies Element of the Couty's General Plan. The General Plan identifies the following Cabrillo Highway, State Route No.1 (SR-1), as both a State and County Scenic Highway, but does not identify any scenic vistas along this route.

The project will include the construction of a new force main within SR-1 between California Avenue in the communities of Moss Beach and Sonora Ave in the community of El Granada, California; refer to **Exhibit 3, Conceptual Engineering**. To remove and replace the project force main in the alignment of the existing force main, bypassing of flow within the existing pipeline will be required. Four bypass vaults are proposed that will allow the Construction Contractor to bypass segments of the existing force main during pipeline replacement. The four proposed bypass vaults are spaced such that temporary HDPE bypass piping can be installed both above ground and below ground by the Construction Contractor. Each bypass segment is approximately 5,000 LF in length. The bypass piping will be installed above ground, parallel to,

and adjacent to the project force main to be replaced. Where the piping crosses critical roadways, the line will be installed below ground to lessen vehicle impacts. Where the piping crosses areas identified as environmentally sensitive, the bypass will be routed to near or within the paved shoulder of the Caltrans SR-1 ROW. If required by Caltrans, K-Rails will be installed by the Construction Contractor to protect the bypass line from vehicle traffic. The proposed temporary bypass will be installed entirely within Caltrans and/or County ROW. Because the project will replace the pipeline, rather than introduce a new use, activities and visual quality in the area would remain largely the same. Therefore, the project would not have a substantial adverse effect on a scenic vista. Impacts would be less than significant.

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

Less Than Significant Impact. The project will include the construction of a new force main within SR-1 between California Avenue in the town of Moss Beach and Sonora Ave in the town of El Granada, California. To remove and replace the project force main in the alignment of the existing force main, bypassing of flow within the existing pipeline will be required. Four bypass vaults are proposed to be constructed that will allow the Construction Contractor to bypass segments of the existing force main during pipeline replacement. The four proposed bypass vaults are spaced such that temporary HDPE bypass piping can be installed both above ground and below ground by the Construction Contractor. Each bypass segment is approximately 5,000 LF in length. The bypass piping will generally be installed above ground, parallel to, and adjacent to the project force main to be replaced. Where the piping crosses critical roadways, the line will be installed below ground to lessen vehicle impacts. Where the piping crosses areas identified as environmentally sensitive, the bypass will be routed to a location near or within the paved shoulder of the Caltrans SR-1 ROW. If required by Caltrans, K-Rails will be installed by the Construction Contractor to protect the bypass line from vehicle traffic. The proposed temporary bypass will be installed entirely within Caltrans and/or County ROW. Because the project will be replacing an existing pipeline, and the visual characteristics of the existing pipeline would remain similar to current conditions, impacts would be less than significant.

c) In nonurbanized 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?

***Less Than Significant Impact*.** The project site is along SR-1 and is replacing an existing sewer main. Specifically, the site is bordered by neighborhoods, agricultural land, open space, and the Half Moon Bay Airport. For the same reasons as discussed in thresholds a) and b), the project would not substantially degrade the existing visual character or quality of the project site or its surroundings. While project construction would temporarily alter the visual character of the affected roadways, as experienced by motorists, recreationists, and employees at adjacent developments, the force main will be largely underground, and therefore, the existing visual quality would be returned after completion of the project. Therefore, impacts would be less than significant.

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

***Less Than Significant Impact*.** Construction of the project may create temporary sources of light and glare from construction equipment parked on site. In the event that construction activities must be conducted during non-daylight hours, Construction Contractors will require the use of additional lighting to provide adequate visibility at the construction site. However, construction would be prohibited after 6:00 P.M. weekdays and after 5:00 P.M. on Saturdays in

compliance with the County's noise standards unless otherwise approved by the County and/or Caltrans. Project construction activities will be required to comply with the permitted hours outlined in Section 4.88.360 of the County's Municipal Code.

Construction-related lighting fixtures shall be oriented downward and away from adjacent sensitive areas (including residential and biologically sensitive areas). Once construction is complete, no permanent lights or sources of glare would be installed as part of the project. Therefore, although the project may introduce temporary sources of light or glare during construction, there would be no permanent sources of light or glare and impacts would be less than significant.

5.2 Agriculture / Forestry Resources

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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 proposed 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 nonagricultural use?			✓	
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c)	Conflict with existing zoning for, or cause rezoning of, forestland (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 forestland or conversion of forestland 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 nonagricultural use or conversion of forestland to non-forest use?				✓

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 nonagricultural use?

Less Than Significant Impact. The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as it exists within the Caltrans ROW. Based on the California Department of Conservation California Important Farmland Finder website, the site is adjacent to Prime Farmland, Unique Farmland, and Grazing land. Although the project is adjacent to these important Farmlands, it would not convert any of these lands to any uses not currently occurring. Project staging will occur within lands designated for agriculture. However, these lands will be returned to their original status once project construction is completed. The existing force main is being replaced, so no new activities would be introduced to the area. Therefore, impacts would be less than significant.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

***No Impact*.** The project site is not zoned for agricultural use, nor is the site covered under an existing Williamson Act contract. Based on the California Department of Conservation Williamson Act Enrollment Finder[6]. Thus, project implementation would not conflict with existing zoning for agricultural use, or a Williamson Act contract. No impact would occur.

c) Conflict with existing zoning for, or cause rezoning of, forestland (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. As there are no forests or timberlands located within the project alignment, the proposed project would not result in the rezoning of forest or timberland. Therefore, no impact would occur.

d) Result in the loss of forestland or conversion of forestland to non-forest use?

***No Impact*.** As there are no forests or timberlands located within project alignment, the proposed project would not result in the rezoning of forest or timberland. No loss of forest land or the conversion of forest land to non-forest land would occur. Therefore, no impact would occur**.**

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forestland to non-forest use?

No Impact. Refer to Impact 5.2(a) through 5.2(d). No impact would occur.

5.3 Air Quality

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?			✓	

Air quality impacts were assessed in accordance with methodologies recommended by the California Air Resources Board (CARB) and the Bay Area Air Quality Management District (BAAQMD). Where quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod). The modeling results are provided as Appendix A.

Air Quality Setting

San Francisco Bay Area Air Basin

The project is located in the unincorporated San Mateo County, which is part of the San Francisco Bay Area Air Basin (SFBAAB). An air basin is a geographical region to describe an area with a commonly shared air mass, since air pollution does not follow county, city, or political boundaries. The location is under the jurisdiction of the BAAQMD, which is the local agency with the primary responsibility for the control of non-vehicular sources of air pollution throughout SFBAAB. The BAAQMD experiences winter radiation inversions, which occur when heat quickly escapes the earth's surface after sunset, cooling the air near the ground and trapping pollutants like carbon monoxide and particulates. These inversions are strongest on clear, calm nights, limiting air mixing and contributing to ozone formation. In summer, frequent hot, sunny days promote the formation of ozone as reactive gases and nitrogen oxides react under ultraviolet light.

Regional Climate

The meteorological condition of the project location such as wind speed and direction and temperature, have an impact on the air quality. The SFBAAB typically experiences moderately wet winters from November to March and dry, warm summers. Mountain areas can receive up to 40 inches of rainfall, while valley regions get under 16 inches. Coastal temperatures are often up to 35 degrees Fahrenheit cooler than areas 15 to 20 miles inland. This difference drops to under 10 degrees at night. During winter, minimum and maximum temperatures tend to reverse their usual pattern.

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The current air quality attainment plan for the BAAQMD is the *2017 Clean Air Plan*. It outlines control strategies to lower emissions and ambient air pollutant levels, protects public health by targeting pollutants with the highest health risks—especially in the most impacted communities—and aims to reduce greenhouse gas emissions to address climate change.

According to the *2022 BAAQMD CEQA Air Quality Guidelines*, conformance with the air quality plans for development projects is determined by demonstrating compliance with the indicators discussed below.

Criterion No. 1: Does the project support the primary goals of the air quality plan?

The *2017 Clean Air Plan* focuses on two goals: 1) Protect Air Quality and Health at the Regional and Local Scale: attain all state and national air quality standards; and eliminate disparities among Bay area communities in cancer health risk from toxic air contaminants; and 2) Protect the Climate: reduce Bay area GHG emissions 40 percent below 1990 levels by 2030, and 80 percent below 1990 levels by 2050.

The project would support the primary goals of the air quality plan if it would not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new air quality violations, or delay timely attainment of air quality standards or the interim emissions reductions specified in the *2017 Clean Air Plan*. As discussed in Responses 5.3(b) and 5.3(c) below, project emissions during construction and operation would not cause exceedance of BAAQMD regional thresholds or cause localized impacts. In addition, as discussed in Section 5.8, Greenhouse Gas Emissions, the project would not generate significant levels of GHG emissions. As such, the project would support the primary goals of the *2017 Clean Air Plan* and be consistent with Criterion No.1.

Criterion No. 2: Does the project include all applicable control measures?

The project would result in less than significant air quality impacts, and therefore mitigation measures are not required. The project's construction will be required to comply with all applicable BAAQMD Rules and Regulations, including, but not limited to Regulation 6, Rule 1 and Rule 6, Particulate Matter; Regulation 7, Odorous Substance; and Regulation 11, Rule 2, Hazardous Pollutants – Asbestos Demolition, Renovation, and Manufacturing. Operation of the project will only involve intermittent and infrequent maintenance and inspection of the sewer system, resulting in nominal emissions. As such, the project would include all applicable control measures and consistent with Criterion No.2.

Criterion No. 3: Does the project disrupt or hinder implementation of any control measures?

The project will implement BAAQMD Rules and Regulations during construction and will involve intermittent and infrequent operational activities. Therefore, the project would not disrupt or hinder implementation of any control measures.

In summary, the project would support the primary goals of the *2017 Clean Air Plan*, include all applicable control measures, and not disrupt or hinder implementation of any control measures. As such, the project would be consistent with the *2017 Clean Air Plan*, and the impact would be less than significant.

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?

Less Than Significant Impact.

Construction Impacts

Construction associated with the project would generate short-term construction-related emissions of criteria air pollutants. Construction emissions are temporary and include emissions of criteria pollutants from construction activities. The project would be constructed over approximately 11 months, including construction mobilization, physical construction activities, and construction demobilization. Construction equipment list was provided by project engineers based on past experiences constructing similar projects of similar scale. **Table 5.1, Construction Emissions Summary** presents the project's construction emissions and comparison with the BAAQMD regional thresholds. Emissions were estimated using CalEEMod Version 2022.1. As shown in **Table 5.1**, emissions resulting from construction of the project would not exceed criteria pollutant thresholds established by the BAAQMD for emissions of any criteria pollutant. It should be noted that BAAQMD established thresholds for exhaust PM_{10} and $PM_{2.5}$ but not fugitive dust, indicating that projects should implement best management practices to reduce fugitive dust emissions. The project will implement fugitive dust best management practices included in BAAQMD Regulation 6, Rule 1 and Rule 6, Particulate Matter, which are incorporated in CalEEMod modeling and **Table 5.1**. As a conservative analysis, exhaust and fugitive dust PM_{10} and $PM_{2.5}$ emissions were combined and compared with the BAAQMD exhaust thresholds. As the project emissions would not exceed BAAQMD established thresholds, construction activities associated with the project would not 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 and the project's construction-related impacts would be less than significant.

Table 5.11: Construction Emissions Summary

Emissions Source	Total Emissions (tons per year)[1]			
	ROG	NOx	PM_{10}	$PM_{2.5}$
Year 1 (2026)	2.65	23.9	2.97	1.72
Year 2 (2027)	2.02	16.9	0.89	0.65
BAAQMD Significance Threshold	**54**	**54**	**82 (exhaust)**	**54 (exhaust)**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Refer to CalEEMod output included in Appendix A.
Notes: ROG: Reactive Organic Compounds, used interchangeably with Volatile Organic Compounds (VOC); NO_X: oxides of nitrogen; $PM_{2.5}$: particulate matter less than 2.5 micrometers in diameter; PM_{10}: particulate matter less than 10 micrometers in diameter.
1. As a conservative analysis, PM_{10} and $PM_{2.5}$ emissions shown in the table include both exhaust and fugitive dust emissions.

Operational Impacts

Operation of the project would generate long-term operational emissions of criteria air pollutants. However, the project will construct a sewer force main and only involve intermittent and infrequent maintenance and inspection of the sewer system during operation. Although vehicle trips and associated mobile source emissions would be generated due to maintenance and inspection staff traveling to and from the project site, such trips would be intermittent and infrequent. The project would not involve energy sources, area sources, or stationary sources emissions during operation. As such, emissions resulting from operation of the project would be nominal and not exceed criteria pollutant thresholds established by the BAAQMD for emissions of any criteria pollutant. Therefore, operational activities associated with the project would not 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 and

the project's operational impacts would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. According to BAAQMD, certain community members who are more susceptible to poor air quality are referred to as sensitive receptors, which typically include children, the elderly, and those with preexisting serious health problems. Land uses where sensitive receptors are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers and preschools, hospices, dormitories, prisons, nursing homes, hospitals, and residential communities. The project site is located adjacent to multiple residential communities along SR-1 in Moss Beach and El Granada.

Construction Impacts

The project's construction activities would involve the operation of diesel-powered equipment, which would emit diesel particulate matter (DPM), which is identified as a toxic air contaminant by CARB. Construction of the project will be required to comply with California Code Regulations (CCR), Title 13, Sections 2449(d)(3) and 2485, to minimize the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. Implementation of these regulations would reduce the amount of DPM emissions from the construction of the project. Furthermore, cancer health risks associated with exposures to DPM typically are associated with chronic exposure, in which a 30-year exposure period often is assumed. Project construction would last for approximately 11 months, which is well below the 30-year exposure period. In addition, although construction activities could occur up to the property lines of nearby residential uses, such activities would only occur for a few days near each residence.

Project construction would also generate $PM_{2.5}$ emissions from fugitive dust, which could cause adverse health impacts as indicated by BAAQMD. However, as discussed under Response 4.3(b), $PM_{2.5}$ emissions generated from project construction would be nominal, and the project will implement best management practices included in BAAQMD Regulation 6, Rule 1 and Rule 6, Particulate Matter to reduce fugitive dust emissions. Therefore, $PM_{2.5}$ emissions would not cause significant impact to nearby sensitive receptors. Impacts would be less than significant.

Operational Impacts

As discussed in Response 4.3(b), emissions resulting from operation of the project would be nominal and off-site, and therefore the project would not expose sensitive receptors to substantial pollutant concentrations during operation. As such, impacts would be less than significant.

d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?

Less Than Significant Impact. Land uses associated with odor complaints typically include agricultural uses (livestock and farming), wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding.

Construction Impacts

Potential temporary and intermittent odors may result from construction equipment exhaust and application of asphalt. Temporary and intermittent construction-source emissions are controlled through existing requirements and industry Best Management Practices (BMPs), including CCR Title 13 Sections 2449(d)(3) and 2485, which require the project to minimize idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. Therefore, any impacts to existing adjacent land uses would be short-term and are less than significant.

Operational Impacts

The operation of the proposed project does not include any uses typically identified as being associated with odors. Therefore, impacts would be less than significant.

5.4 Biological Resources

Would the proposed project:

	Issues	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Wildlife or US 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 Wildlife or US 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?				✓

The information and analysis herein rely on the following investigations and collectively document the biological resources and conditions of the project site:

- *Biological Assessment, SAM Force Main in Montara Replacement Project, San Mateo County, California* (Biological Assessment), prepared by EMC Planning Group., dated November 5, 2025, provided as Appendix B1
- *Aquatic Resources Delineation Report, SAM Force Main in Montara Replacement Project, San Mateo County, California* (ARDR), prepared by EMC Planning Group, dated November 13, 2025, provided as Appendix B2

Physical and Biological Setting

Site Conditions

Based on the *Biological Assessment* prepared for the project, field surveys were conducted in May 2025, June 2025, and July 2025 evaluating a buffer area of 250 feet to 430 feet along the project alignment and staging areas. The topography within the project site is characterized as predominantly flat and dominated by several plant communities: wetland, freshwater forested, coastal scrub, coastal prairie, closed cone forest, trees, annual grassland, ornamental, agriculture, and wild strawberry. Elevations on the project site range from 0 feet mean sea level (msl) to 120 feet above msl. There are several drainage features occurring on-site, which are discussed in detail under "Jurisdictional Areas" below. The Pacific Ocean is west of the project site. The surrounding land use is comprised of Medium Density Residential to the north, Agriculture to the east, Airport, Agriculture, and Public Recreation to the west, and Open Space and Medium Residential to the south.

Vegetation

The project area contains several plant communities -- wetland, freshwater forested, coastal scrub, coastal prairie, closed cone forest, trees, annual grassland, ornamental, agriculture, and wild strawberry, and shown in **Exhibit 5, Vegetation and Land Cover Map** based on data from the *Biological Assessment.* Areas with wild strawberry within a one-half mile of the coast are considered a sensitive natural community under the San Mateo County Mid-Coast Land Use Plan Section 7.49.

Special-Status Biological Resources

A literature review was conducted prior to the field surveys. Additionally, aerial photographs and topographic maps of the project location and surrounding areas were reviewed as part of the *Biological Assessment* conducted for the project. The following U.S. Geological Survey (USGS) quads were used to query the California Natural Diversity Database (CNDDB): *Hunters Point, San Francisco South, Half Moon Bay, San Mateo, Woodside, and Montara Mountain*. The CNDDB and U.S. Fish and Wildlife Service (USFWS) critical habitat databases were utilized, together with Geographic Information System software, to locate the previously recorded locations of sensitive plant and wildlife occurrences and designated critical habitat and determine the distance from the project site. In addition, the USFWS Information for Planning and Consultation (IPaC) Project Planning Tool and the USFWS National Wetlands Inventory were consulted. Records of occurrence for special-status plants were reviewed for those same USGS quadrangles in the CNPS Rare Plant Inventory.

Special-Status Wildlife

A total of seven wildlife species are listed as State and/or federally Threatened, Endangered, or Candidate species. Of these, one wildlife species was present on the project site: California red-legged frog (*Rana draytonii*). The remaining species were considered to have a low to moderate probability of occurrence: monarch butterfly (*Danaus plexippus*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), steelhead (*Oncorhynchus mykiss irideus*), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), Western bumble bee (*Bombus*

occidentalis), and nesting migratory birds and raptors. A list of species observed during the 2025 field surveys is provided in the *Biological Assessment*. The following is a description of the sensitive wildlife species and their potential to occur onsite.

California red-legged frog

California red-legged frog is a federally listed Threatened species and a California Department of Fish and Wildlife (CDFW) California Species of Special Concern (SSC). Its habitat includes aquatic, artificial flowing waters, artificial standing waters, freshwater marsh, marsh and swamp, riparian forest, riparian scrub, riparian woodland, Sacramento and San Joaquin flowing and standing waters, and south coast. It requires 11 to 20 weeks for larval development and must have access to estivation habitat. It is most commonly found in lowlands and foothills, in or near permanent sources of deep water, with dense, shrubby, or emergent riparian vegetation. Larvae for California red-legged frogs were observed within a wetland channel from a drainage culvert within the southern portion of the project alignment during the reconnaissance field survey on May 2, 2025. This species is considered present in the project site.

Monarch Butterfly

The Monarch butterfly is not officially listed under the California Endangered Species Act (CESA) or the federal Endangered Species Act or considered a CDFW SSC; however, on December 15, 2020, USFWS announced that listing the monarch as endangered or threatened under the Endangered Species Act is warranted, but precluded by higher priority listing actions. The monarch is now considered a candidate for listing under the Endangered Species Act and will be reviewed by USFWS annually until a listing decision is made. The project area supports roosting habitat within the trees, closed cone forest, and freshwater forest areas and foraging habitat within the coastal scrub, coastal prairie, and annual grassland areas for monarch butterflies. No monarch butterflies were observed during the field surveys.

San Francisco Garter Snake

San Francisco garter snake is federally listed endangered species and is listed as endangered under the CESA. The San Francisco garter snake is reclusive and primarily forages in aquatic habitats. Although the San Franscisco garter snake has the potential to occur, this species was not observed during the field surveys.

Steelhead

Throughout the West Coast, 11 species (Distinct Population Segments, DPS) of steelhead are protected under the Endangered Species Act. Steelhead within the project vicinity belong to the Central California Coast DPS (*Oncorhynchus mykiss irideus pop. 8*). Denniston Creek is a perennial creek that could potentially support steelhead. However, no steelhead were observed during the field surveys and has low potential to occur within Denniston Creek within the project area.

Saltmarsh Common Yellowthroat

Saltmarsh common yellowthroat is a state listed SSC bird species. Their nests are typically constructed on or within eight centimeters of the ground. Their nests may be over water in emergent aquatic vegetation, dense shrubs, or other dense growth. Although not observed during the field surveys, Saltmarsh common yellowthroat has the potential to nest and forage within the wetland and freshwater forested areas of the project area.

San Francisco Dusky-Footed Woodrat

San Francisco dusky-footed woodrat is state listed SSC and is a local subspecies of the broadly distributed dusky-footed woodrat that is found on the San Francisco Peninsula south to the southernmost edge of Santa Cruz County and inland to the East Bay hills. They typically inhabit oak and riparian woodlands with a well-developed understory as well as chaparral and scrub habitats, where their stick nests are often visible. Although suitable habitat exists in portions of the project site, no species was

observed during the field surveys.

Western Bumble Bee

In 2019, the western bumble bee was identified as a candidate species for listing under the CESA. The listing process was temporarily halted due to a court challenge but was reinstated to candidate status in September 2022. Although not yet formally listed, species identified as "candidates" must be considered during CEQA analyses. Floristic resources within the annual grassland, ruderal, coastal scrub, and coastal prairie habitats of the project alignment provide foraging habitat for the western bumble bee. Nesting habitat is present in the form of downed logs, thatch, bunch grasses, small mammal burrows and other habitat features. This species was not observed during the field surveys.

Special-Status Plants

A total of fourteen (14) plant species are listed as State and/or federal Threatened, Endangered, Candidate, or 1B.1 listed plants on the California Native Plant Society (CNPS) Rare Plant Inventory. Of these, one (1) plant species has the potential to be present on the project site: Ornduff's meadowfoam (*Limnanthes douglasii ssp. ornduffii*). The following is a description of the sensitive species.

Ornduff's Meadowfoam

Ornduff's meadowfoam is listed by the CNPS as a 1B.1 species, plants that are considered rare, threatened, or endangered in California and elsewhere. This species is most commonly found in meadows, seeps, and agricultural fields at the elevation of 5-15 meters. This species blooms during the wet season, generally November through May. This species was not observed during the 2025 focused surveys but has the potential to be present within the agricultural area in central portion of the project alignment.

Sensitive Natural Communities

Five sensitive natural communities were identified within the project area and include the following: Arroyo willow thickets, California sagebrush scrub, Bush monkey-flower scrub, Coastal tufted jair grass, and Monterey pine trees. These plant communities are also considered Environmentally Sensitive Habitat Area (ESHA), strictly regulated by the City of Half Moon Bay (within the larger buffer area used in the evaluation of the project), County of San Mateo, and the California Coastal Commission (CCC). In addition, areas with California wild strawberry (*Fragaria californica*) are considered a sensitive natural community under the San Mateo County Mid-Coast Land Use Plan, Section 7.49.

Nesting Birds

As there are known occurrences in the project vicinity and suitable habitat on and adjacent to the project site, nesting birds and raptors have the potential to be present on the project site.

Migratory Corridors and Linkages

Wildlife movement corridors link together areas of suitable habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbances. The project site was evaluated for its function as a wildlife corridor that species would use to move between wildlife habitat zones. Usually, mountain canyons or riparian corridors are used by wildlife as corridors. Query results showed that the northern portion of the project alignment adjacent to the Half Moon Bay Airport is located within an Essential Habitat Connectivity Area or corridor designated as a Rank 3 "connection with implementation flexibility". This is defined as areas that have been identified as having a connectivity importance, but have not been identified as channelized areas, species corridors, or habitat linkages at this time. In addition, the wetland areas provide breeding habitat for frogs and potentially other amphibians. The coastal scrub, freshwater forested, and trees throughout the project alignment provides both stopover and nesting habitat for migrating birds and small mammals.

Critical Habitat

Critical habitat is designated by USFWS for endangered and threatened species per the Federal Endangered Species Act (16 U.S.C. § 1533 (a)(3)), and to the extent prudent and determinable. Special management of critical habitat, including measures for water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types is required to ensure the long-term survival and recovery of the identified species. Critical habitat designation delineates all suitable habitat for the species. Based on the *Biological Assessment,* the project site is approximately 335 feet west of the boundary of the Pacifica to Half Moon Bay designated critical habitat area (SNM-1) for California red-legged frog.

Jurisdictional Areas

Three key agencies regulate activities in inland streams, wetlands, and riparian areas in California. The United States Army Corps of Engineers (USACE) Regulatory Branch regulates discharge of dredge or fill materials into waters of the United States pursuant to Section 404 of the federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the Regional Water Quality Control Board (RWQCB) regulates discharges to surface waters pursuant to CWA Section 401 and the California Porter-Cologne Water Quality Control Act, while the CDFW regulates alterations to streambeds and associated plant communities under Section 1600 et seq. of the California Fish and Game Code.

As discussed in the *ARDR,* a total of twenty-two drainage features were documented within the project site. All delineated wetlands had hydrophytic vegetation, hydric soils, and/or wetland hydrology present or had ordinary high-water mark (OHWM) indicators. A total of 0.186 acres of the project site were determined to be potential jurisdictional Waters of the United States and therefore subject to Section 404 of the Clean Water Act. A total of 1.824 acres of the project site were determined to be potential jurisdictional Waters of the State and therefore subject to Section 401 of the Clean Water Act, which requires certification from the state in which the discharge originates. **Table 5.2, Summary of Jurisdictional Waters and Streambeds Within the Project Site**, below provides a summary of the total acreage for the drainages documented within the project site and their potential jurisdiction. **Exhibit 6, Jurisdictional Waters Map**, shows the locations of the identified drainages on the project site.

Table 5.22: Summary of Jurisdictional Waters and Streambeds Within the Project Site

Drainage ID	USACE Waters of the U.S.	RWQCB Waters of the State	Coastal Commission	CDFW Streambeds
Wetland 1	0.0 acres	0.0 acres	0.117 acres	0.117 acres
Wetland 2	0.0 acres	0.025 acres	0.025 acres	0.0 acres
Wetland 3	0.0 acres	0.0 acres	0.033 acres	0.033 acres
Wetland 4	0.0 acres	0.0 acres	0.577 acres	0.577 acres
Wetland 5	0.0 acres	0.0 acres	0.087 acres	0.0 acres
Wetland 6	0.0 acres	0.0 acres	0.013 acres	0.0 acres
Wetland 7	0.0 acres	0.169 acres	0.169 acres	0.0 acres
Wetland 7a	0.0 acres	0.0 acres	0.029 acres	0.0 acres
Wetland 8	0.0 acres	0.0 acres	0.321 acres	0.0 acres

Wetland 9	0.0 acres	1.064 acres	1.064 acres	0.0 acres
Wetland 10	0.0 acres	0.0 acres	0.817 acres	0.817 acres
Wetland 11	0.0 acres	0.007 acres	0.007 acres	0.0 acres
Wetland 12	0.0 acres	0.0 acres	1.733 acres	1.733 acres
Wetland 13	0.0 acres	0.0 acres	0.064 acres	0.0 acres
Wetland 14	0.0 acres	0.0 acres	0.534 acres	0.534 acres
Reach A	136.2 feet	136.2 feet	0.117 acres	0.117 acres
	0.016 acres	0.031 acres		
Riparian Area Reach A	0.0 acres	0.0 acres	0.117 acres	0.117 acres
Reach B	0 feet	207 feet	207 feet	0.0 acres
		0.01 acres	0.01 acres	
Reach C	0 feet	400 feet	400 feet	0.0 acres
		0.014 acres	0.014 acres	
Reach D	400 feet	400 feet	400 feet	0.0 acres
	0.05 acres	0.14 acres	0.14 acres	
Reach E	0 feet	100 feet	100 feet	0.0 acres
		0.007 acres	0.007 acres	
Reach F	350 feet	350 feet	350 feet	0.0 acres
	0.040 acres	0.121 acres	0.121 acres	
Reach G	550 feet	550 feet	550 feet	0.0 acres
	0.063 acres	0.19 acres	0.19 acres	
Reach H	150 feet	150 feet	150 feet	0.0 acres
	0.017 acres	0.051 acres	0.051 acres	
TOTAL	**0.186 acres**	**1.824 acres**	**5.454 acres**	**3.234 acres**

Source: EMC Planning Group, *Project Aquatic Resources Delineation Report*, November 13, 2025, Table 4-2 (Appendix B2).

Wetland 1– Wetland 1 is classified by the National Wetlands Inventory as Freshwater Forested/Shrub Wetland and by this assessment as Riparian Shrub Forest and a part of an intermittent unnamed stream. It is located adjacent to the staging area on the north side of the project area, just south of California Ave and west of SR-1. The associated reach (Reach A) provides intermittent flows which from a series of culverts and riverine feature further upslope

Wetland 2 – Wetland 2 is not classified by the National Wetlands Inventory. It is classified by this assessment as an emergent wetland. It is located within the town of Moss Beach at the north intersection of SR-1 and Cypress Avenue. Wetland 2 is a roadside wetland that is poorly drained and seasonally saturated with water and with soil moisture persisting into the summer in wet years.

Wetland 3 – Wetland 3 is not classified by the National Wetlands Inventory. Based on this assessment, it is classified as a remnant riparian woodland. The feature was identified by the presence of dominant willow (*Salix* spp.) and its proximity to the larger Freshwater Forested/Shrub Wetland (Wetland 4) associated with San Vicente Creek.

Wetland 4 – Wetland 4 is classified by the National Wetlands Inventory as a Freshwater Forested/Shrub Wetland and corresponds to San Vicente Creek (Reach D). This feature is classified by this assessment as a Freshwater Forested Wetland/Riparian Woodland. It is located southwest of Marine Boulevard and is bisected by SR-1.

Wetland 5 – Wetland 5 is located south of the main residential area of Moss Beach, between Marine Boulevard and Etheldore Street. It is not classified in the National Wetlands Inventory.

Wetland 6 – Wetland 6 is not classified in the National Wetlands Inventory. It is a small roadside wetland likely formed from runoff along Etheldore Street.

Wetland 7 Group – Wetland 7 Group is not classified by the National Wetlands Inventory (NWI). This wetland receives runoff from adjacent hills via man-made channels and is seasonally flooded, with water persisting into late spring and early summer.

Wetland 8 – Wetland 8 is not classified in the National Wetlands Inventory. This area drains slopes forested slopes above and terminates in a forested shrub wetland area that is dominated by willows with a culverted channel that passes under SR-1.

Wetland 9 – Wetland 9 that runs parallel to SR-1 is classified by National Wetland Inventory (NWI) as Riverine and functions as a tributary to Denniston Creek. This wetland is seasonally flooded, with water persisting into summer.

Wetland 10 – Wetland 10 consists of a stream channel (Reach F) and riparian woodland that passes under SR-1 and is classified by the National Wetlands Inventory as Riverine and is also known as Denniston Creek. This perennial creek flows between residential development and agricultural fields.

Wetland 11 – Wetland 11 is an isolated wetland that was not classified by the National Wetlands Inventory. The feature was identified by the presence of a gentle swale and hydrophytic vegetation.

Wetland 12 – Wetland 12 consists of a stream channel (Reach G) and riparian woodland that runs parallel to Sonora Avenue and SR-1 before passing under SR-1. The National Wetlands Inventory classifies this feature as Riverine and maps it as a tributary to Denniston Creek; however, field observations suggest that it is hydrologically isolated.

Wetland 13 – Wetland 13 is likely an extension of Forested Wetland 12 however, mowing and the placement of woodchips have isolated this wetland.

Wetland 14 – Wetland 14 consists of a stream channel (Reach H) and freshwater forested wetland that flows through residential development in El Granada before eventually passing under SR-1. The National Wetlands Inventory (NWI) classifies this feature as Riverine and identifies it as Deer Creek.

Reach A – Reach A is classified by the National Wetlands Inventory as a Freshwater Forested/Shrub Wetland and by this assessment as an intermittent, unnamed stream. It is located adjacent to the staging area on the north side of the project area, just south of California Avenue and west of SR-1. The reach conveys intermittent flows originating from a series of culverts and a riverine feature located further upslope.

Reach B – Reach B drains a portion of the residential development in the community of Moss Beach, flowing south through a series of manmade channels and culverts before exiting the survey area and continuing toward the Fitzgerald Marine Reserve.

Reach C – Reach C drains a portion of the residential development in the community of Moss Beach, flowing south through a series of manmade channels and culverts before exiting the survey area and continuing toward the Fitzgerald Marine Reserve.

Reach D – Reach D is classified by the National Wetlands Inventory as a Freshwater Forested/Shrub Wetland and by this assessment as a perennial stream, San Vicente Creek.

Reach E – Reach E comprise two manmade channels that drain a portion of Montara Mountain, south of Moss Beach.

Reach F – Reach F is classified by the National Wetlands Inventory as Riverine and by this assessment as a perennial stream, Denniston Creek. This perennial creek flows between residential development and agricultural fields, located hugging the western extent of residential development in the community of El Granada. Denniston Creek conveys perennial flows originating from the coastal mountains north of the project site and flows beneath SR-1.

Reach H – Reach H is classified by the National Wetlands Inventory as Riverine and by this assessment as an intermittent stream and potential tributary of Denniston Creek. The reach flows between residential development and SR-1 near Coral Reef Avenue and Sonora Avenue in the community of El Granada. Reach H conveys intermittent flows originating from the coastal mountains north of the project site.

Reach G – Reach G is classified by the National Wetlands Inventory as Riverine and by this assessment as an intermittent creek (Deer Creek). The reach flows between residential development and SR-1, located near Avenue Alhambra in the community of El Granada. Reach G conveys intermittent flows originating from the coastal mountains north of the project site and continues beneath SR-1.

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 Wildlife or US Fish and Wildlife Service?

Less Than Significant Impact With Mitigation Incorporated.

Special-Status Wildlife Species

As discussed above, seven wildlife species have the potential to be present on the project site: California red-legged frog (*Rana draytonii*), monarch butterfly (*Danaus plexippus*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), steelhead (*Oncorhynchus mykiss irideus* pop. 8), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), and Western bumble bee (*Bombus occidentalis*). California red-legged frog (*Rana draytonii*) was determined to be present within the project area and is expected to occur within the project area. Therefore, the Construction Contractor should obtain an Incidental Take Permit from USFWS for potential impacts to California red-legged frog and implement avoidance and minimization measures for San Francisco garter snake, as described in Mitigation Measure BIO-1. In addition, Workers Awareness Training shall be conducted by a qualified biologist prior to ground disturbance, as described in Mitigation Measure BIO-2. Steelhead has the potential to be impacted as a result of impacts to Denniston Creek. If impacts cannot be avoided, the Construction Contractor shall coordinate with National Oceanic and Atmospheric Administration Fisheries to determine the appropriate course of action per the requirements of the Federal Endangered Species Act (e.g., obtaining Incidental Take Permits) and implement the permit requirements prior to ground disturbance, as described in Mitigation Measure BIO-3. Additionally, a pre-construction habitat survey for monarch butterflies is required, as described in Mitigation Measure BIO-4; a nesting bird survey to protect nesting birds and saltmarsh common yellowthroat is required for work occurring during nesting bird season (January 15 through September 15), as described in Mitigation Measure BIO-5; and a pre-construction survey for San Francisco dusky-footed woodrat is required, as described in Mitigation Measure BIO-6. If western bumble bee is listed prior to project implementation, one of the following options shall be implemented prior to vegetation removal: seasonal avoidance, assume presence of Western bumble bee, or conduct focused surveys for

Western bumble bee, as described in Mitigation Measure BIO-7. Implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6 and BIO-7 would reduce potentially significant impacts to these special-status wildlife species to less than significant with mitigation incorporated.

Special-Status Plant Species and Plant Communities

As discussed above, one plant species has the potential to be present on the project site: Ornduff's meadow, a CRPR 1.B species. Therefore, focused surveys for these special-status species are required, as described in Mitigation Measure BIO-8. Implementation of Mitigation Measure BIO-8, combined with Mitigation Measure BIO-2 presented above, would reduce potentially significant impacts to these special-status plant species to less than significant with mitigation incorporated.

Mitigation Measures

BIO-1 **California Red-Legged Frog and San Francisco Garter Snake**. California red-legged frog breeding habitat was documented within a wetland feature along the project alignment and the project is within the dispersal distance from known occupied habitats. California red-legged frog is considered one of the main food sources for San Francisco garter snake, which is also known from the project vicinity.

The Construction Contractor should obtain an Incidental Take Permit from the USFWS for potential project impacts to California red-legged frog and implement all avoidance, minimization, and compensatory mitigation measures required by the permit. Because San Francisco garter snake is state-listed as a fully protected species, Incidental Take permits are not applicable and impacts to the species must be avoided. The avoidance and minimization measures identified below are recommended before/during construction to minimize the potential for "take" of California red-legged frog and avoid potential "take" of San Francisco garter snake.

Conservation measures may include, but not be limited to, the following:

1. At least 30 days prior to ground disturbance, the biologist should submit the name and credentials of the project biologists who will conduct activities specified in this measure. No project activities should begin until the biologist has received written approval from the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife that the biologists are qualified to conduct the work.
2. A qualified biologist should conduct a preconstruction survey of the work area within 48 hours of the initiation of project activities. If a California red-legged frog or San Francisco garter snake of any life stage is found, the animal should not be handled and should instead be allowed to leave the site on its own. If needed, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife should be contacted to request permission to relocate the individual or additional guidance on the disposition of the individual. The results of the preconstruction survey should be provided to SAM Manager or his/her designee one day prior to the commencement of construction activities.
3. The biologists should have the authority to halt construction work at any time to prevent harm to California red-legged frog or San Francisco garter snake or when any of the permit-specified protection measures have been violated.

Work should re-commence only when authorized by the biologists. If work is stopped due to potential harm to protected species, the project biologists should contact the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife immediately to communicate the event and coordinate appropriate action. A biologist should conduct biological construction monitoring in all work areas within 100 feet of wetland areas. Before the start of work each day, a biologist should check for wildlife under any equipment such as vehicles and stored pipes within active construction zones. A biologist should also check all excavated steep-walled holes or trenches greater than one foot deep for trapped animals. If California red-legged frog or San Francisco garter snake is observed within an active construction zone, a biologist should be notified immediately and all work within 100 feet of the individual animal should be halted and all equipment turned off until the individual has left the area. If needed, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife should be contacted to request permission to relocate the individual or additional guidance on the disposition of the individual.

4. In areas within 100 feet of potential habitat such as wetlands, a wildlife fence should be installed. The wildlife fence should consist of silt fencing, plywood, ERTEC fencing, or suitable material at least 36 inches in height that is buried six inches deep in the ground, or similar method, to prevent access under the fencing. A qualified biologist should remain on-site to monitor the installation of the wildlife fence to ensure that no San Francisco garter snakes or California red-legged frogs are trapped within the construction area or harmed during installation.
5. Following the completion of the installation of the wildlife fence, the biologist should train a dedicated member of the construction crew in the identification of the California red-legged frog and San Francisco garter snake, as well as appropriate protocols to follow if either of these species (or animals that may be one of these species) are detected on the site. This dedicated crew member should be responsible for checking the work area for these species prior to the start of construction each day, for inspecting any steep-walled holes or trenches for any animals that may inadvertently become trapped and/or injured, and for inspecting the integrity of the wildlife fence each day and ensuring that any needed repairs are completed within 24 hours. The construction manager should provide a weekly summary of each inspection to the project biologist and SAM for the duration of construction.
6. To prevent the inadvertent entrapment of San Francisco garter snakes or California red-legged frogs, all excavated, steep-walled holes or trenches should be completely covered at the end of each work day with plywood or similar materials. If this is not possible, one or more escape ramps constructed of earth fill or wooden planks should be placed in the excavation. Before such holes or trenches are filled, they should be thoroughly inspected for any animals by the crew member dedicated to chocking the work area or a biological monitor. If at any time a California red-legged frog or San Francisco garter snake is found trapped or injured in one of these holes, any project activities that could result in harm to the individual should cease until the individual has moved out of the project site on its own (a ramp allowing the individual to leave may need to be provided).

BIO-2 **Worker Awareness (WEAP) Training**. Prior to ground disturbance, a qualified biologist should conduct a training session for all construction personnel. At a minimum, the training should include a description of special-status species that are present or are potentially occurring in the project vicinity, including, but not limited to, California red-legged frog, San Francisco garter snake, steelhead, monarch butterfly, San Francisco dusky-footed woodrat, western bumble bee, saltmarsh common yellow throat, and other nesting birds and raptors. Their habitats, general measures that are being implemented to conserve species as they relate to the project, and the boundaries within which construction activities will occur should be explained. Informational handouts with photographs clearly illustrating the species' appearances should be used in the training session. All new construction personnel should undergo this mandatory environmental awareness training.

The training session shall include information about steps to take if a special-status species is encountered, including contact information for the biological monitors and measures to protect species during construction. The biological monitor should be available to answer any questions about the special-status species. All new construction personnel should undergo this mandatory worker environmental awareness training when they start work on the project. Training should occur prior to the start of construction and periodically, as needed, if new construction personnel begin work at the project site. Each worker should sign a statement that they received training and the statement should be posted or easily available for viewing at the project site. Documentation of compliance with this measure should be submitted to SAM, U.S. Fish and Wildlife Service, and California Department of Fish and Wildlife as needed.

BIO-3 **Steelhead**. If impacts to Denniston Creek cannot be avoided involving steelhead, the Construction Contractor should coordinate with the National Oceanic and Atmospheric Administration Fisheries to determine the appropriate course of action per the requirements of the Federal Endangered Species Act (e.g., obtaining Incidental Take Permits) and implement the permit requirements prior to ground disturbance.

Project activities should occur during the summer dry season when flows are low or streams are dry. Where feasible, the construction should occur from the bank, or on a temporary pad underlain with filter fabric. Any work within the stream channel should be performed in isolation from the flowing stream and erosion protection measures should be in place before work begins. Prior to dewatering, the best means to bypass flow through the work area to minimize disturbance to the channel and avoid direct mortality of fish and other aquatic invertebrates should be determined. Any construction debris should be prevented from falling into the stream channel. Any material that does fall into a stream during construction should be immediately removed in a manner that has minimal impact to the streambed and water quality. Dewatering should be coordinated with a qualified fisheries biologist to perform fish and amphibian relocation activities.

Fish should be excluded from the work area by blocking the stream channel above and below the work area with fine-meshed net or screen. Mesh should be no greater than 1/8-inch diameter. The bottom edge of the net or screen should be completely secured to the channel bed to prevent fish from reentering the work area. Exclusion screening should be placed in areas of low water velocity to

minimize fish impingement. Screens shall be regularly checked and cleaned of debris to permit free flow of water.

BIO-4 **Monarch Butterfly Overwintering Habitat Survey and Avoidance**. Prior to initiation of ground disturbance, a late fall/early winter survey of trees on the project site should be conducted by a qualified biologist to determine if overwintering sites for monarch butterfly are present. A letter report documenting survey results should be submitted to SAM upon completion. If the results of the survey do not identify any potential overwintering monarch butterflies on-site, no further mitigation is required. If it is determined that overwintering monarchs use the site, the applicant should avoid removal of trees used for overwintering by monarchs to the greatest extent feasible. If trees cannot be avoided, tree removal should occur outside of the overwintering period, which generally occurs from October through February, or until a qualified biologist has determined that overwintering monarchs are no longer using the site.

BIO-5 **Protected Nesting Birds**. To avoid impacts to nesting birds and/or saltmarsh common yellowthroat during the nesting season (January 15 through September 15), all construction activities should be conducted between September 16 and January 14, which is outside of the bird nesting season.

If construction occurs during the bird nesting season, then a qualified biologist should conduct a pre-construction survey for nesting birds to ensure that no nests will be disturbed during project construction. If project-related work is scheduled during the nesting season (February 15 to August 30 for small bird species such as passerines; January 15 to September 15 for owls; and February 15 to September 15 for other raptors), a qualified biologist should conduct nesting bird surveys.

a. Two surveys for active bird nests should occur within 14 days prior to start of construction, with the final survey conducted within 48 hours prior to construction. Appropriate minimum survey radii surrounding each work area are typically 250 feet for passerines, 500 feet for smaller raptors, and 1,000 feet for larger raptors. Surveys should be conducted at the appropriate times of day to observe nesting activities. Locations off the site to which access is not available may be surveyed from within the site or from public areas. If no nesting birds are found, a letter report confirming absence should be prepared and submitted to SAM and no further mitigation is required.

b. If the qualified biologist documents active nests within the project site or in nearby surrounding areas, an appropriate buffer between each nest and active construction should be established. The buffer should be clearly marked and maintained until the young have fledged and are foraging independently. Prior to construction, the qualified biologist should conduct baseline monitoring of each nest to characterize “normal” bird behavior and establish a buffer distance, which allows the birds to exhibit normal behavior. The qualified biologist should monitor the nesting birds daily during construction activities and increase the buffer if birds show signs of unusual or distressed behavior (e.g., defensive flights and vocalizations, standing up from a brooding position, and/or flying away from the nest). If buffer establishment is not possible, the qualified biologist or construction foreman should have the

authority to cease all construction work in the area until the young have fledged and the nest is no longer active. Once the absence of nesting birds has been confirmed, a letter report should be prepared and submitted to SAM.

BIO-6 **San Francico Dusky-Footed Woodrat**. Prior to issuance of demolition and grading permits, a qualified biologist shall conduct preconstruction surveys for woodrat nests between 14 and 30 days prior to demolition or construction activities within 25 feet of wooded areas. If no nests are found, a letter report shall be prepared by the biologist and submitted to SAM, where it shall be kept on file, and no further measures are required.

If woodrat nests are observed, the nests shall be flagged for avoidance of direct impacts where feasible. If avoidance is not possible, the nest(s) shall be manually deconstructed and rebuilt when young are not present, typically during the non-breeding season (October through January). If it is determined that young may be present during the preconstruction survey, a suitable buffer (determined by the qualified biologist) shall be established around the nest until the young are independent enough to successfully move from the deconstructed nest. Once nest(s) have been deconstructed and woodrats have left the construction area, a letter report shall be prepared by the biologist and submitted to SAM, where it shall be kept on file.

BIO-7 **Western Bumble Bee**. If the western bumble bee is listed prior to project implementation, one of the following options shall be implemented prior to vegetation removal.

Option 1: Seasonal Avoidance

Clear vegetation and conduct ground-disturbing activities outside of the colony active period (March through August) to avoid peak flight season and discourage western bumble bees from nesting in the project area.

Option 2: Assume presence of Western bumble bee

Assume presence and obtain Incidental Take Authorization from the California Department of Fish and Game (Section 2081 of the Fish and Game Code. Avoidance measures identified in the permit shall be implemented. Compensatory mitigation, such as land acquisition and habitat restoration or enhancement will be required.

Option 3: Conduct focused surveys for Western bumble bee

If seasonal avoidance is not possible, consultation with the California Department of Fish and Wildlife shall occur at least one year prior to ground disturbance to evaluate potential impacts and other feasible avoidance measures, including habitat assessments and/or surveys.

Surveys shall occur during the colony active period for the western bumblebee (March through August) prior to tree removal, vegetation clearance, grading, or the initiation of any construction activity in any undeveloped area of the project site, developers of future individual projects shall hire a qualified biologist to conduct a pre-construction survey of small mammal burrows and thatched/bunch grasses. If the survey results are negative (i.e., no western bumble bee activity observed), a letter report confirming absence shall be prepared and submitted to SAM, where it shall be kept on file, and no further mitigation is required.

If western bumble bee nests are detected and the area can be avoided, a qualified biologist shall supervise the installation of protective fencing/flagging a minimum of 50 feet around the nest area prior to construction and phase vegetation removal, to retain patches of floral resources during construction. The fencing/flagging shall be checked at least once per week by a biological monitor until construction is complete to ensure that the protective fencing/flagging remains intact. The qualified biologist can conduct the weekly checks or train a biological monitor selected from the construction crew by the Construction Contractor (typically the project foreman) to check the fencing/flagging and provide weekly updates. Documentation of the fencing/flagging installation shall be provided to SAM prior to the start of ground disturbance activities. Documentation of the weekly checks and timely maintenance of fencing/flagging (if needed) shall be provided to SAM quarterly during construction.

If western bumble bee nests are detected and the area cannot be avoided, the qualified biologist shall coordinate with the California Department of Fish and Wildlife to obtain Incidental Take Authorization. Compensatory mitigation, such as land acquisition and habitat restoration or enhancement will be required.

After it has been confirmed that the habitat area is no longer occupied, a letter report shall be prepared and submitted to SAM. The Construction Contractor shall be responsible for implementation of this mitigation measure with oversight by SAM.

BIO-8 **Focused Plant Surveys**. Prior to ground disturbance, a biologist qualified in botany shall conduct a focused survey for Ornduff's meadowfoam on the project alignment in accordance with current California Department of Fish and Wildlife and California rare plant survey protocols (CDFW 2018 and CNPS 2001). The survey shall occur during the peak blooming period for these species to determine their presence or absence. Some special-status plant species are only identifiable during their blooming periods and surveys are only considered valid if they occur when blooms are visible. Based on the known blooming periods of Ornduff's meadowfoam, three surveys will be necessary to adequately survey the project site: the first in February, the second in April, and the third in December. If possible, known reference populations of the target species in the project vicinity shall first be visited to verify that the species is observable, and the focused survey shall be conducted within two weeks of observing the reference population in full bloom.

The biologist shall then prepare a brief report documenting the results of the surveys which should be submitted to SAM prior ground disturbance. If the focused surveys conclude that special-status plant species are not present within the project site boundary, or if they are present but impacts to them can be completely avoided, then no further measures would be required.

If the focused surveys identify special-status plant species within the project site boundary and they would be affected by the proposed project, then appropriate avoidance and minimization measures shall be developed by the biologist and implemented by the project applicant prior to ground disturbance. Measures may include, but are not limited to:

a. A qualified biologist shall identify an on-site or off-site mitigation area suitable for restoration of habitat and seed transplantation for any special-status plant species.

b. Prior to ground disturbance, a qualified biologist or native plant specialist shall perform seed collection from all special-status plants located within the impact areas and implement seed installation at the mitigation area at the optimal time. Additionally, topsoil from the special-status species occurrence area(s) shall be salvaged (where practical) for use in the mitigation area.

c. A maintenance and monitoring program shall be developed by a qualified biologist and established for a minimum of five years after mitigation area installation to verify that restoration activities have been successful. Maintenance activities may include, but not limited to, watering during the plant establishment period, supplemental seed planting as needed, and removal of non-native plants. Monitoring shall include, at a minimum, quarterly monitoring reports for the first year and annual reports for the remaining four years. The performance standard for successful mitigation shall be a minimum 3:1 replacement ratio (i.e., three plants observed in mitigation area for each plant lost from the project site) achieved in at least one of the five years of monitoring.

   The Construction Contractor should be responsible for implementation of this mitigation measure. Compliance with this measure shall be documented prior to approval of a grading permit.

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 Wildlife or US Fish and Wildlife Service?

Less Than Significant Impact With Mitigation Incorporated. As discussed above, Arroyo willow thickets, California sagebrush scrub, bush monkey-flower scrub, and coastal tufted hair grass within the project alignment are classified by California Department of Fish and Wildlife as "Sensitive Natural Communities" and as ESHA. The current project design anticipates avoiding sensitive natural communities within the project alignment by utilizing horizontal directional drilling under the habitat areas. If the proposed project cannot avoid these sensitive natural community areas within the project alignment, additional compensatory mitigation may be required by SAM or by the California Coastal Commission as part of the Coastal Development Permit process. Therefore, if impacts to these communities are not avoidable, a qualified biologist should delineate the boundaries of the sensitive natural communities and the Construction Contractor shall prepare and implement a restoration and/or compensatory mitigation plan, in consultation with CDFW, as described in Mitigation Measure BIO-9. Additionally, to avoid impacts to California Wild Strawberry, implementation of Mitigation Measure BIO-10 will require the Construction Contractor to retain a qualified biologist to delineate the boundaries of California wild strawberry and create a relocation/restoration plan if necessary. Implementation of Mitigation Measures BIO-9 and BIO-10 would reduce potentially significant impacts to these sensitive natural communities to less than significant with mitigation incorporated.

Mitigation Measures

BIO-9 **Sensitive Natural Communities/Environmentally Sensitive Habitat Areas**. If impacts to sensitive natural communities cannot be avoided, prior to the start of construction, the Construction Contractor shall retain a qualified biologist to delineate the boundaries of sensitive natural communities within and adjacent to the project area. The biologist shall flag and map these areas in the field. Protective fencing (e.g., high-visibility construction fencing) shall be installed along the

flagged boundaries to establish environmentally sensitive area buffers. No ground disturbance, grading, or equipment staging shall occur within the fenced environmentally sensitive area.

If avoidance of sensitive natural communities is not feasible, the applicant shall prepare and implement a restoration and/or compensatory mitigation plan, in consultation with the California Department of Fish and Wildlife, to ensure no net loss of sensitive natural community functions or values. The plan may include measures such as replanting with locally appropriate native species, habitat restoration, or off-site conservation at a minimum 1:1 ratio.

BIO-10 **California Wild Strawberry**. If impacts to habitats containing California wild strawberry cannot be avoided, prior to the start of construction, the project applicant shall retain a qualified botanist to delineate the boundaries of California wild strawberry within and adjacent to the project area. The botanist shall flag and map these areas in the field. Protective fencing (e.g., high-visibility construction fencing) shall be installed along the flagged boundaries to establish environmentally sensitive area (ESA) buffers. No ground disturbance, grading, or equipment staging shall occur within the fenced ESA.

If avoidance of habitats containing is not feasible, the Construction Contractor shall retain a botanist experienced in strawberry relocation/restoration to determine if the plants have particular value. If needed, the botanist shall prepare and implement a relocation/restoration plan to ensure no net loss of California wild strawberry plants. The plan shall include, but not be limited to, watering during the plant establishment period, supplemental planting as needed, and removal of non-native plants. Monitoring should include, at a minimum, quarterly monitoring reports for the first year and annual monitoring and reporting for second year.

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?

Less Than Significant Impact With Mitigation Incorporated. As discussed above, a total of twenty-two drainage features were documented within the project site. Five stream reaches are connected to navigable waters and may be considered jurisdictional by the USACE and RWQCB. Three of these reaches are isolated from navigable waters and therefore not considered jurisdictional under USACE but likely jurisdictional under the RWQCB. Three wetlands had all three parameters but are isolated from other wetlands, and are therefore jurisdictional by the RWQCB. One wetland has two parameters and is considered jurisdictional by RWQCB. All wetlands are likely jurisdictional under the CCC definition. Riparian vegetation associated with stream reaches are jurisdictional under the California Department of Fish and Wildlife.

Specifically, as shown on **Table 5.2** and **Exhibit 6**, project development is expected to result in permanent impacts to 0.186 acres of USACE jurisdictional waters of the U.S., 1.824 acres of RWQCB jurisdictional waters of the State, 5.454 acres of CCC jurisdictional waters and 3.234 acres of CDFW jurisdictional streambeds within the project site. The current project design anticipates avoiding jurisdictional wetlands and waters within the project alignment by utilizing horizontal directional drilling under the jurisdictional areas. However, if the project cannot avoid jurisdictional wetlands and waters within the project alignment, mitigation is required. Mitigation Measure BIO-11 requires the Construction Contractor to retain a qualified biologist to obtain appropriate permits with the associated agencies. Additionally, Mitigation Measure BIO-12 requires the Construction Contractor to obtain a National Pollutant

Discharge Elimination System (NPDES) permit prior to construction. With implementation of Mitigation Measures BIO-11 and BIO-12, potentially significant impacts to jurisdictional waters would be less than significant with mitigation incorporated.

Mitigation Measures

BIO-11 Jurisdictional Wetlands and Waters. According to the *Montara Force Main Replacement Project Aquatic Resources Delineation Report* (EMC Planning Group 2025), 22 potentially jurisdictional aquatic features were mapped within the biological survey area. The delineated wetlands or aquatic features were classified as wetlands, streams/drainages, or riparian woodlands. If impacts to one or more of these features should occur, permits may be required prior to disturbance. If the United States Army Corps of Engineers (USACE) claims jurisdiction over features that should be impacted, the Construction Contractor should retain a qualified biologist to obtain a Clean Water Act Section 404 Nationwide Permit. If proposed impacts do not qualify for a Nationwide Permit, the applicant should proceed with the qualified biologist in obtaining an Individual Permit from the USACE. If impacts may occur to features potentially considered jurisdictional by the Regional Water Quality Control Board (RWQCB), the Construction Contractor should retain a qualified biologist to obtain a Clean Water Act Section 401 Water Quality Certification or approval under the Water Discharge Requirements Program. If impacts to riparian vegetation occur, the Construction Contractor should also retain a qualified biologist to coordinate with the California Department of Fish and Wildlife (CDFW) to obtain a Streambed Alteration Agreement.

To compensate for temporary impacts to wetlands or waters that would be impacted as a result of the proposed project, mitigation should be provided as required by the regulatory permits and preparation of a Wetland/Riparian Mitigation and Monitoring Plan is recommended:

1. A Wetland/Riparian Mitigation and Monitoring Plan should be developed that outlines mitigation and monitoring obligations for temporary and permanent impacts to wetlands and other waters as a result of construction activities. The Wetland/Riparian Mitigation and Monitoring Plan will include thresholds of success, monitoring and reporting requirements, and site-specific plans to compensate for the loss of wetland or riparian vegetation resulting from the project. The Wetland/Riparian Mitigation and Monitoring Plan should be submitted to the appropriate regulatory agencies for review and approval during the permit application process.

BIO-12 Water Quality Protection. Construction-related storm water discharges to surface waters are regulated through the National Pollutant Discharge Elimination System (NPDES) program and the Construction Contractor is required to obtain an NPDES permit prior to construction. Best management practices (BMPs) in the NPDES permit may include, but are not limited to, silt fencing, fiber rolls, straw bales, or other measures and shall be implemented during construction to minimize dust, dirt, and construction debris from leaving the construction area and entering adjacent surface waters.

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?

Less Than Significant Impact. Although the central portion of the project alignment is a

wildlife corridor, classified as a Rank 3 connection with implementation flexibility, only temporary impacts are expected from the project that would not alter the movement of wildlife in the project area. In addition, implementation of the mitigation measures listed above is anticipated to protect state and federally protected biological resources. Therefore, the Project would not interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors. A less than significant impact would occur.

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

Less Than Significant Impact With Mitigation Incorporated. The project is not within the City of Half Moon Bay; however, the buffer includes a larger area for review of potential impacts. Should any heritage trees be impacts for trees within the City of Half Moon Bay: Chapter 7.40 of the City of Half Moon Bay Code of Ordinances states that a heritage tree cannot be removed or pruned more than one-third of the branches or roots within a twelve-month period without obtaining a permit in accordance with the requirements listed in the City of Half Moon Bay Code of Ordinances.

For trees within San Mateo County, San Mateo County Code of Ordinance Section 8.400.110 states that protected and heritage trees require tree removal permits and tree pruning permits, unless they qualify for an exemption as provided under Section 8.400.100 of the San Mateo County Code of Ordinance. Exemption 7 under Section 8.400.100 of the San Mateo County Code of Ordinance states that tree removal and pruning by California Public Utilities Commission licensed utility in order to maintain required clearance around power lines or pipelines is applicable for exemption. This may be applicable to the project and would make the project exempt from applying for a tree removal permit with the County of San Mateo. In addition, Section 7.48 of the *San Mateo County Mid-Coast Land Use Plan* requires protection of native Monterey pine trees, if present.

If the project is not exempt under Section 8.400.100 of the San Mateo County Code of Ordinance, implementation of Mitigation Measure BIO-13 requiring a tree inventory and assessment would reduce any impacts to heritage trees to less than significant.

Mitigation Measures

BIO-13 **Regulated Trees**. A tree inventory and assessment should be conducted for the project site. The project is not within the City of Half Moon Bay; however, the buffer includes a larger area for review of potential impacts. In accordance with the Chapter 7.40 of the City of Half Moon Bay's Code of Ordinance and San Mateo County Code of Ordinance, the Construction Contractor should obtain a tree removal permit within the City of Half Moon Bay if more than one-third of a heritage tree will be trimmed or if it will be removed and/or if a protected or heritage tree needs to be removed or pruned within the County of San Mateo (if the project does not qualify for an exemption under Section 8.400.100 of the San Mateo County Code of Ordinance). Per section 7.48 of the San Mateo County Mid-Coast Land Use Plan, the assessment should include a determination on whether Monterey pine (Pinus radiata) present are considered native and if mitigation or tree protection measures are needed. Any replacement trees required should be installed in accordance with all mitigation, maintenance, and monitoring requirements specified in the tree removal permit(s), arborist report, or otherwise required by the City of Half Moon Bay or County of San Mateo.

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?

No Impact. The project area is not located within or near lands that are governed by a habitat conservation plan, a natural community conservation plan or other approved, local, regional or state habitat conservation plan. Therefore, no impact would occur.

Exhibit 5: Vegetation and Land Cover Map

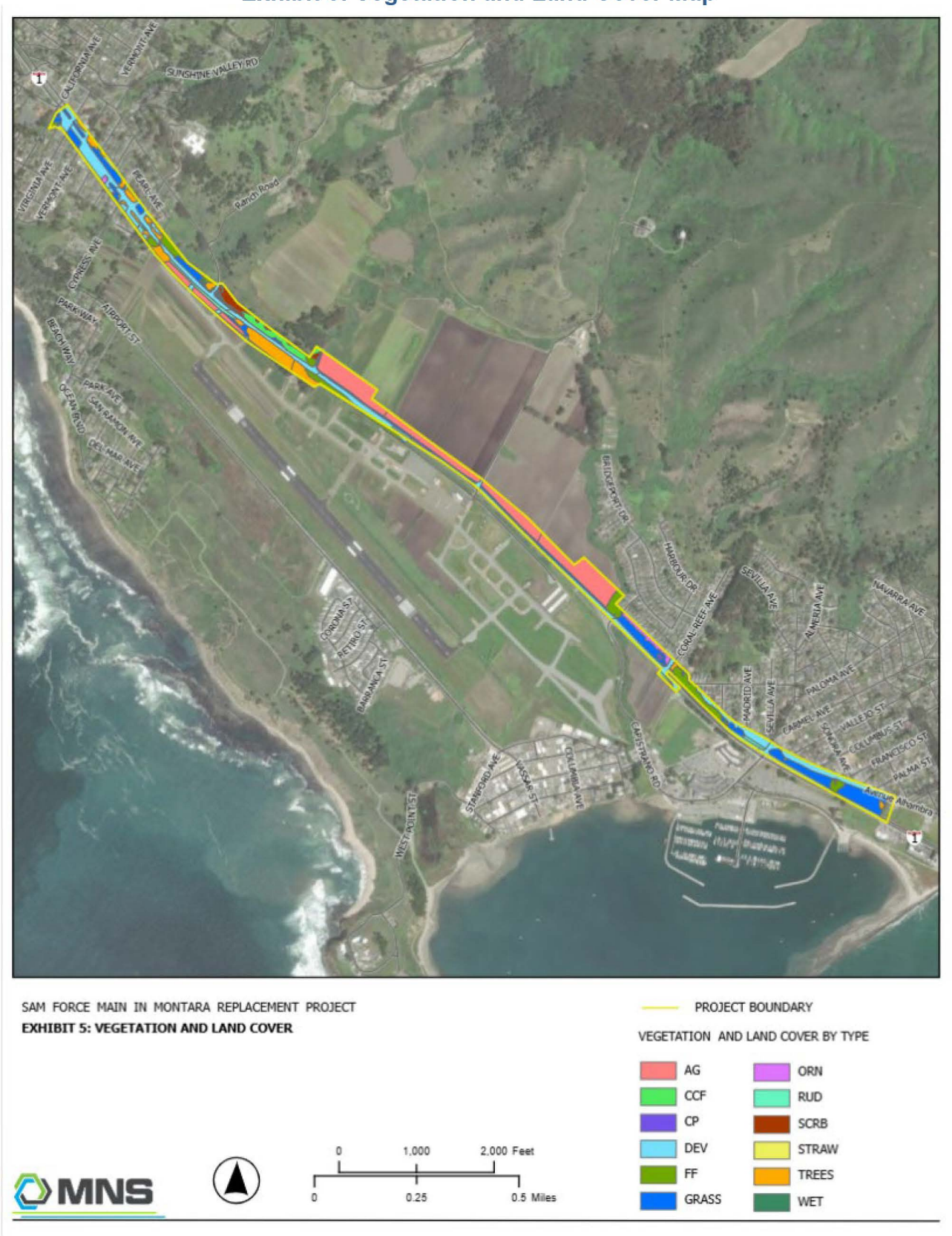

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Exhibit 6: Jurisdictional Waters Map

SAM FORCE MAIN IN MONTARA REPLACEMENT PROJECT
EXHIBIT 6: JURISDICTIONAL WATERS

MNS

0 1,000 2,000 Feet
0 0.25 0.5 Miles

WETLAND AREA
PROJECT BOUNDARY

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5.5 Cultural Resources

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a)	Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?		✓		
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?		✓		
c)	Disturb any human remains, including those interred outside of dedicated cemeteries?		✓		

Cultural resources include places, objects, and settlements that reflect group or individual religious, archaeological, architectural, or paleontological activities. Such resources provide information on scientific progress, environmental adaptations, group ideology, or other human advancements. By statute, the California Environmental Quality Act (CEQA) is primarily concerned with two classes of cultural resources: "historical resources," which are defined in Public Resources Code Section 21084.1 and State CEQA Guidelines Section 15064.5, and "unique archaeological resources," which are defined in Public Resources Code Section 21083.2.

The information and analysis herein rely on the following investigations and collectively document the cultural resources and conditions of the project site:

- *Draft* Archaeological Phase I Survey Report SAM Force Main in Montara Replacement Project, Half Moon Bay and El Granada, San Mateo County, California (Cultural Resource Survey) prepared by EMC Planning Group, dated September 2025, provided as Appendix C1.

Project Setting

The project alignment is located north of the City of Half Moon Bay, San Mateo County, California between the census-designated places of Montara and El Granada. It runs between the Pacific Ocean and the Santa Cruz Mountains. The project alignment is approximately 2.5 miles long. There are developed areas with commercial businesses on a section that runs north-south through the central part of the project area, but the area is otherwise undeveloped.

Based on information obtained from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey online database, the project site contains numerous soil types including Typic Argiustolls, loamy-Urban land association, 5 to 15 percent slopes (455991), Denison clay loam, nearly level (456363), Denison loam, nearly level (456366), Farallone coarse sandy loam, nearly level (456384), and Gullied land (alluvial soil material) (456412), Elkhorn sandy loam, moderately steep and steep, severely eroded (456379). Excluding the gullied land and other alluvial soils, these soil types consist of moderately to well drained varyingly coarse loams (clay vs. sandy) that are formed on terraces.

The site is located on SR-1 and consists of the road surface to depths of approximately 20 – 30 feet deep,

all within Caltrans ROW. The project site vicinity is generally characteristic of a coastal terrace habitat. Onsite topography consists of low relatively flat linear route of the project alignment. San Vicente Creek is in the northwestern portion of the project alignment. Elevations on the project site range from 85 feet above mean sea level (AMSL) in the northwest to 30 feet AMSL in the southeast. Several onsite utilities and/or access easements are located within the property. The eastern portion of the project site includes the remnants of an old homestead foundation. Evidence of illegal refuse dumping and onsite campfires is present throughout the project site.

Methodology

Records Search

As part of the Cultural Resource Survey prepared for the project, a record search of the project area and the environs within one-quarter mile was conducted at the Northwestern Information Center on May 13, 2025. This archival research reviewed the status of all recorded historic and prehistoric cultural resources, as well as survey and excavation reports completed within one-quarter mile of the proposed project site.

Tribal Consultation

In addition to the records search described above, a Sacred Lands File search was requested from the Native American Heritage Commission (NAHC) and a response was received on August 8, 2025. The search results were positive for the Township 5 South, Range 6 West Section of the Half Moon Bay and Montara Mountain quad maps, indicating that a Tribal Cultural Resource was located within the proximity of the project area. Inquiry letters to tribal members on the contact list provided by the NAHC were sent out on August 8, 2025. These Tribes include Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, Indian Canyon Mutsun Band of Costanoan, Costanoan Rumsen Carmel Tribe, Muwekma Ohlone Tribe of the SF Bay Area, The Ohlone Indian Tribe, and Wuksachi Indian Tribe/Eshom Valley Band. SAM is a Joint Powers Authority created by an agreement between the Granada Sanitary District, the Montara Sanitary District, and the City of Half Moon Bay in 1976. SAM is a public agency that provides wastewater treatment services and contract collection maintenance service for the City of Half Moon Bay and communities of El Granada, Miramar, Montara, Moss Beach and Princeton Harbor. As the lead agency under CEQA, SAM is required to complete the Assembly Bill (AB) 52 process and consult with the pertinent Tribal stakeholders. SAM communications to meet its AB 52 obligations to the designated tribes included follow up emails to written correspondences and non-responses to distributed notices, direct telephone calls, and scheduled teleconference meetings with individual designated tribes via Microsoft Teams. As of January 2026, no communication from any known Tribe in the project area has been provided..

Field Survey

On May 7, 2025, a pedestrian survey of the entire project area was conducted using standard archaeological procedures and techniques. The survey occurred in transects at 15-meter (33 feet) intervals or closer. All archaeological material more than fifty years of age or earlier encountered during the inventory was recorded.

Results

The record search revealed that 16 cultural resource studies have been conducted within the project area and an additional 48 studies have been conducted with one-quarter mile radius. Two of these projects are recent Caltrans approved projects that were located within the current project alignment. Two preciously recorded cultural resources are mapped within the project alignment, P-41-000203 and P-41-000550. P-41-000203 is a precolonial shell midden site located at San Vicente Creek. P-41-000550 is in the southern portion of the project alignment and is recorded as the historic town of Granada.

During the field survey, cultural resources were observed in the southeastern-most portion of the project area. A historic glass shard, white-glazed ceramic sherd, and a broken bivalve were located on the ground surface between Francisco Street and Columbus Street, off of Avenue Alhambra and to the east of Cabrillo Highway.

These items are part of a disturbed context. It is possible that the bivalve is an ecofact or part P-41-000-549 based on a map received from the Northwest Information Center. P-41-000-549 is listed as the El Granada Ocean Shore Railroad Station which is an element of the P-41-00550 historic town of Granada. No resources were found that could be associated with site P-41-000-203, the site containing indigenous habitation debris, which is northwest of the current finds.

a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

***Less Than Significant Impact With Mitigation Incorporated*.** The project Design-Build team engineer has coordinated with Caltrans Cultural Resource staff on their requirements for Cultural Resource Review and Compliance for the Project. Coordination with Caltrans and project engineers has allowed the project to design the construction to avoid impacts on the two identified cultural resources. Caltrans has instructed the project to Complete an Archaeological Survey Report (ASR) with the findings of the preliminary draft Phase I Cultural Resource Inventory to the format and content requirements of Caltrans Exhibit 5.1. After completion of the ASR, Caltrans has instructed the project to complete a Historical Resource Compliance Report (HRCR), according to the format and content requirements outlined in Exhibit 2.10. Caltrans has also instructed the project to prepare an Environmentally Sensitive Area (ESA) Action Plan, per the format and content requirements outlined in Exhibit 2.14. This would facilitate Caltrans' review of the project and the previous cultural documentation to support a Finding of No Adverse Effect with Standard Conditions and approve the project.

As stated previously, two preciously recorded cultural resources are mapped within the project alignment, P-41-000203 and P-41-000550. P-41-000203 is a precolonial shell midden site located at San Vicente Creek. P-41-000550 is in the southern portion of the project alignment and is recorded as the historic town of Granada. It is possible that the bivalve is an ecofact or part P-41-000-549. P-41-000-549 is listed as the El Granada Ocean Shore Railroad Station which is an element of the P-41-00550 historic town of Granada. No resources were found that could be associated with site P-41-000-203, the site containing indigenous habitation debris, which is northwest of the current finds.

As it is possible that both historic and indigenous cultural materials are under the ground surface, Mitigation Measure CR-1, Cultural Resource Discovery Procedures, and CR-2, Develop and Implement a Cultural Resources Monitoring Plan, are recommended to ensure potential impacts to cultural and/or tribal cultural resources are mitigated to a less-than-significant level.

Mitigation Measures

CR-1 **Cultural Resource Discovery Procedures**. In the event cultural resources, including historical resources, are encountered during ground disturbing activities, the Construction Contractor shall temporarily halt or divert excavations within 50 meters (165 feet) of the find until it can be evaluated. All potentially significant archaeological deposits shall be evaluated to demonstrate whether the resource is eligible for inclusion on the California Register of Historic Resources, even if discovered during construction. If cultural resources, including historical resources, are encountered, they shall be evaluated and mitigated simultaneously in the timeliest manner practicable, allowing for recovery of materials and data by standard archaeological procedures. For prehistoric archaeological sites, this data recovery involves the hand-excavated recovery and non-destructive analysis of a

small sample of the deposit. Historic resources shall also be sampled through hand excavation, though architectural features may require careful mechanical exposure and hand excavation.

Any previously undiscovered cultural resources, including historic resources, found during construction activities shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance by a qualified Archaeologist. Significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites.

CR-2 **Develop and Implement a Cultural Resources Monitoring Plan.** Prior to ground disturbance, a Cultural Resources Monitoring Plan (CRMP) will be drafted by a qualified archaeologist. The CRMP will involve coordination with the Project Team (Contractors, Engineers, etc.) to develop a project-specific plan for cultural resources monitoring during project construction. The CRMP should include areas where monitoring is required by both a qualified archaeologist, as well as a Native American monitor with demonstrable association with the project area. An important element of the plan will be a description of the known archaeological resources (including the types of artifacts likely be to be encountered during monitoring). The CRMP will include a background section that discusses the environmental setting, cultural setting, and the results of the records and literature search at the NWIC. The CRMP will include standard operating procedures and methods for monitoring, including project personnel, a description of the monitor's duties, a description of the communication process, and a description of the training program for SAM/Construction Contractor. The plan will detail how any sampling of the excavated soil will occur, authorizing the monitor to stop work in the event resources are found, and any other logistical information such as providing the monitor sufficient notice of when soil disturbance will occur. The plan will also outline procedures for addressing unanticipated archaeological discoveries, cultural resources, human remains, or sacred sites encountered during construction. Procedures will be designed to adequately address treatment of cultural resources under California Environmental Quality Act (CEQA) guidelines (Article 5: Section 15064.5) should they be discovered during project activities.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

***Less Than Significant Impact With Mitigation Incorporated*.** Refer to Section 3.5 (a). The project has coordinated with Caltrans Cultural Resource staff on their requirements for Cultural Resource Review and Compliance for the project. Coordination with Caltrans and project engineers has allowed the project to design the construction to avoid impacts on the two identified resources. This will be documented within the ASR, the HRCR, and the ESA Action Plan. The ESA Action Plan may contain provisions or requirements for archaeological and/or tribal monitoring of construction during earth disturbing activities. This is being determined in conjunction with Caltrans Cultural Resources staff.

As it is possible that both archaeological and indigenous cultural materials are under the ground surface, Mitigation Measure CR-1, Cultural Resource Discovery Procedures, and CR-2, Develop and Implement a Cultural Resources Monitoring Plan, is recommended to ensure potential impacts to cultural and/or tribal cultural resources are mitigated to a less-than-significant level.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact With Mitigation Incorporated. It is not anticipated that human remains or informal cemetery areas are present on the project site. However, ground-disturbing activities such as grading or excavation can potentially disturb human remains. Therefore, the project is required to implement Mitigation Measure CR-3, which states that, if human remains are found, those remains would require proper treatment in accordance with the California Public Resources Code Section 5097.98 and Health and Safety Code Sections 7050.5-7055, which describe the general provisions regarding human remains, including the requirements if any human remains are accidentally discovered during project construction. As required by State law, the procedures set forth in Section 5097.98 of the California Public Resources Code would be implemented, including notification of the County Coroner, notification of the NAHC, and consultation with the individual identified by the NAHC to be the "most likely descendant." With implementation of Mitigation Measure CR-3 for unanticipated discovery of human remains, impacts would be reduced to less than significant.

Mitigation Measures

CR-3 **Unanticipated Discovery of Human Remains**. If human remains or funerary objects are encountered during any activities associated with the project, work in the immediate vicinity (within a 100-foot buffer of the find) shall cease and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5 and that code enforced for the duration of the project.

5.6 Energy

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?			✓	

In 1975, largely in response to the oil crisis of the 1970s, the California Legislature adopted Assembly Bill (AB) 1575, which created the California Energy Commission (CEC). The statutory mission of the CEC is to forecast future energy needs, license thermal power plants of 50 megawatts or larger, develop energy technologies and renewable energy resources, plan for and direct state responses to energy emergencies, and—perhaps most importantly—promote energy efficiency through the adoption and enforcement of appliance and building energy efficiency standards.

Energy consumption is analyzed due to the potential direct and indirect environmental impacts associated with the project. Energy consumption calculations are provided as Appendix A and were calculated based on air quality emissions modeling.

Energy Generation and Demand

According to CEC, the total system electric generation (TSEG) for California was 278,338 gigawatt-hours (GWh) in 2024, up one percent from 2023. TSEG is the sum of all utility-scale in-state generation plus net electricity imports from power plants with a nameplate capacity of at least one megawatt (MW). Clean energy resources accounted for 62 percent of California's power mix, a four percent increase from 58 percent in 2023. In-state generation was 216,181 GWh in 2024, virtually unchanged from the 2023 value of 216,047 GWh. Imported energy decreased to 62,157 GWh, down five percent (3,361 GWh) from 2023. California's hydroelectric generation in 2024 decreased eight percent from 2023, ranking as the 11th highest over the past 25 years.

As reported by the CEC, the total electricity consumption in California in 2024 was 282,783 GWh, and the total natural gas consumption was 11,104 million therms. Pacific Gas and Electric Company (PG&E) provides electricity and natural gas to the County of San Mateo and surrounding areas. In their territory, PG&E sold approximately 75,338 GWh of electricity and 4,256 million therms of natural gas in 2024.

San Mateo County Energy Usage

The electricity consumption in the County from 2015 to 2024 is shown in **Table 5.3, Electricity Consumption in San Mateo County 2015-2024**. As indicated, the demand has no substantial increase, even as the population has increased.

Table 5.33: Electricity Consumption in San Mateo County 2015-2024

Year	Electricity Consumption (in GWh)
2015	4,402
2016	4,304
2017	4,315
2018	4,210
2019	4,284
2020	4,105
2021	4,040
2022	4,119
2023	4,051
2024	4,261

Source: Electricity and Natural Gas Consumption by County, California Energy Consumption Dashboards. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards, accessed October 21, 2025.

The natural gas consumption in San Mateo County from 2015 to 2024 is shown in **Table 5.4, Natural Gas Consumption in San Mateo County 2015-2024.** Similar to electricity consumption, the demand has remained relatively constant during this timeframe, even with an increase in population.

Table 5.44: Natural Gas Consumption in San Mateo County 2015-2024

Year	Natural Gas Consumption (in millions of therms)
2015	194
2016	200
2017	211
2018	210
2019	214
2020	200
2021	205
2022	204
2023	211
2024	189

Source: Electricity and Natural Gas Consumption by County, California Energy Consumption Dashboards. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/california-energy-consumption-dashboards, accessed October 21, 2025.

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. The project's estimated energy consumption is summarized in **Table 5.5, Project Energy Consumption**. It should be noted that the project will construct a sewer force main and only involve intermittent and infrequent maintenance and inspection of the sewer system during operation. Although vehicle trips would be generated due to maintenance and inspection staff traveling to and from the project site, such trips would be intermittent and infrequent, and the associated fuel consumption would be nominal. The project would not construct buildings and therefore would not consume electricity or natural gas during operation. As such, energy consumption during project operation was not quantified and impacts would be less than significant.

Construction fuel consumption includes fossil fuels that will be used for construction vehicles

during construction activities including construction mobilization, physical construction activities, and construction demobilization. Off-road construction fuel consumption was calculated by using construction equipment list provided by project engineers and CalEEMod default fuel rate to determine the total diesel gallons used. On-road construction fuel consumption was calculated based on CalEEMod default worker, vendor, and hauling trip numbers and average fuel efficiency from CARB's EMFAC2021 Model.

Table 5.55: Project Energy Consumption

Energy Type	Project Annual Energy Consumption	San Mateo County Annual Energy Consumption[1]	Percent Increase
Fuel Consumption			
Construction Off-Road (Heavy-Duty Equipment) Fuel Consumption	31,021 gallons	991,373 gallons	3.1291%
Construction On-Road (Worker, Vendor, and Hauling Vehicle) Fuel Consumption	17,482 gallons	264,514,941 gallons	0.0066%

Source: Refer to CalEEMod output and calculation details included in Appendix A.

Notes:

1. Countywide off-road fuel consumption obtained from CARB's OFFROAD Database for the year 2026 (first year of construction). Countywide on-road fuel consumption obtained from CARB's EMFAC2021 Model for the year 2026 (first year of construction).

Fuel use during construction will be short-term and would not create a substantial demand on energy resources. Additionally, some incidental energy savings would result from compliance with State regulations requiring heavy-duty diesel equipment to be shut off when idle for more than five minutes. Construction equipment used for the project will also meet the latest EPA and CARB engine emissions standards, which promote efficient combustion, optimize fuel use, and minimize excess fuel consumption. Furthermore, rising transportation costs and fuel prices provide Construction Contractors and project owners with a strong economic incentive to reduce wasteful and inefficient energy use throughout construction activities.

The project's incremental increase in energy use associated with construction materials—such as asphalt, steel, concrete, pipes, and other manufactured or processed products—would not significantly raise overall energy demand compared to local and regional construction activity. As shown in **Table 5.5**, project construction would not significantly increase the County's annual fuel consumption and therefore would have a nominal effect on the local and regional energy supplies.

Fuel consumption during construction will be temporary and will end once construction activities are completed. The project does not include any unique characteristics that would require the use of equipment less energy-efficient than that used on comparable projects in the region or State. Therefore, construction-related fuel use would be no more inefficient, wasteful, or excessive than that of similar developments, and impacts would be less than significant.

b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. The applicable plans and regulations for renewable energy or energy efficiency include the CEC's 2025 Integrated Energy Policy Report, the 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6 and 11; Title 24 Standards), the Renewable Portfolio

Standards, and the County's Community Climate Action Plan. These plans focus on reducing energy consumption and increasing renewable energy generation in the long term in building energy and transportation fuels. As discussed above, the project would consume nominal fuels during construction and consume nominal transportation fuel due to intermittent and infrequent maintenance activities and would not consume electricity or natural gas during operation. As such, none of the renewable energy and energy efficiency policies and measures included in the applicable plans apply to the project. As such, the project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency, and impacts would be less than significant.

5.7 Geology / Soils

Would the proposed project:					
Issues		**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a)	Expose people or structures to 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?			✓	
	ii) Strong seismic ground shaking?			✓	
	iii) Seismic-related ground failure, including liquefaction?			✓	
	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 because 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 risks to life or property?			✓	
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				✓
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		

The information and analysis herein rely on the following investigations and collectively document the paleontological resources and conditions of the project site:

- *Draft* Pacific Paleontology, PaPa, Inc. Paleontological Mitigation Services SAM Force Main Project,

Moss Beach, El Granada, CA Paleontological Identification Report, PIR, prepared by Wayne Thompson, SVP-Qualified Principal Paleontologist, EMC Planning Group, dated 2025, provided as Appendix C2.

Results

The project lies within and nearby Very Highly Significant and Sensitive paleontological resources (fossils) and geological formations. Three of these formations are "most-common" in museum paleontological collections and consistently produce significant fossils: The Miocene marine Monterey Shale Formation, the Miocene to Pliocene marine Purisima Formation, and the Pleistocene Marine Terrace units 2, 3, and 4 which produce terrestrial Ice Age megafauna. Other horizons have also recently proven to be paleontologically important, including a notable newly-discovered horizon within less than a half mile of the project corridor, the Tku horizon, has recently produced a significant abundance of Ice Age megafauna, including Bison latifrons and potentially Mammuthus and Megalonyx.

a) Expose people or structures to 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?

Less Than Significant Impact. The potential for ground rupture is most likely to occur along the traces of active faults. According to the California Department of Conservation's California Earthquake Hazards Zone Application, the proposed project site is not located within an Alquist-Priolo Earthquake Fault Zone and no known active faults traverse the site (California Department of Conservation [CDOC] 2022). The nearest potentially active faults mapped in accordance with the Alquist-Priolo Earthquake Fault Zoning Act are the Denniston Creek Fault and the Seal Cove Fault. Both faults are less than a mile from the project site (0.15 miles and 0.50 miles respectively) but neither have a recent history of significant seismic activity nor do they have any visible surface rupturing (Lowney et.al., 1974). Due to the lack of significant seismic activity, there is no potential for surface fault rupture in project area and the project would have a less than significant impact.

   ii) Strong seismic ground shaking?

Less Than Significant Impact. The project site is located within a seismically active region of northern California near faults capable of generating earthquakes with strong ground shaking. The intensity of ground shaking would depend upon the magnitude of the earthquake, distance to the epicenter, and the geology of the area between the epicenter and the project site.

The closest fault zone to the project site is the San Gregorio Fault Zone, with the site being between two of the zones onshore fault lines. The Denniston Creek fault is approximately 0.15 miles northeast of the project site and the Seal Cove Fault is approximately 0.50 miles west of the site. The San Gregorio Fault extends about 250 miles along the central California coast and, along with the San Adreas Fault, defines the zone that separates the Pacific Plate from the North American Plate. According to Working Group On California Earthquake Probabilities' Uniform California Earthquake Rupture Forecast (Version 3) (2017) the San Gregorio Fault has an approximately 10% chance of one or more major (magnitude 6.7 or

higher) earthquakes over the next 30 years.

Due to the low probability of strong ground shaking from the San Gregorio Fault, the project would have a less than significant impact and would not increase existing impacts.

iii) Seismic-related ground failure, including liquefaction?

***Less Than Significant Impact*.** Liquefaction is the rapid transformation of saturated, loosely packed, fine-grained sediment to a fluid like state as a result of ground shaking. The potential for liquefaction is most pronounced when the groundwater table is shallow (typically less than 50 feet below the surface) and liquefaction potential becomes increasingly heightened as the water table becomes shallower.

According to the Seismic Hazard Zone Report for the Montara Mountain 7.5-Minute Quadrangle (2019) liquifiable deposits of sand and silt layers have been identified at the location of the proposed project. The report found that, when saturated, the liquefaction susceptibility of this deposit is high. However, the pipeline and the freeway have existed in the area for decades, and replacement of the pipeline would not exacerbate the inherent risk. Due to the project being a replacement of a preexisting pipeline, the project would have a less than significant impact.

iv) Landslides?

***No Impact*.** The project site and surrounding area is generally flat, flanked by farmland to the northeast and the Half Moon Bay Airport to the southwest. To the North lies the Montara Mountains which do show evidence of historic debris flow, however the closest landslide (deposit) line from these mountains is located 0.50 miles to the north of the project site. Another historic debris flow is located 0.53 miles to the south of the project site near Pillar Point Bluff. Due to the project site area having a less than 27 degree slope, the absence of any historical landslides or debris flows, and the project being a replacement of a preexisting pipeline, the project would have no impact.

b) Result in substantial soil erosion or the loss of topsoil?

***Less Than Significant Impact*.** Construction activities associated with the project would include minor earth-disturbing activities (i.e., cut and fill, vegetation removal, grading, trenching, excavation, and movement of soil) that could expose disturbed areas and stockpiled soils to winter rainfall and stormwater runoff. Areas of exposed stockpiled soils could also be subject to wind or water erosion.

Pursuant to the requirements of the State Water Resources Control Board (SWRCB), the project will be subject to the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, which will be obtained prior to the start of grading and construction. As part of the permit requirements, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared to include Best Management Practices (BMPs) that will be designed to prevent soil erosion and the discharge of turbidity sediments into the local storm drains during the project construction phase. Therefore, project conformance with the NPDES and SMOC requirements, impacts concerning substantial soil erosion and loss of topsoil would be less than significant.

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?

***Less Than Significant Impact*.** Liquefaction potential is defined as the loss of soil strength

because of increased pore water pressure due to dynamic earthquake loading. Soil types most susceptible to liquefaction are loose, saturated silty to clean fine sands. According to the Seismic Hazard Zone Report for the Montara Mountain 7.5-Minute Quadrangle (2019) liquifiable deposits of sand and silt layers have been identified at the location of the proposed project. The report found that, when saturated, the liquefaction susceptibility of this deposit is high. However, the pipeline and the freeway have existed in the area for decades, and replacement of the pipeline would not exacerbate the inherent risk. Lateral spreading occurs when large blocks of intact, non-liquefied soil move downslope on a liquefied soil layer. Lateral spreading is often a regional event. For lateral spreading to occur, the liquefiable soil zone must be unconstrained laterally and free to move along sloping ground.

According to the U.S. Department of Agriculture Natural Resources Conservation Services Web Soil Survey, the soil underlain the project site is comprised of a variety of Denison clay loams and Denison sandy loams. These soils are moderately well drained, have a moderate available water supply, and have a moderate capacity to transmit water.

The site is relatively flat and not located in an area where landslides or lateral spreading would typically occur. The project site is not located on soil that is unstable or could become unstable as a result of the project. This impact would be less than significant.

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

Less Than Significant Impact. Expansive soils are those that undergo volume changes as moisture content fluctuates, swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement, and distorting structural elements. According to the U.S. Department of Agriculture Natural Resources Conservation Services Web Soil Survey, the soil underlain the project site is comprised of a variety of Denison clay loams and Denison sandy loams. These soils are moderately well drained, have a moderate available water supply, and have a moderate capacity to transmit water.

The project will be designed to ensure the project is appropriate to local soil/substrate conditions. In addition, the project will be designed and constructed consistently with all applicable local and regional design standards which are required to adhere to state seismic design parameters identified in California Building Code. Therefore, with implementation of the design specifications provided in the BMPs relative to expansive soils as specified above, the project would not result in substantial direct or indirect risks to life or property due to expansive soils. This impact would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. No septic tanks or alternative wastewater systems would be constructed as part of the project. No impact would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact With Mitigation Incorporated. Paleontological resources are the preserved fossilized remains of plants and animals. Fossils and traces of fossils are preserved in sedimentary rock units, particularly fine- to medium-grained marine, lake, and stream deposits, such as limestone, siltstone, sandstone, or shale, and in ancient soils (paleosols). Such resources are also found in coarse-grained sediments, such as

conglomerates or coarse alluvium sediments. Fossils are rarely preserved in igneous or metamorphic rock units. Fossils may occur throughout a sedimentary unit and are more likely to be preserved subsurface, where they have not been damaged or destroyed by previous ground disturbance, amateur collecting, or natural causes such as erosion. In contrast, archaeological and historic resources are often recognized by surface evidence of their presence.

The County of San Mateo General Plan establishes goals and policies related to paleontological resources. Goal 5.3 aims to protect paleontological sites from destruction in order to preserve and interpret them for future scientific research, and public education programs. Goal 5.20 states that prior to approval of development for new sites, require a mitigation plan, adequate to protect the resource and prepared by a qualified professional, be reviewed and implemented as part of the project. Mitigation Measure GEO-1 shall satisfy this requirement.

In general, the potential for a given project to result in negative impacts to paleontological resources is directly proportional to the amount of ground disturbance associated with the project; thus, the higher the amount of ground disturbances within geological deposits with a known paleontological sensitivity, the greater the potential for negative impacts to paleontological resources. As part of project construction, the project site will be subject to ground-disturbing activities associated with site grading activities. Therefore, ground-disturbing activities conducted on the project site may result in significant impacts to previously undiscovered paleontological resources, such as destruction, damage, or loss of scientifically important paleontological resources. This is considered a potentially significant impact for which mitigation would be required. Mitigation Measure GEO-1 outlines the procedural requirements, in the event that paleontological resources are unearthed during excavation and grading activities. Potential impacts to paleontological resources attributed to the project would be reduced to less than significant with adherence to Mitigation Measure GEO-1 for paleontological resources discovery procedures, and Mitigation Measure GEO-2, Develop a Paleontological Mitigation Plan.

Mitigation Measure

GEO-1 **Paleontological Resource Discovery Procedures**. In the event that paleontological resources are unearthed during excavation and grading activities associated with project development, the Construction Contractor shall cease all earth-disturbing activities within a 100-meter radius of the area of discovery and shall retain a qualified paleontologist to evaluate the significance of the finding and appropriate course of action. Salvage operation requirements pursuant to Section 15064.5 of the State CEQA Guidelines shall be followed. Work within the area of discovery shall resume only after the resource has been appropriately mitigated.

GEO-2 **Develop a Paleontological Mitigation Plan.** The project should prepare a Paleontological Evaluation Memorandum (PEM) in place of a more extended Paleontological Evaluation Report (PER); combined with a Paleontological Mitigation Plan (PMP) for the project. Following the PEM and PMP a Worker Environmental Awareness Program (WEAP) should be created for educating ground staff and managers directly involved with the project on the particular nuances of the paleontological exposure of the project.

5.8 Greenhouse Gas Emissions

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?			✓	

Greenhouse gas (GHG) emissions impacts were assessed in accordance with methodologies recommended by the California Air Resources Board (CARB) and the Bay Area Air Quality Management District (BAAQMD). Where quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod). The modeling results are provided as Appendix A.

Introduction

The U.S. Environmental Protection Agency (USEPA) has specifically identified the most important GHGs directly emitted by humans as carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and several fluorine-containing halogenated substances, including hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride. These gases influence global climate by trapping heat in the atmosphere that would otherwise escape to space. Slight changes in the average temperatures can be accompanied by an increase in severe weather events such as storms, droughts, ecosystem change, loss of plant and animal species, stresses to human health, and alterations in regional agricultural productivity. According to the USEPA, GHGs from human activities are the most significant driver of observed climate change since the mid-20th century.

GHGs have varying global warming potentials (GWP). GWP is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time (usually 100 years), relative to the emissions of 1 ton of CO_2. The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that are the most common GHGs that result from human activity include CH_4, which is estimated to have a GWP of 28 over 100 years; N_2O, which has a GWP of 265, according to Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report. High GWP gases include GHGs that are used in refrigeration/cooling systems, such as chlorofluorocarbons and hydrofluorocarbons.

Greenhouse Gases

CO_2 is the most common of the six targeted GHGs, caused anthropogenically by the burning of fossil fuels and deforestation. CH_4 is produced through the anaerobic decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion. N_2O is generated as a result of soil cultivation practices, particularly the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning. HFCs are primarily used as refrigerants, consisting of gas molecules containing hydrogen, fluorine, and carbon atoms. PFCs consist of a class of gases containing carbon and fluorine originally

introduced as alternatives to ozone-depleting substances and typically emitted as by-products of industrial and manufacturing processes. SF_6 is primarily used in electrical transmission and distribution systems.

Sources of Greenhouse Gas Emissions

GHGs are emitted from a variety of activities, ranging from the combustion of fuels and other materials to leaking gases and chemical reactions. GHG emissions are grouped into three "Scopes" by the regulations:

- Scope 1: Direct Emissions
    - Stationary combustion (e.g., boilers),
    - Mobile combustion (e.g., motor vehicles),
    - Fugitive (e.g., landfill leakage and refrigerants),
    - Process (e.g., wastewater treatment);
- Scope 2: Indirect Emissions (e.g., electricity and steam imports); and
- Scope 3: Emissions that do not fall into Scope 1 or 2 but are the result of the facility's existence (e.g., employee commuting, deliveries.

California Air Resources Board Scoping Plan

In January 2017, the California Air Resources Board (CARB) issued the proposed 2017 Scoping Plan update to reflect the 2030 target set by Executive Order (EO) B-30-15 and codified by Senate Bill (SB) 32. The draft Scoping Plan was developed with input by the Environmental Justice Advisory Committee and other stakeholders. On December 15, 2022, CARB adopted the 2022 Scoping Plan. The 2022 Scoping Plan lays out the sector-by-sector roadmap for California to achieve carbon neutrality by 2045 or earlier, to minimize the impacts of climate change. The previous Scoping Plan updates focused on specific GHG reduction targets for industrial, energy, and transportation sectors – first to meet 1990 levels by 2020, then to meet the more aggressive target of 40 percent below 1990 levels by 2030. The 2022 Scoping Plan extends and expands upon these earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. Appendix D of the 2022 Scoping Plan includes recommendations for local governments actions that align with the State's climate goals, with a focus on local GHG reduction strategies and approval of new land use development projects, including thorough environmental review under CEQA.

Bay Area Air Quality Management District GHG Thresholds

The BAAQMD's approach to developing thresholds of significance for climate impacts is to use a "fair share" approach for determining whether an individual project's GHG emissions would be cumulatively considerable. If a project would contribute its "fair share" of what is needed to achieve the State's long-term GHG reduction goals, then the lead agency can find that the project is adequately contributing to solving the problem of global climate change and that project's impact is not significant. Using this approach, the BAAQMD has identified the necessary design elements required of new land use projects and plans being built today in order to achieve California's long-term climate goal of carbon neutrality by 2045. The design elements are as follows:

Projects must include, at a minimum, the following project design elements:

1. Buildings
    a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).
    b. The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

2. Transportation

   a. The project will achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target that reflects the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory: Evaluating Transportation Impacts in CEQA:

      i. Residential projects: 15 percent below the existing VMT per capita

      ii. Office projects: 15 percent below the existing VMT per employee

      iii. Retail projects: no net increase in existing VMT

   b. The project will achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

Alternatively, a project for which these design elements are not implemented could still be determined to make a less-than-significant contribution of GHG emissions by demonstrating consistency with a local GHG reduction strategy that is consistent with state guidance (State CEQA Guidelines Section 15183.5[b]).

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

Less Than Significant Impact. Project-related GHG emissions would include emissions from direct and indirect sources resulting from the construction and operation of the project. Direct project-related GHG emissions include emissions from construction activities, area sources, mobile sources, and refrigerants, while indirect sources include emissions from energy consumption, water demand, and solid waste generation.

Operation of the project will generate long-term operational GHG emissions. However, the project will construct a sewer force main and only involve intermittent and infrequent maintenance and inspection of the sewer system during operation. Although vehicle trips and associated mobile source GHG emissions would be generated due to maintenance and inspection staff traveling to and from the project site, such trips would be intermittent and infrequent. The project would not involve emissions from other sources during operation. As such, emissions resulting from operation of the project would be nominal and were not quantified.

Construction associated with the project will generate GHG emissions. The project will be constructed over approximately 11 months, including construction mobilization, physical construction activities, and construction demobilization. **Table 5.6, Annual Construction GHG Emissions Summary**, presents the project's annual GHG emissions from construction and total construction emissions amortized over the lifetime of the project, assumed to be 30 years according to BAAQMD. As shown in **Table 5.6**, the project will generate a total of 511 $MTCO_2e$ GHG emissions during construction, which is equivalent to 17.03 $MTCO_2e$ per year amortized over 30 years.

As discussed above, the project would generate nominal mobile source emissions during operation and would not involve building construction. As such, none of the design elements required by the BAAQMD apply to the project. In addition, the County adopted its Community Climate Action Plan (CCAP) in October 2022, which is a qualified local GHG reduction strategy under State CEQA Guidelines Section 15183.5[b]. The CCAP includes GHG reduction measures to help the County achieve its GHG reduction targets. However, none of the measures apply to the project as the project would only involve intermittent and infrequent

maintenance activities during operation. As such, project impacts related to GHG emissions would be less than significant.

Table 5.66: Annual Construction GHG Emissions Summary

Construction Year	Metric Tons CO_2e/Year
Construction Emissions	
Year 1 (2026)	295
Year 2 (2027)	216
Total Construction Emissions	**511**
Amortized Construction Emissions	**17.03**

Source: Refer to CalEEMod output included in Appendix A.

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

Less Than Significant Impact. The applicable plans adopted for the purpose of reducing the emissions of GHGs include the CARB's 2022 Scoping Plan, the Association of Bay Area Governments' (ABAG) Plan Bay Area 2050, and the County's CCAP. These plans focus GHG emissions reductions on building energy, transportation, solid waste, and agricultural land. As discussed above, the project would generate nominal mobile source emissions due to intermittent and infrequent maintenance activities and would not affect agricultural land or involve building construction or waste generation during operation. As such, none of the GHG reduction measures or local actions included in the applicable plans apply to the project. As such, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions and impacts would be less than significant.

5.9 Hazards and Hazardous Materials

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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?			✓	
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 which 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 2 miles or a public airport or public use airport, result in a safety hazard for people residing or working in the project area? For a project within the vicinity of a private airstrip, result in a safety hazard 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 to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?		✓		

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

Less Than Significant Impact.

Construction Impacts

Project construction could expose construction workers and the public to temporary hazards related to the transport, use, and maintenance of construction materials (i.e., oil, diesel fuel, and transmission fluid) and/or import/export of soils. Project construction activities will comply with the applicable laws and regulations governing the use, storage, and transportation of hazardous materials/waste, ensuring that potentially hazardous materials are used and handled appropriately. Impacts concerning the routine transport, use, or disposal of hazardous materials during project construction would be less than significant.

Operational Impacts

This project is replacing and repairing an existing force main that has had leaks. Therefore, it is removing a hazard to the public and environment by addressing a hazardous pipeline prone to leaks. Routine checks and maintenance will be performed to ensure that leaks are not occurring. This ensures that impacts concerning the routine transport, use, or disposal of hazardous materials during project operation would be less than significant.

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?

Less Than Significant Impact.

Construction Impacts

During project construction, there is a possibility of accidental release of hazardous substances such as petroleum-based fuels or hydraulic fluids used for construction equipment. The level of risk associated with the accidental release of hazardous substances is not considered significant due to the small volume and low concentration of hazardous materials utilized during construction. As required by various State laws, the Construction Contractor must use standard construction controls and safety procedures that will avoid and minimize the potential for accidental release of such substances into the environment. Standard construction practices would be observed such that any materials released are appropriately contained and remediated as required by local, State, and Federal law. Therefore, the impacts would be less than significant.

Operational Impacts

This project is replacing and repairing an existing force main that has had leaks. Therefore, it is removing a hazard to the public and environment by addressing a hazardous pipeline prone to leaks. Routine checks and maintenance will be performed to ensure that leaks are not occurring. This ensures that impacts concerning the routine transport, use, or disposal of hazardous materials during project operation would be less than significant.

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

Less Than Significant Impact. The nearest schools to the project site are El Granada Middle School, Wilkinson School, and Picasso Preschool. All these schools are adjacent to SR-1 in El Granada and are within 0.05 miles of the project. However, as noted in Responses 5.9(a) and 5.9(b), the project would not result in significant hazardous materials impacts during the construction process or long-term operations. Thus, the impacts would be less than significant.

d) Be located on a site which 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. Government Code Section 65962.5 requires the Department of Toxic Substances Control (DTSC) and SWRCB to compile and update a regulatory sites list (pursuant to the criteria of the Section). The California Department of Health Services must also compile and update, as appropriate, a list of all public drinking water wells that contain detectable levels of organic contaminants and are subject to water analysis pursuant to Health and Safety Code Section 116395. Government Code Section 65962.5 requires the local enforcement agency, as designated pursuant to Section 18051 of Title 14 of the California Code of Regulations, to compile, as appropriate, a list of all solid waste disposal facilities from which there is a known migration of hazardous waste.

Based on regulatory database searches, the project site is not listed pursuant to Government Code Section 65962.5. In addition, no RECs, CRECs, or HRECs were identified on the project site or in the project area. Thus, no impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles or a public airport or public use airport, result in a safety hazard for people residing or working in the project area? For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?

Less Than Significant Impact. The nearest airport to the project site is the Half Moon Bay Airport located adjacent to SR-1. Based on the Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport in San Mateo County California, revised September 2014, the project site is located inside of the Airport Influence Area (AIA), as well as Zone 3 – Inner Turning Zone (ITZ). Additionally, the project site is not located within the vicinity of a private airstrip or related facilities.

The AIA zone includes all other portions of regular aircraft traffic batters based upon the 14 CFR Part 77 conical surface from the 2013 HAF airport layout plan. The aircraft accident risk level is considered to be low within the AIA zone. The maximum non-residential intensity allowed within the AIA is 300 persons per acre. The prohibited uses in the AIA are activities which would cause hazards to flight, and outdoor stadiums, neither of which this project includes.

ITZ encompasses locations where aircraft are typically turning from the base to final approach legs of the standard traffic pattern and are descending from traffic pattern altitude. The accident risk level is considered to be moderate to high within the ITZ zones encompassing approximately seven percent of general aviation aircraft accidents. The maximum non-residential intensity allowed within the ITZ is 100 persons per acre. The project activities are not included in the list of prohibited uses, and therefore would be compliant with the airport land use plan.

Although the project is an appropriate activity as established by the airport land use plan, there is a moderate to high accident risk near the airport and within the project footprint. Therefore, the Construction Contractor shall ensure that all crew members are following construction BMPs related to hearing protection. Therefore, project construction will expose crews to excessive noise, but with proper hearing protecting, impacts would be less than significant.

Operation of the project would not involve any tall structures, as the force main would be constructed largely below-grade and at ground level. Therefore, there would be no operational impacts associated with this project involving an airport land use plan.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact With Mitigation. The City of Half Moon Bay's Safety Element of the General Plan contains policy 6-1.46 Police and Fire Services. This policy states that there must be coordination with the San Mateo County Sheriff's Department and the Coastside Fire Protection District to ensure that police and fire staff and facilities are maintained to provide adequate and timely response to all emergencies. Project construction will occur along SR-1, which is the main major roadway in the area. Therefore, coordination with both agencies will be required to develop a traffic control plan (Mitigation Measure TR-1) to be implemented by the Construction Contractor to ensure emergency response times remain adequate.

Construction staging will not interfere with any nearby roadways, and project-related construction vehicles and equipment shall only be parked onsite. During construction, the project will generate additional traffic associated with workers mobilizing daily at the site. Equipment will be transported to the project site. Grading and construction will be in continuous phases; equipment and vehicles can be parked onsite, and no off-site parking will be required. Therefore, with implementation of Mitigation Measure TR-1 (refer to Section 5.17, Transportation), impacts to local plans would be less than significant with mitigation.

g) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less Than Significant Impact With Mitigation Incorporated. CalFire manages significant fire hazards in the state through its Fire and Resources Assessment Program (FRAP). These maps place areas of the state into different fire hazard severity zones (FHSZ) based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses. As part of this mapping system, land where CalFire is responsible for wildland fire protection and generally located in unincorporated areas is classified as a State Responsibility Area (SRA). Where local fire protection agencies are responsible, the land is classified as a Local Responsibility Area (LRA).

The project is located almost entirely within an LRA with the highest designation being a Very High Fire Hazard Zone (VHFHZ), with a small portion of the project being adjacent to an SRA designated as a Moderate Fire Hazard Zone (MFHZ). The project will not involve the installation or maintenance of a structure that is typically associated with fire risk. The project will involve the use of construction equipment that could spark a fire in grassland areas designated as VHFHZ and MFHZ. Therefore, the Construction Contractor will be required to implement Mitigation Measure WF-1, Fire Protection Plan (refer to Section 5.20, Wildfire), to reduce risks. With mitigation, the risk of loss due to wildfires caused by project construction

would be less than significant.

5.10 Hydrology / Water Quality

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater 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?			✓	
	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) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less Than Significant Impact. The project involves the construction of a sewer force main that traverses the communities of Half Moon Bay, Miramar, El Granada, and Moss Beach in the County of San Mateo. Construction activities associated with the project will include minor earth-disturbing activities (i.e., cut and fill, vegetation removal, grading, trenching, excavation, and movement of soil) that could expose disturbed areas and stockpiled soils to winter rainfall and stormwater runoff. Areas of exposed or stockpiled soils could also be subject to wind or water erosion.

A SWPPP will be prepared prior to issuance of grading permits and implemented during all ground-disturbing activities. The SWPPP will include BMPs to prevent discharge of polluted runoff from the project site to storm drains and surface waterways, and to prevent wind and water erosion from preconstruction through construction site restoration activities.

During project construction, Construction Contractors will be required to comply with federal, state, and local requirements and guidelines to minimize the potential for polluted stormwater runoff, including NPDES General Permit CA0038598 (Order R2-2023-0002) issued as SAM as discharger for Stormwater Discharges Associated with Construction and Land Disturbance Activities, and each applicable jurisdiction's Municipal Separate Storm Sewer System (MS4) permit.

Following construction of the project, the site will be returned to the pre-construction state. Adherence to construction BMPs and the various regulatory requirements governing construction, the project would not violate any applicable water quality standards or otherwise degrade water quality. Therefore, impacts would be less than significant.

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

Less Than Significant Impact. The project is located in the Half Moon Bay Terrace Groundwater Basin (CDWR 2014). The project will not result in the construction of new impervious surfaces that would prevent water from infiltrating into the groundwater. In addition, the project will not include development that would increase water demand in the area surrounding the project site. As such, the project would not substantially deplete groundwater supplies or interfere with groundwater recharge. Impacts would be less than significant.

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?

Less Than Significant Impact. Construction of the project could temporarily alter the existing drainage patterns surrounding the sewer force main trench. Excavated soils would be susceptible to water and wind erosion. Implementation of the SWPPP during construction activities would minimize erosion of loose excavated soils. Upon completion of construction activities, the project alignment will be restored to existing conditions. As such, the project would not permanently alter the existing drainage pattern of the site resulting in substantial erosion or siltation. Impacts would be less than significant.

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

Less Than Significant Impact. Construction of the project could temporarily alter the existing drainage patterns surrounding the sewer force main trench. Upon completion of construction, the area will be restored to existing conditions. As such, the construction footprint would be small and would not significantly impact the rate or amount of surface water within the project site that could result in flooding on or off site. Therefore, impacts would be less than significant.

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?

Less Than Significant Impact. Construction of the proposed project will temporarily alter the existing drainage pattern surrounding the active project footprint. Upon completion of construction, the project site will be restored to existing conditions. As such, the project would not result in permanent changes to the drainage system that would create or contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems. Impacts would be less than significant.

iv) Impede or redirect flood flows?

No Impact. Construction of the proposed project will temporarily alter the existing drainage pattern surrounding the active project footprint. Upon completion of construction, the project site will be restored to existing conditions. As such, the proposed project would not result in permanent changes to the drainage system that would impede or redirect flood flows. No Impact would occur.

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

Less than Significant Impacts.

Flood Hazard

According to the Flood Insurance Rate Map (FIRM) No. 06081C0119F, the project site is located within a 0.2% Annual Chance Flood Hazard zone. However, as discussed above, once construction is completed there will be no change to the drainage pattern on the project site, the site will be restored to existing conditions, and the project would not exacerbate flooding hazards. Therefore, impacts would be less than significant.

Tsunami

A tsunami is a great sea wave, commonly referred to as a tidal wave, produced by a significant undersea disturbance such as tectonic displacement of a sea floor associated with large, shallow earthquakes. The project site is located as close as 0.35 miles to the Pacific Ocean and is within a Tsunami Hazard Zone. This project is replacing an old leaking sewer main, which is lowering the risks of pollutants entering the ocean or other entities. Therefore, impacts would be less than significant.

Seiche

A seiche is an oscillation of a body of water in an enclosed or semi-enclosed basin, such as a reservoir, harbor, lake, or storage tank. The project site is not in the vicinity of a reservoir, harbor, lake, or storage tank capable of creating a seiche. No impact would occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact. Refer to Section 3.10.2(a) and 3.10.2(b). The project will comply with applicable stormwater quality standards during short-term construction activities and appropriate BMPs will be implemented to address potential water quality impacts. As such, the project would not conflict with implementation of a water quality control plan or groundwater management plan. No impact would occur.

5.11 Land Use / Planning

Would the proposed project:					
Issues		**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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) Physically divide an established community?

Less Than Significant Impact. Factors that could physically divide a community include, but are not limited to:

- Construction of major highways or roadways;
- Construction of storm channels;
- Closing bridges or roadways; and
- Construction of utility transmission lines.

The key factor determining if a project would create a physical barrier that significantly changes the connectivity between community is to understand the extent to which persons would be separated from other areas of the community. The proposed project does not propose to construct major highways, storm channels, transmission lines, nor does the project propose to close a bridge or roadway. There is no established community, as the site and surrounding areas are either vacant or developed with existing residential, agricultural, airport, or commercial uses. The proposed project is the construction of a force main to replace an existing sewer main mostly within the Caltrans ROW on SR-1. Project construction will cause temporary delays along SR-1 that could impact access temporarily. However, the proposed project would not result in permanent changes to or interference with the existing vehicular, bicycle, or pedestrian transportation system or increase hazards for adjacent land uses during operations that would cause impacts. A less than significant impact would occur.

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?

Less Than Significant Impact. The project site's surrounding existing land use designation is Medium Density Residential, Airport, Open Space, and Agriculture. The project site's existing zoning designation is R-1 (One Family Residential District), S-17 (Residential Density District 17), DR (Design Review District), CD (Coastal Development District), M-1 (Light Industrial District), EG (Community Open Space Conservation District), and CCR (Coastside Commercial Recreation District).

The immediate surrounding area is primarily agricultural and developed, consisting of the Half Moon Bay Airport and residential properties. Surrounding uses include single-family homes, farmland, open space, and commercial. Land use designations surrounding the site include Medium Density Residential, Airport, Open Space, and Agriculture. Zoning designations surrounding the site include R-1 (One Family Residential District), S-17 (Residential Density District 17), DR (Design Review District), CD (Coastal Development District), M-1 (Light Industrial District), EG (Community Open Space Conservation District), and CCR (Coastside Commercial Recreation District).

The project will require construction within the Caltrans ROW and involves the replacement of an existing force main. Upon completion of construction activities, the project alignment will be restored to existing conditions. Therefore, no new activities will occur within the ROW, and no changes or conflicts to land use or zoning policies will take place. A less than significant impact would occur. Further, SAM would obtain the applicable permits to ensure the project does not conflict with an applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

5.12 Mineral Resources

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a)	Result in the loss of availability of a known mineral resource that would be a 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 in a local general plan, specific plan, or other land use plan?				✓

a) Result in the loss of the availability of a known mineral resource that would be of value to the region and the residents of the State?

No Impact. The Surface Mining and Reclamation Act of 1975 (SMARA) mandates a process for classification and designation of lands containing potentially important mineral deposits. SMARA requires the California Geological Survey State Geologist to classify specified areas in Mineral Resource Zones (MRZs). These MRZs are based on geological appraisals, which include the use of literature, geological maps, and publications and date from the CDOC Division of Mines and Geology, U.S. Geological Survey, the former US Bureau of Mines, and the US Bureau of Land Management.

An area can be classified as:

- MRZ-1: Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.
- MRZ-2: Areas where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood for their presence exists.
- MRZ-3: Areas containing mineral occurrences of undetermined mineral resource significance.
- MRZ-4: Areas where available information is inadequate for assignment to any other MRZ category

The area that encompasses the project and the western portion of San Mateo County is classified as MRZ-3 (Stinson et al., 1982).

The project site does not contain any known mineral resources, nor are there any mining activities occurring at the site or in the general vicinity of the site (San Mateo County, 2019). Implementation of the project would result in no impact to regionally important mineral resources.

b) Result in the loss of availability of a locally important mineral resource recovery site

delineated in a local general plan, specific plan, or other land use plan?

***No Impact*.** Refer to Impact 5.12(a) above. The common minerals around the project are sand and gravel. The project site does not contain any known mineral resources nor are there any mining activities occurring at the site or in the general vicinity of the site. Implementation of the project would result in no impact to locally important mineral resources.

5.13 Population / Housing

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a)	Induce substantial 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) Induce substantial 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)?

No Impact. A project could induce population growth in an area either directly through the development of new residences or businesses or indirectly by extending roads and other development infrastructure. The project is the construction of a force main to replace an existing sewer main mostly within the Caltrans ROW on SR-1, and the site will be restored to existing conditions. The proposed project would not result in permanent changes to or interference with the existing vehicular, bicycle, or pedestrian transportation system during operations. Furthermore, the project is not introducing any new homes or businesses or extending any roads or infrastructure and there would be no impact.

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

No Impact. As stated previously, the project is the construction of a force main to replace an existing sewer main mostly within the Caltrans ROW on SR-1, and the site will be restored to existing conditions. Therefore, project implementation would not displace any existing housing or people. No impact would occur.

5.14 Noise

Would the proposed project result in:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
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 ground-borne vibration or ground-borne 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?			✓	

Existing Noise Sources

The project site is located in a quiet rural area, where the majority of environmental noise is due to vehicular activity on SR-1 and aircraft engine noise generated from the Half Moon Bay Airport adjacent to the project site. Based on the *Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport* (September 2014), the project site is partially located within the 60 dBA CNEL noise contour of the airport, but not the 65, 70, or 75 dBA CNEL noise contours.

Sensitive Receptors

Human response to noise differs greatly based on the type of noise, the time of day, and the sensitivity of the receptor. Certain groups are more vulnerable to noise impacts than the general population. In California, land uses considered sensitive include schools, playgrounds, athletic fields, hospitals, rest homes, rehabilitation centers, and long-term or mental care facilities. Sensitive receptors are generally defined as locations where people (especially children, the elderly, and sick people) are present. Less noise-sensitive land uses include business, commercial, and professional areas. The least noise-sensitive uses include industrial, manufacturing, utility, agricultural, open space, undeveloped, parking, warehousing, and transit terminal areas, which often produce high noise levels. Moderately sensitive land uses typically consist of multi-family housing, hotels, motels, dormitories, and outpatient medical facilities. The closest sensitive receptors are multiple residential communities along SR-1 in Moss Beach and El Granada adjacent to the project site.

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?

***Less Than Significant Impact With Mitigation Incorporated*.**

Construction Impacts

Construction noise levels near the project site will vary based on the type, quantity, and duration of equipment use. The impact of construction noise depends on the specific construction activities underway, the noise levels they generate, the distance to nearby noise-sensitive receptors, and the existing ambient noise environment. Construction typically proceeds through several distinct phases, each involving different equipment with unique noise characteristics. As these phases progress, they change the overall noise environment at the project site and in the surrounding area throughout the construction period.

The project will be constructed over approximately 11 months, including construction mobilization, physical construction activities, and construction demobilization. Project construction will occur up to the property lines of the residences located along SR-1. However, due to their dimensions, heavy-duty construction equipment will not operate on the property lines of the residences and multiple pieces of construction equipment will not operate at the same location. As such, for the purpose of this analysis, construction noise levels were analyzed assuming construction equipment will operate at 10 feet from nearby sensitive receptors and will not operate simultaneously at the same location.

The noise levels from construction equipment to be utilized by the project are presented in **Table 5.7, Construction Noise Levels**. **Table 5.7** shows the reference maximum noise levels (L_{max}) at 50 feet from the source, the L_{max} at 10 feet from the source, and the equivalent noise levels (L_{eq}) at 10 feet from the source, which account for the acoustical use factor (i.e., percentage of time a piece of construction equipment operates at its maximum sound level). As shown in **Table 5.7**, construction noise levels would range from 90 to 97 dBA L_{eq} at the nearest sensitive receptors.

Table 5.77: Construction Noise Levels

Equipment	Acoustical Use Factor (%)	Reference Noise Level L_{max} at 50 Feet (dBA)	L_{max} at 10 Feet (dBA)[1]	L_{eq} at 10 Feet (dBA)[2]
Auger Drill Rig	20	85	99	92
Concrete Saw	20	90	104	97
Dozer	40	85	99	95
Drum Mixer	50	80	94	91
Excavator	40	85	99	95
Front End Loader	40	80	94	90
Man Lift	20	85	99	92
Roller	20	85	99	92
Tractor	40	84	98	94

Source: Federal Highway Administration, *Construction Noise Handbook*, August 2006.

Notes: L_{max} = maximum sound level; L_{eq} = equivalent sound level

1. Calculated using the following formula:
   $L_{max, D} = L_{max, ref} - 20 \text{ LOG } (D/50)$
   Where: $L_{max, D}$ = L_{max} adjusted for the distance; $L_{max, ref}$ = reference noise level; D = Distance from equipment to receptor
2. Calculated using the following formula:
   $L_{eq} = L_{max} + 10 \text{ LOG } (UF\%/100)$
   Where: UF% = acoustical use factor percentage

According to the County of San Mateo Municipal Code Chapter 4.88, Noise Control, Section 4.88.360, Exemptions, construction noise is exempt from the County's noise standards if construction activities occur between the hours of 7:00 A.M. and 6:00 P.M. weekdays and between 9:00 A.M. and 5:00 P.M. on Saturdays. Construction activities are prohibited at any time on Sundays, Thanksgiving, and Christmas. Project construction activities will mostly occur within the permitted hours outlined in Section 4.88.360 of the County's Municipal Code, while nighttime construction activities would occasionally be required by Caltrans. According to Section 4.88.380, Exemption, and Section 4.88.400 Variances—Authorization of the County's Municipal Code, nighttime construction activities would be exempt from the noise ordinance if a government agency determines it is for the good of the public and states in its contract, or the Planning Commission of the County of San Mateo, served as the Noise Board of Review, grants variances for exception.

Although there are no applicable construction noise thresholds set by the County, there are applicable thresholds found in other documents that can be used as a guideline. The National Institute for Occupational Safety and Health (NIOSH) identifies a noise level threshold based on the duration of exposure to the source. The construction-related noise level threshold starts at 85 dBA for more than eight hours per day, and for every 3-dBA increase, the exposure time is cut in half. For the purposes of this analysis, the lowest, most conservative construction noise level threshold of 85 dBA L_{eq} over a period of eight hours or more was used as an acceptable threshold for construction noise at the nearby sensitive receptor locations.

As shown in **Table 5.7**, construction noise levels would exceed 85 dBA L_{eq} at 10 feet from the source. However, it should be noted that construction activities will occur over approximately 11 months along approximately 13,540 linear feet of SR-1. As such, construction activities will only occur near each sensitive receptor for a few days. For the rest of the time, construction activities will be located further away from the receptors, resulting in significantly lower noise levels. In addition, proposed construction staging areas will be located at least 50 feet from property lines of sensitive receptors, which would reduce noise levels generated from construction equipment moving to and from the staging areas.

Nevertheless, as construction noise levels would potentially exceed the threshold established by NIOSH, implementation of Mitigation Measure NOI-1 will be required to reduce construction noise impacts. Mitigation Measure NOI-1 will require a Construction Noise Management plan to be prepared that includes construction noise control measures, including installing mufflers on equipment, directing equipment away from sensitive receptors, posting signage with contact information for complaints, designating noise disturbance coordinator, installing temporary noise barriers, and complying with the County's construction hours. Mitigation Measure NOI-1 will ensure construction noise levels would be reduced to below the threshold. As such, construction noise impact would be less than significant with mitigation incorporated.

Operational Impacts

The project will construct a sewer force main and only involve intermittent and infrequent maintenance and inspection of the sewer system during operation. Although vehicle trips would be generated due to maintenance and inspection staff traveling to and from the project site, such trips would be intermittent and infrequent, which would not cause a permanent significant increase in traffic noise levels. The project would not introduce new stationary sources to the project site. As such, noise impacts during project operation would be less than significant.

Mitigation Measures

NOI-1 **Construction Noise Management Plan**. Prior to issuance of grading permit, the Construction Contractor shall submit a Construction Noise Management Plan to the County of San Mateo Planning and Building Department that includes noise control measures to reduce construction noise impacts to nearby sensitive receptors. The Construction Noise Management Plan shall include the following measures:

- Construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards.
- Stationary construction equipment shall be placed so that emitted noise is directed away from the nearest sensitive receptors.
- For the duration of construction, SAM or Construction Contractor shall post a sign in a construction zone that includes contact information for individuals who desire to file a noise complaint.
- SAM shall designate a "noise disturbance coordinator" responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of any noise complaint (e.g., starting too early, bad muffler, etc.) and shall require that reasonable measures be implemented to correct the problem. A telephone number for the disturbance coordinator shall be posted at the construction site.
- Where necessary to meet the standard of 85 dBA L_{eq} for daytime construction affecting residential uses, erect temporary noise barriers at a height of 12 feet minimum to block the line-of-sight between construction equipment and receptors. Barriers shall be constructed with a solid material that has a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the barrier.
- Construction activities shall occur between the hours of 7:00 A.M. and 6:00 P.M. weekdays and between 9:00 A.M. and 5:00 P.M. on Saturdays. Construction activities shall not occur at any time on Sundays, Thanksgiving, and Christmas. Should construction activities occur outside of the permitted hours, the Construction Contractor shall obtain variances for exception from Planning Commission of the County of San Mateo prior to initiation of construction work, and the days and hours when such activities occur shall be stated in the construction contract.

b) Generation of excessive ground-borne vibration or ground-borne noise levels?

Less Than Significant Impact. Project construction can generate varying degrees of ground borne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings in the vicinity of a construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s).

The construction vibration assessment is based on the FTA guidance, which covers potential impacts on buildings and potential annoyance to building occupants. **Table 5.8, FTA Construction Vibration Damage Criteria**, shows FTA guidelines for vibration damage

criteria from construction activity. The thresholds are conservative to address the possibility of cosmetic effects that would occur at amplitudes well below that which causes structural damage. The table provides peak particle velocity (PPV) limits for four building categories. As the closest structures to the project site are engineered single-family residential buildings, the 0.3 inch per second (in/sec) PPV is used as the significance threshold.

Table 5.88: FTA Construction Vibration Damage Criteria

Building Type	PPV Threshold (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, Table 7-5, September 2018.

Project construction will occur up to the property lines of the residences located along SR-1. The residential buildings are located approximately 20 feet or more from the property lines along SR-1; as such, vibration levels are analyzed at 20 feet. The vibration levels from construction equipment to be utilized by the project are shown in **Table 5.9, Construction Vibration Levels**. As shown, construction vibration levels would not exceed 0.3 in/sec at the nearest structures. Construction vibration impacts would be less than significant.

Table 5.99: Construction Vibration Levels

Equipment	PPV at 25 feet (in/sec)	PPV at 20 feet (in/sec)[1]
Vibratory Roller	0.210	0.268
Large Bulldozer	0.089	0.114
Loaded Trucks	0.076	0.097
Small Bulldozer	0.003	0.004

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, Table 7-5, September 2018.

Notes:

1. Calculated using the following formula:

$PPV_d = PPV_{ref} \times (25/D)^{1.1}$

Where: PPV_d = PPV adjusted for the distance; PPV_{ref} = reference vibration level; D = Distance from equipment to receiving structure

Operation of the project would involve intermittent and infrequent maintenance and inspection of the sewer system, which would not generate long-term vibration levels. As such, operational vibration impacts would be less than significant.

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?

Less Than Significant Impact. The nearest airport to the project site is the Half Moon Bay Airport which is located adjacent to the west of the project site. Based on the *Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport* (September 2014), the project site is partially located within the 60 dBA CNEL noise contour of the airport, but not the 65, 70, or 75 dBA CNEL noise contours. However, the project will not introduce new sensitive receptors to the project site and workers will only intermittently and infrequently visit the project site for maintenance and inspection of the sewer system during operation. Additionally, the project site is not located within the vicinity of a private airstrip or related

facilities. Therefore, the project would not expose people residing or working in the project area to excessive noise levels, and impact would be less than significant.

5.15 Public Services

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a)	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 series:				
	i) Fire protection?			✓	
	ii) Police protection?			✓	
	iii) Schools?				✓
	iv) Parks?				✓
	v) Other public facilities?				✓

a) 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 series:

i) Fire protection?

Less Than Significant Impact. The Coastside Fire Protection District (CFPD) provides fire, rescue, and emergency services to the project area. The closest fire station to the project is Station #31, located approximately adjacent to the project site at 555 Obispo Road, El Granada, CA 94018. Implementation of the project will not increase population in the area, nor will it introduce any new government facilities involving fire protection. During construction, response times may be impacted due to construction on SR-1. Coordination with local fire departments will be required to ensure a proper transportation plan is established to minimize delays in response time. Additionally, the project will undergo review by the CFPD, which may result in changes to design or site-specific conditions or approval. As stated previously, the project involves the construction of a force main to replace an existing sewer main, and once construction is complete, the site will be restored to existing conditions with existing land uses. Therefore, impacts related to fire protection would be less than significant.

ii) Police protection?

Less Than Significant Impact. The Coastside Patrol Bureau (CPB) provides sheriff protection

services to the County and surrounding cities, while traffic enforcement services are provided by the California Highway Patrol (CHP). The nearest police station to the project is located in the community of Moss Beach at 500 California Avenue, towards the northern terminus of the project footprint.

Similar to fire protection services, implementation of the project will not increase population in the area, nor will it introduce any new government facilities related to police protection. Additionally, the project will undergo review by the CPB, which may result in changes to design or site-specific conditions or approval. As stated previously, the project involves the construction of a force main to replace an existing sewer main, and once construction is complete, the site will be restored to existing conditions with existing land uses. Therefore, impacts would be less than significant.

iii) Schools?

No Impact. The nearest schools to the project site are El Granada Middle School, Wilkinson School, and Picasso Preschool. All these schools are adjacent to SR-1 in the community of El Granada and are within 0.05 miles of the project. Implementation of the project will not increase population in the area, nor will it introduce any new government facilities including schools. As stated previously, the project involves the construction of a force main to replace an existing sewer main, and once construction is complete, the site will be restored to existing conditions with existing land uses. Therefore, there would be no impact to local schools.

iv) Parks?

No Impact. Implementation of the project will not alter existing parks or result in an increase in population that will require new or expanded park facilities. Nearby local parks include Princeton by the Sea Park approximately 0.25 miles from the project, and Moss Beach Park, also approximately 0.25 miles from the project. As stated previously, the project involves the construction of a force main to replace an existing sewer main, and once construction is complete, the site will be restored to existing conditions with existing land uses. Therefore, no impact would occur.

v) Other public facilities?

No Impact. Implementation of the project will not include any new housing, businesses, or other development that will require new or expanded other public facilities such as hospitals or libraries in the area surrounding the project. Therefore, no impact would occur.

5.16 Recreation

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a)	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)	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓

a) 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?

No Impact. Refer to Section 5.15 (iv). The project intends to replace an existing force main sewer line along SR-1 within the Caltrans ROW. As stated previously, the project involves the construction of a force main to replace an existing sewer main, and once construction is complete, the site will be restored to existing conditions with existing land uses. The project will not increase the use of existing neighborhood or regional parks, or other recreational facilities. There is not expected to be an increase of local population as a result of this project. Therefore, there would be no impact.

b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. Refer to Impact 5.16(a). The construction of recreational facilities is not proposed by the project. No impacts relative to recreational facilities would occur.

5.17 Transportation

Would the proposed project:					
	Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a)	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)	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) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less Than Significant Impact.

SR-1 is a north-south state highway which runs along most of the Pacific coastline of California. Near the project study area, the freeway has one northbound lane and one southbound lane with a posted speed limit of 50 miles per hour (mph).

There are other various exits that could be impacted by construction activities, these streets include:

- Virginia Avenue
- Vermont Avenue
- Lancaster Boulevard
- Terrace Avenue
- Cypress Avenue
- Marine Boulevard
- Coral Reef Avenue
- Capistrano Road
- Easements on private property
- Ellendale Street
- Airport Street

- Cornell Avenue
- California Avenue
- Broadway
- Prospect Way
- Avenue Alhambra

Each of these streets would likely see more traffic than normal during construction activities, as SR-1 will experience delays. The 2040 San Mateo County Traffic Plan (SMCTP) establishes various visions and goals for the local transportation systems. There are no specific goals or policies related to construction, or to SR-1.

Project implementation will require temporary partial lane closures within the project site. During project construction, vehicles will access the project site from existing roadways. Upon completion of construction of the force main, the project site will be restored to existing conditions with existing land uses. Due to the small construction footprint and continued roadway access within the project site, construction activities associated with the project would not conflict within any plans or ordinances addressing the circulation system. Impacts would be less than significant

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

No Impact. The project involves the construction of a force main to replace an existing sewer main, and once construction is complete, the site will be restored to existing conditions with existing land uses. As such, a level of service or vehicle miles traveled analysis was not performed because the proposed project would not result in a long-term effect on traffic flow, circulation, or traffic congestion. Therefore, the project would not conflict or be inconsistent with the State CEQA Guidelines Section 15064.3, subdivision (b). There would be no impact.

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

No Impact. During construction, temporary staging and work areas along project SR-1 and access roads will not include permanent features that will increase roadway hazards due to design or incompatible uses. Construction may include the presence of equipment, materials, or open trenches in public roadways. Although proposed construction activity would affect roadway functioning, such activity will be temporary and will not increase hazards or incompatible uses. Once in operation, the force main will not include above-ground appurtenances, such as vents and cleaning access within public roadways that would create a permanent hazard. The proposed project would not result in permanent changes to or interference with the existing vehicular, bicycle, or pedestrian transportation system or increase hazards or incompatible uses. Therefore, there would be no impact regarding hazards due to a design feature or incompatible use.

d) Result in inadequate emergency access?

Less Than Significant Impact With Mitigation. The project will be constructed within the Caltrans ROW on SR-1. Project construction would cause temporary delays along SR-1 that could impact emergency response times. Although no roadways will be completely closed during project construction, temporary lane closures will occur and construction-related vehicles and equipment could be present in these roadways and could adversely affect emergency access. Therefore, the Construction Contractor will be required to implement Mitigation Measure TR-1, Traffic Control Plan. With the implementation of Mitigation Measure

TR-1 and coordination with local emergency response agencies, impacts to emergency response access would be reduced to less than significant.

Mitigation Measures

TR-1 **Traffic Control Plan**. The Construction Contractor shall submit a project-specific Traffic Control Plan (TCP) 90 days prior to commencement of ground disturbing activities to the County of San Mateo Planning Manager and County of San Mateo Public Works Department (Engineering Division) for review and approval in consultation with the Coastside Fire Protection District (CFPD), as well as local police and all other impacted emergency response agencies. The TCP shall incorporate construction measures in order to ensure emergency response times and access along SR-1 and nearby impacted surface streets remain adequate.

5.18 Tribal Cultural Resources

Would the proposed project:

Issues	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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:				
i. 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)?			✓	
ii. 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.		✓		

California Assembly Bill 52 (AB 52) was enacted and expanded CEQA by establishing a formal consultation process for California tribes within the CEQA process. The bill specifies that any project may affect or cause a substantial adverse change in the significance of a tribal cultural resource will require a lead agency to "begin consultation with a California Native American tribe that is traditional and culturally affiliated with the geographic area of the proposed project." Section 21074 of AB 52 also defines a new category of resources under CEQA called "tribal cultural resources." Tribal cultural resources are defined as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" and is either listed on or eligible for the California Register of Historical Resources or a local historic register.

A Sacred Lands File search was requested from the NAHC and a response was received on August 8, 2025. The search results were positive for the Township 5 South, Range 6 West Section of the Half Moon Bay and

Montara Mountain quad maps, indicating that a tribal cultural resource was located within the proximity of the project area. Inquiry letters to tribal members on the contact list provided by the NAHC were sent out on August 8, 2025. These Native American Tribes include Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, Indian Canyon Mutsun Band of Costanoan, Costanoan Rumsen Carmel Tribe, Muwekma Ohlone Tribe of the SF Bay Area, The Ohlone Indian Tribe, and Wuksachi Indian Tribe/Eshom Valley Band. SAM is a Joint Powers Authority created by an agreement between the Granada Sanitary District, the Montara Sanitary District, and the City of Half Moon Bay in 1976. SAM is a public agency that provides wastewater treatment services and contract collection maintenance service for the City of Half Moon Bay and communities of El Granada, Miramar, Montara, Moss Beach and Princeton Harbor. As the lead agency under CEQA, SAM is required to complete the AB 52 process and consult with the pertinent Tribal stakeholders. SAM communications to meet its AB 52 obligations to the designated tribes included follow up emails to written correspondences and non-responses to distributed notices, direct telephone calls, and scheduled teleconference meetings with individual designated tribes via Microsoft Teams. Additional AB 52 consultation letters were sent to the same tribal members listed above on January 8, 2026. Currently, no responses from any known Native American Tribe in the project area have been provided, and formal AB 52 consultation is ongoing.

The information and analysis herein rely on the following investigations and collectively document the cultural resources and conditions of the project site:

- *Draft* Archaeological Phase I Survey Report SAM Force Main in Montara Replacement Project, Half Moon Bay and El Granada, San Mateo County, California (Cultural Resource Survey) prepared by EMC Planning Group, dated September 2025, provided as Appendix C1.

a) 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:

i) 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)?

Less Than Significant Impact. As detailed in Impact 5.5(a), a Sacred Lands File search was requested from the Native American Heritage Commission (NAHC) and a response was received on August 8, 2025. The search results were positive for the Township 5 South, Range 6 West Section of the Half Moon Bay and Montara Mountain quad maps, indicating that a Tribal Cultural Resource was located within or within the proximity of the project area. Inquiry letters to tribal members on the contact list provided by the NAHC were sent out on August 8, 2025. SAM is a Joint Powers Authority created by an agreement between the Granada Sanitary District, the Montara Sanitary District, and the City of Half Moon Bay in 1976. SAM is a public agency that provides wastewater treatment services and contract collection maintenance service for the City of Half Moon Bay and communities of El Granada, Miramar, Montara, Moss Beach and Princeton Harbor. As the lead agency under CEQA, SAM is required to complete the AB 52 process and consult with the pertinent Tribal stakeholders. SAM communications to meet its AB 52 obligations to the designated tribes included follow up emails to written correspondences and non-responses to distributed notices, direct telephone calls, and scheduled teleconference meetings with individual designated tribes via Microsoft Teams. The precolonial archaeological site, P-41-000203 would be avoided by the project and not impacted. No responses from any known Native American Tribe in the project area have been provided and no additional tribal cultural resource has been disclosed through consultation. Pending completion of the AB 52 consultations, impacts related to historic tribal cultural resources defined in Public Resources Code Section 5020.1(k) would be less than significant.

ii) 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.

Less Than Significant Impact With Mitigation Incorporated. In addition to correspondences previously submitted and in compliance with AB 52, the lead agency under CEQA distributed additional AB 52 consultation letters on January 8, 2026 notifying each tribe that requested to be on the agency's list for the purposes of AB 52 of the opportunity to consult with the agency regarding the proposed project. The agency communications to meet its AB 52 obligations to the designated tribes included follow up emails to written correspondences and non-responses to distributed notices, direct telephone calls, and scheduled teleconference meetings with individual designated tribes via Microsoft Teams. Currently, responses from any known Native American Tribe in the project area have not been provided.

The project's proposed ground disturbance activities could uncover previously undiscovered tribal cultural resources. Therefore, implementation of Mitigation Measures CR-1 and CR-2 will be required. Mitigation Measures CR-1 and CR-2 would ensure that in the event unknown cultural resources, including archaeological, tribal cultural resources, and human remains and associated funerary objects are discovered during ground-disturbing activities, appropriate measures are taken. Following implementation of Mitigation Measures CR-1, CR-2, CR-3, impacts to tribal cultural resources would be reduced to less than significant.

5.19 Utilities / Service Systems

Would the proposed project:				
Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Require or result in the relocation or construction of new or expanded water, or 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?			✓	
e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?			✓	

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

Less Than Significant Impact. The project will involve the construction of a sewer force main to replace the current sewer main. The project will provide adequate sewer capacity for current and planned land uses within the area surrounding the project. The sewer force main will be designed and constructed in accordance with applicable regulations. The project will be constructed largely in the same footprint as the existing force main, with minor changes to avoid ESAs. As other utility connections, such as water and electricity, may be affected during construction, the Construction Contractor will be required to coordinate with utility companies directly to ensure that any relocation or delay in service would occur in compliance with established standards. Therefore, impacts would be less than significant.

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

Less Than Significant Impact. The project will not require substantial water supply during or

after construction. Water needed for the project would be minimal and may include water used for dust control during construction. Existing municipal water supplies would be sufficient to accommodate the minor temporary and short-term water needs for the project, as the project would be restored to existing conditions with existing land uses and no water-generating land uses are proposed. Therefore, impacts would be less than significant.

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?

No Impact. The project will include installation of a sewer force main to support existing and proposed land uses in the area. The project would not result in new wastewater generating land uses. Therefore, no impact would occur.

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?

Less Than Significant Impact. Construction of the proposed project will generate solid waste in the form of construction and demolition debris that will need to be hauled off site and disposed of in a landfill by the Construction Contractor. Construction and demolition material will include asphalt and concrete removed from paved areas and concrete, metal, and plastic pipe sections. It is estimated that approximately 52,000 cubic yards will need to be excavated and removed for construction of the force main. All excavated material will be exported and disposed of at a permitted landfill in accordance with local and state solid waste disposal requirements. There are two state regulations that set standards for solid waste generation: AB 939 mandates 50 percent diversion of solid waste; and AB 341 mandates recycling programs to help reduce GHG emissions. Waste material may be hauled to the Ox Mountain Landfill, approximately 7.5 miles from the project site. The Ox Mountain Landfill has a remaining capacity of 22,180,000 cubic yards (CalRecycle) and has an expected closure in 2034. Therefore, the existing landfill would have sufficient capacity to accommodate construction debris from the proposed project.

Operation of the project is not anticipated to generate solid waste in the long-term. Therefore, solid waste generation would be limited to temporary construction activities and would not significantly affect available solid waste disposal capacity in the region. Therefore, impacts related to local infrastructure capacity would be less than significant.

e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact. Construction and operation of the proposed project will comply with local, state, and federal regulations related to solid waste. While operation of the project is not anticipated to generate a long-term solid waste stream, construction activities would create debris such as excavated soil and demolished concrete, asphalt, metal, and plastic. Construction Contractor(s) would be required to dispose of excess construction debris in accordance with existing reduction statutes (AB 939 and AB 341) and regulations, including 2022 CALGreen Code 4.408.1. These regulations would determine the landfill to be used for disposal of construction debris, mandate 65 percent diversion of solid waste (CALGreen Code 4.408.1), and mandate recycling programs to reduce GHG emissions (AB 341). Therefore, impacts related to compliance with local, state, and federal reduction statutes and regulations related to solid waste would be less than significant.

5.20 Wildfire

Would the proposed project:				
Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?		✓		
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) Substantially impair an adopted emergency response plan or emergency evacuation plan?

***Less Than Significant Impact With Mitigation Incorporated*.** CalFire manages significant fire hazards in the state through its Fire and Resources Assessment Program (FRAP). These maps place areas of the state into different fire hazard severity zones (FHSZ) based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses. As part of this mapping system, land where CalFire is responsible for wildland fire protection and generally located in unincorporated areas is classified as a State Responsibility Area (SRA). Where local fire protection agencies are responsible, the land is classified as a Local Responsibility Area (LRA).

The project is located almost entirely within an LRA with the highest designation being a Very High Fire Hazard Zone (VHFHZ), with a small portion of the project being adjacent to an SRA designated as a Moderate Fire Hazard Zone (MFHZ). The County of San Mateo has published materials related to evacuations and community preparedness. This project would not interfere with the strategies outlined in these published materials. However, due to the designation of a VHFHZ within the project's footprint, it is recommended that Mitigation Measure WF-1, Fire Protection Plan be established.

Additionally, the project is the construction of a force main to replace an existing sewer main mostly within the Caltrans ROW on SR-1, and the site will be restored to existing conditions. SR-1 is a major north-south highway for the communities near the project area, and SR 1 is expected to be used as an evacuation route in the event of an emergency. The project will be subject to San Mateo County's Emergency Operations Plan (EOP) (San Mateo County 2015). The EOP provides guidelines for emergency response planning, preparation, training, and execution throughout the county. Project construction will result in temporary and minor increases in construction-related traffic on SR-1. The Construction Contractor will prepare a traffic control plan (Mitigation Measure TR-1) to maintain the flow of traffic during construction and ensure accessibility through the locations along SR-1 for essential services and vehicles. In the event of such an emergency, the Construction Contractor will coordinate with local officials to ensure that SR-1 remains open to emergency traffic.

Therefore, with implementation of Mitigation Measures TR-1 and WF-1, the project would not substantially impair an adopted emergency response plan or emergency evacuation plan during construction or operation. This impact would be reduced to a less than significant impact.

Mitigation Measures

WF-1 **Fire Protection Plan**. The Construction Contractor shall submit a project-specific Fire Protection Plan (FPP) 90 days prior to commencement of ground disturbing activities to the County of San Mateo Planning Manager and County of San Mateo Public Works Department (Engineering Division) for review and approval in consultation with the Coastside Fire Protection District (CFPD). The FPP shall incorporate construction and operational (design) standards pertaining to access, water system, and fuel modification requirements to reduce the threat of wildfires, and other elements necessary to comply with County and CFPD regulations. All fire protection measures and features identified in FPP shall be implemented in conjunction with development of the project, including but not limited to use of properly maintained equipment, restrictions on equipment use, establishment of defensible space, unobstructed horizontal clearance at access drives in accordance with fire codes, etc.

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?

Less Than Significant Impact With Mitigation Incorporated. The project is located almost entirely within an LRA with the highest designation being a VHFHZ, with a small portion of the project being adjacent to an SRA designated as a MFHZ. The project itself is located almost entirely within the Caltrans ROW, with some of the project traversing ESAs. Project operation would not exacerbate wildfire risk, and once construction is complete, the site would be restored to existing conditions. However, because the construction equipment could pose a fire risk in grassland areas designated as VHFHZ and MFHZ, the Construction Contractor would be required to implement Mitigation Measure WF-1, Fire Protection Plan, to reduce risks. Therefore, impacts would be less than significant with mitigation.

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?

Less Than Significant Impact. The project is the construction of a force main to replace an existing sewer main mostly within the Caltrans ROW on SR-1, and the site will be restored

to existing conditions. The project would not result in permanent changes or impacts to or interference with the existing vehicular, bicycle, or pedestrian transportation system during operations. The project will not involve the installation or maintenance of infrastructure that is typically associated with fire risk, such as new roads, fuel breaks, emergency water sources, or power lines. The project will rely on existing roads for access during construction and operation and maintenance. Installation of the force main would occur within the Caltrans ROW. Therefore, impacts would be less than significant.

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?

***Less Than Significant Impact*.** The project will be located within the existing Caltrans ROW (SR-1) in a location with an existing force main. The replacement force main will be installed mostly below-grade. Also, overlying ground surfaces will be restored to pre-construction conditions, resulting in no permanent impacts on site drainage during operation. Construction of the project could temporarily alter the existing drainage patterns surrounding the sewer force main trench. However, the construction footprint would be small and would not significantly impact the rate or amount of surface water within the project site that could result in flooding on or off site. Therefore, impacts would be less than significant.

5.21 Mandatory Findings of Significance

Would the proposed project:				
Issues	**Potentially Significant Impact**	**Less Than Significant Impact with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a) Have the potential to 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, 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) 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) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		✓		

a) Have the potential to 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, 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?

Less Than Significant Impact With Mitigation Incorporated. As discussed in Section 5.4, *Biological Resources*, after implementation of Mitigation Measures BIO-1 through BIO-13, the project would result in less than significant impacts to biological resources. Similarly, as discussed in Sections 5.5, *Cultural Resources* and Section 5.7, *Geology and Soils*, after implementation of Mitigation Measures CR-1, CR-2, CR-3, GEO-1 and GEO-2, the project would result in less than significant impacts to human remains, archaeological resources, paleontological resources, and tribal cultural resources.

b) Have impacts that are individually limited, but cumulatively considerable?

***Less Than Significant Impact With Mitigation Incorporated*.** A significant impact may occur if a proposed project, in conjunction with related projects, would result in impacts that are less than significant when viewed separately, but would be significant when viewed together. As concluded in Sections 5.1 through 5.20, the proposed project would not result in any significant and unavoidable impacts in any environmental categories with implementation of project mitigation measures. Implementation of mitigation measures at the project-level would reduce the potential for the incremental effects of the project to be considerable when viewed in connection with the effects of past projects, current projects, or probable future projects. Project impacts would be less than significant with mitigation incorporated.

c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

***Less Than Significant Impact With Mitigation Incorporated*.** Previous sections of this Initial Study reviewed the project's potential impacts related to aesthetics, air quality, noise, hazards and hazardous materials, traffic, wildfire, and other issues. As concluded in these previous discussions, the project would not have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly, following conformance with the existing regulatory framework and mitigation measures identified. Further, as a replacement of an existing force main, project features would be designed to meet the needs of humans and are not anticipated to result in direct or indirect adverse effects. Impacts would be less than significant with mitigation incorporated.

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SAM Force Main in Montara Replacement Project

CalEEMod Detailed Report

SAM Force Main In Montara Replacement Project Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Montara Force Main
Construction Start Date	7/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.60
Precipitation (days)	41.0
Location	37.517369438546496, -122.50052617443396
County	San Mateo
City	Unincorporated
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1226
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.30

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Road Construction	2.60	Mile	1.09	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.26	2.65	23.9	28.5	0.05	0.79	2.17	2.97	0.73	0.99	1.72	—	5,158	5,158	0.27	0.14	2.15	5,208
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.26	2.65	24.0	28.4	0.05	0.79	2.17	2.97	0.73	0.99	1.72	—	5,141	5,141	0.27	0.15	0.06	5,192
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.12	0.91	8.26	9.79	0.02	0.28	0.77	1.05	0.26	0.35	0.61	—	1,763	1,763	0.09	0.05	0.30	1,780
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.20	0.17	1.51	1.79	< 0.005	0.05	0.14	0.19	0.05	0.06	0.11	—	292	292	0.01	0.01	0.05	295

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.26	2.65	23.9	28.5	0.05	0.79	2.17	2.97	0.73	0.99	1.72	—	5,158	5,158	0.27	0.14	2.15	5,208

2027	2.39	2.02	16.9	19.7	0.03	0.65	0.25	0.89	0.60	0.06	0.65	—	3,345	3,345	0.13	0.03	0.63	3,357
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.26	2.65	24.0	28.4	0.05	0.79	2.17	2.97	0.73	0.99	1.72	—	5,141	5,141	0.27	0.15	0.06	5,192
2027	3.13	2.55	23.2	28.1	0.05	0.72	2.17	2.89	0.67	0.99	1.66	—	5,119	5,119	0.26	0.14	0.05	5,167
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.12	0.91	8.26	9.79	0.02	0.28	0.77	1.05	0.26	0.35	0.61	—	1,763	1,763	0.09	0.05	0.30	1,780
2027	0.83	0.69	6.08	7.26	0.01	0.20	0.41	0.61	0.19	0.18	0.37	—	1,294	1,294	0.06	0.03	0.18	1,304
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.20	0.17	1.51	1.79	< 0.005	0.05	0.14	0.19	0.05	0.06	0.11	—	292	292	0.01	0.01	0.05	295
2027	0.15	0.13	1.11	1.32	< 0.005	0.04	0.07	0.11	0.03	0.03	0.07	—	214	214	0.01	< 0.005	0.03	216

3. Construction Emissions Details

3.1. Mobilization (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.21	1.86	17.0	19.9	0.03	0.66	—	0.66	0.61	—	0.61	—	3,310	3,310	0.13	0.03	—	3,321
Dust From Material Movement	—	—	—	—	—	—	1.70	1.70	—	0.88	0.88	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	1.07	1.26	< 0.005	0.04	—	0.04	0.04	—	0.04	—	209	209	0.01	< 0.005	—	209
Dust From Material Movement	—	—	—	—	—	—	0.11	0.11	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.23	< 0.005	0.01	—	0.01	0.01	—	0.01	—	34.5	34.5	< 0.005	< 0.005	—	34.7
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.05	0.79	0.00	0.00	0.23	0.23	0.00	0.05	0.05	—	222	222	< 0.005	< 0.005	0.66	223
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.2	28.2	< 0.005	< 0.005	0.07	29.6
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.02	13.4
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.78	1.78	< 0.005	< 0.005	< 0.005	1.86
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.19	2.19	< 0.005	< 0.005	< 0.005	2.23
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.29	0.29	< 0.005	< 0.005	< 0.005	0.31
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Force Main Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.05	2.55	22.9	26.7	0.04	0.79	—	0.79	0.72	—	0.72	—	4,209	4,209	0.17	0.03	—	4,223
Dust From Material Movement	—	—	—	—	—	—	1.71	1.71	—	0.88	0.88	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	3.05	2.55	22.9	26.7	0.04	0.79	—	0.79	0.72	—	0.72	—	4,209	4,209	0.17	0.03	—	4,223
Dust From Material Movement	—	—	—	—	—	—	1.71	1.71	—	0.88	0.88	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.91	0.76	6.86	8.00	0.01	0.24	—	0.24	0.22	—	0.22	—	1,260	1,260	0.05	0.01	—	1,264
Dust From Material Movement	—	—	—	—	—	—	0.51	0.51	—	0.26	0.26	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.17	0.14	1.25	1.46	< 0.005	0.04	—	0.04	0.04	—	0.04	—	209	209	0.01	< 0.005	—	209
Dust From Material Movement	—	—	—	—	—	—	0.09	0.09	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.07	1.08	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	303	303	< 0.005	< 0.005	0.90	304
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.11	0.01	0.95	0.67	< 0.005	0.01	0.16	0.16	0.01	0.04	0.05	—	647	647	0.09	0.10	1.25	681
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.08	0.08	1.00	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	286	286	0.01	0.01	0.02	290
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	0.01	1.00	0.67	< 0.005	0.01	0.16	0.16	0.01	0.04	0.05	—	647	647	0.09	0.10	0.03	679
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.29	0.00	0.00	0.09	0.09	0.00	0.02	0.02	—	85.9	85.9	< 0.005	< 0.005	0.12	87.1
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.03	< 0.005	0.29	0.20	< 0.005	< 0.005	0.05	0.05	< 0.005	0.01	0.01	—	194	194	0.03	0.03	0.16	204
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	14.2	14.2	< 0.005	< 0.005	0.02	14.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.05	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.1	32.1	< 0.005	0.01	0.03	33.7

3.5. Force Main Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.94	2.45	22.2	26.5	0.04	0.72	—	0.72	0.66	—	0.66	—	4,208	4,208	0.17	0.03	—	4,222

Dust From Material Movement	—	—	—	—	—	—	1.71	1.71	—	0.88	0.88	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.52	0.43	3.91	4.67	0.01	0.13	—	0.13	0.12	—	0.12	—	741	741	0.03	0.01	—	744
Dust From Material Movement	—	—	—	—	—	—	0.30	0.30	—	0.15	0.15	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.71	0.85	< 0.005	0.02	—	0.02	0.02	—	0.02	—	123	123	< 0.005	< 0.005	—	123
Dust From Material Movement	—	—	—	—	—	—	0.05	0.05	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.94	0.00	0.00	0.31	0.31	0.00	0.07	0.07	—	281	281	0.01	< 0.005	0.02	281

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.11	0.01	0.95	0.66	< 0.005	0.01	0.16	0.16	0.01	0.04	0.05	—	630	630	0.09	0.10	0.03	663
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.16	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49.6	49.6	< 0.005	< 0.005	0.06	49.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	< 0.005	0.16	0.12	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	111	111	0.02	0.02	0.09	117
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.21	8.21	< 0.005	< 0.005	0.01	8.24
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	18.4	18.4	< 0.005	< 0.005	0.01	19.3

3.7. Demobilization (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.33	1.96	16.9	18.9	0.03	0.65	—	0.65	0.60	—	0.60	—	3,108	3,108	0.13	0.03	—	3,118
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipm	0.27	0.23	1.99	2.23	< 0.005	0.08	—	0.08	0.07	—	0.07	—	366	366	0.01	< 0.005	—	367
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.36	0.41	< 0.005	0.01	—	0.01	0.01	—	0.01	—	60.6	60.6	< 0.005	< 0.005	—	60.8
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.04	0.81	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	238	238	< 0.005	< 0.005	0.63	239
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	26.5	26.5	< 0.005	< 0.005	0.03	26.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.39	4.39	< 0.005	< 0.005	0.01	4.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Mobilization	Linear, Grading & Excavation	7/1/2026	7/31/2026	5.00	23.0	—
Force Main Construction	Linear, Drainage, Utilities, & Sub-Grade	8/1/2026	3/31/2027	5.00	173	—
Demobilization	Linear, Paving	4/1/2027	5/31/2027	5.00	43.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Mobilization	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Mobilization	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Mobilization	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Mobilization	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Mobilization	Skid Steer Loaders	Diesel	Average	2.00	8.00	71.0	0.37
Mobilization	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37

Force Main Construction	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Force Main Construction	Cement and Mortar Mixers	Diesel	Average	2.00	8.00	10.0	0.56
Force Main Construction	Concrete/Industrial Saws	Diesel	Average	5.00	8.00	33.0	0.73
Force Main Construction	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Force Main Construction	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Force Main Construction	Rollers	Diesel	Average	1.00	8.00	36.0	0.38
Force Main Construction	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Force Main Construction	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Force Main Construction	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Demobilization	Excavators	Diesel	Average	5.00	8.00	36.0	0.38
Demobilization	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Demobilization	Rollers	Diesel	Average	3.00	8.00	36.0	0.38
Demobilization	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Demobilization	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Mobilization	—	—	—	—
Mobilization	Worker	27.5	11.7	LDA,LDT1,LDT2
Mobilization	Vendor	1.00	8.40	HHDT,MHDT

Mobilization	Hauling	0.00	20.0	HHDT
Mobilization	Onsite truck	—	—	HHDT
Force Main Construction	—	—	—	—
Force Main Construction	Worker	37.5	11.7	LDA,LDT1,LDT2
Force Main Construction	Vendor	0.00	8.40	HHDT,MHDT
Force Main Construction	Hauling	6.76	25.0	HHDT
Force Main Construction	Onsite truck	—	—	HHDT
Demobilization	—	—	—	—
Demobilization	Worker	30.0	11.7	LDA,LDT1,LDT2
Demobilization	Vendor	0.00	8.40	HHDT,MHDT
Demobilization	Hauling	0.00	20.0	HHDT
Demobilization	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Mobilization	—	—	1.09	0.00	—
Force Main Construction	3,925	5,426	0.37	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	3	74%	74%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Road Construction	1.09	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	8.54	annual days of extreme heat
Extreme Precipitation	6.90	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	14.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A

Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	7.52
AQ-PM	14.5
AQ-DPM	30.0
Drinking Water	48.2
Lead Risk Housing	23.7
Pesticides	82.8
Toxic Releases	28.0
Traffic	21.1
Effect Indicators	—
CleanUp Sites	46.1
Groundwater	30.9
Haz Waste Facilities/Generators	0.00
Impaired Water Bodies	23.9
Solid Waste	0.00
Sensitive Population	—
Asthma	38.6
Cardio-vascular	20.9
Low Birth Weights	60.1
Socioeconomic Factor Indicators	—
Education	14.8
Housing	42.3
Linguistic	0.00
Poverty	6.73
Unemployment	1.15

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	91.03041191
Employed	89.79853715
Median HI	83.63916335
Education	—
Bachelor's or higher	78.91697677
High school enrollment	100
Preschool enrollment	88.41267804
Transportation	—
Auto Access	43.87270627
Active commuting	72.95008341
Social	—
2-parent households	52.82946234
Voting	91.50519697
Neighborhood	—
Alcohol availability	59.74592583
Park access	35.26241499
Retail density	11.88245862
Supermarket access	2.399589375
Tree canopy	93.41716925
Housing	—
Homeownership	81.12408572
Housing habitability	44.70678814
Low-inc homeowner severe housing cost burden	43.85987425
Low-inc renter severe housing cost burden	88.29718979

Uncrowded housing	33.18362633
Health Outcomes	—
Insured adults	88.86179905
Arthritis	0.0
Asthma ER Admissions	65.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	54.6
Cognitively Disabled	26.7
Physically Disabled	29.8
Heart Attack ER Admissions	91.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	68.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	7.9
SLR Inundation Area	31.3

Children	71.1
Elderly	28.7
English Speaking	74.8
Foreign-born	17.8
Outdoor Workers	33.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	86.3
Traffic Density	2.3
Traffic Access	23.0
Other Indices	—
Hardship	23.7
Other Decision Support	—
2016 Voting	92.6

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	11.0
Healthy Places Index Score for Project Location (b)	90.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Per questionnaire
Construction: Off-Road Equipment	Per questionnaire
Construction: Trips and VMT	Hauling distance adjusted per questionnaire

SAM Force Main in Montara Replacement Project

Biological Assessment

Biological Assessment

SAM Force Main in Montara Replacement Project

San Mateo County, California

January 14, 2026

Prepared by

EMC Planning Group

BIOLOGICAL ASSESSMENT

SAM FORCE MAIN IN MONTARA REPLACEMENT PROJECT

SAN MATEO COUNTY, CALIFORNIA

PREPARED FOR

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Executive Summary

The purpose of this biological assessment is to review the proposed SAM Force Main in Montara Replacement Project to determine to what extent the proposed action may affect threatened or endangered species, species proposed for listing, or designated or proposed critical habitats. The analysis in this document focuses on the potential impacts of the project on biological resources within a biological survey area along the project alignment, and identifies measures to reduce or avoid these impacts. The analysis has been prepared pursuant to the National Environmental Policy Act, the federal and state Endangered Species Acts, and the California Environmental Quality Act.

The proposed project alignment is approximately 2.5 miles long and is located between the cities of Montara and El Granada, San Mateo County, California. The proposed project work includes the replacement of approximately 2.5 miles of the SAM Intertie Pipeline System (IPS) existing ductile iron pipe (DIP) force main. The installation method for the majority of the replacement force main is horizontal directional drilling in order to avoid sensitive natural communities coupled with open-cut trench installation where protected resources will not be affected.

Biological surveys were conducted in May 2025, June 2025, and July 2025, to evaluate the biological resources at the project site, including potential special-status plant and wildlife species and protected wetlands and wildlife habitat. The assessment also included a review of the *California Natural Diversity Database*, the official species list generated using the U.S. Fish and Wildlife Service's *Information Planning and Conservation System*, the California Native Plant Society *Rare Plant Inventory*, existing scientific literature, aerial photographs, technical background information, site plans, and policies applicable to projects located in San Mateo County.

Several plant communities occur within the project alignment including wetland, freshwater forested, coastal scrub, coastal prairie, closed cone forest, trees, annual grassland, ornamental, agriculture, wild strawberry as well as ruderal and developed areas. Denniston Creek, San Vicente Creek, Deer Creek, and other small intermittent unnamed drainages drain west towards the Pacific Ocean. A total of 22 aquatic features were documented within the biological study area (BSA).

Federally-listed California red-legged frog (*Rana draytonii*) larvae were observed within a wetland area adjacent to a drainage culvert within the southern portion of the project alignment during the biological survey in May 2025. The project alignment also has the potential to support federally-listed San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), steelhead (*Oncorhynchus mykiss irideus*),

and candidate species for federal listing monarch butterfly (*Danaus plexippus*). State-listed species which could be present on the project site include San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), candidate species for state listing western bumble bee (*Bombus occidentalis*), and nesting birds and raptors. In addition, the California Native Plant Society California Rare Plant Rank 1B.1 species, Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*) was documented within the biological survey area. Although not observed during focused surveys, this species has the potential to occur on the project alignment.

Potentially jurisdictional aquatic features in the form of freshwater forested and wetland habitats, streams, and drainage channels occur throughout the project alignment. Project impacts to wetlands or to areas within the ordinary high water mark of waters connected within a watershed may be regulated by the U.S. Army Corps of Engineers. Impacts to areas within the top of bank are regulated by the Regional Water Quality Control Board and impacts to riparian vegetation are regulated by the California Department of Fish and Wildlife.

For purposes of analyses under the California Environmental Quality Act, impacts to state-listed species have been determined to be less-than-significant with mitigation. For purposes of analyses under the National Environmental Policy Act, impacts as a result of the project may potentially adversely affect the federally-listed California red-legged frog and San Francisco garter snake. Consultation with U.S. Fish and Wildlife Service and California Department of Fish and Wildlife is recommended.

1.0 Introduction

1.1 Project Summary and Report Purpose

The goal of the proposed SAM Force Main in Montara Replacement Project is replacement of approximately 2.5 miles of the existing ductile iron pipe (DIP) which is a portion of the SAM Intertie Pipeline System (IPS)force main. The remaining DIP portion of the IPS is the Force Main in Montara (FMM) which is approaching the end of its service life. Replacement of this segment will prevent future failures and improve resilience of the overall sewer infrastructure.

The proposed scope of work consists of replacing approximately 13,395 linear feet of a combination of 12- and 14-inch DIP pipeline with high density polyethylene (HDPE) pipe, installing air release valves and vacuum release valves, and installing bypass stations. The recommended installation method for the majority of the FMM replacement is horizontal directional drilling (HDD) coupled with open-cut trench installation where necessary. In addition, to maintain operations during construction an aboveground pipeline will be placed along the pipeline route. The temporary pipeline will be placed within the construction corridor where open trenching is proposed, along the shoulder of State Route 1 in areas where HDD is proposed, and bored under public road crossings.

Report Purpose

The purpose of this biological assessment is to review the proposed SAM Force Main in Montara Replacement Project in sufficient detail to determine to what extent the proposed action may affect threatened or endangered species, species proposed for listing, or designated or proposed critical habitats. In addition, the following information is provided to comply with statutory requirements to use the best scientific information available when assessing the risks posed to listed and/or proposed species and designated and/or proposed critical habitat by proposed federal actions. This biological assessment is prepared in accordance with legal requirements set forth under regulations implementing the Endangered Species Act. This biological assessment addresses species listed by the U.S. Fish and Wildlife Service (USFWS) per the federal Endangered Species Act (FESA) and species listed by the California Department of Fish and Wildlife (CDFW) per the California Endangered Species Act (CESA).

The following federally-listed special-status species were identified with the potential to occur or are expected to occur on or in the project alignment and may be impacted by the proposed project:

- California red-legged frog (*Rana draytonii*), federally threatened, California Species of Special Concern;

- Monarch butterfly (*Danaus plexippus*), federal candidate species;
- San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), federally endangered, state endangered, state fully protected species; and
- Steelhead (*Oncorhynchus mykiss irideus*), federally threatened.

The following state-listed special-status species were identified with the potential to occur on or in the project alignment and may be impacted by the proposed project:

- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), California State Species of Special Concern;
- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), California State Species of Special Concern;
- Western bumble bee (*Bombus occidentalis*), state candidate endangered species; and
- Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*), CRPR 1B.1.

The action addressed within this document falls within critical habitat for the federally threatened steelhead, Figure 1-2, Aerial Photograph. Critical habitat for California red-legged frog is also located approximately 560 feet northeast of the biological survey area, Figure 1-2, Aerial Photograph.

1.2 Project Location

The proposed project alignment is approximately 2.5 miles long and is located between the cities of Montara and El Granada, San Mateo County, California, between the Pacific Ocean and the Santa Cruz Mountains. Figure 1-1, Project Location, shows Montara and El Granda and the project site in the regional setting of northwestern San Mateo County, approximately 16 miles from the San Francisco Bay. The project site is located along California State Route 1 (State Route 1) between Moss Beach and El Granada village. In this document the northern portion of the project alignment refers to the portion of the alignment nearest to Moss Beach, the central portion of the project alignment refers to the portion of the project alignment between Etheldore Street and Coral Reef Avenue, and the southern portion of the project alignment refers to the portion of the alignment closest to El Granada.

An aerial photograph showing existing conditions within the biological study area (BSA) is included as Figure 1-2, Aerial Photograph. The biological survey area is an approximately 250- to 430-foot buffer along the 2.5-mile pipeline and includes the proposed project alignment, temporary pipeline alignment, and staging and access areas. Representative site photographs are presented in Figure 1-3, Site Photographs, and Figure 1-4, Site Photographs. Appendix A, Site Plans, shows the proposed alignment and project design.

Source: ESRI 2025

Figure 1-1

Project Location Map

SAM Force Main in Montara Replacement Project Biological Assessment

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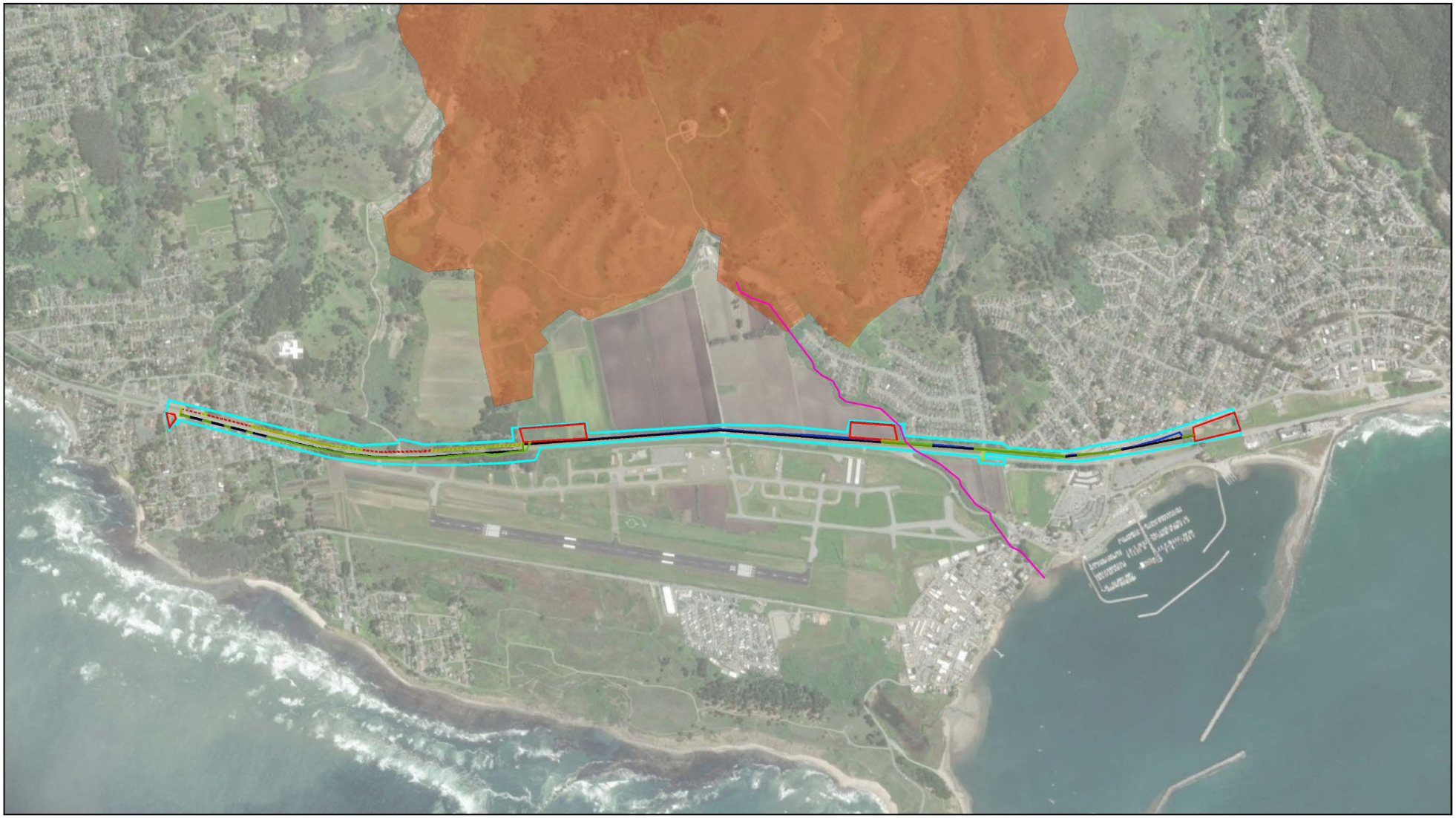

Source: ESRI 2025, MNS Engineers 2025, NOAA 2005, USFWS 2010

Figure 1-2

Aerial Photograph

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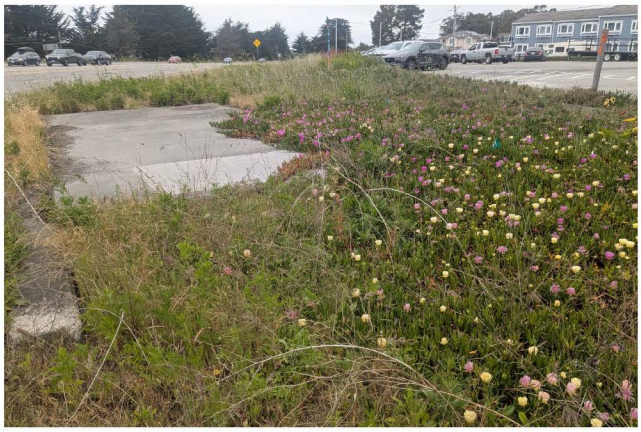

Photo 1. Ruderal habitat dominated by hottentot fig iceplant *(Carpobrotus edulis*) and annual grasses on the central portion of the project alignment.

Photo 2. Annual grassland on the central portion of the project alignment with mulch spread over vegetation.

Photo 3. Arroyo willow (*Salix lasiolepis*) adjacent to wetland habitat on the central portion of the project alignment.

Photo 4. Wetland habitat with standing water on the central portion of the project alignment.

Photo 5. Annual grassland habitat dominated by wild oat (*Avena* sp.) on the central portion of the project alignment.

Photo 6. Agricultural field on the east side of Highway 1.

Source: EMC Planning Group 2025

Figure 1-3

Site Photographs

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Photo 7. Coastal scrub habitat dominated by coyote brush (*Baccharis pilularis*) on the northern portion of the project alignment.

Photo 8. Regularly mowed annual grassland on the northern portion of the project alignment.

Photo 9. Monterey cypress trees (*Hesperocyparis macrocarpa*) planted on the northern portion of the project alignment.

Photo 10. Ruderal habitat dominated by non native species include wild mustard (*Brassica* sp.) on the northern portion of the project alignment on the west side of Highway 1.

Photo 11. Closed coned forest dominated by Monterey cypress and Monterey pine (*Pinus radiata*) on the central portion of the project alignment.

Photo 12. Annual grassland area with mulch spread over vegetation on the southern portion of the project alignment.

Source: EMC Planning Group 2025

Figure 1-4

Site Photographs

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1.3 Environmental Setting

The project site is located along the Central Coast of California near Half Moon Bay, within San Mateo County, California, approximately 20 miles south of San Francisco between the Pacific Ocean and the Santa Cruz Mountains. The environmental setting is shown on Figure 1-2, Aerial Photograph. The project site is mapped on the Montara Mountain U.S. Geological Survey (USGS) 7.5-minute quadrangle map with an approximate elevation between 49 and 120 feet above sea level (USGS 2025). This location is within the Central Coast Bioregion, a region of the state defined by coast redwoods (*Sequoia sempervirens*) and valley oaks (*Quercus lobata*). The Central Coast Bioregion represents exceptional biological diversity and natural beauty. Extending from the San Fracisco Bay south to northern Santa Barbara County, the bioregion is bounded on the west by the Pacific Ocean and on the east by the San Joaquin Valley, Carrizo Plain, and the interior Transverse Ranges. Across the bioregion's 15,000 square miles (nine percent of California's area), physical and biological processes, combined with time and human actions, have resulted in a broad range of ecosystems, each harboring distinct assemblages of plants and animals (Tietje, et al. 2019).

The project vicinity experiences a Mediterranean-type climate, which can be characterized as having cool, rainy winters and warm, rainless summers. Rainfall between the months of May and October is relatively rare. Moisture-bearing winter storms originate to the west and north over the Pacific Ocean bringing the greatest amount of rainfall in January, with an average monthly precipitation of 2.18 inches. Average annual precipitation is around 26.17 inches. Average maximum temperatures range from 58.4 degrees Fahrenheit in January to 66.8 degrees Fahrenheit in September. Average minimum temperatures range from 42.9 degrees Fahrenheit in January to 52.7 degrees Fahrenheit in August (Western Regional Climate Center, 2025).

1.4 Watershed

The U.S. Geological Survey (USGS) National Map identifies the study area within the "San Francisco Coastal South" 8-digit National Hydrography Dataset (NHD) Hydrologic Unit Code (HUC) watershed (18050006). More specifically, the study area lies in the HUC NHD 12-digit subwatershed "Denniston Creek-Frontal Pacific Ocean" (180500060205). Denniston Creek, San Vicente Creek, Deer Creek, and other small intermittent unnamed drainages drain to the Pacific Ocean within this watershed. A total of 22 areas aquatic features were documented within the project area. Further information regarding aquatic features can be found in the *SAM Force Main in Montara Replacement Project Aquatic Resources Delineation* (EMC Planning Group, 2026).

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2.0
Regulatory Setting

This section includes a summary of regulations for the protection of biological resources applicable to the project.

2.1 Federal Regulations

Endangered Species Act

The federal Endangered Species Act of 1973 protects species that the U.S. Fish and Wildlife Service has listed as Endangered or Threatened. Permits may be required from USFWS if activities associated with a proposed project would result in the "take" of a federally listed species or its habitat. Under the Act, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take. "Take" of a listed species is prohibited unless (1) a Section 10(a) permit has been issued by the USFWS or (2) an Incidental Take Statement has been obtained through formal consultation between a federal agency and the USFWS pursuant to Section 7 of the Act.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 prohibits killing, possessing, or trading in migratory birds, and protects the nesting activities of native birds including common species, except in accordance with certain regulations prescribed by the Secretary of the Interior. Over 1,000 native nesting bird species are currently protected under the federal law. This Act encompasses whole birds, parts of birds, bird nests, and eggs.

The U.S. Fish and Wildlife Service published a proposed rule to clarify prohibitions governing the "take" of birds under the Migratory Bird Treaty Act on February 3, 2020. This proposed rule clarifies that the scope of the Migratory Bird Treaty Act applies only to intentional injuring or killing of birds. Conduct that results in the unintentional (incidental) injury or death of migratory birds are not prohibited under the Act. On January 7, 2021, the final regulation defining the scope of the Migratory Bird Treaty Act was published in the Federal Register. The rule went into effect on February 8, 2021.

On October 4, 2021, the U.S. Fish and Wildlife Service published a final rule revoking the January 7, 2021, regulation that limited the scope of the Migratory Bird Treaty Act. With this final and formal revocation of the January 7 rule, the USFWS returns to implementing the Migratory Bird Treaty Act as prohibiting incidental take and applying enforcement discretion, consistent with judicial precedent and long-standing agency practice prior to 2017. This final rule went into effect on December 3, 2021.

Clean Water Act

Section 404 of the Clean Water Act of 1972 regulates the discharge of dredge and fill material into "Waters of the U.S.". "Waters of the U.S." are waters such as oceans, rivers, streams, lakes, ponds, and wetlands subject to U.S. Army Corps of Engineers (USACE) Regulatory Program jurisdiction under Section 404 of the Clean Water Act. Certain artificial drainage channels and wetlands have also been considered jurisdictional "Waters of the U.S."

The U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers are in receipt of the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency*. On August 29, 2023, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers issued a final ruling amending the regulatory definition of "waters of the United States" to conform with the *Sackett* decision.

The USACE determines the extent of its jurisdiction as defined by ordinary high-water marks on channel banks, wetland boundaries, and/or connectivity to a navigable water. Wetlands are habitats with soils that are intermittently or permanently saturated or inundated. The resulting anaerobic conditions naturally select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 *Corps of Engineers Wetlands Delineation Manual* and the 2008 *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).*

Activities that involve the discharge of fill into jurisdictional wetlands or waters are subject to the permit requirements of the USACE. Discharge permits are typically issued on the condition that the project proponent agrees to provide compensatory mitigation which results in no net loss of area, function, or value, either through wetland creation, restoration, or the purchase of credits through an approved mitigation bank. In addition to individual discharge permits, the USACE also issues nationwide permits applicable for certain activities.

Pursuant to the USACE Manuals, key criteria for determining the presence of wetlands are:

- The presence of inundated or saturated soil conditions resulting from permanent or periodic inundation by ground water or surface water; and
- A prevalence of vegetation typically adapted for life in saturated soil conditions (hydrophytic vegetation).

Explicit in the definition is the consideration of three environmental parameters: hydrology, soil, and vegetation. Positive wetland indicators of all three parameters are normally present in wetlands. The assessment of all three parameters in normal circumstances enhances the technical accuracy, consistency, and credibility of a wetland determination and is required per the USACE Manuals.

2.2 State Regulations

California Endangered Species Act

Pursuant to the California Endangered Species Act and Section 2081 of the California Fish and Game Code, an Incidental Take Permit from the California Department of Fish and Wildlife (CDFW) is required for projects that could result in the "take" of a state-listed Threatened or Endangered species. "Take" is defined under the Act as an activity that would directly or indirectly kill an individual of a species; "take" is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." If a proposed project would result in the "take" of a state-listed species, then a CDFW Incidental Take Permit, including the preparation of a species conservation plan, would be required.

California Coastal Act

California Coastal Act Section 30240 prohibits all development, including vegetation removal, excavation, grading, filling, and the construction of roads and structures, in and/or adjacent to any "environmentally sensitive area", which is defined in Section 30107.5 as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."

Section 30121 defines wetlands as "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." In further defining jurisdictional state waters under the Coastal Act, the California Coastal Commission (CCC) establishes a "one parameter" wetland definition that requires the presence of only a single wetland parameter (i.e., soils, vegetation and/or hydrology) as opposed to the three parameters required by the USACE jurisdictional wetland definition, to meet the jurisdictional wetland criteria. The single parameter rule in the Coastal Zone is primarily based on the hydric (i.e. wetland) soils definition, which states that a soil is considered hydric if it is ponded or remains saturated for a minimum period of seven consecutive days during the growing season. Any alteration of existing wetlands must comply with the regulations of the California Coastal Act, including implementation of mitigation measures as appropriate.

Finally, Section 30231 states that "the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams."

Specific California Coastal Act excerpts pertaining to coastal biological resources include:

> Section 30001: Legislative findings and declarations; ecological balance. The Legislature hereby finds and declares:
>
> (a) That the California coastal zone is a distinct and valuable natural resource of vital and enduring interest to all the people and exists as a delicately balanced ecosystem.
>
> (b) That the permanent protection of the state's natural and scenic resources is a paramount concern to present and future residents of the state and nation.
>
> (c) That to promote the public safety, health, and welfare, and to protect public and private property, wildlife, marine fisheries, and other ocean resources, and the natural environment, it is necessary to protect the ecological balance of the coastal zone and prevent its deterioration and destruction.
>
> (d) That existing developed uses, and future developments that are carefully planned and developed consistent with the policies of this division, are essential to the economic and social well-being of the people of this state and specially to working persons employed within the coastal zone.
>
> **Section 30116: Sensitive coastal resource areas. [abridged]** "Sensitive coastal resource areas" means those identifiable and geographically bounded land and water areas within the coastal zone of vital interest and sensitivity. "Sensitive coastal resource areas" include the following:
>
> (a) Special marine and land habitat areas, wetlands, lagoons, and estuaries as mapped and designated in Part 4 of the coastal plan.
>
> **Section 30231: Biological productivity; water quality.** The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30240: Environmentally sensitive habitat areas; adjacent developments.

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Nesting Birds and Birds of Prey

Sections 3505, 3503.5, and 3800 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, including their nests or eggs. Birds of prey (the orders Falconiformes and Strigiformes) are specifically protected under provisions of the California Fish and Game Code, Section 3503.5. This section of the Code establishes that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code. Disturbance that causes nest abandonment and/or loss of reproductive effort, such as construction during the bird nesting season, is considered "take" by the CDFW.

Streambed Alterations

The California Department of Fish and Wildlife has jurisdiction over the bed and bank of natural drainages according to provisions of Sections 1601 through 1603 of the California Fish and Game Code. Diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources and/or riparian vegetation are subject to CDFW regulations. Activities that would disturb these drainages are regulated by the CDFW; authorization is required in the form of a Streambed Alteration Agreement. Such an agreement typically stipulates certain measures that will protect the habitat values of the drainage in question.

California Porter-Cologne Water Quality Control Act

Under the California Porter-Cologne Water Quality Control Act, the applicable Regional Water Quality Control Board (RWQCB) may necessitate Waste Discharge Requirements for the fill or alteration of "Waters of the State," which according to California Water Code Section 13050 includes "any surface water or groundwater, including saline waters, within the boundaries of the state." The RWQCB may, therefore, necessitate Waste Discharge Requirements even if the affected waters are not under USACE jurisdiction. Also, under Section 401 of the Clean Water Act, any activity requiring a USACE Section 404 permit must also obtain a state Water Quality Certification (or waiver thereof) to ensure that the proposed activity will meet state water quality standards. The applicable state RWQCB is responsible for administering the water quality certification program and enforcing National Pollutant Discharge Elimination System permits.

California Environmental Quality Act (CEQA)

CEQA Guidelines Appendix G contains standards of significance to indicate that a project may have a significant effect on biological resources if it would:

- 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 CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

2.3 Regional/Local Regulations

San Mateo County Mid-Coast Land Use Plan (LCP)

The County LCP contains local legislation that is applicable to the proposed project:

General Policies

Section 7.3 Protection of Sensitive Habitats. (a)Prohibit any land use or development which would have significant adverse impact on sensitive habitat areas. (b) Development in areas adjacent to sensitive habitats shall be sited and designed to prevent impacts that could significantly degrade the sensitive habitats. All uses shall be compatible with the maintenance of biologic productivity of the habitats.

Section 7.4 Permitted Use in Sensitive Habitats. (a) Permit only resource dependent uses in sensitive habitats. Resource dependent uses for riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs and habitats supporting rare, endangered, and unique species shall be the uses permitted in Policies 7.9, 7.16, 7.23, 7.26, 7.30, 7.33, and 7.44, respectively, of the County Local

Coastal Program on March 25, 1986. (b) In sensitive habitats, require that all permitted uses comply with U.S. Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game requirements.

Section 7.5 Permit Conditions. (a) As part of the development review process, require the applicant to demonstrate that there will be no significant impact on sensitive habitats. When it is determined that significant impacts may occur, require the applicant to provide a report prepared by a qualified professional which provides: (1) mitigation measures which protect resources and comply with the policies of the Shoreline Access, Recreation/Visitor-Serving Facilities and Sensitive Habitats Components, and (2) a program for monitoring and evaluating the effectiveness of mitigation measures. Develop an appropriate program to inspect the adequacy of the applicant's mitigation measures. (b) When applicable, require as a condition of permit approval the restoration of damaged habitat(s) when in the judgment of the Planning Director restoration is partially or wholly feasible.

Riparian Corridors

Section 7.8 Designation of Riparian Corridors. Establish riparian corridors for all perennial and intermittent streams and lakes and other bodies of freshwater in the Coastal Zone. Designate those corridors shown on the Sensitive Habitats Map and any other riparian area meeting the definition of Policy 7.7 as sensitive habitats requiring protection, except for manmade irrigation ponds over 2,500 sq. ft. surface area.

Section 7.9 Permitted Uses in Riparian Corridors. (b) When no feasible or practicable alternative exists, permit the following uses: (1) stream dependent aquaculture, provided that non-stream dependent facilities locate outside of corridor, (2) flood control projects, including selective removal of riparian vegetation, where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, (3) bridges when supports are not in significant conflict with corridor resources, (4) pipelines, (5) repair or maintenance of roadways or road crossings, (6) logging operations which are limited to temporary skid trails, stream crossings, roads and landings in accordance with State and County timber harvesting regulations, and (7) agricultural uses, provided no existing riparian vegetation is removed, and no soil is allowed to enter stream channels.

Section 7.10 Performance Standards in Riparian Corridors. Require development permitted in corridors to: (1) minimize removal of vegetation, (2) minimize land exposure during construction and use temporary vegetation or mulching to protect critical areas, (3) minimize erosion, sedimentation, and runoff by appropriately grading and replanting modified areas, (4) use only adapted native or non-invasive exotic plant species when replanting, (5) provide sufficient passage for native and anadromous fish as specified by the State Department of Fish and Game, (6) minimize adverse effects of waste water discharges and entrainment, (7) prevent depletion of

groundwater supplies and substantial interference with surface and subsurface waterflows, (8) encourage waste water reclamation, (9) maintain natural vegetation buffer areas that protect riparian habitats, and (10) minimize alteration of natural streams.

Section 7.11 Establishment of Buffer Zones. (a) On both sides of riparian corridors, from the "limit of riparian vegetation" extend buffer zones 50 feet outward for perennial streams and 30 feet outward for intermittent streams. (b) Where no riparian vegetation exists along both sides of riparian corridors, extend buffer zones 50 feet from the predictable high water point for perennial streams and 30 feet from the midpoint of intermittent streams. (c) Along lakes, ponds, and other wet areas, extend buffer zones 100 feet from the high water point except for man-made ponds and reservoirs used for agricultural purposes for which no buffer zone is designated.

Section 7.12 Permitted Uses in Buffer Zones. Within buffer zones, permit only the following uses: (1) uses permitted in riparian corridors; (2) residential uses on existing legal building sites, set back 20 feet from the limit of riparian vegetation, only if no feasible alternative exists, and only if no other building site on the parcel exists; (3) on parcels designated on the LCP Land Use Plan Map: Agriculture, Open Space, or Timber Production, residential structures or impervious surfaces only if no feasible alternative exists; (4) crop growing and grazing consistent with Policy 7.9; (5) timbering in "streamside corridors" as defined and controlled by State and County regulations for timber harvesting; and (6) no new residential parcels shall be created whose only building site is in the buffer area.

Section 7.13 Performance Standards in Buffer Zones: Require uses permitted in buffer zones to: (1) minimize removal of vegetation; (2) conform to natural topography to minimize erosion potential; (3) make provisions (i.e., catch basins) to keep runoff and sedimentation from exceeding pre-development levels; (4) replant where appropriate with native and noninvasive exotics; (5) prevent discharge of toxic substances, such as fertilizers and pesticides; into the riparian corridor; (6) remove vegetation in or adjacent to man-made agricultural ponds if the life of the pond is endangered; (7) allow dredging in or adjacent to man-made ponds if the San Mateo County Resource Conservation District certified that siltation imperils continued use of the pond for agricultural water storage and supply; and (8) limit the sound emitted from motorized machinery to be kept to less than 45-dBA at any riparian buffer zone boundary except for farm machinery and motorboats.

Wetlands

Section 7.15 Designation of Wetlands. (a) Designate the following as wetlands requiring protection: Pescadero Marsh, Pillar Point Marsh (as delineated on Map 7.1), marshy areas at Tunitas Creek, San Gregorio Creek, Pomponio Creek and Gazos Creek, and any other wetland meeting the definition in Policy 7.14. (b) At the time a development application is submitted, consider modifying the boundary of Pillar Point Marsh (as delineated on Map 7.1) if a report by a qualified professional, selected jointly by the County and the applicant, can demonstrate that land within the boundary does not meet the definition of a wetland.

Section 7.16 Permitted Uses in Wetlands. Within wetlands, permit only the following uses: (1) nature education and research, (2) hunting, (3) fishing, (4) fish and wildlife management, (5) mosquito abatement through water management and biological controls; however, when determined to be ineffective, allow chemical controls which will not have a significant impact, (6) diking, dredging, and filling only as it serves to maintain existing dikes and an open channel at Pescadero Marsh, where such activity is necessary for the protection of pre-existing dwellings from flooding, or where such activity will enhance or restore the biological productivity of the marsh, (7) diking, dredging, and filling in any other wetland only if such activity serves to restore or enhance the biological productivity of the wetland, (8) dredging man-made reservoirs for agricultural water supply where wetlands may have formed, providing spoil disposal is planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation, and (9) incidental public service purposes, including, but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

Section 7.17 Performance Standards in Wetlands. Require that development permitted in wetlands minimize adverse impacts during and after construction. Specifically, require that: (1) all paths be elevated (catwalks) so as not to impede movement of water, (2) all construction takes place during daylight hours, (3) all outdoor lighting be kept at a distance away from the wetland sufficient not to affect the wildlife, (4) motorized machinery be kept to less than 45-dBA at the wetland boundary, except for farm machinery, (5) all construction which alters wetland vegetation be required to replace the vegetation to the satisfaction of the Planning Director including "no action" in order to allow for natural reestablishment, (6) no herbicides be used in wetlands unless specifically approved by the County Agricultural Commissioner and State Department of Fish and Game, and (7) all projects be reviewed by the State Department of Fish and Game and State Water Quality Board to determine appropriate mitigation measures.

Section 7.18 Establishment of Buffer Zones. Require that development permitted in wetlands minimize adverse impacts during and after construction. Specifically, require that: (1) all paths be elevated (catwalks) so as not to impede movement of water, (2) all construction takes place during daylight hours, (3) all outdoor lighting be kept at a distance away from the wetland sufficient not to affect the wildlife, (4) motorized machinery be kept to less than 45-dBA at the wetland boundary, except for farm machinery, (5) all construction which alters wetland vegetation be required to replace the vegetation to the satisfaction of the Planning Director including "no action" in order to allow for natural reestablishment, (6) no herbicides be used in wetlands unless specifically approved by the County Agricultural Commissioner and State Department of Fish and Game, and (7) all projects be reviewed by the State Department of Fish and Game and State Water Quality Board to determine appropriate mitigation measures.

Section 7.19 Permitted Uses in Buffer Zones. Buffer zones shall extend a minimum of 100 feet landward from the outermost line of wetland vegetation. This setback may be reduced to no less

than 50 feet only where: (1) no alternative development site or design is possible; and (2) adequacy of the alternative setback to protect wetland resources is conclusively demonstrated by a professional biologist to the satisfaction of the County and the State Department of Fish and Game. A larger setback shall be required as necessary to maintain the functional capacity of the wetland ecosystem.

Rare and Endangered Species

Section 7.32 Designation of Habitats of Rare and Endangered Species. Designate habitats of rare and endangered species to include, but not be limited to, those areas defined on the Sensitive Habitats Map for the Coastal Zone.

Section 7.33 Permit Uses. (b) If the critical habitat has been identified by the Federal Office of Endangered Species, permit only those uses deemed compatible by the U.S. Fish and Wildlife Service in accordance with the provisions of the Endangered Species Act of 1973, as amended.

Section 7.34 Permit Conditions. In addition to the conditions set forth in Policy 7.5, require, prior to permit issuance, that a qualified biologist prepare a report which defines the requirements of rare and endangered organisms. At minimum, require the report to:

a. Discuss: (1) Animal food, water, nesting or denning sites and reproduction, predation and migration requirements, and (2) Plants life histories and soils, climate and geographic requirements.
b. Include a map depicting the locations of plants or animals and/or their habitats.
c. Demonstrate that any development will not impact the functional capacity of the habitat.
d. Recommend mitigation if development is permitted within or adjacent to identified habitats.

Section 7.35 Preservation of Critical Habitat. Require preservation of all habitats of rare and endangered species using criteria including, but not limited to, Section 6325.2 (*Primary Fish and Wildlife Habitat Area Criteria*) and Section 6325.7 (*Primary Natural Vegetative Areas Criteria*) of the Resource Management Zoning District.

Section 7.36 San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*). (a) Prevent any development where there is known to be a riparian or wetland location for the San Francisco garter snake with the following exceptions: (1) existing man-made impoundments smaller than one-half acre in surface, and (2) existing man-made impoundments greater than one-half acre in surface providing mitigation measures are taken to prevent disruption of no more than one half of the snake's known habitat in that location in accordance with recommendations from the State Department of Fish and Game. (b) Require developers to make sufficiently detailed analyses of any construction which could impair the potential or existing migration routes of the San Francisco garter snake. Such analyses will determine appropriate mitigation measures to be taken to provide for appropriate migration corridors.

Section 7.37 San Francisco Tree Lupine Moth (*Graptholitha edwardsiana*). Prevent the loss of any large populations (more than 100 plants in a 1/10-acre area) of tree lupine within 1 mile of the coastline.

Section 7.38 Brackish Water Snail (*Tryonia imitator*). (a) Prevent any development which can have a deleterious effect on the California brackish water snail, including any dredging of its known or potential habitat.

Section 7.40 Globose Dune Beetle (*Coelus globosus*). (a) Assess, monitor, and contain the spread of dune grass.

Section 7.41 Rare Plant Search. Encourage a continued search for any rare plants known to have occurred in San Mateo County Coastal Zone but not recently seen. Such search can be done by various persons or groups concerned with such matters.

Section 7.42 Development Standards. Prevent any development on or within 50 feet of any rare plant population. When no feasible alternative exists, permit development if: (1) the site or a significant portion thereof is returned to a natural state to allow for the reestablishment of the plant, or (2) a new site is made available for the plant to inhabit.

Unique Species

Section 7.43 Designation of Habitats of Unique Species. Development Standards Prevent any development on or within 50 feet of any rare plant population. When no feasible alternative exists, permit development if: (1) the site or a significant portion thereof is returned to a natural state to allow for the reestablishment of the plant, or (2) a new site is made available for the plant to inhabit.

Section 7.44 Permitted Use. Permit only the following uses: (1) education and research, (2) hunting, fishing, pedestrian and equestrian trails that have no adverse impact on the species or its habitat, and (3) fish and wildlife management to the degree specified by existing governmental regulations.

Section 7.45 Permit Conditions. Permit only the following uses: (1) education and research, (2) hunting, fishing, pedestrian and equestrian trails that have no adverse impact on the species or its habitat, and (3) fish and wildlife management to the degree specified by existing governmental regulations.

Section 7.46 Preservation of Habitats. Require preservation of critical habitats using criteria including, but not limited to, Section 6325.2 (*Primary Fish and Wildlife Habitat Area Criteria*) and Section 6325.7 (*Primary Natural Vegetative Areas Criteria*) of the Resource Management Zoning District.

Section 7.48 Monterey Pine (*Pinus radiata*) (a) Require any development to keep to a minimum the number of native Monterey pine cut in the natural pine habitat near the San Mateo-Santa Cruz County line. (b) Allow the commercial cutting of Monterey pine if it: (1) perpetuates the long-term viability of stands, (2) prevents environmental degradation, and (3) protects the viewshed within the Cabrillo Highway Scenic Corridor. (c) To preserve the productivity of prime agricultural soils, encourage the control of invasive Monterey pine onto the soils.

Section 7.49 California Wild Strawberry (*Fragaria californica*) Require any development, within one-half mile of the coast, to mitigate against the destruction of any California wild strawberry in one of the following ways: (a) Prevent any development, trampling, or other destructive activity which would destroy the plant; or (b) After determining specifically if the plants involved are of particular value, successfully transplant them or have them successfully transplanted to some other suitable site. Determination of the importance of the plants can only be made by a professional doing work in strawberry breeding.

Section 7.50 Champion Monterey Cypress (*Cupressus macrocarpa*). Declare the Champion Monterey Cypress Tree a Class I Heritage Tree.

Weedy, Undesirable Plants

Section 7.52 Public Agency Requirements. Require public agencies, to the point feasible, to remove the undesirable pampas grass and French, Scotch, and other invasive brooms from their lands.

San Mateo County Code of Ordinance

Tree and Natural Resource Protection of San Mateo County (Ordinance No. 4895).

8.400.060 – Protected Trees. Trees protected by this ordinance are:

1. Any tree 12.1 inches in diameter (38 inches circumference) or larger when measured 4.5 feet (54 inches) above natural grade.
2. The following indigenous species shall be considered protected when they meet or exceed the minimum size as specified in Table 1:
3. Heritage Trees designated by the Board of Supervisors.
4. Any tree that was required by the County to be planted as a replacement tree, or protected trees retained by the terms and conditions of a development application, building permit, subdivision approval, tree removal, or code enforcement action.
5. A community of trees.
6. Any tree designated for carbon sequestration and storage and/or environmental mitigation purposes as identified in a permit or agreement between the property owner and a responsible government agency, where the County is a party or a third party beneficiary, or recorded as a deed restriction.

Table 1 Protected Indigenous Trees

Botanical Name	Common Name	Minimum Trunk Diameter (measured at 4.5 feet above natural ground height)
Acer macrophylum	Bigleaf Maple	10 inches
Acer negundo	California Box Elder	10 inches
Alnus rhombifolia	White Alder	Six inches or larger within riparian corridors
Arbutus menziesii	Pacific madrone	10 inches
Chrysolepis chrysophylla	California Buckeye	10 inches
Aesculus californica	Golden Chinquapin	10 inches
Fraxinus latifolia	Oregon Ash	10 inches
Hesperocyparis abramsiana	Santa Cruz Cypress	10 inches
Platanus racemosa	California Sycamore	10 inches
Populus fremontii	Fremont Cottonwood	Six inches or larger within riparian corridors
Pseudotsuga menziesii	Douglas fir	18 inches
Quercus agrifolia	Coast live oak	10 inches
Quercus chrysolepis	Canyon live oak	10 inches
Quercus douglasii	Blue oak	10 inches
Quercus parvula var. shrevei	Shreve Oak	10 inches
Quercus garryana	Oregon white oak	Any Size
Quercus kellogii	Black oak	10 inches
Quercus lobata	Valley oak	10 inches
Quercus wislizenii	Interior live oak	10 inches
Salix lasiolepis, Salix laevigata, Salix lasiandra, Salix sitchensis	Willow	Any size in riparian corridors; six inch or larger "trunks" outside riparian corridors
Sequoia sempervirens	Redwood	18 inches
Torreya californica	California nutmeg	10 inches

8.400.090 - Tree Removal in the Resource Management/Coastal Zone (RM/CZ), Planned Agricultural (PAD) and Timberland Preserve/Coastal Zone (TPZ/CZ) Districts. In the RM/CZ and PAD Districts located within the urban area of the Midcoast, or in the RM/CZ, PAD and TPZ/CZ Districts within any County or State Scenic Corridor as identified in the San Mateo County General Plan or Local Coastal Program, a Protected Tree Removal permit or an Expedited Tree Removal permit shall be required for the removal of one or more Protected Trees in accordance with this ordinance, unless one of the Exemptions in Section 8.400.100: Permit Exemptions applies. In the RM/CZ and PAD Districts located outside the urban area of the Midcoast, or in the RM/CZ, PAD, or TPZ/CZ Districts outside any County or State Scenic Corridor, no permit is required in accordance with this ordinance for the removal of one or more

Protected Trees. An RM/CZ, TPZ/CZ, PAD and/or a Coastal Development Permit may be required when tree removal is proposed as part of a development project, when any tree 55 inches in circumference or larger is proposed for removal, or when tree removal constitutes major removal or harvesting of vegetation other than for agricultural purposes, pursuant to the RM/CZ, PAD and TPZ/CZ and Coastal Development (CD) District Regulations.

8.400.100 - Permit Exemptions. 7. Tree removal or pruning by a California Public Utilities Commission licensed utility in order to maintain required clearance around power lines or pipelines.

8.400.110- Permit Required. Except as provided in Section 8.400.100: Permit Exemptions, a permit from the San Mateo County Planning and Building Department shall be required under this ordinance as follows:

1. A Protected Tree Removal permit shall be required to remove or effectively remove, one or more protected trees on public or private property or within a public or private right-of-way. An Expedited Tree Removal permit- may instead be granted if the tree meets the conditions described in Section 8.400.130: Expedited Tree Removal Permits Requirements.

A Protected Tree Pruning Permit shall be required for:

a. Tree pruning where the cut would result in the removal of a live branch (or trunk of a multi-trunk tree) that is 6 inches in diameter (19 inches circumference) or greater at the point of the cut for all Protected Indigenous Trees

b. Tree pruning of any oak tree (Quercus spp.) that is 30 inches in diameter (94 inches circumference) or greater in urban areas outside the Coastal Zone c. Tree pruning of any Heritage Tree.

For requirements specific to Specified Bayside Design Review Districts, RM, RM/CZ, PAD, TPZ and TPZ/CZ Districts, refer to Sections 8.400.080 and 8.400.090.

8.400.150 - Required Findings for Permit Approval. The Director of Planning and Building shall approve a Protected Tree Removal Permit or Pruning Permit only after determining that the relevant findings based on the applicable Review Criteria can be made.

Tree Removal with Development or Subdivisions. Findings a-e must be made, and at least two of findings f-k must be made.

a. The proposed removal complies with the Migratory Bird Treaty Act (16 U.S.C. § 703 et seq.) and the California Fish and Game Code (§ 3513). Specifically, the project will avoid any actions that could result in the 'take' of migratory birds, their nests, or eggs.

b. The removal proposal includes a tree replacement planting proposal that conforms to the replanting requirements of this ordinance.

c. There is no feasible alternative building site on the parcel for or configuration of a house, commercial structure, parking lot, driveway, or accessory dwelling unit that enables preservation of the tree. The applicant has maximized redesign opportunities to avoid or minimize tree removal, and trees and other vegetative land cover are proposed for removal only where necessary for the construction of structures or necessary paved areas. Denial of authorization to remove a tree in this case would cause a violation of a state housing law.

d. In the case of Single-Family development, the retention of the protected tree would result in reduction of the otherwise-permissible building envelope by more than twenty-five (25) percent, or creates an unusual hardship for the property owner by severely limiting the use of the property in a manner not typically experienced by owners of similarly situated properties, and the applicant has demonstrated to the satisfaction of the Director of Planning and Building that there are no reasonable alternatives to preserve the tree, or that such alternatives would have the effect of authorizing permanent structures not compatible or harmonious with other development in the vicinity.

e. No more than 50% of the property's tree canopy would be lost.

f. The tree is in severe decline and diseased, or remedial treatments or corrective practices that would facilitate saving the tree are not feasible, as determined by the arborist report.

g. The tree is a Hazard Tree or otherwise a public nuisance which cannot be corrected through remedial measures.

h. The tree is suppressing or is suppressed by the growth and development of an adjacent protected tree of higher value, and removal of the tree will create improved growing conditions for the suppressed tree(s) to thrive.

i. The tree is causing damage to existing infrastructure (including foundation, driveway or eaves) of a residence, commercial, or accessory structure and there are no reasonable solutions adapt or relocate the infrastructure to accommodate for the tree.

j. The tree has, or will imminently, interfere with utility services where such interference cannot be controlled or remedied through reasonable modification, relocation or repair of the utility service or the pruning of the root or branch structure of the tree; or where removal or pruning is required by a public utility to comply with California Public Utility Commission (CPUC) or Federal Energy Regulatory Commission (FERC) rules or regulations.

k. The removal of the tree is necessary to repair a geologic hazard.

8.400.160 - Required Replacement Planting

1. Number and Species of Replacement Tree(s) Required. All Protected Tree Removal Permits shall require the planting of one or more replacement trees as a condition of approval, consistent with the following standards:

a. One (1) or more replacement trees, shall be planted on the subject private property. The number of replacement trees required shall be as prescribed in Table 2 Tree Replacement Standard.

b. The Replacement Tree(s) shall be a species selected from the County's Protected Tree Replacement Species List, suited to the available planting location, proximity to structures, overhead clearances, soil type, compatibility with surrounding canopy, and other relevant factors.

c. Removed Protected Indigenous trees shall be replaced with the same species unless the Director of Planning and Building determines that another indigenous or other tree species is more appropriate. Considerations for non-indigenous tree replacement shall include the site's carrying capacity for additional trees, risk of known or potential future pest and disease threats, an indigenous replacement tree that would threaten the health and safety of the property owner or immediate neighbors. If the tree removed is infested or diseased, then trees not susceptible to the disease or pest should be planted.

d. Trees listed in Section 8.400.130: Expedited Tree Removal Permit Requirements, may not be planted as replacement plantings anywhere in the County.

Table 2 Tree Replacement Standard

Canopy Size of Removed Tree	Replacement Requirement	Replacement Requirement with Development
Up to 25 feet	One 15-gallon tree (1.5-inch caliper)	One 24-inch box tree (2-inch caliper)
25 feet to 40 feet	Two 15-gallon trees (1.5-inch caliper)	Two 24-inch box trees (2-inch caliper)

8.400.180 - Conditions of Approval. In granting any permit as provided herein, the Director of Planning and Building may attach reasonable conditions to ensure compliance with the intent and purpose of this ordinance including, but not limited to:

1. Use of measures to effect erosion control, soil and water retention and diversion or control of increased flow of surface waters.
2. Use of measures to ensure that the contemplated action will not have adverse environmental effects relating to sensitive habitats, protected wildlife, shade, noise buffers, wind protection, air pollution, and historic features. In the event an active nest is found, this may include the postponement of activities until nests are no longer active.
3. Other conditions as necessary to implement the provisions of this ordinance, including Replacement Planting per Section 8.400.160: Required Replacement Planting.

4. The tree removal will not have adverse effects on erosion, soil retention, water retention, and diversion or increased flow of surface water.
5. The tree proposed for removal is not in a sensitive habitat as defined in the County's General Plan, Local Coastal Program, or Habitat Conservation Plans.

City of Half Moon Bay Code of Ordinances

City of Half Moon Bay Heritage Tree Ordinance. Chapter 7.40 of the City of Half Moon Bay's Municipal Code establishes "a process for protecting and preserving trees on public and private property designated by this chapter as heritage trees, while recognizing the interests of property owners to develop, maintain, and enjoy private property."

A heritage tree (defined below) cannot be removed or pruned more than one-third of the branches or roots within a twelve-month period without obtaining a permit in accordance with the requirements of this chapter.

A heritage tree is means:

A. A tree located on public or private property, exclusive of eucalyptus, with a trunk diameter of twelve inches or more, or a circumference of at least thirty-eight inches measured at forty-eight inches above ground level.

B. A tree or stand of trees so designated by resolution of the city council based on its finding of special historical, environmental or aesthetic value, including a resolution adopted under former Chapter 12.16.

C. A tree located within the public right-of-way along the entire length of Main Street or along Kelly Avenue between San Benito Street and Highway 1 (State Route 1).

Any person removing a heritage tree pursuant to a permit issued under this chapter shall replace such tree on a one-for-one basis with a minimum size twenty-four-inch-box specimen tree of a species and in a location approved by the city manager or his or her designee.

City of Half Moon Bay Storm Water Management and Discharge Control Ordinance. Chapter 13.15 of the City of Half Moon Bay's Municipal Code aims to "ensure health, safety, and general welfare of city citizens by:

A. Eliminating non-storm water discharge to the municipal separate storm sewer;

B. Controlling the discharge to municipal separate storm sewers from spills, dumping, or disposal of materials other than storm water; and

C. Reducing pollutants in storm water discharges to the maximum extent practicable.

The intent of this ordinance is to protect and enhance the water quality of our watercourses, water bodies, and wetlands in a manner pursuant to and consistent with the Clean Water Act."

Additional biological resources protection measures provided in the ordinance are as follows:

> Any person engaged in activities which will or may result in pollutants entering the city storm sewer system shall undertake all practicable measures to reduce such pollutants.
>
> Littering. No person shall throw, deposit, leave, maintain, keep or permit to be thrown, deposited, placed, left or maintained, any refuse, rubbish, garbage or other discarded or abandoned objects, articles and accumulations, in or upon any street, alley, sidewalk, storm drain inlet, catch basin, conduit or other drainage structures, business place, or upon any public or private lot of land in the city, so that the same might be or become a pollutant, except in containers or in lawfully established dumping grounds. No person shall throw or deposit litter in any fountain, pond, lake, stream, or any other body of water in a park or elsewhere within the city.
>
> Any construction contractor performing work in the city shall endeavor, whenever possible, to provide filter materials at the catch basin to retain any debris and dirt flowing in to the city's storm sewer system. City may establish controls on the volume and rate of storm water runoff from new developments and redevelopments as may be appropriate to minimize the discharge and transport of pollutants.
>
> Every person owning property through which a watercourse passes, or such person's lessee or tenant, shall keep and maintain that part of the watercourse within the property reasonably free of trash, debris, excessive vegetation and other obstacles which would pollute, contaminate or significantly retard the flow of water through the watercourse; shall maintain existing privately owned structures within a watercourse so that such structures will not become a hazard to the use, function or physical integrity of the watercourse; and shall not remove healthy bank vegetation beyond that actually necessary for said maintenance, nor remove said vegetation in such a manner as to increase the vulnerability of the watercourse to erosion.

3.0 Methods

This section of the report includes a summary of the methods used in the biological survey and analysis.

3.1 Background Research

Prior to the field survey, aerial photographs, natural resource database accounts, and other relevant scientific literature were reviewed. This included searching the USFWS *Information for Planning and Conservation (IPaC)* list of threatened and endangered species (Appendix C, USFWS 2025a), USFWS *National Wetland Inventory* (USFWS 2025b), California Department of Fish and Wildlife (CDFW) *California Natural Diversity Database* (Appendix D, CDFW 2025a), and California Native Plant Society (CNPS) *Rare Plant Inventory* (Appendix E, CNPS 2025) to identify special-status plants, wildlife, and habitats known to occur in the vicinity of the project site. Special-status species in this report are those listed as Endangered, Threatened, or Rare, or as Candidates for listing by the USFWS and/or CDFW; as Species of Special Concern or Fully Protected species by the CDFW; or as Rare Plant Rank 1B or 2B species by the CNPS.

A search of the CDFW's *California Natural Diversity Database* was conducted for the Hunters Point, San Francisco South, Half Moon Bay, San Mateo, Woodside, and Montara Mountain USGS quadrangles in order to evaluate potentially occurring special-status plant and wildlife species in the project vicinity (Appendix D, CDFW 2025a, 2025b). Records of occurrence for special-status plants were reviewed for those same USGS quadrangles in the CNPS Inventory of Rare and Endangered Plants (Appendix E, CNPS 2025). An official U.S. Fish and Wildlife Service list of threatened and endangered species that may occur in the proposed project location or may be affected by the proposed project was generated using the IPaC project planning database (Appendix C, USFWS 2025a).

3.2 Field Survey

EMC Planning Group associate biologists Rose Ashbach, M.S., and Kimiya Ghadiri conducted reconnaissance-level biological surveys, protocol-level botanical surveys, and aquatic resource delineations within the Biological Survey Area (Figure 1-2) on May 23, and June 25, 2025. Associate biologist Rose Ashbach, M.S., also conducted a reconnaissance-level biological and protocol-level

botanical surveys on May 2 and July 11, 2025. All species observed were recorded in field notes, along with information on plant communities and wildlife habitats. Qualitative observations of plant cover, structure, and species composition were used to determine plant communities and wildlife habitats. Plant species were identified in the field or collected for subsequent identification. Searches for reptiles and amphibians were performed by overturning and then replacing rocks and debris, as well as assessment of potentially suitable habitat areas found on the site. Birds were identified by visual and/or auditory recognition; mammals were identified by diagnostic signs (including scat and tracks).

4.0
Existing Biological Conditions

This section of the report documents the biological resources observed during the field survey.

4.1 Plant Communities

A plant community is an assemblage of plant species that co-occur in an area and are linked by their interactions with each other and their environment. Different communities are defined by their growth forms and species composition. Plant community composition is driven by factors such as soil type, topography, climate, and human disturbance. The project area contains several plant communities -- wetland, freshwater forested, coastal scrub, coastal prairie, closed cone forest, trees, annual grassland, ornamental, agriculture, and wild strawberry, as shown on Figures 4-1 through 4-4, Habitat Map Segments 1-4.

Wetland

Several wetlands occur throughout the project area. These areas consist of emergent wetland vegetation and/or standing water. While the wetland features within the project area are variable, several wetland features that connect to drainages or culverts contain canopies dominated by arroyo willow (*Salix lasiolepis*), sitka willow (*Salix sitchensis*), Monterey cypress (*Hesperocyparis macrocarpa*), and dogwood (*Cornus sericea*). The streambeds in these areas are largely scoured of vegetation due to standing and seasonally moving water, but support species such as California blackberry (*Rubus ursinus*), water parsley (*Oenanthe sarmentosa*), English ivy (*Hedera helix*), spreading rush (*Juncus patens*), *Carex* spp., harding grass (*Phalaris aquatica*), sorrel (*Rumex* spp.), watercress (*Nasturtium officinale*), dotted smartweed (*Persicaria punctata*), and common bedstraw (*Galium aparine*).

Other wetland features include depressions in grassland areas that contain emergent wetland vegetation. These areas do not contain a canopy of shrubs or trees, but are dominated by several herbaceous species that can occur within wetlands, including spreading rush, California blackberry, California aster (*Symphyotrichum chilense*), seaside barley (*Hordeum marinum*), rabbitsfoot grass (*Polypogon monspeliensis*), hyssop loosestrife (*Lythrum hyssopifolia*), tall flatsedge (*Cyperus eragrostis*), and dotted smartweed. These areas are regularly mowed and heavily disturbed due to their proximity to major roadways.

Wetland areas dominated by arroyo willow thickets, a sensitive natural community. Arroyo willow thickets are characterized by either greater than 50 percent arroyo willow relative cover, greater than

or equal to 25 percent arroyo willow absolute cover in the shrub or tree canopy, or greater than 50 percent arroyo willow relative cover in the shrub canopy, or 30 percent relative cover with blackberry (*Rubus* spp.) or coyote brush (*Baccharis pilularis*).

Freshwater Forested/Riparian Forest

Densely vegetated freshwater forested and riparian forest areas within the BSA are primarily dominated by arroyo willow and sitka willow. Other species, such as dogwood may be found in the canopy. The thick canopy cover limits the presence of smaller herbaceous plants, although species such as English ivy, California blackberry, cape ivy (*Delairea odorata*), and California aster, among other, may be present.

Freshwater forested areas are considered arroyo willow thickets, the sensitive natural community. Arroyo willow thickets are characterized by either greater than 50 percent arroyo willow relative cover, greater than or equal to 25 percent arroyo willow absolute cover in the shrub or tree canopy, or greater than 50 percent arroyo willow relative cover in the shrub canopy, or 30 percent relative cover with blackberry or coyote brush.

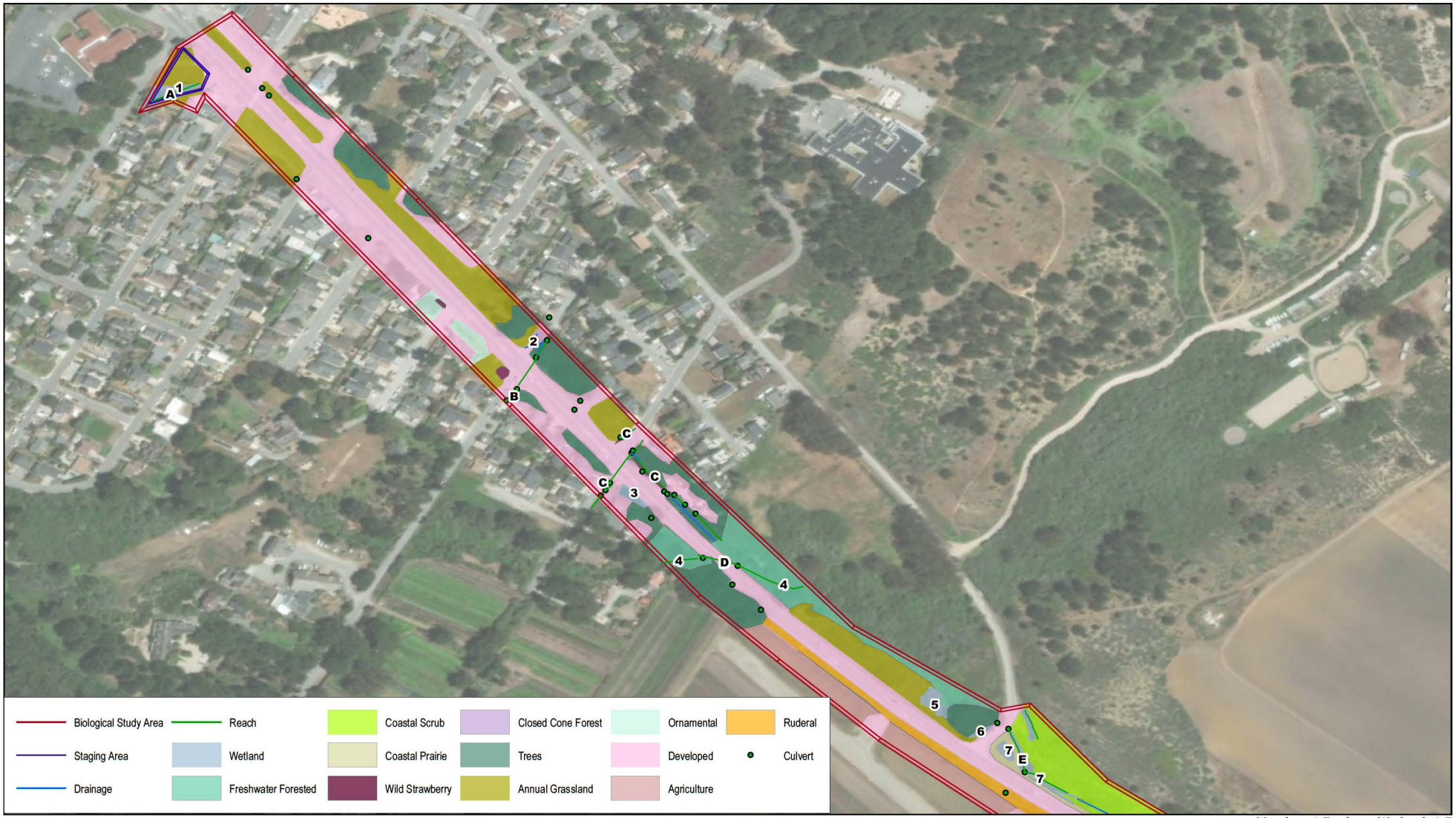
Coastal Scrub

Coastal scrub areas occur within the northern portion of the project alignment. These areas are dominated by native shrubs and herbaceous plants, including sticky monkey-flower (*Diplacus aurantiacus*), California sagebrush (*Artemisia californica*), coyote brush, California blackberry, blue eyed grass (*Sisyrinchium bellum*), coffeeberry (*Frangula californica*), yerba buena (*Clinopodium douglasii*), common yarrow (*Achillea millefolium*), California aster, and California bee plant (*Scrophularia californica*). Non-native species that occur in this area include fennel (*Foeniculum vulgare*).

Potions of coastal scrub found within the BSA are considered "bush monkey-flower scrub", a sensitive natural community characterized by greater than 50 percent sticky monkey-flower relative cover if equal to or less than California sagebrush. The remaining portions of coastal scrub habitat within the BSA is considered "California sagebrush scrub", a sensitive natural community characterized by either greater than 60 percent California sagebrush in the shrub canopy or with sticky monkey-flower sometimes at 30 percent relative cover.

Coastal Prairie

Coastal prairie within the BSA occurs adjacent to wetlands, annual grasslands, and developed major roadways. These areas are regularly mowed and are subject to disturbance given their proximity to major roadways. These areas are co-dominated by native meadow barley (*Hordeum brachyantherum*) and non-native grasses, including English rye grass (*Lolium perenne*), *Vulpia* sp., and oat (*Avena* sp.). Other species that that occur within the coastal prairie habitat include sedges (*Carex* spp.), narrow leaved clover (*Trifolium angustifolium*), iris leaved rush (*Juncus xiphioides*), blue flax (*Linum lewisii*), and sorrel (*Rumex* sp).



Numbers 1-7 refer to Wetlands 1-7
Letters A-E refer to Reach A-E
Source: ESRI 2025, EMC Planning Group 2025

Figure 4-1
Habitat Map Segment 1

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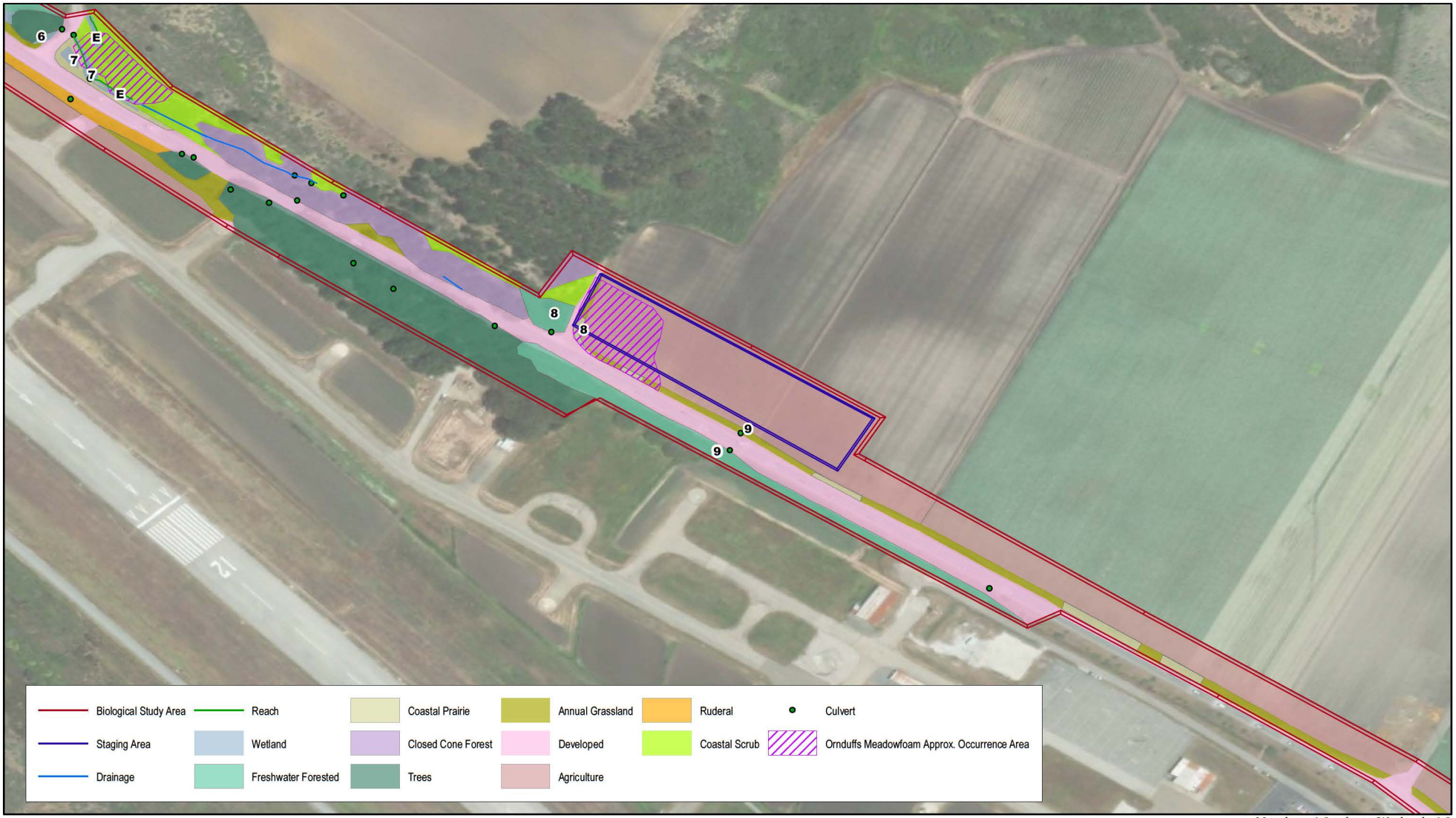

Numbers 6-9 refer to Wetlands 6-9
Letters E refer to Reach E
Source: ESRI 2025, EMC Planning Group 2025, CalFlora 2025

Figure 4-2
Habitat Map Segment 2

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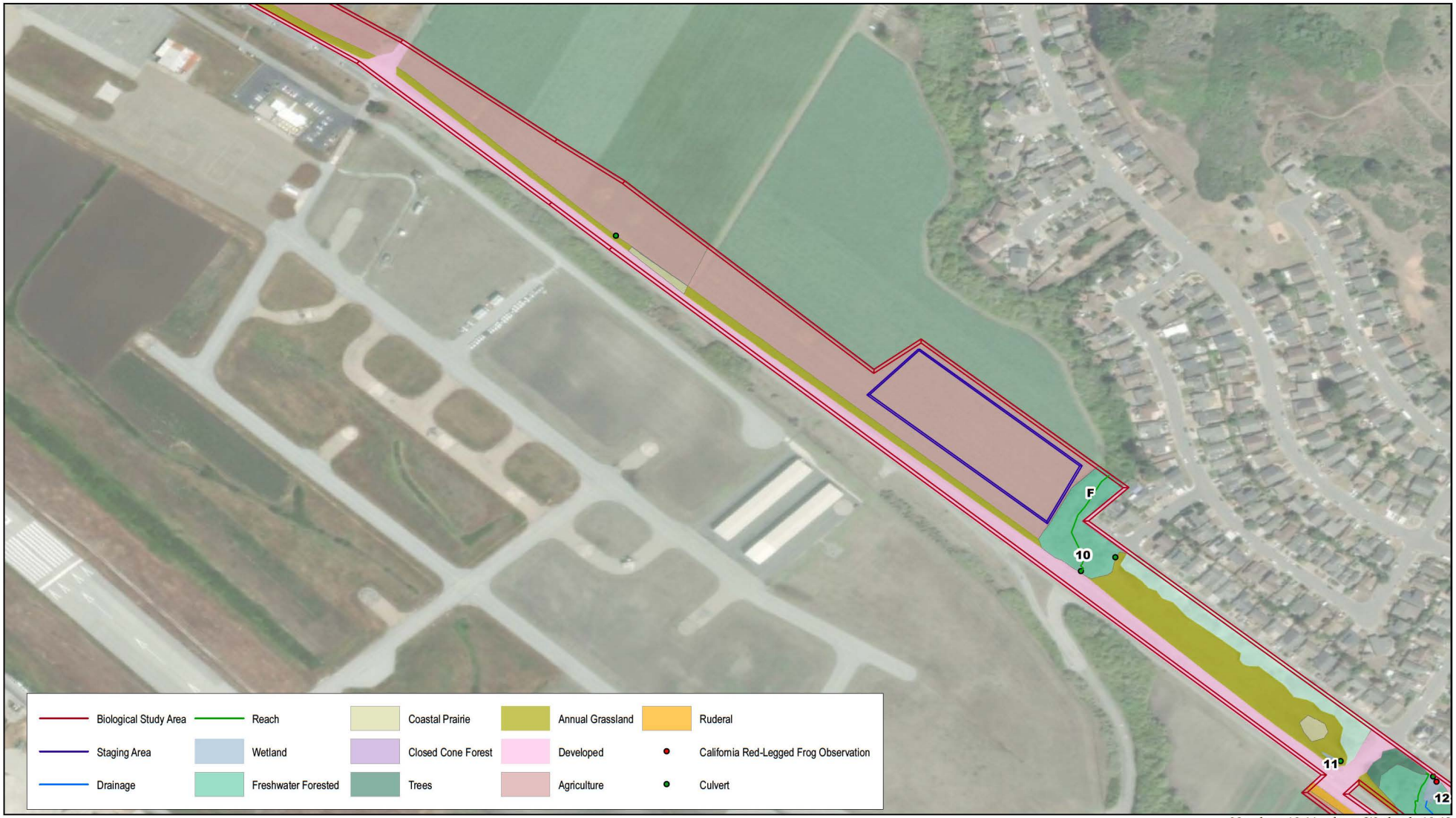

Numbers 10-14 refer to Wetlands 10-12
Letters F refer to Reach F
Source: ESRI 2025, EMC Planning Group 2025

Figure 4-3
Habitat Map Segment 3

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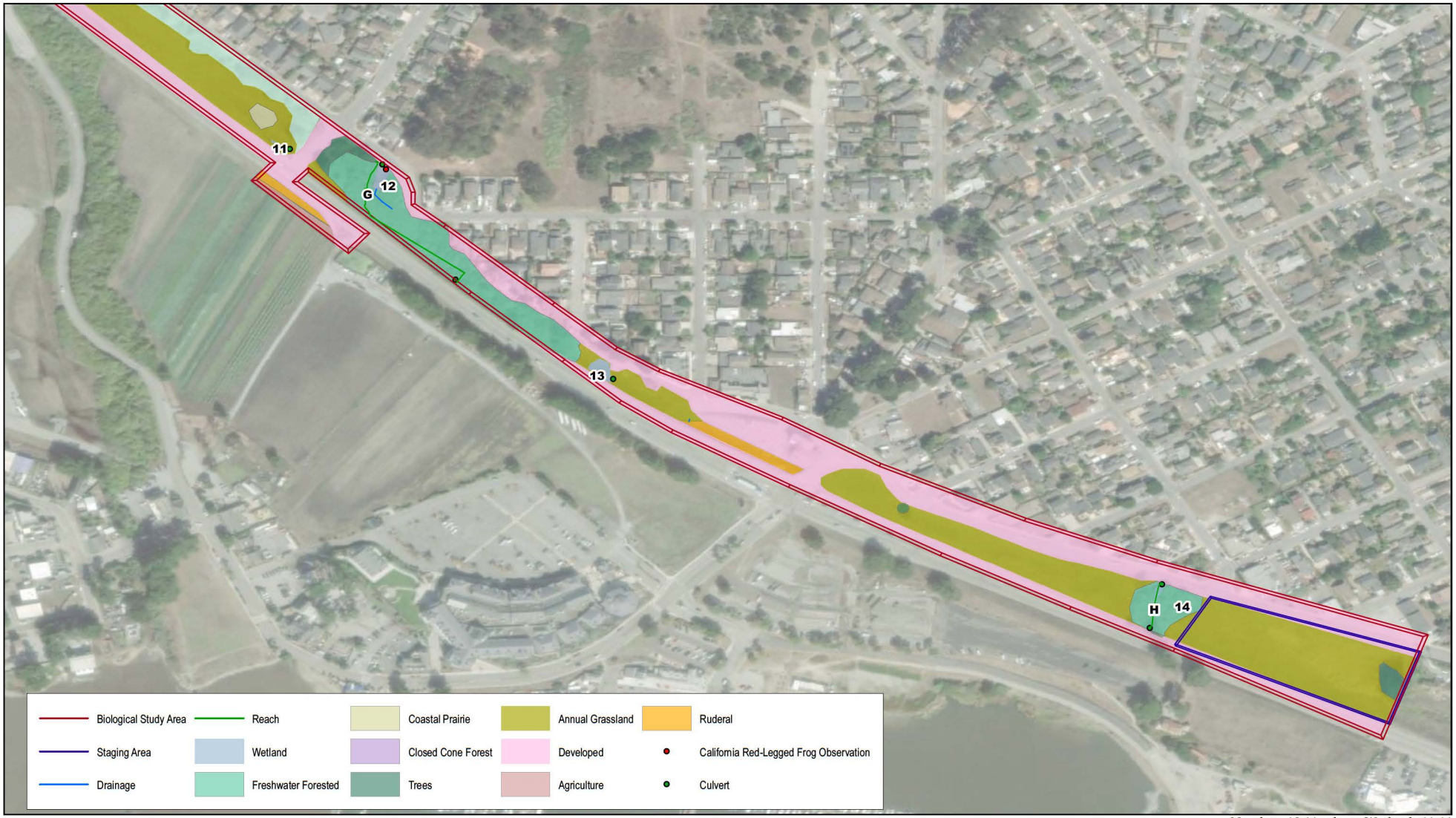

Numbers 10-14 refer to Wetlands 11-14
Letters G and H refer to Reach G and H
Source: ESRI 2025, EMC Planning Group 2025

Figure 4-4
Habitat Map Segment 4

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Coastal prairie is considered "coastal tufted hair grass – meadow barley – California oatgrass meadow", a sensitive natural community. This sensitive natural community is characterized by the dominance of meadow barley, usually with other wetland plants that may be at high cover.

Closed Cone Forest

The BSA contains areas of closed cone forest. These areas are dominated by closed cone tree species Monterey pine (*Pinus radiata*) and Monterey cypress. Native closed cone Monterey pine forest is considered endemic and threatened. The Monterey pine forest near Ano Nuevo represents the northernmost of the three mainland endemic populations of this species. The endemic closed cone Monterey pine forest typically occurs on sites with poor edaphic conditions (low nutrients, low organic material, poor drainage, hardpan conditions, etc.), and supports an understory of manzanitas, ceanothus, and other endemic species.

Monterey pine forest within the BSA does not include these characteristics, and Monterey pine and Monterey cypress trees present are outside the endemic range of Monterey pine closed cone forest. Although, closed cone forest within the BSA is not considered a sensitive or protected natural community, Monterey pine trees are recognized as sensitive under Section 7.48 of the San Mateo County Local Coastal Program.

Trees

In addition to native trees, the BSA contains areas of large planted trees. These are primarily large cypress trees that were planted for landscape purposes or as windbreaks. The understory in these areas consists of non-native annual grasses, including oat and ripgut brome (*Bromus diandrus*).

Annual Grassland

Annual grasslands are present throughout the BSA. These areas are heavily disturbed due to their proximity to major roadways and are regularly mowed. Part of the management for these areas includes intermittently spreading woodchips to reduce weeds.

Annual grassland areas are densely vegetated with non-native annual grasses, including ripgut brome, oat, English rye grass, fescue (*Vulpia* sp.), and seaside barley. Other non-native species that occur within these areas include wild radish (*Raphanus sativus*), mustard (*Brassica* sp.), pincushions (*Scabiosa* spp.), and Italian thistle (*Carduus pycnocephalus*).

Due to the density of non-native grasses, frequent mowing, and high levels of disturbance, these areas are generally not suitable for native species. However, some native species, including blue flax, California blackberry, California bee plant, and common yarrow are present within the annual grassland areas.

Ornamental

Ornamental habitat occurs within the project area adjacent to residential areas. These areas support non-native landscape plants including redclaw (*Escallonia rubra*), pines (*Pinus* spp.), pincushions, and garland daisy (*Glebionis coronarium*). These areas are regularly landscaped and don't support native vegetation.

Agriculture

The BSA includes large portions of farmland that has been utilized for agricultural row crops. These areas are private property and are regularly tilled, watered, and maintained. Small areas around telephone poles within the agricultural fields to the north of State Route 1 are not tilled or mowed and support native species, including dogwood, sorrel and nonnative mustard. Documented occurrences of Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*), a CNPS Rare Plant Rank 1B.1 species, exist on the outer borders of the agricultural fields on the east side of State Route 1, south of Etheldore Street, opposite of the Half Moon Bay Airport (See Figure 4-2 Habitat Map Segment 2). This species has been documented in shallow ditches of very large fallow fields artificially fertilized for agricultural purposes. Although not observed during focused surveys, this species was recorded within the survey area adjacent to the agricultural fields within the project area (CalFlora 2025b).

Wild Strawberry

The BSA contains patches of wild strawberry (*Fragaria californica*) growing in varying plant communities. Wild strawberry was observed under cypress trees in ornamental areas and within annual grassland areas. Wild strawberry was observed growing in heavily disturbed, regularly mowed areas that are co-dominated by non-native annual grasses including oat, ripgut brome, and English rye grass. Areas with wild strawberry within a one half-mile of the coast are considered a sensitive natural community under the San Mateo County Mid-Coast Land Use Plan Section 7.49.

Ruderal

Disturbed ruderal habitat is present directly adjacent to developed roadways. Vegetation in these areas included many ruderal non-native herbs including hottentot fig iceplant (*Carpobrotus edulis*), mustard, wild radish, bur clover (*Medicago polymorpha*), common wild oat (*Avena fatua*), and pincushions. These areas are regularly mowed and heavily disturbed due to their proximity to roadways and a heavily trafficked highway.

Developed

Developed land is located within the BSA and consists of residential roadways, a heavily trafficked highway, and sidewalks.

4.2 Wildlife Habitats

A variety of wildlife species occur throughout the project vicinity, including bobcat (*Lynx rufus*), western fence lizard (*Sceloporus occidentalis*), brush rabbit (*Sylviagus bachmani*), and eastern gray squirrel (*Sciurus carolinensis*). Trees and vegetation throughout the project area could provide suitable nesting habitat for several bird and raptor species, including Anna's hummingbird (*Calypte anna*), white crowned sparrow (*Zonotrichia leucophrys*), house finch (*Haemorhous mexicanus*), sharp-shinned hawk (*Accipiter striatus*), dark-eyed junco (*Junco hyemalis*), spotted towhee (*Pipilo maculatus*), striped skunk, (*Mephitis mephitis*), chestnut-backed chickadee (*Poecile rufescens*), California scrub jay (*Aphelocoma californica*), and American crow (*Corvus brachyrhynchos*).

A coyote (*Canis latrans*), San Francisco alligator lizard (*Elgaria coerulea principis*), and a red-tailed hawk (*Buteo jamaicensis*) were observed within the BSA. Other wildlife species that may utilize the project area include urban-adapted small mammal species such as raccoon (*Procyon lotor*) and striped skunk (*Mephitis mephitis*).

Wetland and freshwater forested habitats within the project area support the greatest diversity and abundance of wildlife species. Because of the available water and the complex vegetation structure, insects, birds, reptiles, mammals and amphibians use these areas for nesting, food, shelter, and as corridors for movement. Sierran tree frog (*Pseudacris sierra*), California red-legged frog (*Rana draytonii*), and coast garter snake (*Thamnophis elegans terretris*) were observed within the wetland and fresh watered forested portions of the BSA.

In addition, the overstory of the wetlands and freshwater forested areas provides high quality habitat for many bird species, including California scrub jay, dark-eyed junco, chestnut-backed chickadee, great horned owl (*Bubo virginianus*), Stellar's jay (*Cyanocitta stelleri*), American robin (*Turdus migratorius*), Bewick's wren (*Thryomanes* bewickii), and spotted towhee. Other species that could utilize the wetland and freshwater resources within the project area include California slender salamander (*Batrachoseps attenuatus*) and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*).

4.3 Wetlands and Waterways

The U.S. Geological Survey (USGS) National Map identifies the study area within the "San Francisco Coastal South" 8-digit National Hydrography Dataset (NHD) Hydrologic Unit Code (HUC) watershed (18050006). More specifically, the survey area lies in the HUC NHD 12-digit subwatershed "Denniston Creek-Frontal Pacific Ocean" (180500060205). Denniston Creek, San Vicente Creek, Deer Creek, and other small intermittent unnamed drainages, drain to the ocean within this watershed. As identified in the *SAM Force Main in Montara Replacement Project Aquatic Resources Delineation Report* (EMC Planning Group, 2026), some of the wetland features within the project area are tributaries associated with Denniston Creek, San Vicente Creek, and Deer Creek. A total of 22 wetland areas were found within the BSA shown on Figures 4-1 through 4-4, Habitat Map Segments 1-4, and are described below:

- **Wetland 1** is classified by the National Wetlands Inventory as *Freshwater Forested/Shrub Wetland* and by this assessment as Riparian Shrub Forest and a part of an intermittent unnamed stream. It is located adjacent to the staging area on the north side of the project area, just south of California Ave and west of State Route 1. The associated reach (Reach A) provides intermittent flows which from a series of culverts and riverine feature further upslope.

- **Wetland 2** is not classified by the National Wetlands Inventory. It is classified by this assessment as an emergent wetland. It is located within the town of Moss Beach at the north intersection of State Route 1 and Cypress Avenue. Wetland 2 is a roadside wetland that is poorly drained and seasonally saturated with water and with soil moisture persisting into the summer in wet years.

- **Wetland 3** is not classified by the National Wetlands Inventory. Based on this assessment, it is classified as a remnant riparian woodland. The feature was identified by the presence of dominant willow (*Salix* spp.) and its proximity to the larger Freshwater Forested/Shrub Wetland (Wetland 4) associated with San Vicente Creek.

- **Wetland 4** is classified by the National Wetlands Inventory as a *Freshwater Forested/Shrub Wetland* and corresponds to San Vicente Creek (Reach D). This feature is classified by this assessment as a Freshwater Forested Wetland/Riparian Woodland. It is located southwest of Marine Boulevard and is bisected by State Route 1.

- **Wetland 5** is located south of the main residential area of Moss Beach, between Marine Boulevard and Etheldore Street. It is not classified in the National Wetlands Inventory.

- **Wetland 6** is not classified in the National Wetlands Inventory. It is a small roadside wetland likely formed from runoff along Etheldore Street.

- **Wetland 7 Group** is not classified by the National Wetlands Inventory (NWI). This wetland receives runoff from adjacent hills via man-made channels and is seasonally flooded, with water persisting into late spring and early summer.

- **Wetland 8** is not classified in the National Wetlands Inventory. This area drains slopes forested slopes above and terminates in a forested shrub wetland area that is dominated by willows with a culverted channel that passes under State Route 1.

- **Wetland 9** that runs parallel to State Route 1 is classified by National Wetland Inventory (NWI) as *Riverine* and functions as a tributary to Denniston Creek. This wetland is seasonally flooded, with water persisting into summer.

- The National Wetlands Inventory identifies a *Riverine* system, tributary to Denniston Creek, as passing through the agricultural fields north of State Route 1 and Wetland 9.

- **Wetland 10** consists of a stream channel (Reach F) and riparian woodland that passes under State Route 1 and is classified by the National Wetlands Inventory as *Riverine* and is also known as Denniston Creek. This perennial creek flows between residential development and agricultural fields.
- **Wetland 11** is an isolated wetland that was not classified by the National Wetlands Inventory. The feature was identified by the presence of a gentle swale and hydrophytic vegetation.
- **Wetland 12** consists of a stream channel (Reach G) and riparian woodland that runs parallel to Sonora Avenue and State Route 1 before passing under State Route 1. The National Wetlands Inventory classifies this feature as *Riverine* and maps it as a tributary to Denniston Creek; however, field observations suggest that it is hydrologically isolated.
- **Wetland 13** is likely an extension of Forested Wetland 12 however, mowing and the placement of woodchips have isolated this wetland.
- **Wetland 14** consists of a stream channel (Reach H) and freshwater forested wetland that flows through residential development in El Granada before eventually passing under State Route 1. The National Wetlands Inventory (NWI) classifies this feature as *Riverine* and identifies it as Deer Creek.
- **Reach A** is classified by the National Wetlands Inventory as a *Freshwater Forested/Shrub Wetland* and by this assessment as an intermittent, unnamed stream. It is located adjacent to the staging area on the north side of the project area, just south of California Avenue and west of State Route 1. The reach conveys intermittent flows originating from a series of culverts and a riverine feature located further upslope.
- **Reach B** drains a portion of the residential development in the town of Moss Beach, flowing south through a series of manmade channels and culverts before exiting the survey area and continuing toward the Fitzgerald Marine Reserve.
- **Reach C** drains a portion of the residential development in the town of Moss Beach, flowing south through a series of manmade channels and culverts before exiting the survey area and continuing toward the Fitzgerald Marine Reserve.
- **Reach D** is classified by the National Wetlands Inventory as a *Freshwater Forested/Shrub Wetland* and by this assessment as a perennial stream, San Vicente Creek.
- **Reach E** comprise two manmade channels that drain a portion of Montara Mountain, south of Moss Beach.

- **Reach F** is classified by the National Wetlands Inventory as *Riverine* and by this assessment as a perennial stream, Denniston Creek. This perennial creek flows between residential development and agricultural fields, located hugging the western extent of residential development in the town of El Granada. Denniston Creek conveys perennial flows originating from the coastal mountains north of the project site and flows beneath State Route 1.

- **Reach H i**s classified by the National Wetlands Inventory as *Riverine* and by this assessment as an intermittent stream and potential tributary of Denniston Creek. The reach flows between residential development and State Route 1 near Coral Reef Avenue and Sonora Avenue in the town of El Granada. Reach H conveys intermittent flows originating from the coastal mountains north of the project site.

- **Reach G** is classified by the National Wetlands Inventory as *Riverine* and by this assessment as an intermittent creek (Deer Creek). The reach flows between residential development and State Route 1, located near Avenue Alhambra in the town of El Granada. Reach G conveys intermittent flows originating from the coastal mountains north of the project site and continues beneath State Route 1.

5.0
Special-Status Biological Resources

This section of the report includes a summary of the results of the biological survey and analysis.

5.1 Overview

Special-status species in this report are those listed as Endangered, Threatened, or Rare, or as Candidates for listing by the U.S. Fish and Wildlife Service or California Department of Fish and Wildlife under the state and/or federal Endangered Species Acts. The special-status designation also includes CDFW Species of Special Concern and Fully Protected species, CNPS Rare Plant Rank 1B and 2B species, and other locally rare species that meet the criteria for listing as described in Section 15380 of CEQA Guidelines. Special-status species are generally rare, restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.

Appendix B, Special-Status Species with Potential to Occur within the Project Vicinity, lists special-status species documented within the project vicinity, their listing status and suitable habitat description, and their potential to occur on the project alignment. Appendix C, U.S. Fish and Wildlife Service Official Species List, includes the list generated for the project site by the U.S. Fish and Wildlife Service IPaC website (USFWS 2025a). Appendix D, California Department of Fish and Wildlife California Natural Diversity Database, includes the list generated of special-status plant and wildlife species documented within the six USGS quadrangles surrounding the project vicinity by the California Department of Fish and Wildlife RareFind website (CDFW 2025a). Appendix E, California Native Plant Society Rare Plant Inventory, includes the list generated of special-status plant species documented within the same six USGS quadrangles surrounding the project vicinity by the California Native Plant Society Rare Plant Inventory website (CNPS 2025). Figure 5-1, Special-Status Species Documented within the Project Vicinity, shows locations of recorded observations within three miles of the project alignment. Discussion of special-status species with potential to occur on the site (or otherwise requiring special explanation) is included in the following section.

5.2 Species and Critical Habitats Assessed

The following listed and proposed species and/or designated or proposed critical habitats were identified on the species lists in Appendix B and are considered during this analysis:

Listed Species

The following federally-listed species were considered in this biological assessment:

- California red-legged frog (*Rana draytonii*), federally threatened, California Species of Special Concern;
- Monarch butterfly (*Danaus plexippus*), federal candidate species;
- San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), federally endangered, state endangered, state fully protected species; and
- Steelhead (*Oncorhynchus mykiss irideus*), federally threatened.

The following state-listed species were considered in this biological assessment:

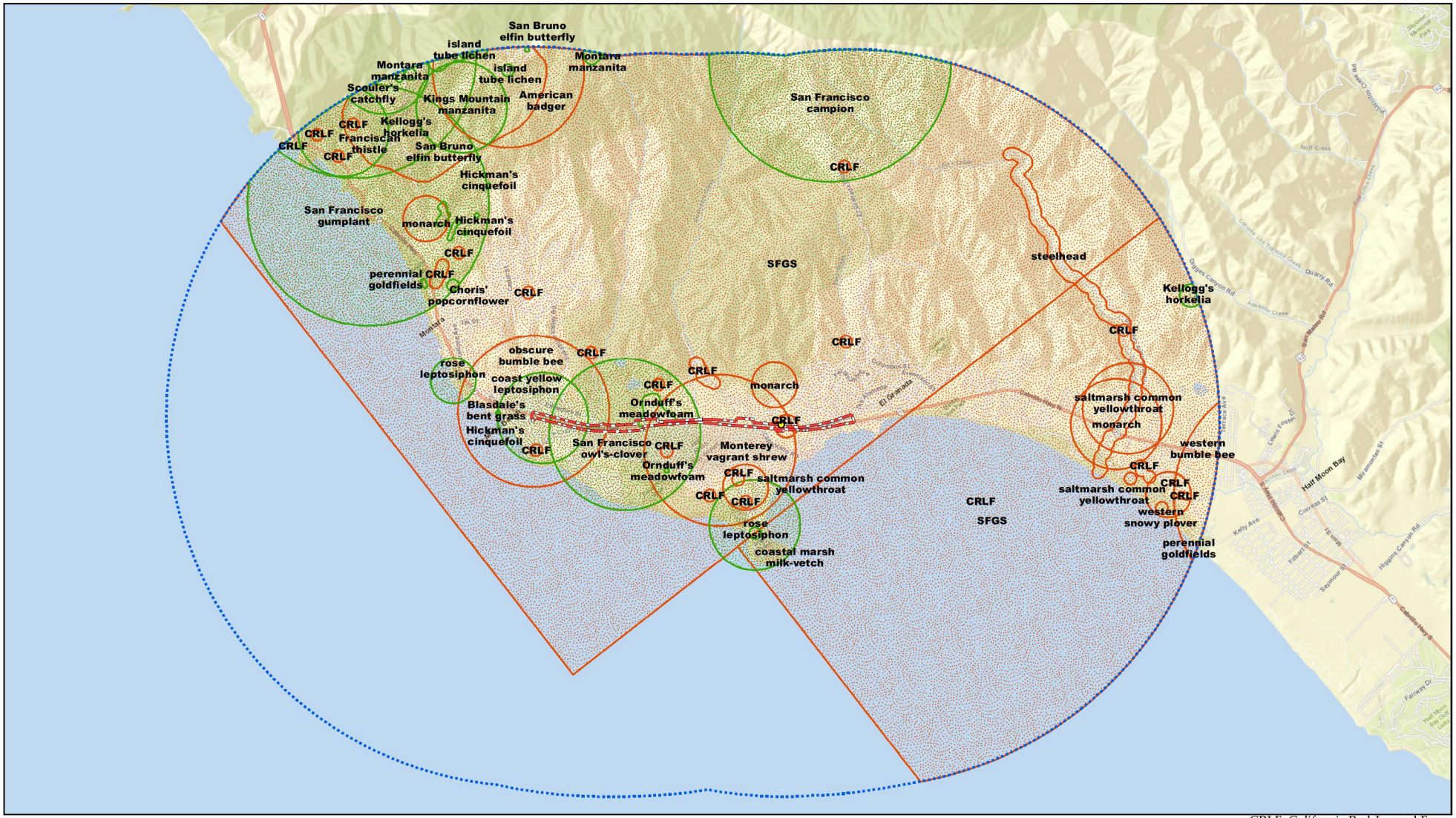
- Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), California State Species of Special Concern;
- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), California State Species of Special Concern; and
- Western bumble bee (*Bombus occidentalis*), state candidate endangered species.

The following California Native Plant Society rare plant species were considered in this biological assessment

- Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*), CRPR 1B.1.

Critical Habitat

Denniston Creek, which crosses the BSA, is considered critical habitat for the California Central Coast steelhead distinct population segment (NOAA 2025). In addition, the central portion of the project alignment is approximately 335 feet west of the boundary of the Pacifica to Half Moon Bay designated critical habitat area (SNM-1) for California red-legged frog (USFWS 2010).



0 4000 feet

Biological Study Area
3-Mile Buffer
Special-Status Plants
Special-Status Wildlife
California Red-Legged Frog Observation

CRLF: California Red-Legged Frog
SFGS: San Francisco Garter Snake
Source: CDFW CNDDB 2025

Figure 5-1

Special-Status Species Within the Project Vicinity

SAM Force Main in Montara Replacement Project Biological Assessment

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5.3 Special-Status Plants

A number of special-status plant species occurring in the project vicinity were evaluated for potential to occur within the BSA. Of these species, Hickman's cinquefoil (*Potemtilla hickmanii*), San Mateo woolly sunflower (*Eriophyllum latilobum*), blue coast gilia (*Gilia capitata* ssp. *chamissonis*), Choris' popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*), coastal marsh milk-vetch (*Astragalus pycnostachyus var. pycnostachyus*), diablo helianthella (*Helianthella castanea*), fragrant fritillary (*Fritillaria liliacea*), franciscan thistle (*Cirsium andrewsii*), Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*), northern curly-leaved monardella (*Monardella sinuata ssp. nigrescens*), Oregon polemonium (*Polemonium carneum*), Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*), perennial goldfields (*Lasthenia californica* ssp. *macrantha*), and Point Reyes horkelia (*Horkelia marinensis*), were determined to have the potential to occur within the project area and were surveyed for during the 2025 reconnaissance field surveys and botanical surveys. No special-status plant species were found during the survey efforts.

Only Ornduff's meadowfoam has been determined to have the potential to be on the project alignment due to previous occurrences within the agricultural areas of the project alignment (CalFlora 2025b, CNDDB 2025b). Information on special-status plants, including listing status, suitable habitat conditions, and potential to occur on the site is presented in Appendix B, and are shown on Figure 5-1, Special-Status Species Documented Within the Project Vicinity.

Ornduff's Meadowfoam

Ornduff's meadowfoam is listed by the CNPS as a 1B.1 species, plants that are considered rare, threatened, or endangered in California and elsewhere. This species is most commonly found in meadows, seeps, and agricultural fields at the elevation of 5-15m. This species blooms during the wet season, generally November through May.

There is one CNDDB occurrence for Ornduff's meadowfoam within the central portion of the project alignment on the east side of State Route 1 within agricultural fields (Occurrence Number 1, 2011). This species was not found during focused surveys conducted in 2025, however there is an occurrence recorded within the project alignment that was noted in CNDDB and observed in CalFlora in 2025b (Figure 4-2, Habitat Map Segment 2). Ornduff's meadowfoam has the potential to be present within the agricultural area in central portion of the project alignment.

5.4 Special-Status Wildlife

Special-status wildlife species potentially occurring in the project vicinity were evaluated for potential to occur within the project area. Information on special-status wildlife species, including listing status, suitable habitat conditions, and potential to occur within the project area is presented in Appendix B, and are shown on Figure 5-1, Special-Status Species Documented Within the Project Vicinity. Species with the potential to occur within the project area are discussed in more detail, below.

The following wildlife species that could potentially be found within the project area, were determined to have a low to moderate probability of occurrence: monarch butterfly (*Danaus plexippus*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), Western bumble bee (*Bombus occidentalis*), and nesting migratory birds and raptors. California red-legged frog (*Rana draytonii*) was determined to be present within the project area and is expected to occur within the project area.

California Red-Legged Frog

A federally-listed threatened species and California Species of Special Concern, California red-legged frog occurs in lowlands and foothills primarily in perennial or ephemeral ponds, pools, and streams where water remains long enough (14-28 weeks) for breeding and metamorphosis of tadpoles. Specific breeding sites include streams, creeks, ponds, marshes, sag ponds, deep pools, backwater areas, dune ponds, lagoons, and estuaries. California red-legged frog may disperse from their aquatic breeding habitats to upland habitats during the dry season. They prefer upland habitats that provide moisture to prevent desiccation and protection from predators, including downed logs, woody vegetation, boulders, moist leaf litter, or other refugia during the dry season. In areas where upland habitats do not contain structure, California red-legged frog take refuge in burrows. However, if there is sufficient water at their breeding location, they may remain in aquatic habitats year-round instead of moving to adjacent uplands.

During wet seasons, frogs can move long distances between habitats, traversing upland areas or ephemeral drainages. Dispersal distances are typically less than 0.3 miles, with a few individuals moving 1.2-2.2 miles (USFWS 2005). Seeps and springs in open grasslands can function as foraging habitat or refugia for wandering frogs.

Larvae for California red-legged were observed within a wetland channel from a drainage culvert within the southern portion of the project alignment during the reconnaissance field survey on May 2, 2025 (Figure 4-4, Habitat Map Segment 4, and Figure 5-1, Special-Status Species Documented within the Project Vicinity). In addition, CNDDB records indicate one occurrence of an adult was found within the project alignment in a residential driveway that used to be bordering the stream to Pillar Point Marsh. The stream has since been converted to an underground culvert to avoid State Route 1 (Occurrence Numbers 1648, 2015). There are eight observations of this species recorded in the CNDDB immediately adjacent to the project area or within one-mile of the BSA (Occurrence Numbers 38, 301, 853, 976, 1449, 1595, 1649, and 1655). In addition, critical habitat for California red-legged frog is located adjacent to the central portion of the project alignment (Figure 1-2, Aerial Photograph).

Occurrence Number 38 is along Denniston Creek (2017). Occurrence Number 301 is within Princeton Marsh (2013). Occurrence Number 1595 is within Half Moon Bay Airport where breeding habitat was found within a drainage culvert (2017). Breeding habitat was found within Montara

Creek (Occurrence Numbers 1449, 2016). Occurrence Number 1655 was found south of the project alignment within upland habitat near San Vicente Creek (2018) and Occurrence Number 1649 were found dispersing near San Vicente Creek north of the project alignment (2012). Occurrence Number 976 was found between Denniston Creek and San Vicente Creek within a pond surrounded by agriculture (2006). Occurrence Number 853 was found north of the project alignment within a pond on private property (2001).

Breeding habitat was confirmed present on the project alignment within the wetland channel from a drainage culvert on the southern portion of the alignment where California red-legged frog tadpoles were observed. CNDDB occurrences are found within the Denniston Creek, San Vicente Creek watersheds, as well as within local ponds and drainage culverts. This species has a high likelihood of occupying wetland features on the project alignment and of occupying upland habitat within the fresh water forested portions of the project site. CNDDB occurrences also document individuals found dispersing across residential roadways. This species could disperse and occupy upland habitat up to 2.2 miles from nearby occurrences. Therefore, all portions of the project alignment could be considered upland or dispersal habitat for this species.

Monarch Butterfly

The Monarch butterfly is not officially listed under the California Endangered Species Act or the federal Endangered Species Act or considered a California Department of Fish and Wildlife Species of Special Concern; however, on December 15, 2020, the U.S. Fish and Wildlife Service announced that listing the monarch as endangered or threatened under the Endangered Species Act is warranted, but precluded by higher priority listing actions. The monarch is now considered a candidate for listing under the Endangered Species Act and will be reviewed by U.S. Fish and Wildlife Service annually until a listing decision is made. The California Department of Fish and Wildlife monitors overwintering colonies of this species because monarch populations in California have severely declined since the 1980s (Xerces 2017). The cause of this decline is thought to be loss of milkweed (*Asclepias* spp.) and nectar plants; loss and degradation of overwintering groves; and other stressors like disease, pesticides, and impacts of climate change (Xerces 2017). The monarch overwintering season is typically October to March.

Monarchs do not favor eucalyptus trees; however, most of the overwintering locations in California are within eucalyptus groves simply because of their abundance in coastal areas in the state (Xerces 2017). Within the vicinity of the project area, trees that could be used by overwintering monarchs include pines, cypress, and willow (Xerces 2017). Monarchs could utilize native species growing in the coastal scrub, coastal prairie, and annual grassland areas of the BSA for foraging habitat.

CNDDB records indicate that there are three known occurrences of monarch butterfly within three miles of the project area. The nearest occurrence is approximately 0.17 miles from the southern portion of the project alignment, but is presumed to be extirpated since 1998 (Occurrence Number

65). The other two occurrences within three miles of the project area are presumed extant from 1998 and from 2015 and were documented within eucalyptus, cypress, and willow trees adjacent to creeks or streamside vegetation (Occurrence Numbers 55 and 64). Monterey pine, Monterey cypress, and eucalyptus trees within the project area have the potential to host roosting monarch butterflies.

The project area supports roosting habitat within the trees, closed cone forest, and freshwater forest areas and foraging habitat within the coastal scrub, coastal prairie, and annual grassland areas for monarch butterflies.

San Francisco Garter Snake

San Francisco garter snake is federally-listed endangered species and is listed as endangered under the California Endangered Species Act. It was officially listed as federally endangered in 1967. Widely regarded as one of the most striking snakes in North America, it is distinguished by its burnt-orange head, turquoise-blue body, and bold white, black, and red-orange stripes.

This species historical range extended from the San Francisco-San Mateo County line south along the base of the Santa Cruz Mountains into northern Santa Cruz County. This species requires both aquatic and upland habitat. This species is often found in or next to aquatic freshwater habitat, including ponds, creeks, marshes, canals, and other water resources, which they use for foraging and basking during the day. They also use grassy areas near underground rodent burrows or under rocks for shelter. San Francisco garter snake may overwinter upland areas away from water.

The San Francisco garter snake is reclusive and primarily forages in aquatic habitats. Its diet consists largely of amphibians, including California red-legged frog, juvenile bullfrogs (*Lithobates catesbeianus*), and other amphibians. It may also feed opportunistically on fish, small mammals, birds and their eggs, reptiles, earthworms, slugs, and leeches.

CNDDB records indicate that there are eighteen occurrences that encompass the Montara Mountain quadrangle that encompasses the BSA (Occurrence Numbers 5, 7, 9, 10, 11, 13, 28, 45, 46, 47, 49, 48, 50, 51, 55, 54, 56, and 57). The habitat types for these occurrences range from habitats of willow riparian corridors adjacent to grassland and coyote brush scrub, to freshwater marshes, ponds, canals, and grasslands.

San Francisco garter snake has been recorded within the Montara Mountain quadrangle and has potential to be found on site.

Steelhead

Throughout the West Coast, 11 species (Distinct Population Segments, DPS) of steelhead are protected under the Endangered Species Act. Steelhead within the project vicinity belong to the Central California Coast DPS (*Oncorhynchus mykiss irideus* pop. 8). Central California Coast steelhead

are anadromous coastal rainbow trout, and are made up of populations downstream of manmade or natural barriers throughout their range. Central California Coast steelhead trout show a tremendous amount of juvenile and adult life history variation to match the varied systems they inhabit, though all adult runs occur during the winter (NOAA Fisheries 2025).

The nearest CNDDB occurrence is within Frenchman's Creek and was recorded in 1979 (Occurrence Number 10). Frenchman's Creek, does not connect to any watersheds within the BSA. Although there are no documented CNDDB occurrences within the BSA, Denniston Creek, which crosses the project alignment, is designated as critical habitat for Central California Coast steelhead.

Denniston Creek is a perennial creek that could potentially support steelhead. Steelhead has low potential to occur within Denniston Creek within the BSA.

Saltmarsh Common Yellowthroat

Saltmarsh common yellowthroat is a state listed Species of Special Concern bird species. This species requires thick continuous cover down to water surface for foraging and tall grasses, tule patches, and willows for nesting. Saltmarsh common yellowthroat typically breeds from early April to mid-July, with peak activity in May and June. Their nests are typically constructed on or within eight centimeters of the ground. Their nests may be over water in emergent aquatic vegetation, dense shrubs, or other dense growth. This species is a resident and summer visitant in the San Francisco Bay Area, and winters south along the coast to San Diego County (Shuford, W.D. and Gardali 2008).

There are three CNDDB observations of this species within three miles of the project alignment: near Frenchman's Creek, Pilarcitos Creek, and Princeton Marsh (Occurrence Numbers 17, 57, and 78). Saltmarsh common yellowthroat has the potential to nest and forage within the wetland and freshwater forested areas of the project area.

San Francisco Dusky-Footed Woodrat

San Francisco dusky-footed woodrat is state listed Species of Special Concern and is a local subspecies of the broadly distributed dusky-footed woodrat that is found on the San Francisco Peninsula south to the southernmost edge of Santa Cruz County and inland to the East Bay hills. They typically inhabit oak and riparian woodlands with a well-developed understory as well as chaparral and scrub habitats, where their stick nests are often visible. The nests, often called 'houses', may be as much as six feet tall, and contain multiple chambers used for sleeping and food storage.

There are no CNDDB occurrences within three miles of the project site, however there are various documented observations of San Francisco dusky-footed woodrat on iNaturalist within the project vicinity (iNaturalist 2025). Suitable habitat for this species exists within the freshwater forested, closed cone forest, and coastal scrub portions of the project site.

Western Bumble Bee

In 2019, the western bumble bee was identified as a candidate species for listing under the CESA. The listing process was temporarily halted due to a court challenge but was reinstated to candidate status in September 2022. Although not yet formally listed, species identified as "candidates" must be considered during CEQA analyses.

Formerly common throughout much of its range—from central California to southern British Columbia and west of the Sierra-Cascade ranges—western bumble bee populations have declined sharply since the late 1990s. These bees primarily nest in underground cavities, such as abandoned burrows or other animal nests, typically located on open west- to southwest-facing slopes. Their general habitat includes meadows and grasslands with abundant flowering plants, and they may also occur in some natural areas within urban environments (Xerces 2008).

Western bumble bees require continuous access to nectar- and pollen-producing plants that bloom throughout their flight period, which extends from as early as February to as late as November. Although they forage on a wide variety of flowering plants, their short tongues limit them to certain types of flowering plants. They are known to prefer plant families such as Fabaceae, Asteraceae, Rhamnaceae, and Rosaceae (Xerces 2008, Martin, et al. 2023).

Western bumble bee was once very common in the Bay Area. Although its current range is primarily within the Sierra Nevada, occasional observations have been recorded within its historic range, including in the vicinity of the project area. There is one observation from 1953 approximately three miles from the project area (Occurrence No. 248).

Floristic resources within the annual grassland, ruderal, coastal scrub, and coastal prairie habitats of the project alignment provide foraging habitat for the western bumble bee. Nesting habitat is present in the form of downed logs, thatch, bunch grasses, small mammal burrows and other habitat features.

Nesting Birds and Raptors

Many passerine bird species and raptors have the potential to nest in the freshwater forested and wetland canopy of the project alignment. Birds may also nest on buildings, on open ground, within trees, or in any type of vegetation.

As there are known occurrences in the project vicinity and suitable habitat on and adjacent to the project site, nesting birds and raptors have the potential to be present on the project site.

5.5 Sensitive Natural Communities

Sensitive natural communities are communities with limited distribution statewide, within a county, or within a region, and are often vulnerable to environmental effects of development. CDFW's List of California Terrestrial Natural Communities identifies which communities are considered sensitive based on the best available scientific information (CDFW 2025c).

Sensitive natural communities within the project area identified by CDFW's List of California Terrestrial Natural Communities (CDFW 2025c) are described as the following:

- Arroyo willow thickets, characterized by either greater than 50 percent arroyo willow relative cover, greater than or equal to 25 percent arroyo willow absolute cover in the shrub or tree canopy, or greater than 50 percent arroyo willow relative cover in the shrub canopy, or 30 percent relative cover with *Rubus* spp. or coyote brush (*Baccharis pilularis*). Arroyo willow thickets are described as freshwater forested and wetland plant communities within the BSA as shown on Figure 4-1 through 4-4, Habitat Map Segments 1-4 and in Section 4.1 above.
- California sagebrush scrub – (purple sage) scrub, characterized by either California sagebrush is greater than 60 percent cover in the shrub canopy or sticky monkey-flower (*Diplacus aurantiacus*) sometimes 30 percent relative cover. California sagebrush scrub is described as the coastal scrub plant community as shown on Figure 4-1 through 4-4, Habitat Map Segments 1-4, and in Section 4.1 above.
- Bush monkey-flower scrub, characterized by greater than 50 percent sticky monkey-flower relative cover if equal or less than California sagebrush. Bush monkey-flower scrub is documented as the coastal scrub plant community as shown on Figure 4-1 through 4-4, Habitat Map Segments 1-4, and in Section 4.1 above.
- Coastal tufted hair grass – meadow barley – California oatgrass meadow characterized by meadow barley (*Hordeum brachyantherum*) characteristically present, usually with other wetland plants that may be at high cover. Coastal tufted hair grass is documented as the coastal prairie plant community as shown on Figure 4-1 through 4-4, Habitat Map Segments 1-4, and in Section 4.1 above.
- Monterey pine trees are protected in the County of San Mateo Local Coastal Program Policies.

These plant communities are also considered Environmentally Sensitive Habitat Area (ESHA), strictly regulated by the City of Half Moon Bay, County of San Mateo, and the California Coastal Commission. In addition, areas with California wild strawberry (*Fragaria californica*) are considered a sensitive natural community under the San Mateo County Mid-Coast Land Use Plan, Section 7.49.

5.6 Jurisdictional Wetlands and Waters

Wetlands and freshwater forested habitats are considered jurisdictional by several regulatory agencies, including the U.S. Army Corps of Engineers (USACE), CDFW, and/or Regional Water Quality Control Board (RWQCB).

As described in the *SAM Force Main in Montara Replacement Project Aquatic Resources Delineation Report* (EMC Planning Group 2026), twenty-two potentially jurisdictional aquatic features were mapped within the BSA. The delineated wetlands or aquatic features were classified as wetlands, streams or drainages, or riparian woodlands. All of these classes were determined to be seasonally flooded or saturated, with soil moisture persisting into early summer. All delineated wetlands had hydrophytic vegetation, hydric soils, and/or wetland hydrology present and waters were delineated using ordinary high water mark (OHWM) indicators. A total of 0.186 acres were determined to be potential jurisdictional Waters of the United States and therefore subject to Section 404 of the Clean Water Act.

The RWQCB definition of wetlands is more inclusive than that of the USACE, and only two parameters must be present. The California Coastal Commission (CCC) requires that only one of the three USACE indicators (wetland vegetation, soils, or hydrology) be present ("one parameter definition"). Further, for Waters of the State, such as natural streams that may fall under the jurisdiction of the CDFW, a channel bed and bank is jurisdictional as measured at the top of bank (TOB). A total of 1.824 acres were determined to be potential jurisdictional Waters of the State and therefore subject to Section 401 of the Clean Water Act, which requires certification from the state in which the discharge originate. Riparian vegetation associated within wetlands or waters is also considered jurisdictional by CDFW. Approximately 3.2 acres of the study area contained riparian vegetation.

5.7 Wildlife Movement Corridors and Habitat Connectivity

Ensuring wildlife movement through a landscape, to enable the acquisition of resources for feeding, cover, and reproduction, has been recognized as critical for the survival of animal populations. Habitat "connectivity" is the ability of an individual or population to move between habitat patches that provide these resources (Hilty et al. 2006).

A species can undertake several types of movement events, which generally take place at different spatial and temporal scales at various life history stages. Daily movement can occur in the procurement of food and water, shelter, or other resource requirements. Seasonal movement, or "migration," generally occurs at a much larger spatial scale. Long distance juvenile dispersal or other colonization events might take place once in an individual's life, occurring only after a lapse of several generations. These various types of movement, along with species-specific differences, lead to numerous ways in which to measure a landscape's connectivity in terms of habitat needs.

The California Essential Habitat Connectivity Project provides a statewide wildlife habitat connectivity map using the CDFW's Biogeographic Information and Observation System (CDFW 2025d). This system was queried to determine the presence or absence of wildlife corridors within the project area. Query results showed that the northern portion of the project alignment adjacent to the Half Moon Bay Airport is located within an Essential Habitat Connectivity Area or corridor designated as a Rank 3 "connection with implementation flexibility". This is defined as areas that have been identified as having a connectivity importance, but have not been identified as channelized areas, species corridors, or habitat linkages at this time. In addition, the wetland areas provide breeding habitat for frogs and potentially other amphibians. The coastal scrub, freshwater forested, and trees throughout the project alignment provides both stopover and nesting habitat for migrating birds and small mammals.

5.8 Regulated Trees

San Mateo County and the City of Half Moon Bay regulate the removal of certain trees within the City and County, as discussed in Section 2.3, Regional/Local Regulations. Exemption 7 under Section 8.400.100 of the San Mateo County Code of Ordinance states that tree removal and pruning by California Public Utilities Commission licensed utility in order to maintain required clearance around power lines or pipelines is applicable for exemption. This may be applicable to the Project and would make the project exempt from applying for a tree removal permit with the County of San Mateo. Prior to any tree removal, a tree removal permit will be obtained with either the County of San Mateo (if the Project does not qualify for an exemption under Section 8.400.100 of the San Mateo County Code of Ordinance) in accordance with San Mateo County Code of Ordinance and/or with the City of Half Moon Bay in accordance with the and City of Half Moon Bay Heritage Tree Ordinance Chapter 7.40. In addition, tree removal will follow the mitigation measures required in Sections 7.48 and Section 7.50 of the San Mateo County Mid-Coast Land Use Plan.

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6.0
Effects Analysis and Conservation Measures

This section of the report identifies potential adverse effects to protected biological resources and recommends mitigation to minimize these effects.

The CEQA standards of significance and NEPA and ESA effects determinations were used to determine potentially significant or significant impacts to biological resources. Please refer to Figure 5-1 and Appendix B for a summary of special-status plant and animal species potentially occurring in the project vicinity that were considered as part of the impact analysis. The project alignment's impact area, in relation to on-site plant communities, is depicted in Figures 4-1 through 4-4, Habitat Map Segments 1-4.

6.1 Conclusions

Protected biological resources, including state and federally listed wildlife species, may be impacted by the proposed project, if present. Therefore, measures are recommended in this section to avoid or minimize impacts to biological resources as a result of the proposed project. These measures are dependent on regulatory agency coordination and approval of associated permit conditions if permits are required. Therefore, final minimization and avoidance measures should be established in consultation and coordination with all involved regulatory agencies and other project permitting authorities, if necessary.

6.2 Federally-Listed Wildlife Species

The proposed project may affect, and is likely to adversely affect, California red-legged frog and San Francisco garter snake. The proposed project is unlikely to adversely affect steelhead. The proposed project may affect, not likely to adversely affect monarch butterfly and nesting birds protected by the Migratory Bird Treaty Act. The following recommendations may be incorporated into project plans or as conditions of approval to avoid, minimize or mitigate potential impacts to these species.

Information on federally- or state-listed wildlife, including listing status, suitable habitat conditions, and potential to occur on the site is presented in Appendices A and B.

California Red-Legged Frog and San Fracisco Garter Snake

The wetland features in the wetland channel from a drainage culvert on the southern portion of the alignment (Figure 4-4, Habitat Map Segment 4) provides breeding habitat for California red-legged frog. Other wetland features within the project area could also potentially provide breeding habitat for California red-legged frog. Construction activities could result in impacts to California red-legged frog or San Francisco garter snake, if present. Therefore, the proposed project may affect, and is likely to adversely affect California red-legged frog and San Francisco garter snake. The applicant will coordinate with the USFWS to determine the appropriate course of action per the requirements of FESA (e.g., obtaining Incidental Take Permits) and implement the permit requirements prior to ground disturbance. Final conservation measures will be determined during the Incidental Take Permitting process; however, the following measures are recommended to minimize impacts to the extent possible.

Recommended Conservation Measures

BIO-1 California Red-Legged Frog and San Francisco Garter Snake. California red-legged frog breeding habitat was documented within a wetland feature along the project alignment and the project is within the dispersal distance from known occupied habitats. California red-legged frog is considered one of the main food sources for San Francisco garter snake, which is also known from the project vicinity.

The applicant should obtain an Incidental Take Permit from the USFWS for potential project impacts to California red-legged frog and implement all avoidance, minimization, and compensatory mitigation measures required by the permit. Because San Francisco garter snake is state-listed as a fully protected species, Incidental Take permits are not applicable and impacts to the species must be avoided. The avoidance and minimization measures identified below are recommended before/during construction to minimize the potential for "take" of California red-legged frog and avoid potential "take" of San Francisco garter snake.

Conservation measures may include, but not be limited to, the following:

1. At least 30 days prior to ground disturbance, the biologist should submit the name and credentials of the project biologists who would conduct activities specified in this measure. No project activities should begin until the biologist has received written approval from the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife that the biologists are qualified to conduct the work.

2. A qualified biologist should conduct a preconstruction survey of the work area within 48 hours of the initiation of project activities. If a California red-legged frog or San Francisco garter snake of any life stage is found, the animal should not be

handled and should instead be allowed to leave the site on its own. If needed, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife should be contacted to request permission to relocate the individual or additional guidance on the disposition of the individual. The results of the preconstruction survey should be provided to the City Manager or his/her designee one day prior to the commencement of construction activities.

3. The biologists should have the authority to halt construction work at any time to prevent harm to California red-legged frog or San Francisco garter snake or when any of the permit-specified protection measures have been violated. Work should re-commence only when authorized by the biologists. If work is stopped due to potential harm to protected species, the project biologists should contact the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife immediately to communicate the event and coordinate appropriate action.

   A biologist should conduct biological construction monitoring in all work areas within 100-feet of wetland areas. Before the start of work each day, a biologist should check for wildlife under any equipment such as vehicles and stored pipes within active construction zones. A biologist should also check all excavated steep-walled holes or trenches greater than one foot deep for trapped animals. If California red-legged frog or San Francisco garter snake is observed within an active construction zone, a biologist should be notified immediately and all work within 100 feet of the individual animal should be halted and all equipment turned off until the individual has left the area. If needed, the U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife should be contacted to request permission to relocate the individual or additional guidance on the disposition of the individual.

4. In areas within 100-feet of potential habitat such as wetlands, a wildlife fence should be installed. The wildlife fence should consist of silt fencing, plywood, ERTEC fencing, or suitable material at least 36 inches in height that is buried six inches deep in the ground, or similar method, to prevent access under the fencing. A qualified biologist should remain on-site to monitor the installation of the wildlife fence to ensure that no San Francisco garter snakes or California red-legged frogs are trapped within the construction area or harmed during installation.

5. Following the completion of the installation of the wildlife fence, the biologist should train a dedicated member of the construction crew in the identification of the California red-legged frog and San Francisco garter snake, as well as appropriate protocols to follow if either of these species (or animals that may be one of these species) are detected on the site. This dedicated crew member should be responsible for checking the work area for these species prior to the start of construction each day, for inspecting any steep-walled holes or trenches for any animals that may inadvertently become trapped and/or injured, and for inspecting the integrity of the wildlife fence each day and ensuring that any needed repairs are

completed within 24 hours. The construction manager should provide a weekly summary of each inspection to the project biologist and the Sewer Authority Mid-Coastside (SAM) for the duration of construction.

6. To prevent the inadvertent entrapment of San Francisco garter snakes or California red-legged frogs, all excavated, steep-walled holes or trenches should be completely covered at the end of each work day with plywood or similar materials. If this is not possible, one or more escape ramps constructed of earth fill or wooden planks should be placed in the excavation. Before such holes or trenches are filled, they should be thoroughly inspected for any animals by the crew member dedicated to chocking the work area or a biological monitor. If at any time a California red-legged frog or San Francisco garter snake is found trapped or injured in one of these holes, any project activities that could result in harm to the individual should cease until the individual has moved out of the project site on its own (a ramp allowing the individual to leave may need to be provided).

BIO-2 Worker Awareness Training. Prior to ground disturbance, a qualified biologist should conduct a training session for all construction personnel. At a minimum, the training should include a description of special-status species that are present or are potentially occurring in the project vicinity, including, but not limited to, California red-legged frog, San Francisco garter snake, steelhead, monarch butterfly, San Francisco dusky-footed woodrat, western bumble bee, saltmarsh common yellow throat, and other nesting birds and raptors. Their habitats, general measures that are being implemented to conserve species as they relate to the project, and the boundaries within which construction activities will occur should be explained. Informational handouts with photographs clearly illustrating the species' appearances should be used in the training session. All new construction personnel should undergo this mandatory environmental awareness training.

The training session shall include information about steps to take if a special-status species is encountered, including contact information for the biological monitors and measures to protect species during construction. The biological monitor should be available to answer any questions about the special-status species. All new construction personnel should undergo this mandatory worker environmental awareness training when they start work on the project. Training should occur prior to the start of construction and periodically, as needed, if new construction personnel begin work at the project site. Each worker should sign a statement that they received training and the statement should be posted or easily available for viewing at the project site. Documentation of compliance with this measure should be submitted to the Sewer Authority Mid-Coastside (SAM), U.S. Fish and Wildlife Service, and California Department of Fish and Wildlife as needed.

Steelhead

Denniston Creek, which crosses the BSA, can potentially support steelhead as is considered a critical habitat area. The current project design anticipates avoiding steelhead critical habitat and all other aquatic resources by utilizing horizontal directional drilling under the habitat areas. It is therefore unlikely that the project will adversely affect steelhead. If the proposed project cannot avoid steelhead critical habitat within the project alignment, the applicant should coordinate with NOAA Fisheries to determine the appropriate course of action per the requirements of FESA (e.g., obtaining Incidental Take Permits) and implement the permit requirements prior to ground disturbance. Final conservation measures will be determined during the Incidental Take Permitting process; however, the following measures are recommended to minimize impacts to the extent possible.

Recommended Conservation Measure

BIO-3 Steelhead. If impacts to Denniston Creek cannot be avoided, the applicant should coordinate with the National Oceanic and Atmospheric Administration Fisheries to determine the appropriate course of action per the requirements of the Federal Endangered Species Act (e.g., obtaining Incidental Take Permits) and implement the permit requirements prior to ground disturbance.

Project activities should occur during the summer dry season when flows are low or streams are dry. Where feasible, the construction should occur from the bank, or on a temporary pad underlain with filter fabric. Any work within the stream channel should be performed in isolation from the flowing stream and erosion protection measures should be in place before work begins. Prior to dewatering, the best means to bypass flow through the work area to minimize disturbance to the channel and avoid direct mortality of fish and other aquatic invertebrates should be determined. Any construction debris should be prevented from falling into the stream channel. Any material that does fall into a stream during construction should be immediately removed in a manner that has minimal impact to the streambed and water quality. Dewatering should be coordinated with a qualified fisheries biologist to perform fish and amphibian relocation activities.

Fish should be excluded from the work area by blocking the stream channel above and below the work area with fine-meshed net or screen. Mesh should be no greater than 1/8- inch diameter. The bottom edge of the net or screen should be completely secured to the channel bed to prevent fish from reentering the work area. Exclusion screening should be placed in areas of low water velocity to minimize fish impingement. Screens shall be regularly checked and cleaned of debris to permit free flow of water.

Monarch Butterfly

Monterey pine, Monterey cypress, and willows within the project area could potentially provide overwintering habitat for monarch butterflies. Monarch overwintering activity has not been observed within the project area, and the potential for monarch use is considered moderate. If present, tree removal could result in impacts to monarch butterflies. Therefore, project impacts may affect, but are not likely to adversely affect monarch butterfly with implementation of the following conservation measure.

Recommended Conservation Measure

BIO-4 Monarch Butterfly Overwintering Habitat Survey and Avoidance. Prior to initiation of ground disturbance, a late fall/early winter survey of trees on the project site should be conducted by a qualified biologist to determine if overwintering sites for monarch butterfly are present. A letter report documenting survey results should be submitted to the Sewer Authority Mid-Coastside (SAM) upon completion. If the results of the survey do not identify any potential overwintering monarch butterflies on-site, no further mitigation is required. If it is determined that overwintering monarchs use the site, the applicant should avoid removal of trees used for overwintering by monarchs to the greatest extent feasible. If trees cannot be avoided, tree removal should occur outside of the overwintering period, which generally occurs from October through February, or until a qualified biologist has determined that overwintering monarchs are no longer using the site.

Saltmarsh Common Yellowthroat and Other Nesting Birds and Raptors

Native birds are protected under the federal Migratory Bird Treaty Act and California Fish and Game Code. Species state-listed as species of concern, including saltmarsh common yellowthroat, should be analyzed during environmental review under CEQA. Nesting birds and/or saltmarsh common yellowthroat may be present on the project alignment and may nest on and adjacent to the project area, especially in the freshwater forested and tree canopies. If protected species are nesting on or adjacent to the project area during the nesting bird season (February 1 to August 31), then construction activities could result in the loss of fertile eggs or nestlings, or otherwise lead to the abandonment of active nests. The effects determination is that the proposed project may affect, but is not likely to adversely affect, nesting migratory birds, including saltmarsh common yellowthroat, and birds of prey with implementation of the following conservation measures. The following conservation measure may be incorporated into project plans or as a condition of approval to avoid, minimize or mitigate potential impacts to nesting migratory birds and birds of prey and to ensure enforcement with the Migratory Bird Treaty Act and California Fish and Game Code.

Recommended Conservation Measure

BIO-5 Protected Nesting Birds. To avoid impacts to nesting birds and/or saltmarsh common yellowthroat during the nesting season (January 15 through September 15), all construction activities should be conducted between September 16 and January 14, which is outside of the bird nesting season. If construction occurs during the bird nesting season, then a qualified biologist should conduct a pre-construction survey for nesting birds to ensure that no nests would be disturbed during project construction.

If project-related work is scheduled during the nesting season (February 15 to August 30 for small bird species such as passerines; January 15 to September 15 for owls; and February 15 to September 15 for other raptors), a qualified biologist should conduct nesting bird surveys.

a. Two surveys for active bird nests should occur within 14 days prior to start of construction, with the final survey conducted within 48 hours prior to construction. Appropriate minimum survey radii surrounding each work area are typically 250 feet for passerines, 500 feet for smaller raptors, and 1,000 feet for larger raptors. Surveys should be conducted at the appropriate times of day to observe nesting activities. Locations off the site to which access is not available may be surveyed from within the site or from public areas. If no nesting birds are found, a letter report confirming absence should be prepared and submitted to the Sewer Authority Mid-Coastside (SAM) and no further mitigation is required.

b. If the qualified biologist documents active nests within the project site or in nearby surrounding areas, an appropriate buffer between each nest and active construction should be established. The buffer should be clearly marked and maintained until the young have fledged and are foraging independently. Prior to construction, the qualified biologist should conduct baseline monitoring of each nest to characterize "normal" bird behavior and establish a buffer distance, which allows the birds to exhibit normal behavior. The qualified biologist should monitor the nesting birds daily during construction activities and increase the buffer if birds show signs of unusual or distressed behavior (e.g., defensive flights and vocalizations, standing up from a brooding position, and/or flying away from the nest). If buffer establishment is not possible, the qualified biologist or construction foreman should have the authority to cease all construction work in the area until the young have fledged and the nest is no longer active. Once the absence of nesting birds has been confirmed, a letter report should be prepared and submitted to the Sewer Authority Mid-Coastside (SAM).

6.3 State-Listed Wildlife Species

The proposed project may impact the state-listed California red-legged frog, San Francisco garter snake, saltmarsh common yellowthroat, nesting birds, San Francisco dusky-footed woodrat, and western bumble bee. Impacts to species also listed under FESA and saltmarsh common yellowthroat are discussed above. The following recommendations may be incorporated into project plans or as a condition of approval to avoid, minimize or mitigate potential impacts to these species.

It should be noted that although not required to be addressed under NEPA due to the lack of a federal listing, species listed as Species of Special Concern should be analyzed per CEQA Guidelines Section 15380. The following species have moderate potential to occur on or adjacent to the project area and are discussed below:

- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*); Species of Special Concern, no federal listing; and
- Western bumble bee (*Bombus occidentalis*), Species of Special Concern, CESA Candidate, no federal listing.

Information on state-listed wildlife, including listing status, suitable habitat conditions, and potential to occur on the site is presented in Appendix B.

San Francisco Dusky-Footed Woodrat

There are no records of San Francisco dusky-footed woodrat within three miles of the project site in the CNDDB, however there are multiple observations of this species in iNaturalist within a three-mile vicinity buffer to the project alignment. Suitable habitat is found within the freshwater forested, closed cone forest, and coastal scrub portions of the BSA. San Francisco dusky-footed woodrat is a state listed species of special concern and impacts as a result of the proposed project may be considered significant under CEQA. Conservation measure BIO-2 presented above, which requires a training session on special-status species potentially present on the construction site for all personnel, along with the following mitigation measure would reduce potential impacts to this species.

Mitigation Measure

BIO-6 San Francico Dusky-Footed Woodrat. Prior to issuance of demolition and grading permits, a qualified biologist shall conduct preconstruction surveys for woodrat nests between 14 and 30 days prior to demolition or construction activities within 25 feet of wooded areas. If no nests are found, a letter report shall be prepared by the biologist and submitted to the Sewer Authority Mid-Coastside (SAM), where it shall be kept on file, and no further measures are required.

If woodrat nests are observed, the nests shall be flagged for avoidance of direct impacts where feasible. If avoidance is not possible, the nest(s) shall be manually deconstructed and rebuilt when young are not present, typically during the non-breeding season (October through January). If it is determined that young may be present during the preconstruction survey, a suitable buffer (determined by the qualified biologist) shall be established around the nest until the young are independent enough to successfully move from the deconstructed nest. Once nest(s) have been deconstructed and woodrats have left the construction area, a letter report shall be prepared by the biologist and submitted to the Sewer Authority Mid-Coastside (SAM), where it shall be kept on file.

Western Bumble Bee

Western bumble bee was designated as a candidate for listing under the CESA in 2019, but no decision on listing has been published. If, at the time of project implementation, the species is not a CESA candidate or CESA listed, and it does not fall into any of the other special-status categories defined in Section 3.1, then it would not qualify for protections under CESA and no mitigation is necessary.

Suitable foraging and nesting habitat for western bumble bee is present within the project area. If present, impacts to western bumble bee are considered significant under CEQA. Implementation of Recommended Conservation Measure BIO-2 presented above, which requires a training session on special-status species potentially present on the project site for all personnel, and the following mitigation measure, will reduce this potential, significant impact to western bumble bee to a less-than-significant level.

Mitigation Measure

BIO-7 If western bumble bee is listed prior to project implementation., one of the following options shall be implemented prior to vegetation removal.

Option 1: Seasonal Avoidance

Clear vegetation and conduct ground-disturbing activities outside of the colony active period (March through August) to avoid peak flight season and discourage western bumble bees from nesting in the project area.

Option 2: Assume presence of Western bumble bee

Assume presence and obtain Incidental Take Authorization from the California Department of Fish and Game (Section 2081 of the Fish and Game Code. Avoidance measures identified in the permit shall be implemented. Compensatory mitigation, such as land acquisition and habitat restoration or enhancement would be required.

Option 3: Conduct focused surveys for Western bumble bee

If seasonal avoidance is not possible, consultation with the California Department of Fish and Wildlife shall occur at least one year prior to ground disturbance to evaluate potential impacts and other feasible avoidance measures, including habitat assessments and/or surveys.

Surveys shall occur during the colony active period for the western bumblebee (March through August) prior to tree removal, vegetation clearance, grading, or the initiation of any construction activity in any undeveloped area of the project site, developers of future individual projects shall hire a qualified biologist to conduct a pre-construction survey of small mammal burrows and thatched/bunch grasses. If the survey results are negative (i.e., no western bumble bee activity observed), a letter report confirming absence shall be prepared and submitted to the Sewer Authority Mid-Coastside (SAM), where it shall be kept on file, and no further mitigation is required.

If western bumble bee nests are detected and the area can be avoided, a qualified biologist shall supervise the installation of protective fencing/flagging a minimum of 50 feet around the nest area prior to construction and phase vegetation removal, to retain patches of floral resources during construction. The fencing/flagging shall be checked at least once per week by a biological monitor until construction is complete to ensure that the protective fencing/flagging remains intact. The qualified biologist can conduct the weekly checks or train a biological monitor selected from the construction crew by the construction contractor (typically the project foreman) to check the fencing/flagging and provide weekly updates. Documentation of the fencing/flagging installation shall be provided to the Sewer Authority Mid-Coastside (SAM) prior to the start of ground disturbance activities. Documentation of the weekly checks and timely maintenance of fencing/flagging (if needed) shall be provided to the Sewer Authority Mid-Coastside (SAM) quarterly during construction.

If western bumble bee nests are detected and the area cannot be avoided, the qualified biologist shall coordinate with the California Department of Fish and Wildlife to obtain Incidental Take Authorization. Compensatory mitigation, such as land acquisition and habitat restoration or enhancement would be required.

After it has been confirmed that the habitat area is no longer occupied, a letter report shall be prepared and submitted to the Sewer Authority Mid-Coastside (SAM). The project applicant shall be responsible for implementation of this mitigation measure with oversight by the Sewer Authority Mid-Coastside (SAM).

6.4 State-Listed Plant Species

Ornduff's meadowfoam, a CRPR 1.B species, is known to occur within agricultural areas along the project alignment. If present, construction activities may impact this species. Implementation of Conservation Measure BIO-2 presented above, which requires a training session on special-status species potentially present on the project site for all personnel, and the following mitigation measure, will reduce this potential, significant impact to Ornduff's meadowfoam to a less-than-significant level.

Mitigation Measure

BIO-8 Focused Plant Surveys. Prior to ground disturbance, a biologist qualified in botany shall conduct a focused survey for Ornduff's meadowfoam on the project alignment in accordance with current California Department of Fish and Wildlife and California rare plant survey protocols (CDFW 2018 and CNPS 2001). The survey shall occur during the peak blooming period for these species to determine their presence or absence. Some special-status plant species are only identifiable during their blooming periods and surveys are only considered valid if they occur when blooms are visible. Based on the known blooming periods of Ornduff's meadowfoam, three surveys would be necessary to adequately survey the project site: the first in February, the second in April, and the third in December. If possible, known reference populations of the target species in the project vicinity shall first be visited to verify that the species is observable, and the focused survey shall be conducted within two weeks of observing the reference population in full bloom.

The biologist shall then prepare a brief report documenting the results of the surveys which should be submitted to the Sewer Authority Mid-Coastside (SAM) prior ground disturbance. If the focused surveys conclude that special-status plant species are not present within the project site boundary, or if they are present but impacts to them can be completely avoided, then no further measures would be required.

If the focused surveys identify special-status plant species within the project site boundary and they would be affected by the proposed project, then appropriate avoidance and minimization measures shall be developed by the biologist and implemented by the project applicant prior to ground disturbance. Measures may include, but are not limited to:

a. A qualified biologist shall identify an on-site or off-site mitigation area suitable for restoration of habitat and seed transplantation for any special-status plant species.

b. Prior to ground disturbance, a qualified biologist or native plant specialist shall perform seed collection from all special-status plants located within the impact

areas and implement seed installation at the mitigation area at the optimal time. Additionally, topsoil from the special-status species occurrence area(s) shall be salvaged (where practical) for use in the mitigation area.

c. A maintenance and monitoring program shall be developed by a qualified biologist and established for a minimum of five years after mitigation area installation to verify that restoration activities have been successful. Maintenance activities may include, but not be limited to, watering during the plant establishment period, supplemental seed planting as needed, and removal of non-native plants. Monitoring shall include, at a minimum, quarterly monitoring reports for the first year and annual reports for the remaining four years. The performance standard for successful mitigation shall be a minimum 3:1 replacement ratio (i.e., three plants observed in mitigation area for each plant lost from the project site) achieved in at least one of the five years of monitoring.

The project applicant should be responsible for implementation of this mitigation measure. Compliance with this measure shall be documented prior to approval of a grading permit.

6.5 Sensitive Natural Communities

Arroyo willow thickets, California sagebrush scrub, bush monkey-flower scrub, and coastal tufted hair grass within the project alignment are classified by California Department of Fish and Wildlife as "Sensitive Natural Communities" and as ESHA. These species are documented as freshwater forested, wetland, coastal scrub, and coastal prairie plant communities within the BSA. Impacts to sensitive natural communities are considered potentially significant. The current project design anticipates avoiding sensitive natural communities within the project alignment by utilizing horizontal directional drilling under the habitat areas. If the proposed project cannot avoid these sensitive natural community areas within the project alignment, additional compensatory mitigation may be required by the County or by the California Coastal Commission as part of the Coastal Development Permit process. This may include off-site habitat preservation or restoration of sensitive habitats similar in composition, quality, and acreage to those that would be impacted, or payment to a regional habitat mitigation bank. The following mitigation measures would reduce impacts to less than significant level in combination with the analysis and measure in Section 6.6, Jurisdictional Wetlands and Waters, below:

Mitigation Measures

BIO-9 Sensitive Natural Communities/Environmentally Sensitive Habitat Areas. If impacts to sensitive natural communities cannot be avoided, prior to the start of construction, the project applicant shall retain a qualified biologist to delineate the boundaries of sensitive natural communities within and adjacent to the project area. The biologist shall flag and

map these areas in the field. Protective fencing (e.g., high-visibility construction fencing) shall be installed along the flagged boundaries to establish environmentally sensitive area buffers. No ground disturbance, grading, or equipment staging shall occur within the fenced environmentally sensitive area.

If avoidance of sensitive natural communities is not feasible, the applicant shall prepare and implement a restoration and/or compensatory mitigation plan, in consultation with the California Department of Fish and Wildlife, to ensure no net loss of sensitive natural community functions or values. The plan may include measures such as replanting with locally appropriate native species, habitat restoration, or off-site conservation at a minimum 1:1 ratio.

Plant communities dominated by California wild strawberry are located in various habitat types including ornamental and annual grasslands. California wild strawberry is considered a sensitive natural community according to the *San Mateo County Mid-Coast Land Use Plan*, Section 7.49. According to the Land Use Plan, any development within one-half mile of the coast shall mitigate against the destruction of any California wild strawberry in one of the following ways:

a. Prevent any development, trampling, or other destructive activity which would destroy the plant; or

b. After determining specifically if the plants involved are of particular value, successfully transplant them or have them successfully transplanted to some other suitable site. Determination of the importance of the plants can only be made by a professional doing work in strawberry breeding.

Impacts to habitats containing California wild strawberry are considered potentially significant. The current project design anticipates avoiding California wild strawberry within the project alignment by utilizing horizontal directional drilling under the habitat areas. If the proposed project cannot avoid California wild strawberry within the project alignment, the following mitigation measure would reduce impacts to less than significant level:

Mitigation Measure

BIO-10 California Wild Strawberry. If impacts to habitats containing California wild strawberry cannot be avoided, prior to the start of construction, the project applicant shall retain a qualified botanist to delineate the boundaries of California wild strawberry within and adjacent to the project area. The botanist shall flag and map these areas in the field. Protective fencing (e.g., high-visibility construction fencing) shall be installed along the flagged boundaries to establish environmentally sensitive area (ESA) buffers. No ground disturbance, grading, or equipment staging shall occur within the fenced ESA.

If avoidance of habitats containing is not feasible, the applicant shall retain a botanist experienced in strawberry relocation/restoration to determine if the plants have particular value. If needed, the botanist shall prepare and implement a relocation/restoration plan to ensure no net loss of California wild strawberry plants. The plan shall include, but not be limited to, watering during the plant establishment period, supplemental planting as needed, and removal of non-native plants. Monitoring should include, at a minimum, quarterly monitoring reports for the first year and annual monitoring and reporting for second year.

6.6 Jurisdictional Wetlands and Waters

Jurisdictional aquatic features in the form of wetlands, streams/drainages, or riparian woodlands occur throughout the project alignment. Impacts to areas within the ordinary high water mark are regulated by the USACE. Impacts to areas within the top of bank are regulated by the RWQCB. Impacts to the riparian corridor (freshwater forested habitat) are regulated by the CDFW. Impacts to jurisdictional wetlands and waters are considered potentially significant. The current project design anticipates avoiding jurisdictional wetlands and waters within the project alignment by utilizing horizontal directional drilling under the jurisdictional areas. If the proposed project cannot avoid jurisdictional wetlands and waters within the project alignment the following mitigation measures would reduce impacts to less than significant level:

BIO-11 Jurisdictional Wetlands and Waters. According to the *SAM Force Main in Montara Replacement Project Aquatic Resources Delineation Report* (EMC Planning Group 2025), twenty-two potentially jurisdictional aquatic features were mapped within the biological survey area. The delineated wetlands or aquatic features were classified as wetlands, streams/drainages, or riparian woodlands. If impacts to one or more of these features should occur, permits may be required prior to disturbance. If the United States Army Corps of Engineers (USACE) claims jurisdiction over features that should be impacted, the applicant should retain a qualified biologist to obtain a Clean Water Act Section 404 Nationwide Permit. If proposed impacts do not qualify for a Nationwide Permit, the applicant should proceed with the qualified biologist in obtaining an Individual Permit from the USACE. If impacts may occur to features potentially considered jurisdictional by the Regional Water Quality Control Board (RWQCB), the applicant should retain a qualified biologist to obtain a Clean Water Act Section 401 Water Quality Certification or approval under the Water Discharge Requirements Program. If impacts to riparian vegetation will occur, the applicant should also retain a qualified biologist to coordinate with the California Department of Fish and Wildlife (CDFW) to obtain a Streambed Alteration Agreement.

To compensate for temporary impacts to wetlands or waters that would be impacted as a result of the proposed project, mitigation should be provided as required by the regulatory permits and preparation of a Wetland/Riparian Mitigation and Monitoring Plan is recommended:

1. A Wetland/Riparian Mitigation and Monitoring Plan should be developed that outlines mitigation and monitoring obligations for temporary and permanent impacts to wetlands and other waters as a result of construction activities. The Wetland/Riparian Mitigation and Monitoring Plan would include thresholds of success, monitoring and reporting requirements, and site-specific plans to compensate for the loss of wetland or riparian vegetation resulting from the project. The Wetland/Riparian Mitigation and Monitoring Plan should be submitted to the appropriate regulatory agencies for review and approval during the permit application process.

BIO-12 Water Quality Protection. Construction-related storm water discharges to surface waters are regulated through the National Pollutant Discharge Elimination System (NPDES) program and project applicants are required to obtain a NPDES permit prior to construction. Best management practices (BMPs) in the NPDES permit may include, but are not limited to, silt fencing, fiber rolls, straw bales, or other measures and shall be implemented during construction to minimize dust, dirt, and construction debris from leaving the construction area and entering adjacent surface waters.

6.7 Wildlife Movement Corridors and Habitat Connectivity

The central portion of the project alignment is considered to be a wildlife corridor classified as a Rank 3 connection with implementation flexibility. However, the proposed project will result in temporary impacts that would not alter the paths of wildlife utilizing the project area for wildlife movement. In addition, implementation of the mitigation measures listed above is anticipated to protect protected biological resources. Therefore, impacts to wildlife movement are considered negligible.

6.8 Regulated Trees

For trees within the City of Half Moon Bay: Chapter 7.40 of the City of Half Moon Bay Code of Ordinances states that a heritage tree cannot be removed or pruned more than one-third of the branches or roots within a twelve-month period without obtaining a permit in accordance with the requirements listed in the City of Half Moon Bay Code of Ordinances.

For trees within San Mateo County, San Mateo County Code of Ordinance Section 8.400.110 states that protected and heritage trees require tree removal permits and tree pruning permits, unless they qualify for an exemption as provided under Section 8.400.100 of the San Mateo County Code of Ordinance. Exemption 7 under Section 8.400.100 of the San Mateo County Code of Ordinance

states that tree removal and pruning by California Public Utilities Commission licensed utility in order to maintain required clearance around power lines or pipelines is applicable for exemption. This may be applicable to the Project and would make the project exempt from applying for a tree removal permit with the County of San Mateo. In addition, Section 7.48 of the *San Mateo County Mid-Coast Land Use Plan* requires protection of native Monterey pine trees, if present.

The following mitigation measure is considered standard to construction compliance, and would comply with Chapter 7.40 of the City of Half Moon Bay's Code of Ordinance and with the City of Half Moon Bay Code of Ordinance (if the Project does not qualify for an exemption under Section 8.400.100 of the San Mateo County Code of Ordinance) ensuring compliance with applicable laws related to the protection of protected trees:

Mitigation Measure

BIO-13 Regulated Trees. A tree inventory and assessment should be conducted for the project site. In accordance with the Chapter 7.40 of the City of Half Moon Bay's Code of Ordinance and San Mateo County Code of Ordinance, the applicant should obtain a tree removal permit within the City of Half Moon Bay if more than one-third of a heritage tree will be trimmed or if it will be removed and/or if a protected or heritage tree needs to be removed or pruned within the County of San Mateo (if the Project does not qualify for an exemption under Section 8.400.100 of the San Mateo County Code of Ordinance). Per section 7.48 of the *San Mateo County Mid-Coast Land Use Plan*, the assessment should include a determination on whether Monterey pine (*Pinus radiata*) present are considered native and if mitigation or tree protection measures are needed. Any replacement trees required should be installed in accordance with all mitigation, maintenance, and monitoring requirements specified in the tree removal permit(s), arborist report, or otherwise required by the City of Half Moon Bay or County of San Mateo.

7.0
Report Preparers and Sources

7.1 Report Preparers

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7.2 Sources

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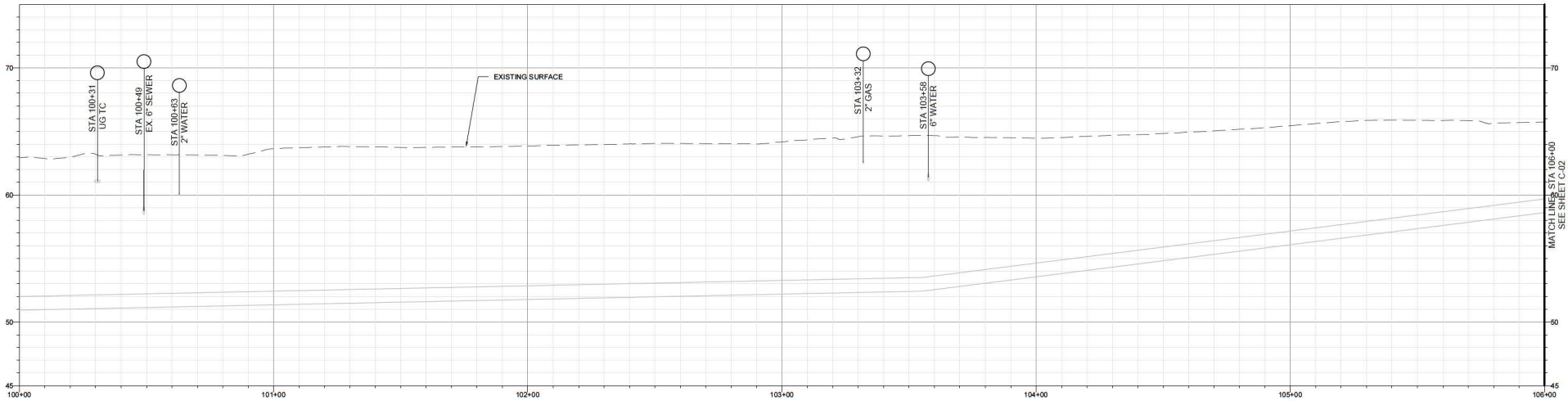
Site Plans

A

APPENDIX



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

M&H Bypass Routing

Above Ground

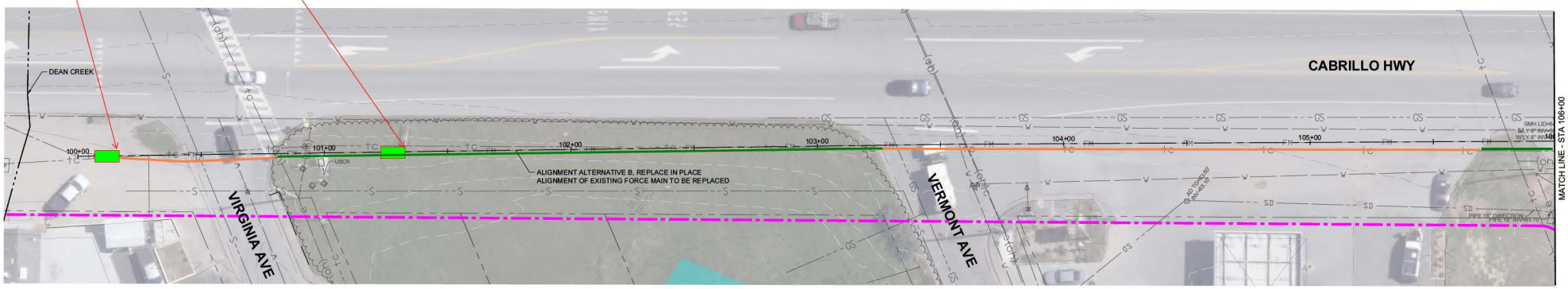
Underground

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

MNS
2025 Gateway Place, Suite 328
San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

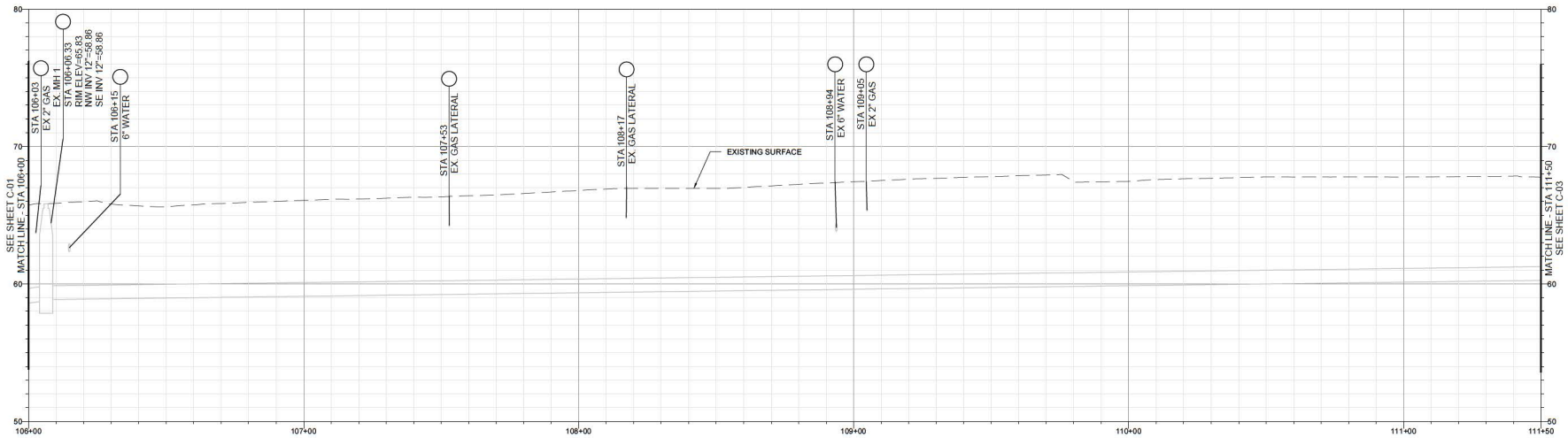
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 1

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-01

SHEET NUMBER: 4 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

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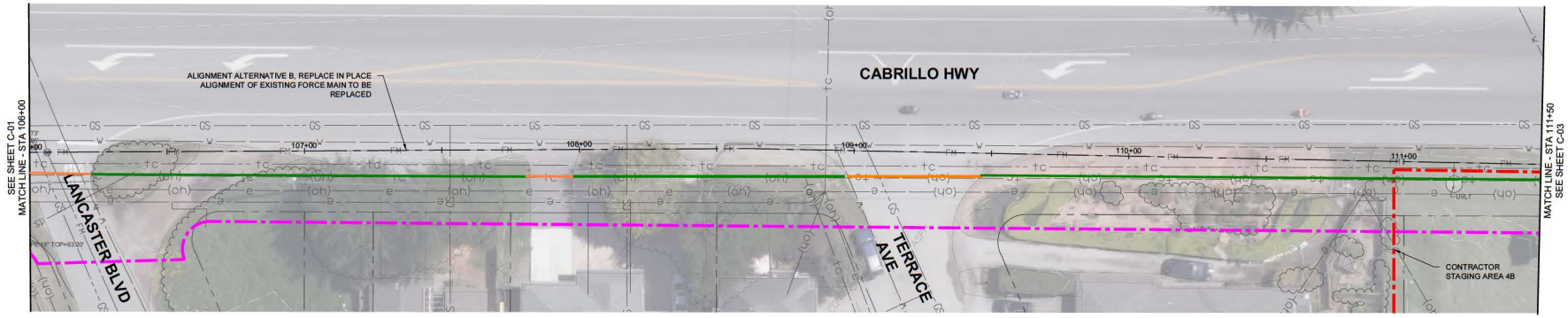
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 2

PROJECT NUMBER: SAMCS.240160
DRAWING NUMBER: C-02
SHEET NUMBER: 5 OF 28

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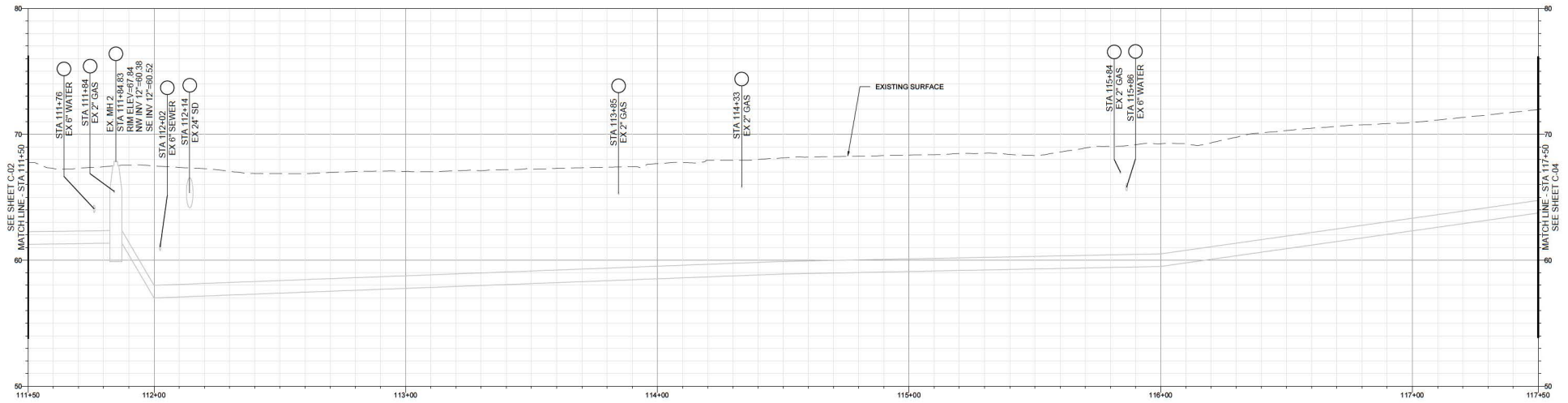


PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

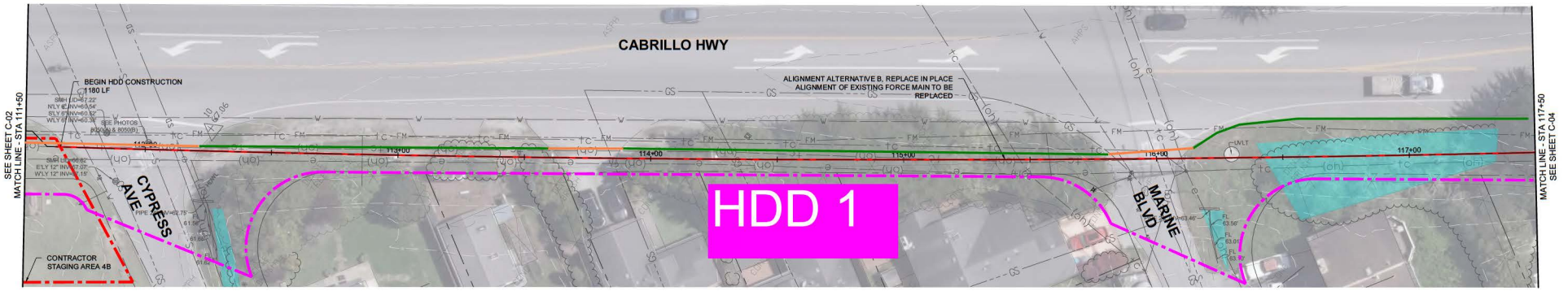
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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2025 Gateway Place, Suite 328
San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

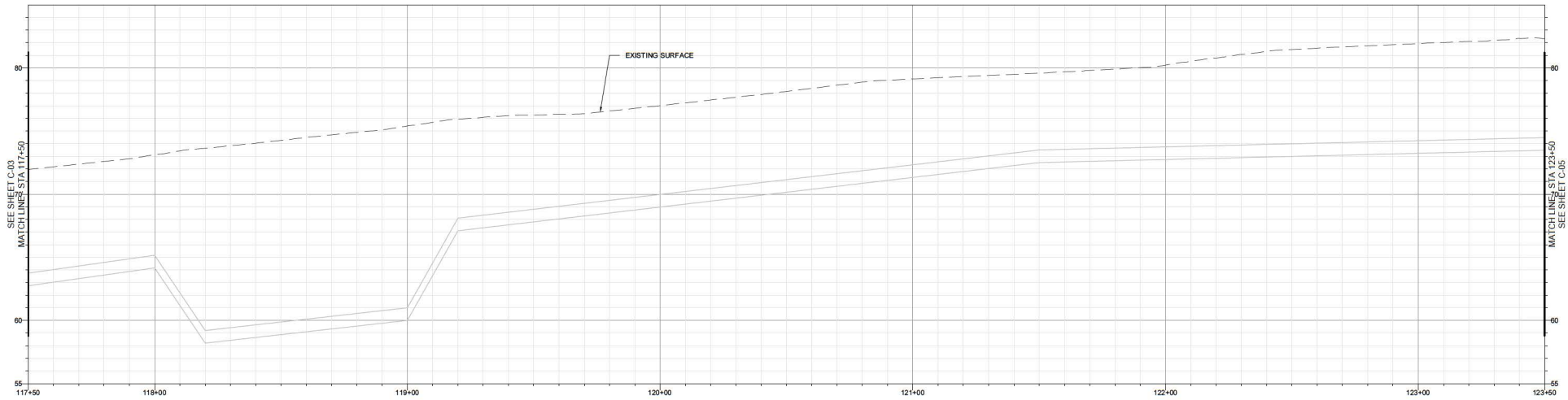
PROJECT NUMBER: SAMCS.240160

PLAN AND PROFILE - 3

DRAWING NUMBER: C-03

SHEET NUMBER: 6 OF 28

Mon 04 Aug 25 - 03:41:04 PM - By: Kiko Dolan - C:\GeoProjects\SAMCS Sewer Authority Mid-Coast\SAMCS_SAV-02 Montara FM\C-03\sheet\SAV-02 Montara FM.dwg



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

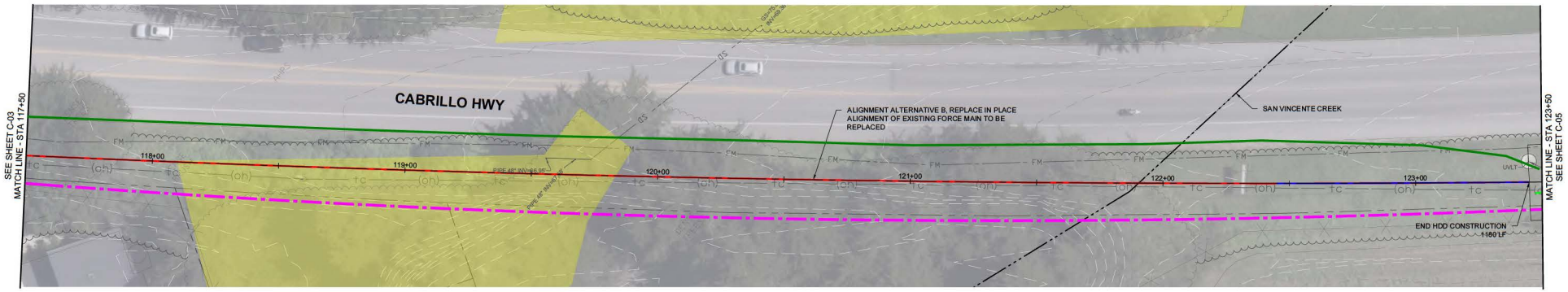
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT

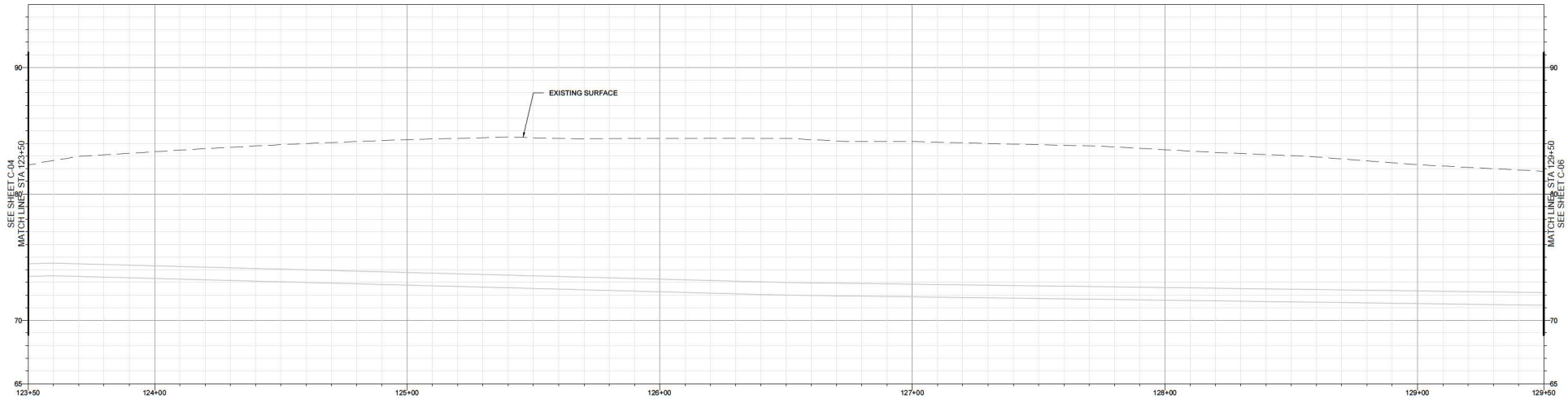
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 4

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-04

SHEET NUMBER: 7 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

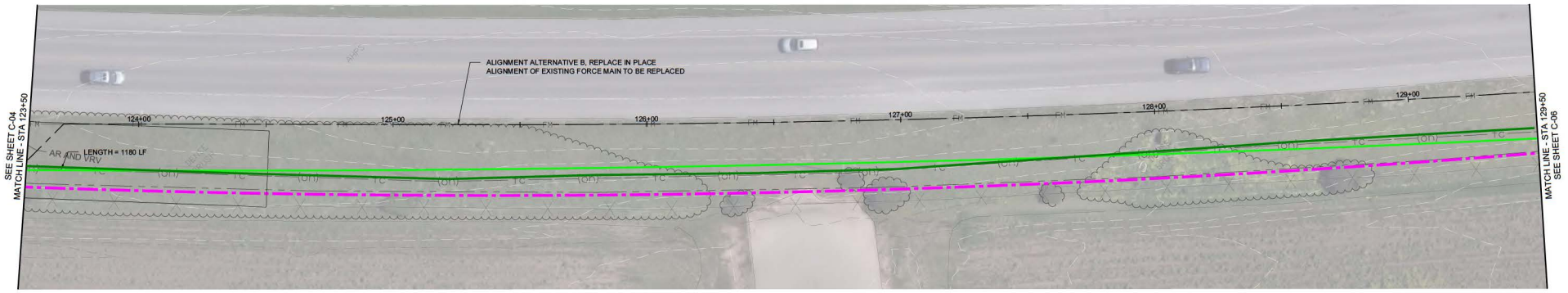
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

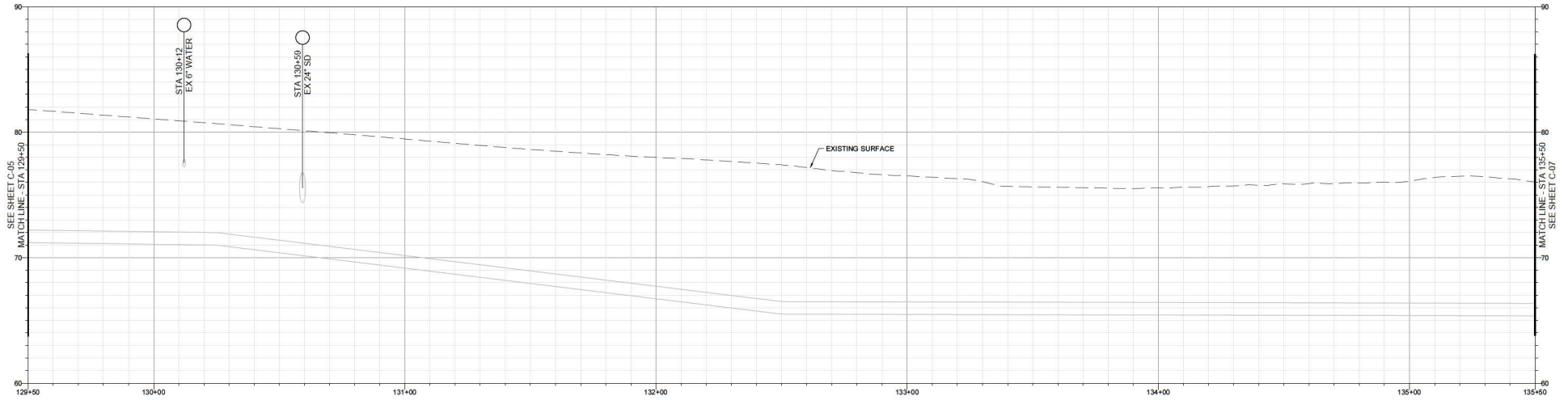
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 5

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-05

SHEET NUMBER: 8 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY

PLAN

20' 10' 0 20' 40'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

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SCALE: AS SHOWN

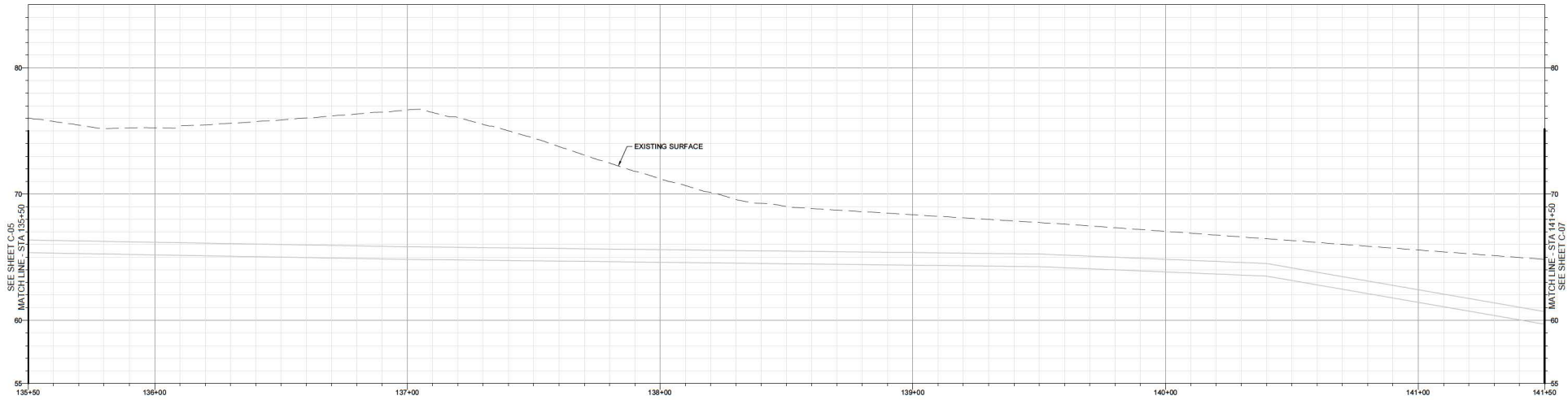
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 6

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-06

SHEET NUMBER: 9 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

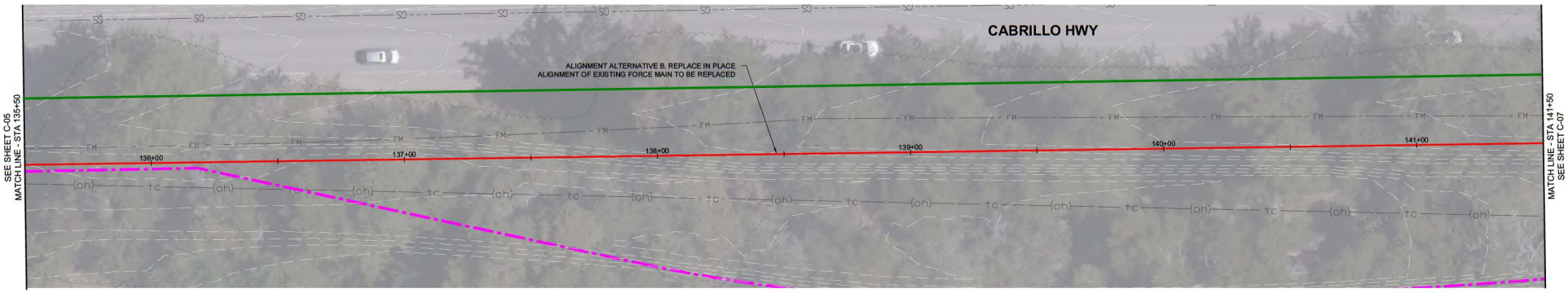
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 7

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-07

SHEET NUMBER: 10 OF 28

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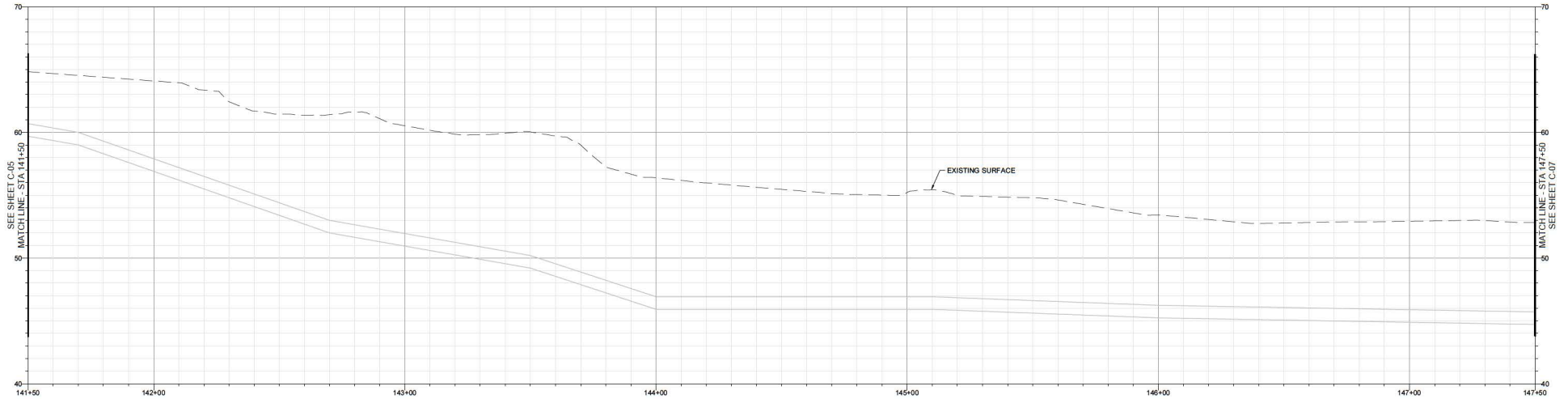


PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

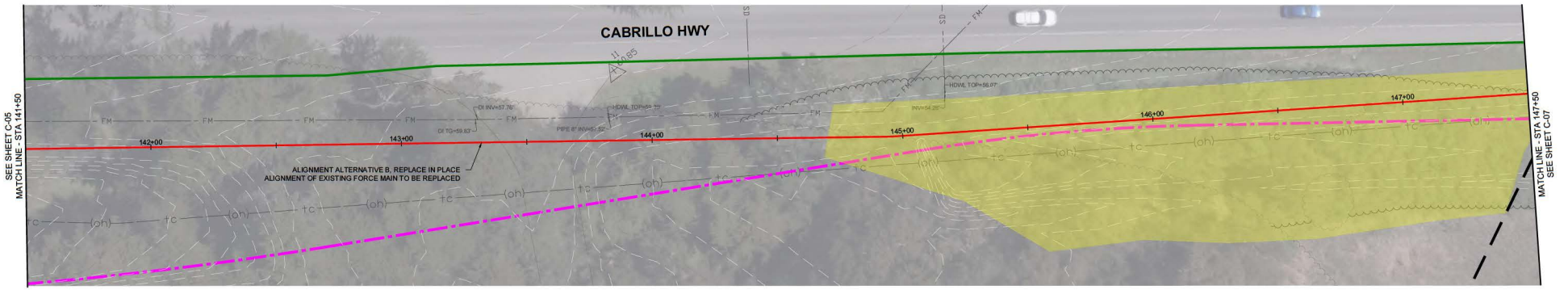
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

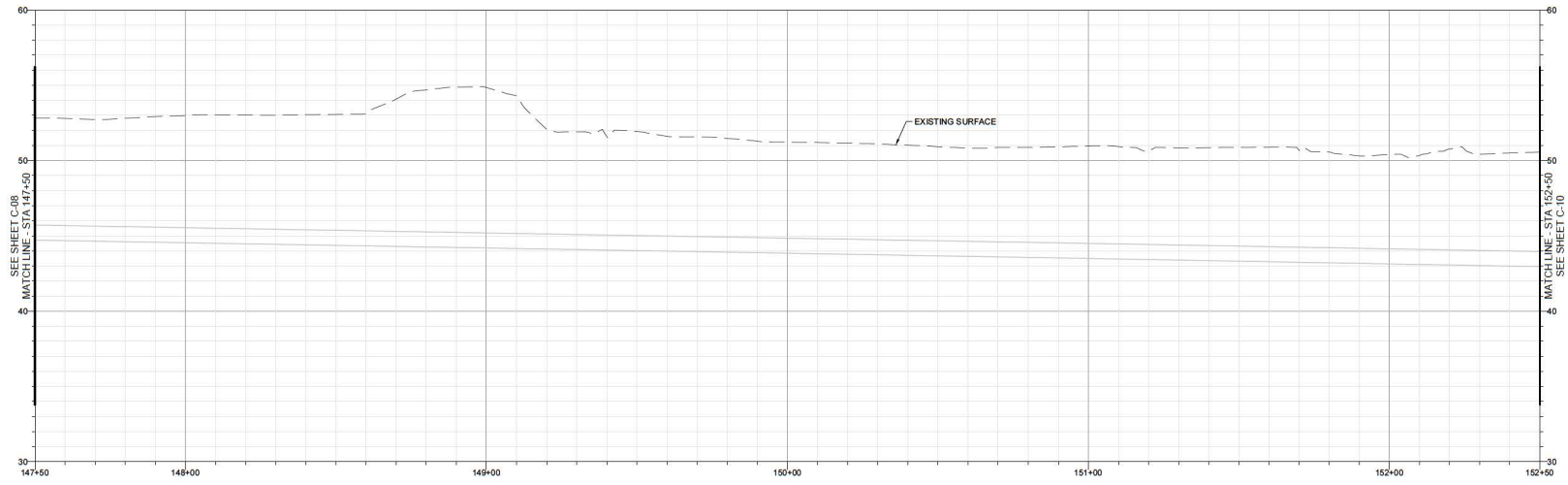
PLAN AND PROFILE - 8

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-08

SHEET NUMBER: 11 OF 28

© Civil Plans by MNS | Sewer Authority Mid-Coastside | John Hill Montara Plan | Dwg | Dec 2 | Sheet 08 P&P - 2.dwg



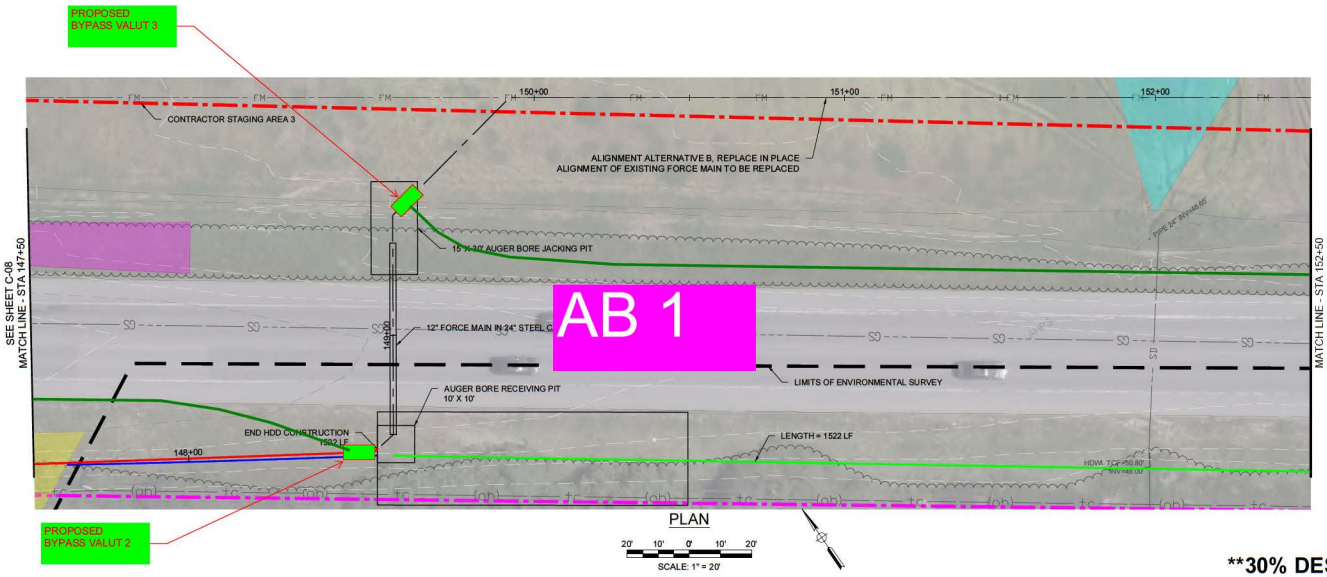
PROFILE

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION



PLAN

SCALE: 1" = 20'

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- BORING LOCATION / ID
- HDD STAGING AREA (100 x 30)
- HDD ACCESS ROAD (15)

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

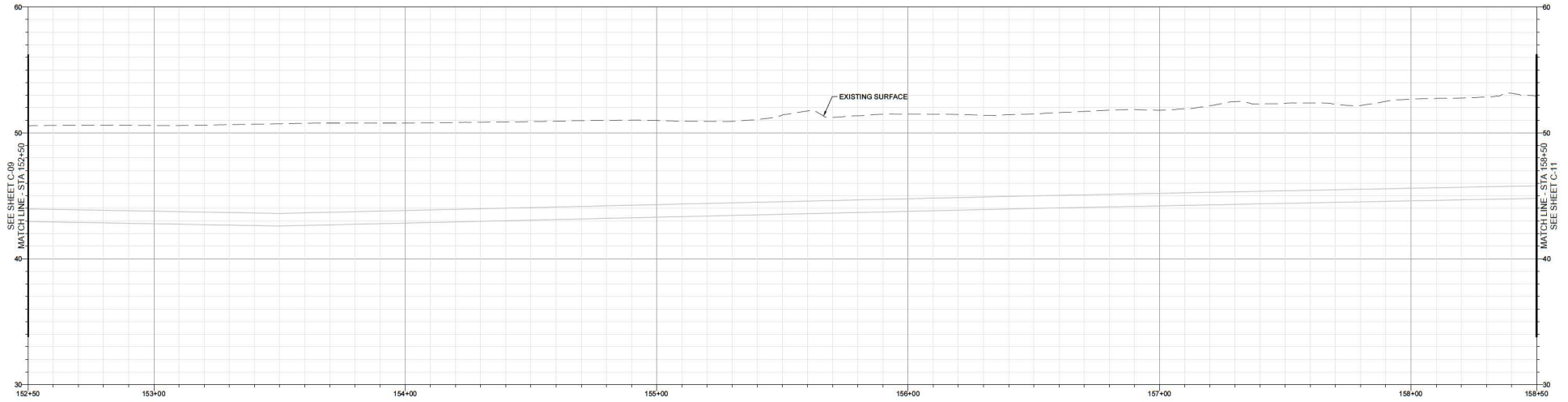
0 1/2 1 2
THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 9

PROJECT NUMBER: SAMCS.240160
DRAWING NUMBER: C-09
SHEET NUMBER: 12 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

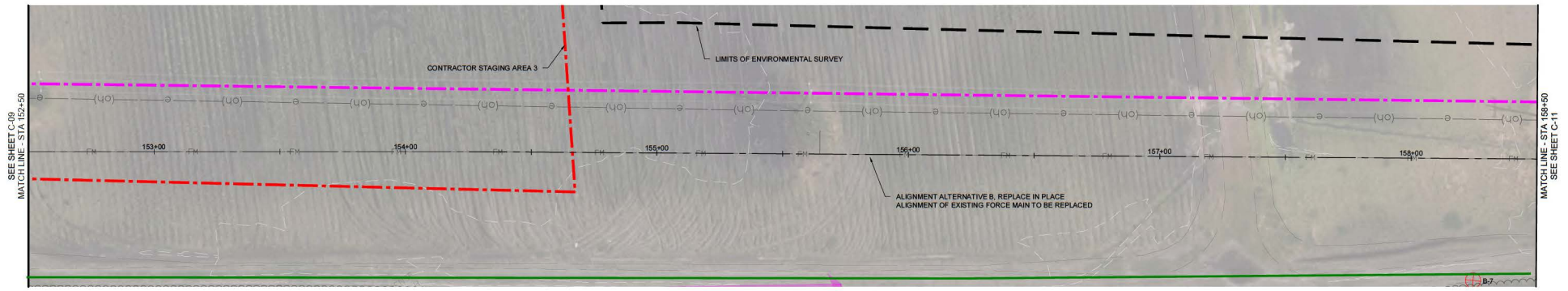
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

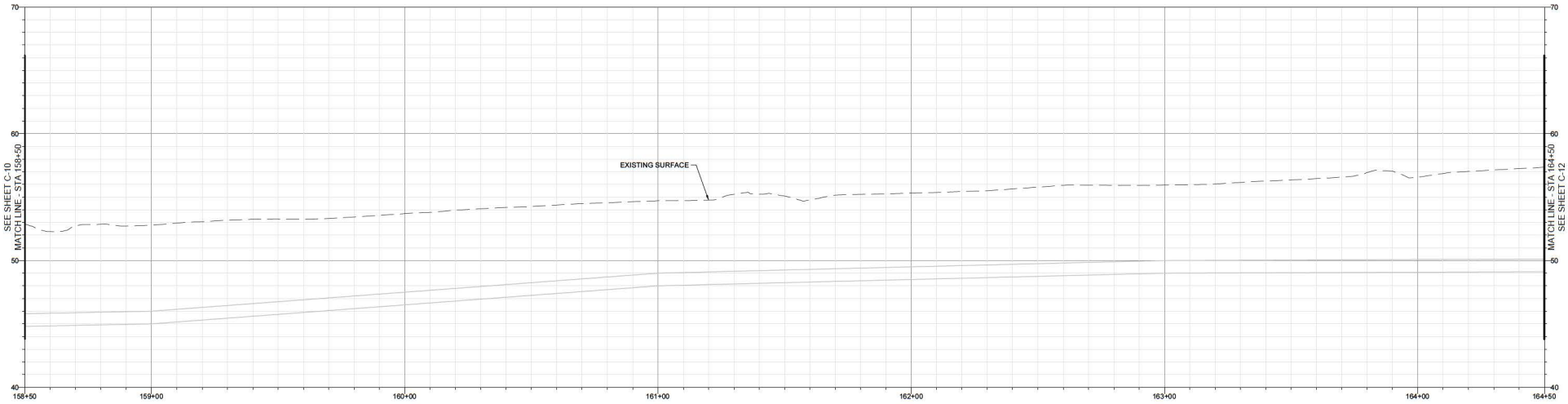
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 10

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-10

SHEET NUMBER: 13 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
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- SET BACK FROM SENSITIVE HABITAT (100LF)
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- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY

PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

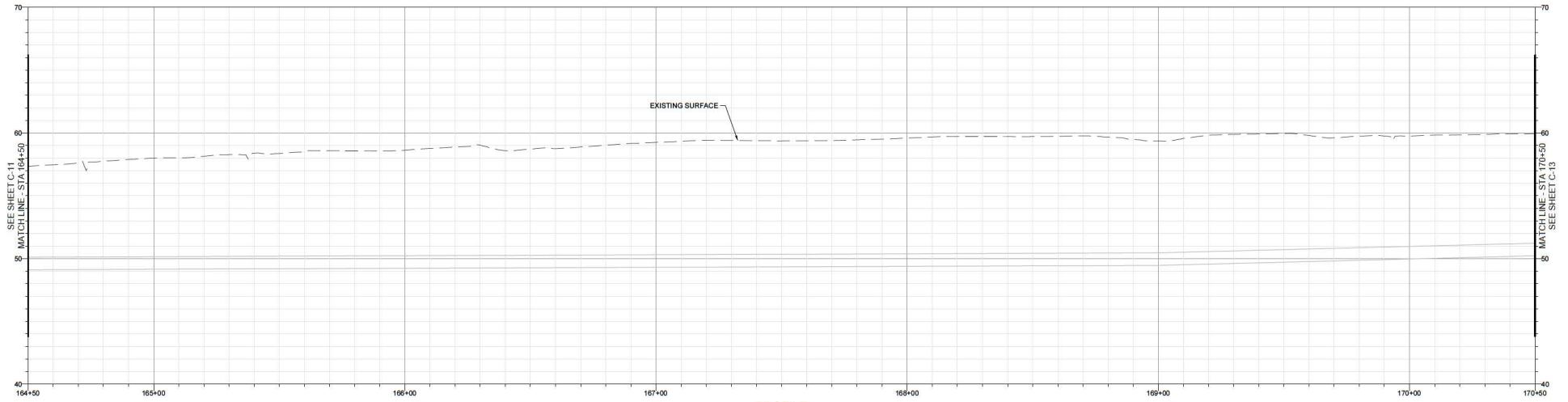
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 11

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-11

SHEET NUMBER: 14 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

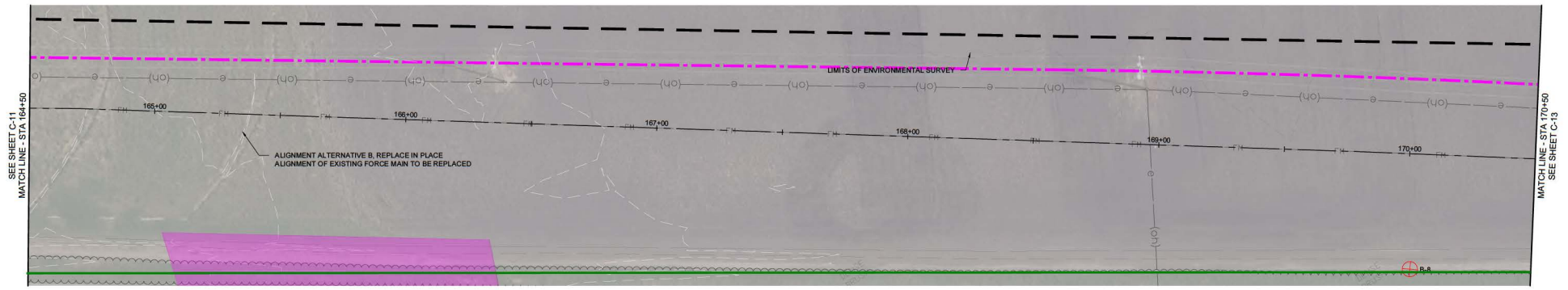
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

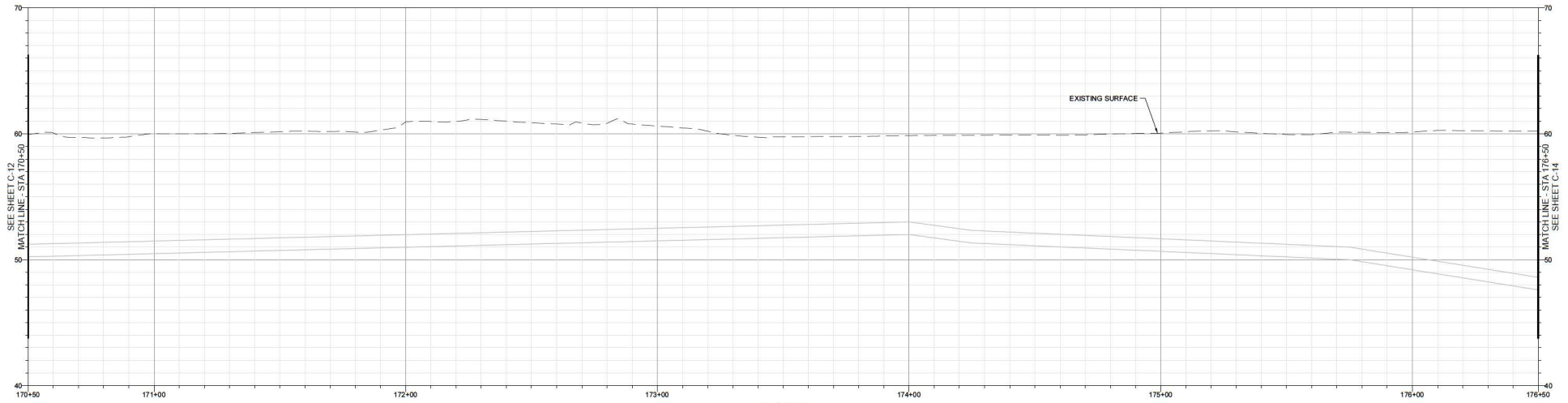
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 12

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-12

SHEET NUMBER: 15 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

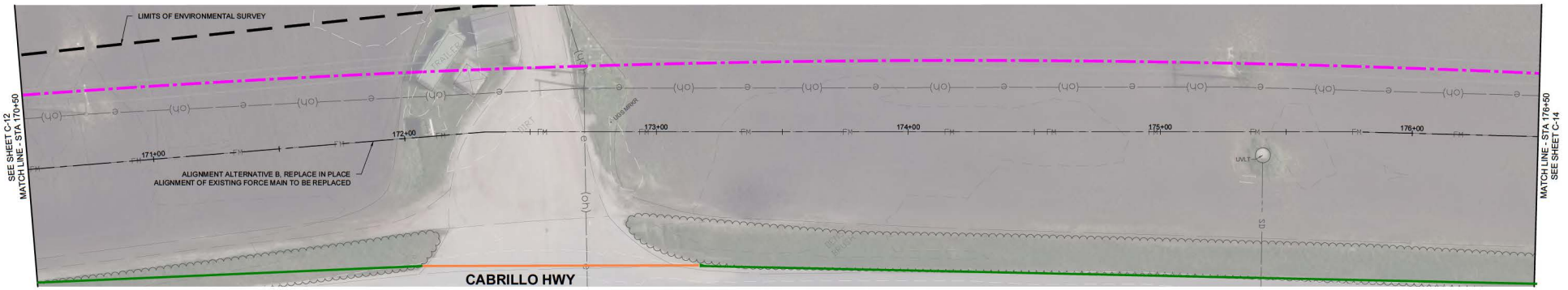
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

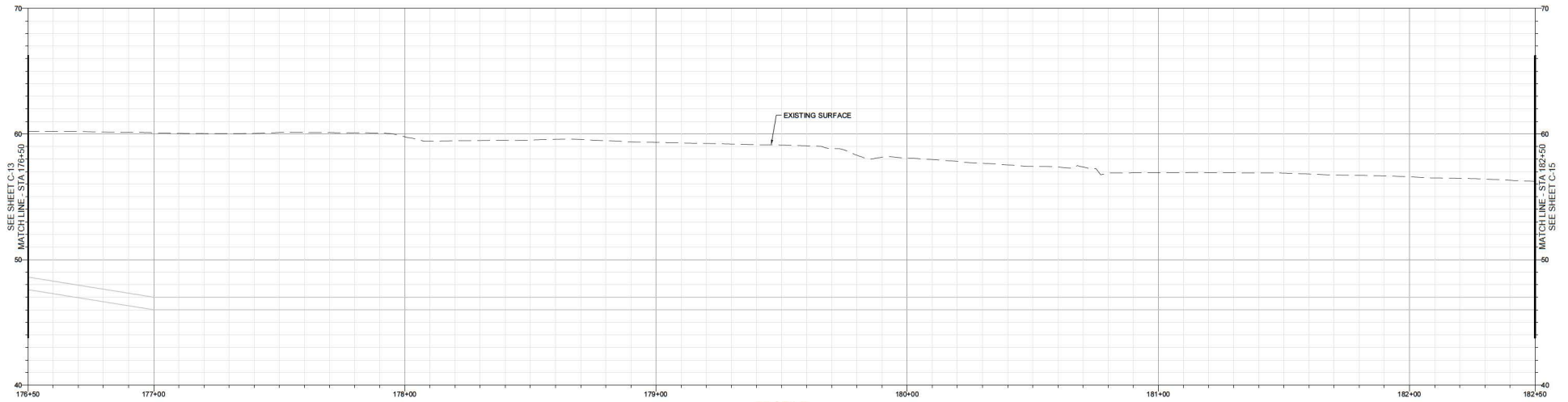
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 13

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-13

SHEET NUMBER: 16 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
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- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY

PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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0 1/2 1 2

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SCALE: AS SHOWN

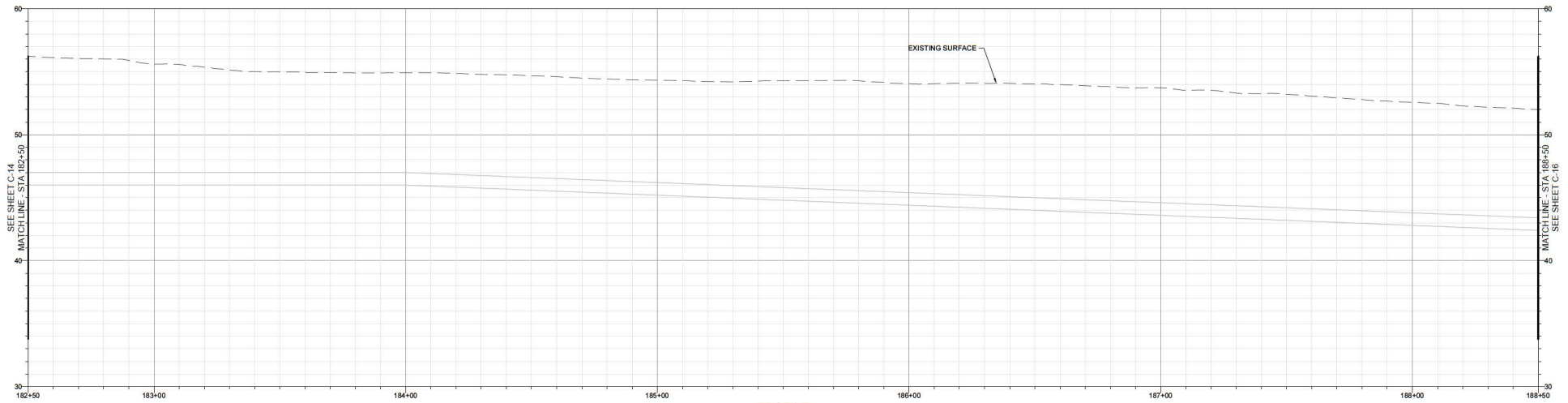
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 14

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-14

SHEET NUMBER: 17 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

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- CALTRANS RIGHT OF WAY
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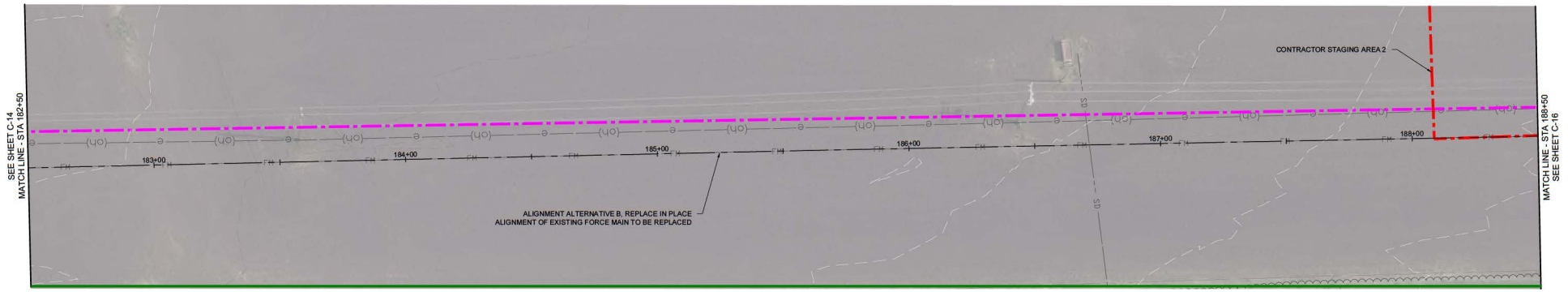
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

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		KAD	30% PLANS

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SCALE: AS SHOWN

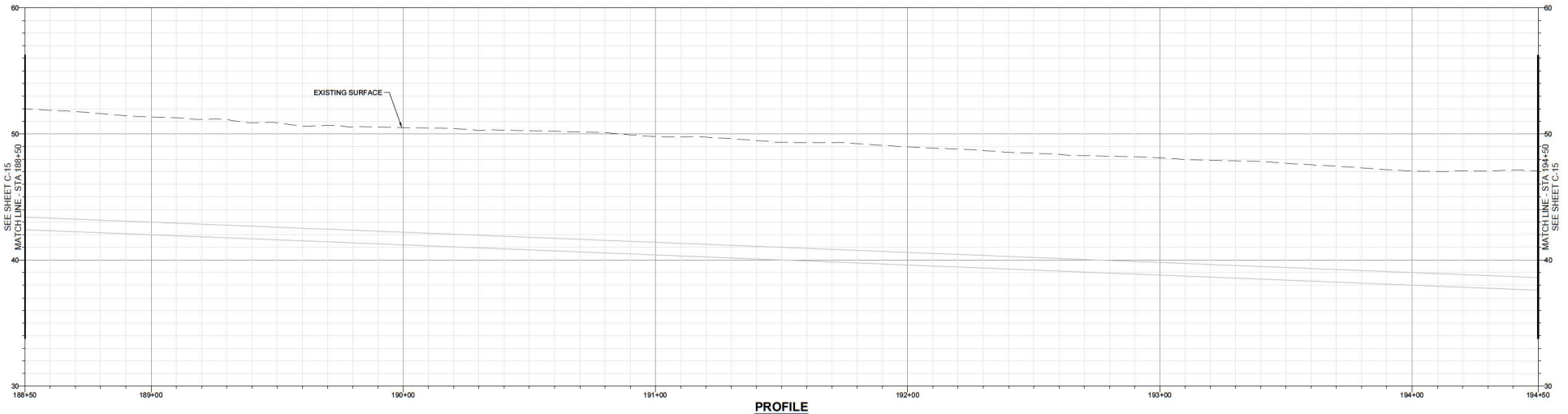
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 15

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-15

SHEET NUMBER: 18 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

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- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

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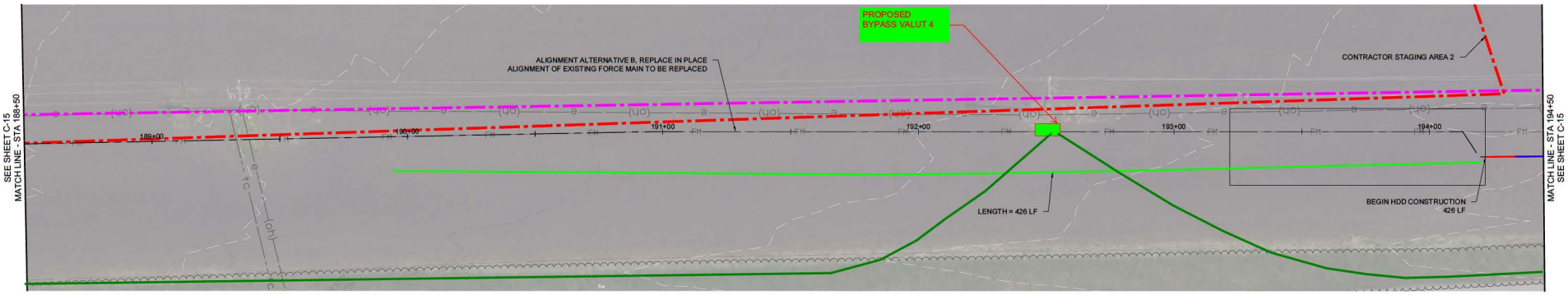
- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

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SCALE: AS SHOWN

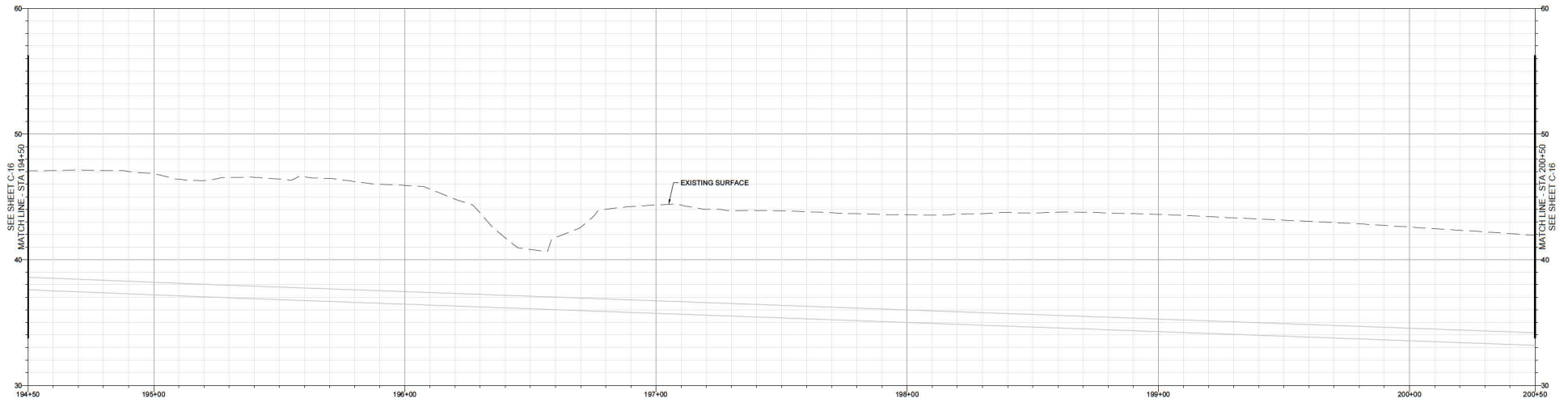
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 16

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-16

SHEET NUMBER: 19 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

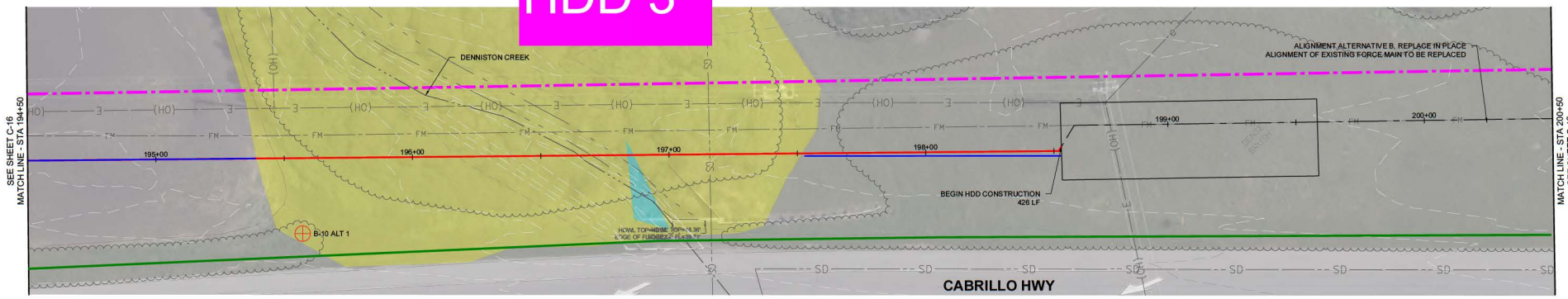
GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY

HDD 3



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

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		KAD	30% PLANS

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0 1/2 1 2

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SCALE: AS SHOWN

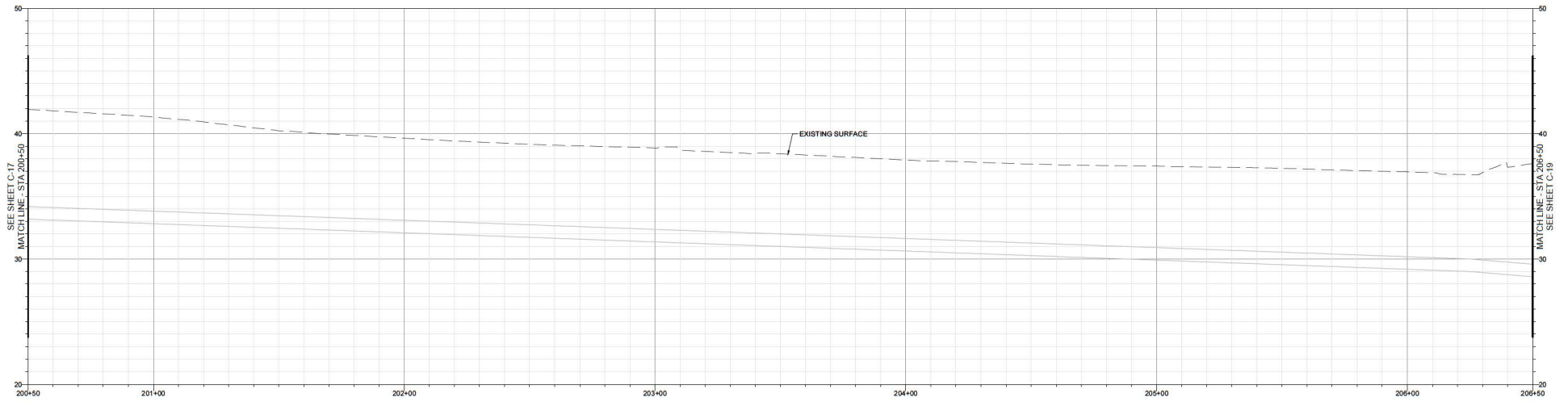
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 17

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-17

SHEET NUMBER: 20 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

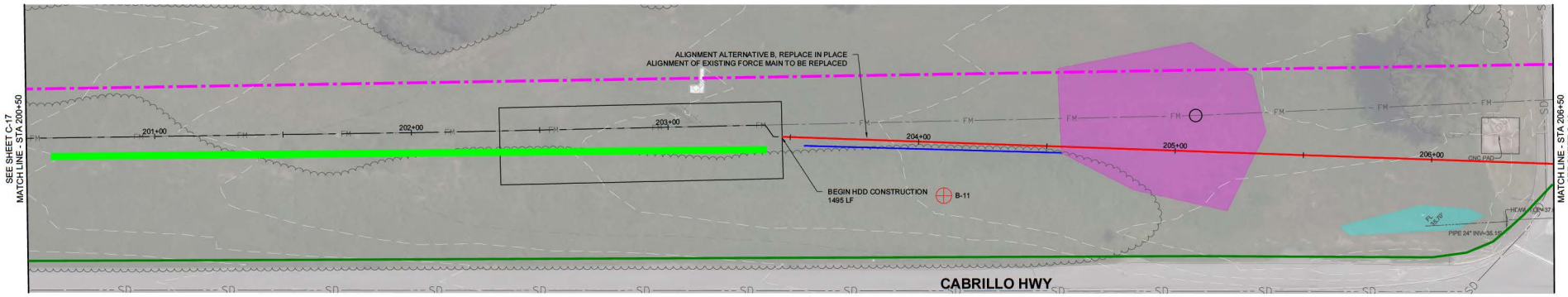
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

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REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

HDD 4

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

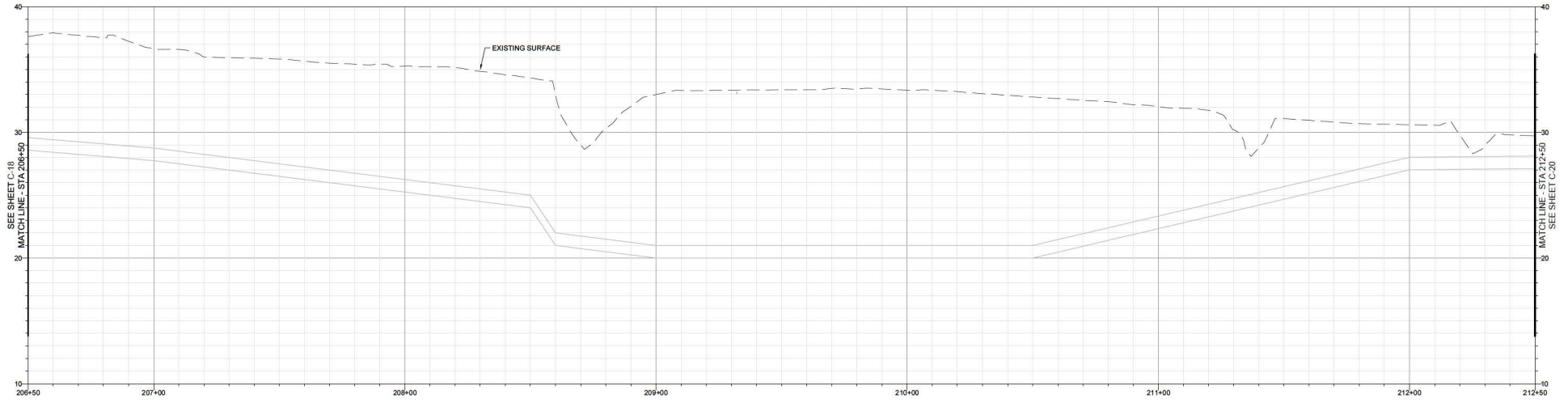
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 18

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-18

SHEET NUMBER: 21 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

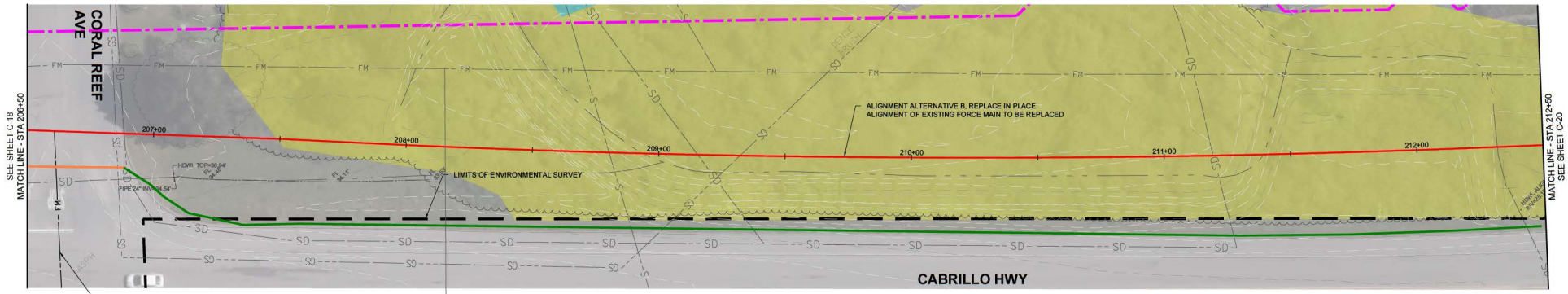
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 x 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

AB 2

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY
		KAD

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PRINCIPAL ENGINEER
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0 1/2 1 2

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SCALE: AS SHOWN

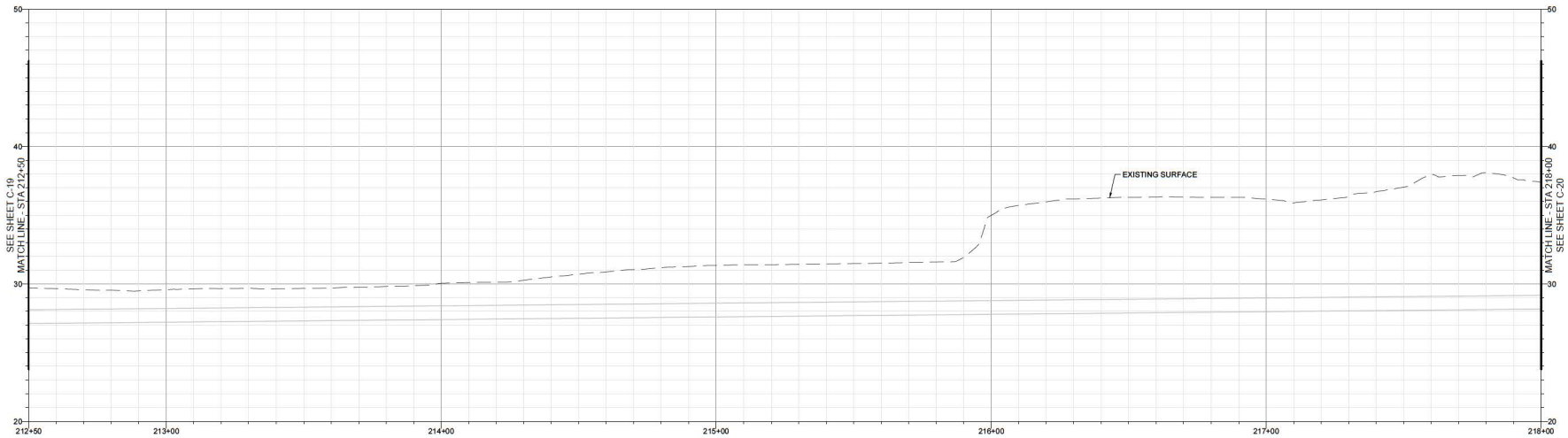
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 19

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-19

SHEET NUMBER: 22 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

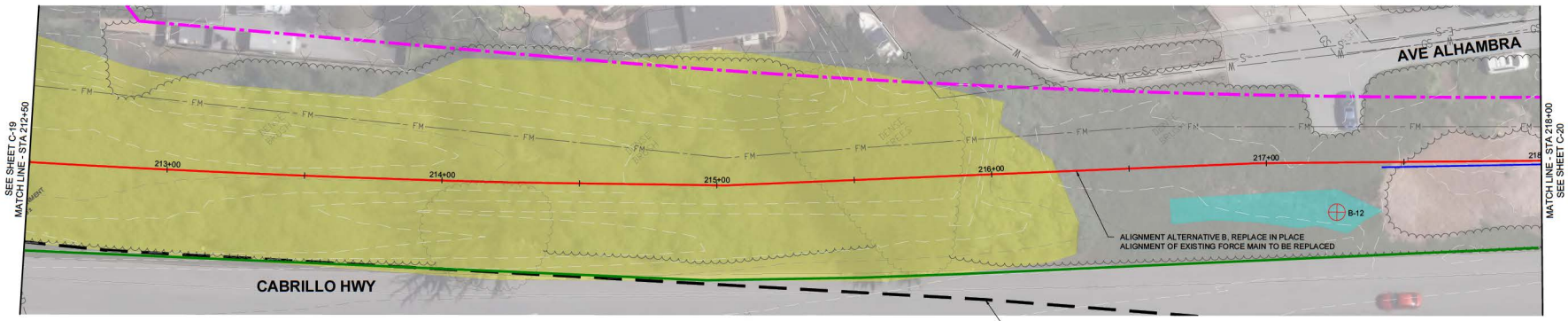
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 10 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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SCALE: AS SHOWN

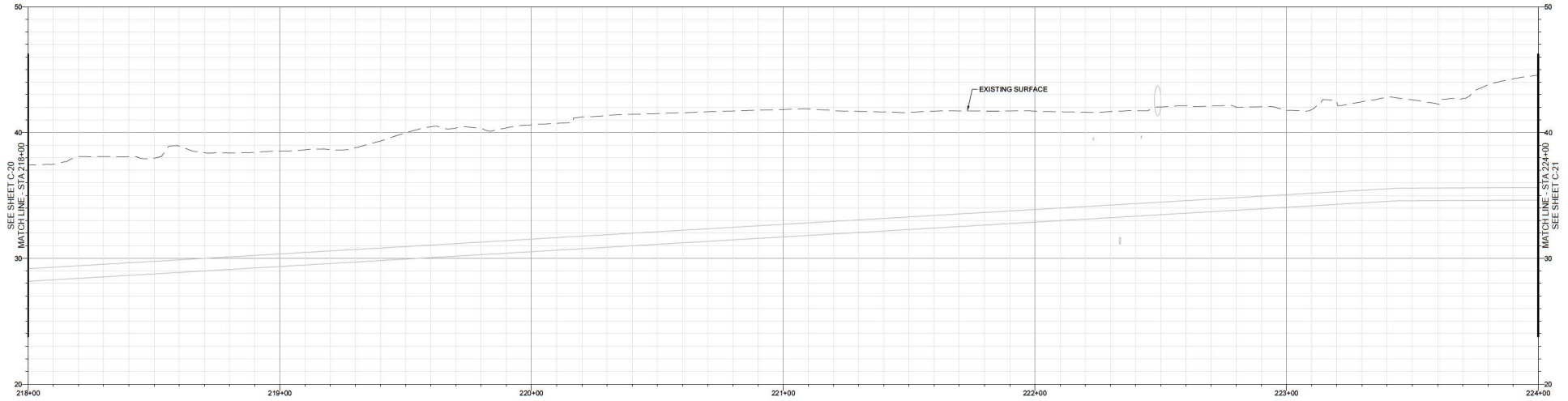
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 20

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-20

SHEET NUMBER: 23 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
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- SET BACK FROM SENSITIVE HABITAT (100LF)
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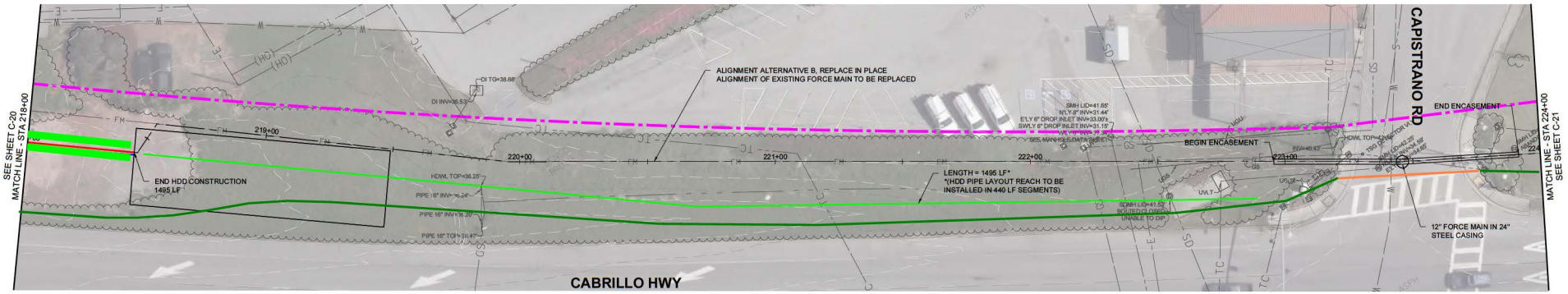
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT

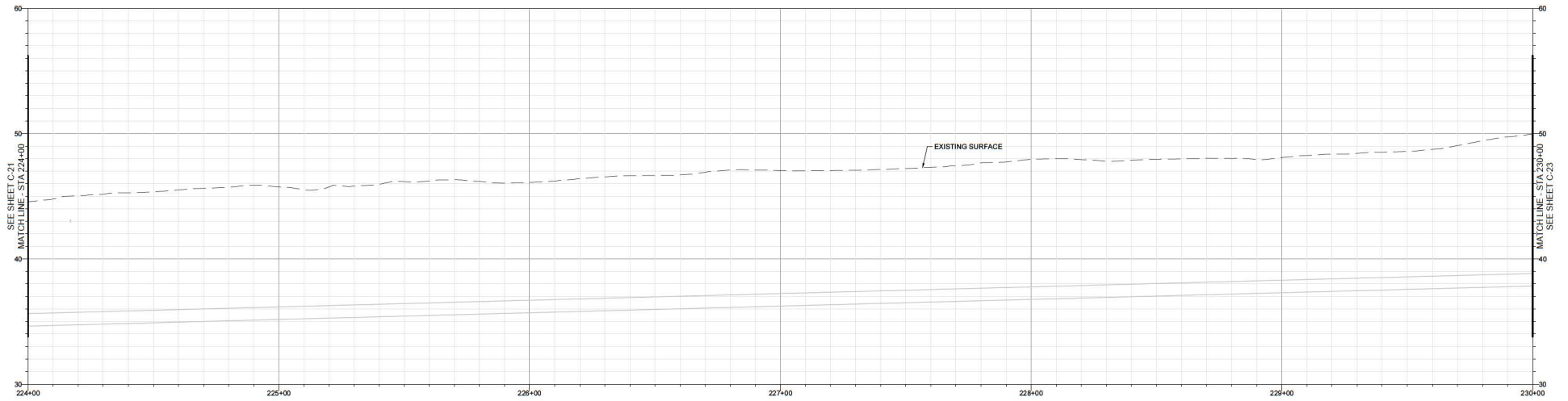
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 21

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-21

SHEET NUMBER: 24 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
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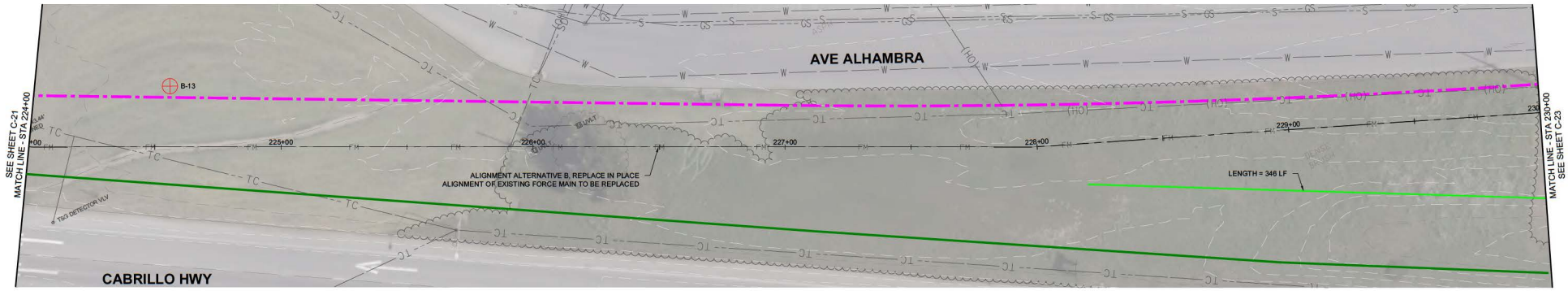
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

MNS
2025 Gateway Place, Suite 328
San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

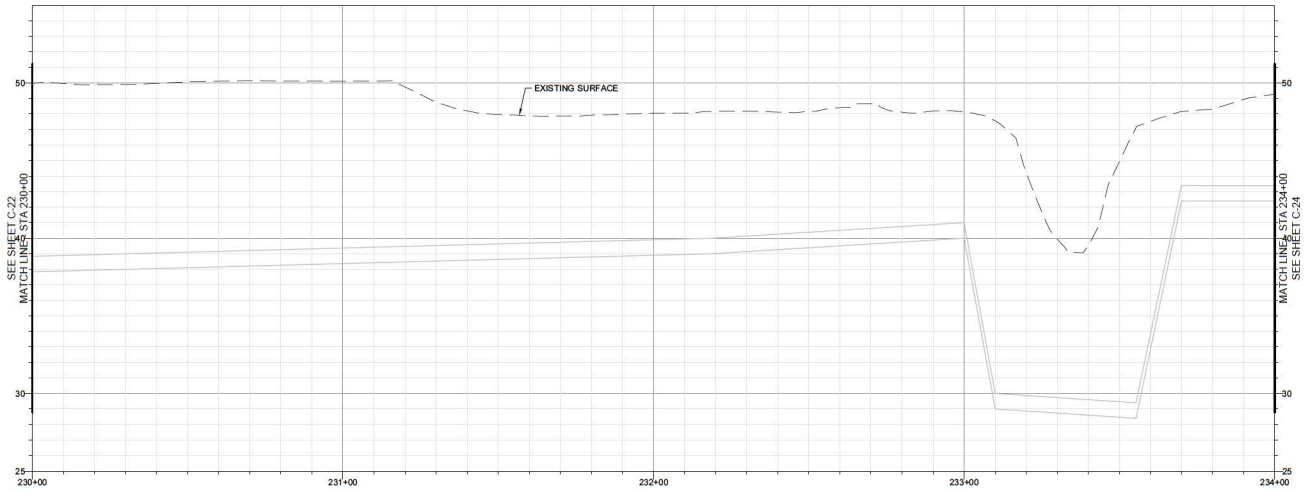
PLAN AND PROFILE - 22

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-22

SHEET NUMBER: 25 OF 28

© Dwg/Projects/SAMCS Sewer Authority Mid-Coast/SAMCS_SAVE/SE Montara Proj/Dwg/C0-2 Sheets/PSP - 1.dwg
Mon 04, Feb 26 - 03:23:15 PM By: Kitty Chan



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

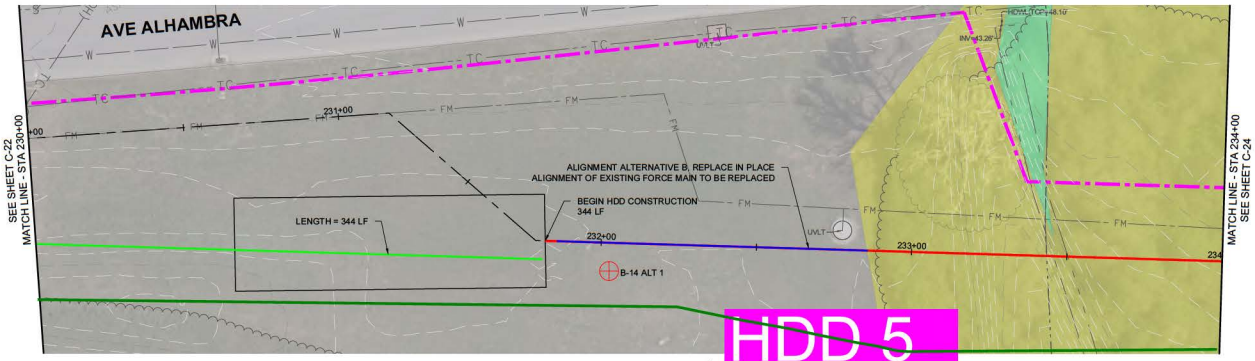
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

MNS
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San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

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THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

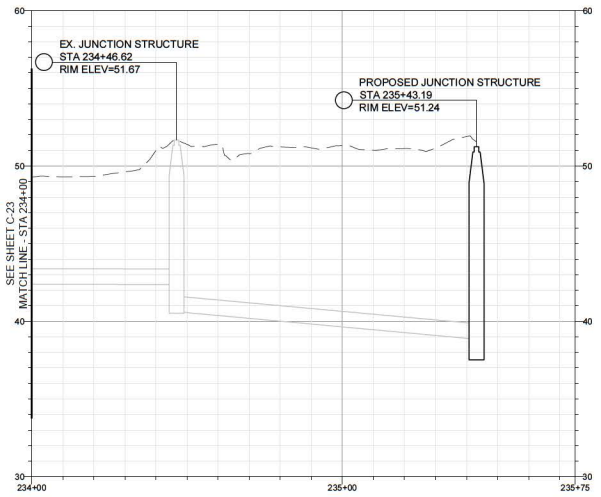
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PROJECT NUMBER: SAMCS.240160

PLAN AND PROFILE - 23

DRAWING NUMBER: C-23

SHEET NUMBER: 26 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

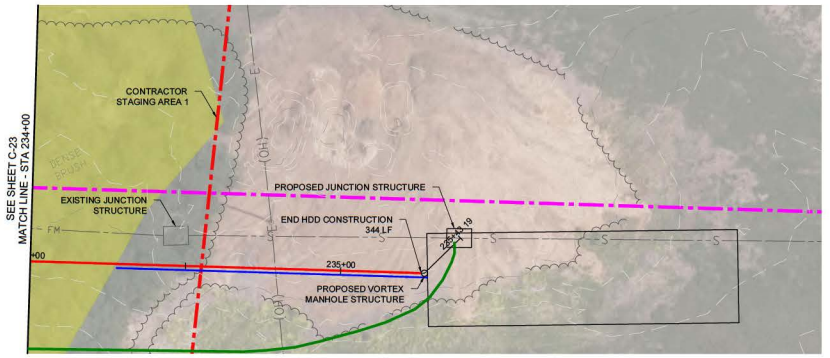
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 10 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

MNS
2025 Gateway Place, Suite 328
San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

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THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 24

PROJECT NUMBER: **SAMCS.240160**

DRAWING NUMBER: **C-24**

SHEET NUMBER: **27** OF **28**

Special-Status Species with the Potential to Occur in the Project Vicinity

B

APPENDIX

Appendix B.1 Special-Status Plant Species with the Potential to Occur in the Project Vicinity

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Adobe sanicle (*Sanicula maritima*)	--/--/1B.1	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie; moist clay or ultramafic soils; elevation 15-215 m. Blooming Period: February-May.	Unlikely. Species not observed during the May 2025 biological survey.
Alkali milk-vetch *(Astragalus tener* var. *tener)*	--/--/1B.2	Alkaline sites in playas, valley and foothill grassland (on adobe clay), and vernal pools; elevation 1-60m. Blooming Period: March - June	Unlikely. No alkaline site in playas, grasslands on adobo clay, or vernal pools. Species not observed during the May or June 2025 biological surveys.
Anderson's manzanita *(Arctostaphylos andersonii)*	--/--/1B.2	Broadleaved upland forest, chaparral, and North Coast coniferous forest. Known only from the Santa Cruz Mountains. Prefers open sites in redwood forest; elevation 180-800m. Blooming Period: November - April	Unlikely. No broadleaved upland forest, chaparral, or North Coast coniferous forest. Outside of elevation range.
Arcuate bush-mallow *(Malacothamnus arcuatus)*	--/--/1B.2	Chaparral, in gravelly alluvium; elevation 80-355m. Blooming Period: April - September	Unlikely. No chaparral. Outside of elevation range.
Beach layia *(Layia carnosa)*	FE/SE/1B.1	Coastal dunes, hugely reduced in range along California's north coast dunes, on sparsely vegetated semi-stabilized dunes, usually behind foredunes; elevation 0-75m. Blooming Period: March - July	Unlikely. No coastal dunes.
Bent-flowered fiddleneck *(Amsinckia lunaris)*	--/--/1B.2	Coastal bluff scrub, cismontane woodland, and valley and foothill grassland, on decomposed shale soils; elevation 3-500m. Blooming Period: March - June	Unlikely. No decomposed shale soils. Species not observed during the May or June 2025 biological surveys.
Blasdale's bent grass *(Agrostis blasdalei)*	--/--/1B	Sandy or gravelly soil close to rocks, often in nutrient-poor soil with sparse vegetation. Blooming Period: May - July	Unlikely. Species not observed during the May or June 2025 biological surveys.
Blue coast gilia (*Gilia capitata* ssp. *chamissonis*)	--/--/1B.1	Coastal dunes, coastal scrub; elevation 3-200 m. Blooming Period: April-July	Unlikely. Coastal scrub habitat is present within the project alignment; however, this habitat type will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Bristly sedge *(Carex comosa)*	--/--/2B.1	Coastal prairie, marshes and swamps (lake margins), and valley and foothill grassland; elevation 0-625m. Blooming Period: May - September	Unlikely. Coastal prairie habitat is present with the project alignment; however, this habitat type will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 surveys.
California seablite *(Suaeda californica)*	FE/--/1B.1	Marshes and swamps; margins of coastal salt marshes; elevation 0-5m. Blooming Period: July - October	Unlikely. No marshes or swamps. Species not observed during the May or June 2025 surveys.
California wild strawberry (*Fragaria californica*)	--/--/LCP	Closed-cone pine forest, douglas-fir forest, yellow pine forest, mixed evergreen forest, chaparral; elevation 15-2000m. Blooming Period: February - May	Present. Mapped within coastal prairie and annual grassland habitat within the project alignment.
Chaparral ragwort *(Senecio aphanactis)*	--/--/2B.2	Cismontane woodland and coastal scrub. Prefers drying alkaline flats; elevation 20-575m. Blooming Period: January - April	Unlikely. Coastal scrub habitat is present within the project alignment; however, this habitat type will be avoided and will not be impacted due to horizontal directional drilling. No drying alkaline flats.
Choris' popcorn-flower *(Plagiobothrys chorisianus* var. *chorisianus)*	--/--/1B.2	Chaparral, coastal scrub, coastal prairie, mesic sites; elevation 15-100m. Blooming Period: March - June	Unlikely. Coastal scrub and coastal prairie habitat are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys.
Coast triquetrella *(Triquetrella californica)*	--/--/1B.2	Coastal bluff scrub and coastal scrub; elevation 10-100 m.	Unlikely. Coastal scrub habitat is present within the project alignment; however, this habitat type will be avoided and will not be impacted due to horizontal directional drilling. No coastal bluff scrub.
Coast yellow leptosiphon *(Leptosiphon croceus)*	SE/--/1B.1	Coastal bluff scrub and coastal prairie. Elevation 10-150 m. Blooming Period: April – June.	Unlikely. Coastal prairie habitat is present within the project alignment; however, this habitat type will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys.
Coastal marsh milk-vetch (*Astragalus pycnostachyus var. pycnostachyus*)	--/--/1B.2	Coastal dunes, marshes and swamps, coastal scrub. Mesic sites in dunes or along streams or coastal salt marshes; elevation 0-155 m. Blooming Period: April - October.	Unlikely. Coastal scrub and coastal prairie habitat are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Compact cobwebby thistle *(Cirsium occidentale* var. *compactum)*	--/--/1B.2	Chaparral, coastal dunes, coastal prairie, coastal scrub. On dunes and on clay in chaparral; also in grassland; elevation 5-245 m. Blooming Period: April-June.	Unlikely. Coastal scrub and coastal prairie habitat are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys. No chaparral or coastal dunes.
Congested-headed hayfield tarplant *(Hemizonia congesta* ssp. *congesta)*	--/--/1B.2	Valley and foothill grassland. Grassy valleys and hills, often in fallow fields; sometimes along roadsides; elevation 5-520 m. Blooming Period: April-November.	Unlikely. Species not observed during the May or June 2025 biological surveys.
Crystal Springs lessingia *(Lessingia arachnoidea)*	--/--/1B.2	Coastal sage scrub, valley and foothill grassland, cismontane woodland. Grassy slopes on serpentine; sometimes on roadsides; elevation 90-200 m. Blooming Period: July-October.	Unlikely. Outside of elevation range.
Dark-eyed gilia *(Gilia millefoliata)*	--/--/1B.2	Coastal dunes; elevation 1-60 m. Blooming Period: April-July.	Unlikely. No coastal dune habitat.
Diablo helianthella *(Helianthella castanea)*	--/--/1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually found in chaparral/oak woodland interface in rocky, azonal soils, often in partial shade; elevation 25-1150m. Blooming Period: April - June	Unlikely. No broadleaved upland forest, chaparral, or cismontane woodland. Riparian woodland and coastal scrub habitats are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys.
Fountain thistle *(Cirsium fontinale* var. *fontinale)*	FE/SE/1B.1	Valley and foothill grassland, chaparral, cismontane woodland, meadows and seeps. Serpentine seeps and grassland; elevation 45-185 m. Blooming Period: May-October.	Unlikely. Outside of elevation range.
Fragrant fritillary *(Fritillaria liliacea)*	--/--/1B.2	Coastal scrub, valley and foothill grassland, and coastal prairie. Often on serpentine; various soils reported though usually clay in grassland; elevation 3-410m. Blooming Period: February - April	Unlikely. Coastal scrub and coastal prairie habitats are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. The grassland habitats present on the project site do not contain serpentine or clay soils. Species not observed during the May or June 2025 biological surveys.
Franciscan manzanita *(Arctostaphylos franciscana)*	FE/--/1B.1	Chaparral. Serpentine outcrops in chaparral; elevation 30-215 m. Blooming Period: February-April.	Unlikely. No chaparral habitat. Species not observed during the May or June 2025 biological surveys.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Franciscan onion *(Allium peninsulare* var. *franciscanum)*	--/--/1B.2	Cismontane woodland, valley and foothill grassland. Clay soils; often on serpentine; sometimes on volcanics. Dry hillsides; elevation 5-320 m. Blooming Period: May-June.	Unlikely. No cismontane woodland habitat. Species not observed during the May or June 2025 biological surveys.
Franciscan thistle *(Cirsium andrewsii)*	--/--/1B.2	Coastal bluff scrub, broadleafed upland forest, coastal scrub, coastal prairie. Sometimes serpentine seeps; elevation 0-295 m. Blooming Period: March-July.	Unlikely. Coastal scrub and coastal prairie habitats are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys.
Hickman's cinquefoil *(Potentilla hickmanii)*	FE/SE/1B.1	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps, marshes and swamps, small streams in open or forested areas along the coast; elevation 5-125m. Blooming Period: April - August	Unlikely. One occurrence within the northern portion of the alignment that is presumed extirpated from 1933 at Moss Beach. Presumed extirpated from development and erosion. No coastal bluff scrub, closed-cone coniferous forest, or marshes and swamps. Species not observed during the May or June 2025 biological surveys.
Hickman's Potentilla *(Potentilla hickmanii)*	FE/CE/1B.1	Coastal bluff scrub, closed-cone coniferous forest, vernally mesic meadows and seeps, and freshwater marshes and swamps; elevation 10-149 m. Blooming Period: April - August	Unlikely. No coastal bluff scrub, closed-cone coniferous forest, vernally mesic meadows and seeps, or freshwater marshes and swamps. Species not observed during the May or June 2025 biological surveys.
Hillsborough chocolate lily *(Fritillaria biflora* var. *ineziana)*	--/--/1B.1	Cismontane woodland, valley and foothill grassland. Probably only on serpentine; most recent site is in serpentine grassland; elevation 90-170 m. Blooming Period: March-April.	Unlikely. Outside of elevation range.
Island tube lichen (*Hypogymnia schizidiata)*	--/--/1B.3	Chaparral, closed-cone coniferous forest. On bark and wood of hardwoods and conifers; elevation 255-545 m.	Unlikely. Outside of elevation range.
Kellogg's horkelia *(Horkelia cuneata* ssp. *sericea)*	--/--/1B.1	Closed-cone coniferous forest, maritime chaparral, coastal scrub, sandy or gravelly openings; elevation 10-200m. Blooming Period: April - September	Unlikely. Coastal scrub habitat is present within the project alignment; however, this habitat type will be avoided and will not be impacted by the project due to horizontal direction drilling. Species not observed during the May or June 2025 biological surveys.
Kings Mountain manzanita *(Arctostaphylos regismontana)*	--/--/1B.2	Broadleaved upland forest, chaparral, North Coast coniferous forest. Granitic or sandstone outcrops; elevation 305-730m. Blooming Period: January - April	Unlikely. Outside of elevation range.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Marin western flax *(Hesperolinon congestum)*	FT/ST/1B.1	Chaparral, valley and foothill grassland. In serpentine barrens and in serpentine grassland and chaparral; elevation 60-400 m. Blooming Period: April-July.	Unlikely. Outside of elevation range.
Marsh sandwort *(Arenaria paludicola)*	FE/SE/1B.1	Sandy openings in freshwater or brackish marshes and swamps; elevation 3-170m. Blooming Period: May - August	Unlikely. No marshes or swamps.
Montara manzanita *(Arctostaphylos montaraensis)*	--/--/1B.2	Chaparral, coastal scrub. Slopes and ridges; elevation 270-460 m. Blooming Period: January-March.	Unlikely. Outside of elevation range.
Northern curly-leaved monardella *(Monardella sinuata ssp. nigrescens)*	--/--/1B.2	Sandy sites in chaparral, coastal dunes, coastal scrub, and lower montane coniferous forest (ponderosa pine sandhills); elevation 0-300m. Blooming Period: April - September	Unlikely. Coastal scrub habitat is present within the project alignment; however, this habitat type will be avoided and will not be impacted by the project due to horizontal direction drilling. No chaparral, coastal dunes, or lower montane coniferous forest. Species not observed during the May or June 2025 biological surveys.
Oregon polemonium *(Polemonium carneum)*	--/--/2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest; elevation 0-1830m. Blooming Period: April - September	Unlikely. Coastal scrub and coastal prairie habitats are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys.
Ornduff's meadowfoam *(Limnanthes douglasii* ssp. *ornduffii)*	--/--/1B.1	Meadows and seeps, agricultural fields; elevation 5-15 m. Blooming Period:	Moderate. Two occurrences within 3 miles of the project alignment. One occurrence is within the central portion of the alignment from 2011 on the east side of State Route 1 just south of Etheldore Street, opposite of Half Moon Bay Airport in shallow ditches of very large fallow fields artificially fertilized for agricultural purposes. Species not observed during the May or June 2025 biological surveys; however, species may be present.
Pacific manazanita *(Arctostaphylos pacifica)*	--/SE/1B.1	Coastal scrub, chaparral; elevation 0-320 m. Blooming Period: February-April.	Unlikely. Coastal scrub habitats is present within the project alignment; however, this habitat type will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Pappose tarplant *(Centromadia parryi* ssp. *parryi)*	--/--/1B.2	Chaparral, coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland. Vernally mesic, often alkaline sites; elevation 1-500 m. Blooming Period: March-November.	Unlikely. No chaparral, meadows and seeps, coastal salt marshes. Species not observed within the grassland or coastal prairie habitats during the May or June 2025 biological surveys.
Perennial goldfields *(Lasthenia californica* ssp. *macrantha)*	--/--/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub; elevation 5-185 m. Blooming Period: January-November.	Unlikely. Two occurrences within 3 miles of the project alignment. The nearest occurrence is approximately 1.7 miles from the northern portion of the alignment from 2015 at Montara State Beach within coastal prairie on marine terrace bluff top. Coastal scrub habitat is present within the project alignment; however, this habitat type will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys.
Point Reyes bird's-beak *(Chloropyron maritimum* ssp. *palustre)*	--/--/1B.2	Coastal salt marshes, usually with Salicornia, Distichlis, Jaumea, and Spartina; elevation 0-15m. Blooming Period: June - October	Unlikely. No coastal marshes.
Point Reyes horkelia (*Horkelia marinensis*)	--/--/1B.2	Coastal dunes, coastal prairie, coastal scrub. Sandy flats and dunes near coast; in grassland or scrub plant communities. 2-775 m.	Unlikely. Coastal scrub and coastal prairie habitats are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed within coastal prairie or grassland habitats during the May or June 2025 biological surveys. No coastal dunes.
Presidio manzanita (*Arctostaphylos montana ssp. ravenii*)	FE/SE/1B.1	Chaparral, coastal prairie, coastal scrub. Open, rocky serpentine slopes; elevation 20-215 m. Blooming Period: Februay - March.	Unlikely. Species not observed within coastal prairie or scrub habitats during the May or June 2025 biological surveys. No chaparral. No open, rocky serpentine slopes.
Robbins' broomrape *(Aphyllon robbinsii)*	--/--/1B.1	Coastal bluff scrub, coastal dunes. Rocky or sandy soil on bluffs, cliffs, landslides, or shell mounts; possibly on sand dunes. Only confirmed host is *Eriophyllum staechadifolium*. Blooming Period: April - July.	Unlikely. No coastal bluff scrub or coastal dunes.
Robust spineflower *(Chorizanthe robusta* var. *robusta)*	FE/--/1B.1	Sandy or gravelly openings in cismontane woodland, coastal dunes, and coastal scrub; prefers sandy terraces and bluffs or loose sand; elevation 3-300m. Blooming Period: April - July	Unlikely. No sandy terraces. Species not observed during the May 2025 biological survey.
Rose leptosiphon *(Leptosiphon rosaceus)*	--/--/1B.1	Coastal bluff scrub; elevation 10-140 m. Blooming Period: April-July.	Unlikely. No coastal bluff scrub.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Round-headed Collinsia *(Collinsia corymbosa)*	--/--/1B.2	Coastal dunes; elevation 0-30 m. Blooming Period: April-June.	Unlikely. No coastal dunes
Saline clover *(Trifolium hydrophilum)*	--/--/1B.2	Marshes and swamps, valley and foothill grassland, and vernal pools. Prefers wet, alkaline sites; elevation 0-300m. Blooming Period: April - June	Unlikely. Wet areas adjacent to grasslands are present within the project alignment; however, these areas will be avoided and will not be impacted due to horizontal directional drilling. Species not observed within coastal prairie or grassland habitats during the May or June 2025 biological surveys. No alkaline sites.
San Bruno Mountain manzanita *(Arctostaphylos imbricata)*	--/SE/1B.1	Chaparral, coastal scrub. Mostly known from a few sandstone outcrops in chaparral; elevation 275-305 m. Blooming Period: February-May.	Unlikely. Outside of elevation range.
San Francisco Bay spineflower *(Chorizanthe cuspidata* var. *cuspidata)*	--/--/1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Closely related to C. pungens. Sandy soil on terraces and slopes; elevation 2-550 m. Blooming Period: April-July.	Unlikely. Coastal scrub and coastal prairie habitats are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed within coastal prairie habitat during the May or June 2025 biological surveys.
San Francisco campion *(Silene verecunda* ssp. *verecunda)*	--/--/1B.2	Coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, and coastal prairie on mudstone/shale and serpentine substrates; elevation 30-645m. Blooming Period: March - August	Unlikely. Coastal scrub and coastal prairie habitats are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed within coastal prairie or grassland habitats during the May or June 2025 biological surveys. No mudstone/shale and serpentine substrates.
San Francisco collinsia *(Collinsia multicolor)*	--/--/1B.2	Serpentine sites in closed cone coniferous forest and coastal scrub. Prefers decomposed shale (mudstone) mixed with humus; elevation 30-250m. Blooming Period: March - May	Unlikely. Coastal scrub habitat is present within the project alignment; however, this habitat type will be avoided and will not be impacted due to horizontal directional drilling. Species not observed during the May or June 2025 biological surveys. No decomposed shale or humus substrates. No closed cone coniferous forest.
San Francisco lessingia *(Lessingia germanorum)*	FE/SE/1B.1	Coastal scrub. On remnant dunes. Open sandy soils relatively free of competing plants; elevation 3-155 m. Blooming Period: July-November.	Unlikely. No remnant dunes on open sandy soil.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
San Francisco owl's-clover *(Triphysaria floribunda)*	--/--/1B.2	Coastal prairie, coastal scrub, valley and foothill grassland. On serpentine and non-serpentine substrate (such as at Pt. Reyes); elevation 1-150 m. Blooming Period: April-June.	Unlikely. One occurrence goes through the central portion of the project alignment from 1900. Coastal scrub and coastal prairie habitats are present within the project alignment; however, these habitat types will be avoided and will not be impacted due to horizontal directional drilling. Species not observed within coastal prairie or grassland habitats during the May or June 2025 biological surveys.
San Mateo thorn-mint *(Acanthomintha duttonii)*	FE/SE/1B.1	Chaparral, valley and foothill grassland. Uncommon serpentinite vertisol clays; in relatively open areas; elevation 50-185 m. Blooming Period: April-June.	Unlikely. Outside of elevation range.
San Mateo woolly sunflower *(Eriophyllum latilobum)*	FE/SE/1B.1	Cismontane woodland, coastal scrub, lower montane coniferous forest. Often on roadcuts; found on and off of serpentine; elevation 30-610 m. May-June.	Unlikely. Coastal scrub habitat is present within the project alignment; however, this habitat type will be avoided and will not be impacted due to horizontal directional drilling. No cismontane woodland or lower montane coniferous forest. Species not observed during the May or June 2025 biological surveys.
Scouler's catchfly (*Silene scouleri ssp. scouleri*)	--/--/2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland; elevation 5-315 m. Blooming Period: June - August.	Unlikely. One occurrence found within three miles of the project alignment from 2003 on granite bluffs. Species not observed within coastal prairie or grassland habitats during the May or June 2025 biological surveys. No coastal bluff scrub.
Short-leaved evax *(Hesperevax sparsiflora* var. *brevifolia)*	--/--/1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Sandy bluffs and flats; elevation 0-640 m. Blooming Period: March-June.	Unlikely. Species not observed within coastal prairie habitat during the May or June 2025 biological surveys. No coastal bluff scrub, or coastal dunes.
Two-fork clover *(Trifolium amoenum)*	--/--/1B.1	Coastal bluff scrub, valley and foothill grassland, sometimes serpentinite; elevation 5-415m. Blooming Period: April - June	Unlikely. Species not observed within grassland habitats during the May or June 2025 biological surveys. No coastal bluff scrub.
Water star-grass (*Heteranthera dubia*)	--/--/2B.2	Marshes and swamps. Alkaline, still or slow-moving water. Requires a pH of 7 or higher, usually in slightly eutrophic waters; elevation 15-1510 m. Blooming Period: July - August.	Unlikely. No marshes or swamps.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Western leatherwood *(Dirca occidentalis)*	--/--/1B.2	Broadleaf upland forest, chaparral, closed cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland. Found on brushy slopes, in mesic sites, mostly in mixed evergreen and foothill woodland communities; elevation 30-550m. Blooming Period: January - April	Unlikely. Species not observed within riparian habitats during the May or June 2025 biological surveys. No broadleaf upland forest, chaparral, closed cone coniferous forest, cismontane woodland, or North Coast coniferous forest.
White-rayed pentachaeta *(Pentachaeta bellidiflora)*	FE/SE/1B.1	Valley and foothill grassland. Open dry, rocky slopes and grassy areas, often on soils derived from serpentine bedrock; elevation 35-620m. Blooming Period: March - May	Unlikely. No dry open rocky slopes, or soils derived from serpentine bedrock. Species not observed during the May or June 2025 biological surveys.
Woodland woollythreads *(Monolopia gracilens)*	--/--/1B.2	Serpentine, open sites in broadleaved upland forest, chaparral, cismontane woodland, North Coast coniferous forest, and valley and foothill grassland; elevation 100-1200m. Blooming Period: March - July	Unlikely. Outside of elevation range.

SOURCE: CDFW 2025, CNPS 2025, USFWS 2025, San Mateo County 2021
NOTE: Status Codes:
Federal (USFWS)
FE: Listed as Endangered under the Federal Endangered Species Act.
FT: Listed as Threatened under the Federal Endangered Species Act.
FC: A Candidate for listing as Threatened or Endangered under the Federal Endangered Species Act.
FSC: Species of Special Concern.
FD: Delisted under the Federal Endangered Species Act.

State (CDFW)
SE: Listed as Endangered under the California Endangered Species Act.
ST: Listed as Threatened under the California Endangered Species Act.
SR: Listed as Rare under the California Endangered Species Act.
SC: A Candidate for listing as Threatened or Endangered under the California Endangered Species Act.
SSC: Species of Special Concern.
SFP: Fully Protected species under the California Fish and Game Code.
SD: Delisted under the California Endangered Species Act.

CNPS Rare Plant Ranks and Threat Code Extensions
1B: Plants that are considered Rare, Threatened, or Endangered in California and elsewhere.
2B: Plants that are considered Rare, Threatened, or Endangered in California, but more common elsewhere.
.1: Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat).
.2: Fairly endangered in California (20-80% occurrences threatened).
.3: Not very endangered in California (<20% of occurrences threatened or no current threats known).

Regional/Local Regulations
LCP: Considered under the San Mateo County Mid-Coast Land Use Plan (LCP)

Potential to Occur
Present: Observed during field surveys, known occurrence of species within the site
High: Known occurrence of species in the vicinity from the CNDDB or other records; presence of suitable habitat conditions
Moderate: Known occurrence of species in the vicinity from the CNDDB or other records; presence of marginal habitat conditions
Low: Species known to occur in the vicinity from the CNDDB or other records; presence of low quality habitat conditions
Unlikely: Species not known to occur in the vicinity from the CNDDB or other documentation; no suitable habitat is present
Not Present: Species not observed during surveys

Appendix B.2 Special-Status Wildlife Species with the Potential to Occur in the Project Vicinity

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Alameda song sparrow *(Melospiza melodia pusillula)*	--/SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*.	Unlikely. No suitable marsh habitat.
American badger *(Taxidea taxus)*	--/SSC	Most abundant in drier, open stages of most shrub, forest, and herbaceous habitats. Need sufficient food and open, uncultivated ground with friable soils to dig burrows. Prey on burrowing rodents.	Unlikely. No suitable open stage shrub, forest, or herbaceous habitats. One occurrence within 3 miles from 1948.
American peregrine falcon *(Falco peregrinus anatum)*	FD/SD,SFP	Occurs near wetlands, lakes, rivers, or other waters on cliffs, banks, dunes, mounds, and human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	Unlikely. No suitable nesting habitat in depressions or ledges in an open site for.
Bank swallow *(Riparia riparia)*	--/ST	Highly colonial species that nests in alluvial soils along rivers, streams, lakes, and ocean coasts. Nesting colonies only occur in vertical banks or bluffs of friable soils at least one meter tall, suitable for burrowing with some predator deterrence values. Breeding colony present in Salinas River.	Unlikely. No suitable nesting habitat with vertical banks or bluffs with friable soils.
Bay checkerspot butterfly *(Euphydryas editha bayensis)*	FT/--	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Castilleja densiflora* and *C. exserta* are secondary host plants.	Unlikely. No serpentine soils and low-quality grassland habitat are present on the project alignment.
Big free-tailed bat *(Nyctinomops macrotis)*	--/SSC	Found in rugged rocky terrain in desert and arid grasslands. Roosts in buildings, caves, crevices in high cliffs, rock outcrops, and occasionally in holes in trees. Likely does not breed in California.	Unlikely. No suitable habitat or near by occurrences.
Burrowing owl *(Athene cunicularia)*	--/SSC, SC	Open, dry, annual or perennial grasslands, desert, or scrubland, with available small mammal burrows.	Unlikely. Low quality grassland habitat is present within the project site. No occurrences within the project vicinity.
Brackish water snail (*Tryonia imitator*)	--/--/LCP	Inhabits coastal lagoons, estuaries, and saltmarshes, from Sonoma County south to San Diego County.	Unlikely. No suitable habitat or nearby occurrences. All water resources will be avoided and will not be impacted due to horizontal direction drilling.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
California black rail *(Laterallus jamaicensis coturniculus)*	--/ST	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays. Needs water depth of about 1 inch that does not fluctuate during the year and dense vegetation for nesting.	Unlikely. No suitable wetland resources are present on the project alignment for nesting habitat. No occurrences within the project vicinity.
California giant salamander *(Dicamptodon ensatus)*	--/SSC	Known from wet coastal forests near streams ad seeps from Mendocino County south to Monterey County and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Unlikely. Low quality wetland resources are within the project alignment. However, all wetland resources will be avoided and will not be impacted due to horizontal directional drilling. The nearest CNDDB occurrence is approximately 5 miles from the project alignment in a watershed that does not connect to the watersheds associated with the project alignment.
California least tern *(Sternula antillarum browni)*	FE/SE	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates (sand beaches, alkali flats, landfills, or paved areas).	Unlikely. No suitable sandy beaches, alkali flats, landfills, or paved areas present.
California red-legged frog *(Rana draytonii)*	FT/SSC	Rivers, creeks, and stock ponds with pools and overhanging vegetation. Requires dense, shrubby or emergent riparian vegetation, and prefers short riffles and pools with slow-moving, well-oxygenated water. Needs upland habitat to aestivate (remain dormant during dry months) in small mammal burrows, cracks in the soil, or moist leaf litter.	Present. One occurrence within the project site from 2015 and 16 other occurrences within 3 miles of the alignment. Larvae for this species observed in a water resource within the project site.
California Ridgway's rail *(Rallus obsoletus obsoletus)*	FE/SE	Found in saltwater and brackish marshes, traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	Unlikely. No saltwater or brackish marshes.
California tiger salamander *(Ambystoma californiense)*	FT/ST	Grasslands and oak woodlands near seasonal pools and stock ponds in central and coastal California. Needs upland habitat to aestivate (remain dormant during dry months) in small mammal burrows, cracks in the soil, or moist leaf litter. Requires seasonal water sources that persist into late March for breeding habitat.	Unlikely. No suitable grasslands or oak woodland near suitable seasonal pools or stock ponds. No occurrences within the project vicinity.
Callippe silverspot butterfly *(Speyeria callippe callippe)*	FE/--	Occurs in grasslands near a shore with California golden violet (*Viola pedunculata*), which is its sole larval host plant.	Unlikely. No host California golden violet plants observed within the project alignment.
Double-crested cormorant *(Nannopterum auritum)*	--/WL	A yearlong resident along the entire coast of California and on inland lakes, in fresh, salt and estuarine waters. Requires undisturbed nest-sites beside water, on islands or mainland. Uses wide rock ledges on cliffs; rugged slopes; and live or dead trees, especially tall trees.	Unlikely. No suitable fresh or salt water estuarine waters for nesting habitat within the project alignment.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Foothill yellow-legged frog *(Rana boylii)*	FE/SE	Partly shaded, shallow streams and riffles with rocky substrate in a variety of habitats. Requires at least some cobble-sized substrate for egg-laying and 15 weeks of available water to attain metamorphosis.	Unlikely. No suitable cobble-sized substrate within wetland resources in the project vicinity. No occurrences within the project vicinity.
Globose dune beetle (*Coelus globosus*)	--/--/LCP	Found in coastal sand dune habitat; erratically distributed from Ten Mile Creek in Mendocino County south to Ensenada, Mexico.	Unlikely. No suitable coastal sand dune habitat.
Green sea turtle *(Chelonia mydas)*	FT/--	Found primarily in subtropical and temperate regions of the Atlantic, Pacific, and Indian Oceans, and in the Mediterranean Sea. Adult females return to land to lay their eggs on sandy beaches.	Unlikely. No suitable ocean or beach habitat.
Green sturgeon *(Acipenser medirostris)*	FT/SSC	Spawning site fidelity. Spawns in the Sacramento, Feather and Yuba Rivers. Presence in upper Stanislaus and San Joaquin Rivers may indicate spawning. Non-spawning adults occupy marine/estuarine waters. Delta Estuary is important for rearing juveniles. Spawning occurs primarily in cool (11-15 C) sections of mainstem rivers in deep pools (8-9 meters) with substrate containing small to medium sized sand, gravel, cobble, or boulder.	Unlikely. No suitable deep pools within rivers.
Hardhead *(Mylopharodon conocephalus)*	--/SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity.	Unlikely. No suitable deep pools within rivers or streams.
Longfin smelt *(Spirinchus thaleichthys)*	FC/SE	Euryhaline, nektonic and anadromous fish found in open waters of estuaries, mostly in middle or bottom of water column. Prefers salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	Unlikely. No estuaries.
Marbled murrelet *(Brachyramphus marmoratus)*	FT/SE	Feeds near shore, and nests up to six miles inland from coast from Half Moon Bay to Santa Cruz in old-growth redwood forests, often in Douglas fir trees.	Unlikely. No suitable nesting habitat within old-growth redwood forests or Douglas fir trees.
Merlin *(Falco columbarius)*	--/WL	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grassland and deserts, farms and ranches, clumps of trees or windbreaks are required for roosting in open county.	Unlikely. Low quality roosting habitat. No occurrences within the project vicinity.
Mission blue butterfly *(Icaricia icarioides missionensis)*	FE/--	Found in coastal scrublands and grasslands in southern Marin, San Francisco, and San Mateo counties. Associated with three species of lupine which primarily serve as larval food plants: silver lupine (*Lupinus albifrons*), summer lupine (*L. formosus*), and manycolored lupine (*L. varicolor*).	Unlikely. The nearest CNDDB occurrence is approximately 6 miles from the southern portion of the project alignment from 1985. This is the southernmost limit of the species distribution.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Monarch butterfly *(Danaus plexippus)*	FC/--	Winter roost sites. Wind protected tree groves (Eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	Moderate. Three occurrences within 3 miles of the project alignment. One occurrence from 1998 is approximately 0.2 miles from the southern portion of the alignment, but is possibly extirpated due to development. One occurrence is approximately 2.2 miles from the northern portion of the alignment from 2015 near martini creek.
Myrtle's silverspot butterfly *(Speyeria zerene myrtleae)*	FE/--	Found in coastal dunes, coastal scrub, and coastal prairie at elevation ranging from sea level to 1,000 feet and as far as 3 miles inland. The larval host plant is western dog violet (*Viola adunca*), while other flowering plants serve as a nectar source for the adults.	Unlikely. The nearest occurrence is approximately five miles from the project alignment within the vicinity of Pacifica and was likely extirpated in the 1950s. Launer et al, suggests that silverspot butterflies south of the golden gate were extinct by the 1970s.
Northwestern pond turtle *Actinemys marmorata)*	FCT/SSC	Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites. Nest sites may be found up to 0.5 km from water.	Unlikely. Wetland resources present within the project site have very minimal water retained through the dry season. The nearest occurrence is approximately 5 miles from the center of the project alignment from 2006 in a creek linking San Andreas Lake and lower Crystal Springs Reservoir. This occurrence is not connected to the water resources within the project alignment.
Pallid bat *(Antrozous pallidus)*	--/SSC	Deserts, grasslands, scrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures.	Unlikely. No rocky areas for roosting. No nearby occurrences.
Saltmarsh common yellowthroat *(Geothlypis trichas sinuosa)*	--/SSC	Fresh and saltwater marshes; requires thick continuous cover down to water surface for foraging, tall grasses, tule patches, and willows for nesting.	Low. Three occurrences within 3 miles of the project alignment. The nearest occurrence is approximately 0.5 miles from the central portion of the alignment from 1990. Nests and breeding pairs found within cattail/tule marsh surrounded by dense thickets of willows. No fresh or saltwater marshes. Marginal nesting habitat within the densely vegetated willow areas adjacent to wetlands within the alignment; however, these areas will be avoided and will not be impacted due to horizontal directional drilling.
Salt-marsh harvest mouse *(Reithrodontomys raviventris)*	FE/SE	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is the primary habitat. Species does not burrow, but builds loosely organized nests. Requires higher areas for flood escape.	Unlikely. No saline emergent wetlands. No occurrences within the project vicinity.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
San Bruno elfin butterfly *(Callophrys mossii bayensis)*	FE/--	Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on steep, north-facing slopes within the fog belt. Larval host plant is *Sedum spathulifolium.*	Unlikely. Two occurrences within 3 miles of the project alignment from 2017 and 2018 within coastal chaparral. No coastal mountainous areas or steep slopes within the project alignment.
San Francisco dusky-footed woodrat *(Neotoma fuscipes annectens)*	--/SSC	Forest habitats of moderate canopy and moderate to dense understory. Constructs nest of shredded grass, leaves, and other materials.	Low. Has the potential to occur within the heavily vegetated riparian areas of the project, however, these areas will be avoided and will not be impacted due to horizontal directional drilling. No occurrences the within the project vicinity.
San Francisco garter snake *(Thamnophis sirtalis tetrataenia)*	FE/SE, SFP	Typically found in the vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	Moderate. 18 occurrences intersect with the project alignment. These occurrences encompass the majority of Montara Mountain and have a large encompassing accuracy.
San Francisco tree lupine moth (*Graptholitha edwardsiana*)	--/--/LCP	Associated with coastal sand dunes where its larval host plant, the San Francisco tree lupine (*Lupinus arboreus*), occurs.	Unlikely. No suitable coastal sand dune within the project vicinity.
Santa Cruz black salamander *(Aneides niger)*	--/SSC	Mixed deciduous and coniferous woodlands and coastal grasslands in San Mateo, Santa Cruz, and Santa Clara Counties. Adults found under rocks, talus, and damp woody debris.	Unlikely. No occurrences within the project vicinity.
Steelhead *(Oncorhynchus mykiss irideus)*	FT/--	Coastal stream with clean spawning gravel. Requires cool water and pools. Needs migratory access between natal stream and ocean.	Low. One occurrence within 3 miles of the project alignment from 1979 within Frenchman's Creek. Denniston Creek which runs through the project alignment is considered critical habitat for this species. No accounts of steelhead within the watersheds present in the project alignment. All water resources will be avoided and will not be impacted due to horizontal direction drilling.
Tidewater goby *(Eucyclogobius newberryi)*	FE/SSC	Brackish water habitats, found in shallow lagoons and lower stream reaches, still but not stagnant water with high oxygen levels.	Unlikely. All water resources will be avoided and will not be impacted due to horizontal direction drilling.
Townsend's big-eared bat *(Corynorhinus townsendii)*	--/SSC	Inhabits a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Unlikely. No occurrences within the project vicinity. No suitable roosting habitat within project alignment.
Western bumble bee (*Bombus occidentalis*)	--/CE	Meadows and grasslands with flowering plants; can also be found in natural areas within urban environments.	Moderate. One occurrence approximately 3 miles from the southern portion of the project alignment from 1953. Grasslands and coastal prairie with flowering plants serve as suitable habitat within the project alignment.

Species	Status (Federal/State/ CNPS)	Suitable Habitat Description	Potential to Occur on the Project Site
Western snowy plover *(Charadrius alexandrinus nivosus)*	FT/SSC	Sandy beaches, salt pond levees, shores of large alkali lakes; sandy, gravelly, or friable soils for nesting.	Unlikely. One occurrence approximately 3 miles from the southern portion of the project alignment from 2016 of two active nests near the mouth of Pilarcitos Creek. However, no suitable sandy beaches, salt pond levees, shored of large alkali lakes occur within the project alignment.

SOURCE: CDFW 2025, USFWS 2025, San Mateo County 2021
NOTE: Status Codes:
Federal (USFWS)
FE: Listed as Endangered under the Federal Endangered Species Act.
FT: Listed as Threatened under the Federal Endangered Species Act.
FC: A Candidate for listing as Threatened or Endangered under the Federal Endangered Species Act.
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SE: Listed as Endangered under the California Endangered Species Act.
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SSC: Species of Special Concern.
SFP: Fully Protected species under the California Fish and Game Code.
SD: Delisted under the California Endangered Species Act.

Regional/Local Regulations
LCP: Considered under the San Mateo County Mid-Coast Land Use Plan (LCP)

Potential to Occur
Present: Observed during field surveys, known occurrence of species within the site
High: Known occurrence of species in the vicinity from the CNDDB or other records; presence of suitable habitat conditions
Moderate: Known occurrence of species in the vicinity from the CNDDB or other records; presence of marginal habitat conditions
Low: Species known to occur in the vicinity from the CNDDB or other records; presence of low quality habitat conditions
Unlikely: Species not known to occur in the vicinity from the CNDDB or other documentation; no suitable habitat is present
Not Present: Species not observed during surveys

U.S. Fish and Wildlife Service Official Species List

APPENDIX C

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 04/17/2025 19:57:48 UTC
Project Code: 2025-0084993
Project Name: Montara Force Main Replacement Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

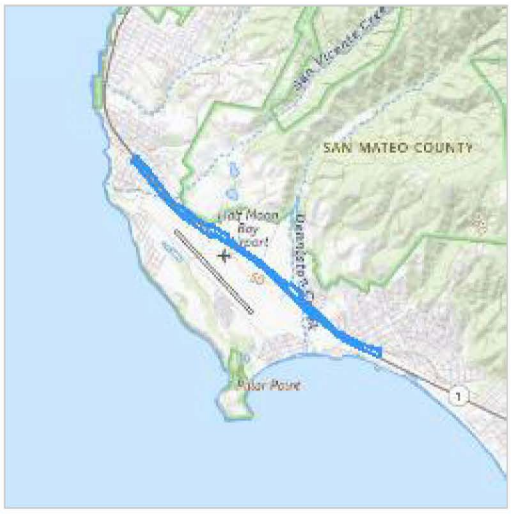
This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2025-0084993
Project Name: Montara Force Main Replacement Project
Project Type: Utility Infrastructure Maintenance
Project Description: Sewer force main replacement project
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.515291149999996,-122.49585915229405,14z



Counties: San Mateo County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 17 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

BIRDS

NAME	STATUS
California Least Tern *Sternula antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
California Ridgway"s Rail *Rallus obsoletus obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

REPTILES

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened
San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5956	Endangered

AMPHIBIANS

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location does not overlap the critical habitat.	Threatened

NAME	STATUS
Species profile: https://ecos.fws.gov/ecp/species/2891	
Foothill Yellow-legged Frog *Rana boylii* Population: Central Coast Distinct Population Segment (Central Coast DPS) There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5133	Threatened

FISHES

NAME	STATUS
Longfin Smelt *Spirinchus thaleichthys* Population: San Francisco Bay-Delta DPS There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/9011	Endangered
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Hickman's Potentilla *Potentilla hickmanii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6343	Endangered
Marsh Sandwort *Arenaria paludicola* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229	Endangered
San Mateo Woolly Sunflower *Eriophyllum latilobum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7791	Endangered
White-rayed Pentachaeta *Pentachaeta bellidiflora* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7782	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Janet Walther
Address: 601 Abrego Street
City: Monterey
State: CA
Zip: 93940
Email walther@emcplanning.com
Phone: 8316491799

LEAD AGENCY CONTACT INFORMATION

Lead Agency: County of San Mateo

California Department of Fish and Wildlife
California Natural Diversity Database

D

APPENDIX

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Hunters Point (3712263) OR San Francisco South (3712264) OR Half Moon Bay (3712244) OR San Mateo (3712253) OR Woodside (3712243) OR Montara Mountain (3712254))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
adobe sanicle *Sanicula maritima*	PDAPI1Z0D0	None	Rare	G2	S2	1B.1
Alameda song sparrow *Melospiza melodia pusillula*	ABPBXA301S	None	None	G5T2T3	S2	SSC
alkali milk-vetch *Astragalus tener var. tener*	PDFAB0F8R1	None	None	G2T1	S1	1B.2
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
American peregrine falcon *Falco peregrinus anatum*	ABNKD06071	Delisted	Delisted	G4T4	S3S4	
Anderson's manzanita *Arctostaphylos andersonii*	PDERI04030	None	None	G2	S2	1B.2
arcuate bushmallow *Malacothamnus arcuatus var. arcuatus*	PDMAL0Q0E0	None	None	G2Q	S2	1B.2
bank swallow *Riparia riparia*	ABPAU08010	None	Threatened	G5	S3	
Bay checkerspot butterfly *Euphydryas editha bayensis*	IILEPK4055	Threatened	None	G4G5T1	S3	
beach layia *Layia carnosa*	PDAST5N010	Threatened	Endangered	G2	S2	1B.1
bent-flowered fiddleneck *Amsinckia lunaris*	PDBOR01070	None	None	G3	S3	1B.2
big free-tailed bat *Nyctinomops macrotis*	AMACD04020	None	None	G5	S3	SSC
Blasdale's bent grass *Agrostis blasdalei*	PMPOA04060	None	None	G2G3	S2	1B.2
blue coast gilia *Gilia capitata ssp. chamissonis*	PDPLM040B3	None	None	G5T2	S2	1B.1
bristly sedge *Carex comosa*	PMCYP032Y0	None	None	G5	S2	2B.1
bumblebee scarab beetle *Lichnanthe ursina*	IICOL67020	None	None	G2	S2	
burrowing owl *Athene cunicularia*	ABNSB10010	None	Candidate Endangered	G4	S2	SSC
California black rail *Laterallus jamaicensis coturniculus*	ABNME03041	None	Threatened	G3T1	S2	FP
California giant salamander *Dicamptodon ensatus*	AAAAH01020	None	None	G2G3	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
California red-legged frog *Rana draytonii*	AAABH01022	Threatened	None	G2G3	S2S3	SSC
California Ridgway's rail *Rallus obsoletus obsoletus*	ABNME05011	Endangered	Endangered	G3T1	S2	FP
California seablite *Suaeda californica*	PDCHE0P020	Endangered	None	G1	S1	1B.1
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
callippe silverspot butterfly *Speyeria callippe callippe*	IILEPJ6091	Endangered	None	G5T1	S1	
chaparral ragwort *Senecio aphanactis*	PDAST8H060	None	None	G3	S2	1B.2
Choris' popcornflower *Plagiobothrys chorisianus var. chorisianus*	PDBOR0V061	None	None	G3T1Q	S1	1B.2
coast yellow leptosiphon *Leptosiphon croceus*	PDPLM09170	None	Endangered	G1	S1	1B.1
coastal marsh milk-vetch *Astragalus pycnostachyus var. pycnostachyus*	PDFAB0F7B2	None	None	G2T2	S2	1B.2
coastal triquetrella *Triquetrella californica*	NBMUS7S010	None	None	G2	S2	1B.2
compact cobwebby thistle *Cirsium occidentale var. compactum*	PDAST2E1Z1	None	None	G3G4T2	S2	1B.2
congested-headed hayfield tarplant *Hemizonia congesta ssp. congesta*	PDAST4R0W1	None	None	G5T2	S2	1B.2
Crystal Springs lessingia *Lessingia arachnoidea*	PDAST5S0C0	None	None	G2	S2	1B.2
dark-eyed gilia *Gilia millefoliata*	PDPLM04130	None	None	G2	S2	1B.2
Diablo helianthella *Helianthella castanea*	PDAST4M020	None	None	G2	S2	1B.2
double-crested cormorant *Nannopterum auritum*	ABNFD01020	None	None	G5	S4	WL
Edgewood blind harvestman *Calicina minor*	ILARA13020	None	None	G1	S1	
Edgewood Park micro-blind harvestman *Microcina edgewoodensis*	ILARA47010	None	None	G1	S1	
foothill yellow-legged frog - central coast DPS *Rana boylii pop. 4*	AAABH01054	Threatened	Endangered	G3T2	S2	
fountain thistle *Cirsium fontinale var. fontinale*	PDAST2E161	Endangered	Endangered	G2T1	S1	1B.1
fragrant fritillary *Fritillaria liliacea*	PMLIL0V0C0	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Franciscan manzanita *Arctostaphylos franciscana*	PDERI040J3	Endangered	None	GHC	S1	1B.1
Franciscan onion *Allium peninsulare var. franciscanum*	PMLIL021R1	None	None	G4G5T2	S2	1B.2
Franciscan thistle *Cirsium andrewsii*	PDAST2E050	None	None	G3	S3	1B.2
fringed myotis *Myotis thysanodes*	AMACC01090	None	None	G4	S3	
green sturgeon - southern DPS *Acipenser medirostris pop. 1*	AFCAA01031	Threatened	None	G2T1	S1	SSC
hardhead *Mylopharodon conocephalus*	AFCJB25010	None	None	G3	S3	SSC
Hickman's cinquefoil *Potentilla hickmanii*	PDROS1B370	Endangered	Endangered	G1	S1	1B.1
Hillsborough chocolate lily *Fritillaria biflora var. ineziana*	PMLIL0V0M1	None	None	G3G4T1	S1	1B.1
hoary bat *Lasiurus cinereus*	AMACC05032	None	None	G3G4	S4	
incredible harvestman *Banksula incredula*	ILARA14100	None	None	G1	S1	
island tube lichen *Hypogymnia schizidiata*	NLT0032640	None	None	G2G3	S2	1B.3
Kellogg's horkelia *Horkelia cuneata var. sericea*	PDROS0W043	None	None	G4T1?	S1?	1B.1
Kings Mountain manzanita *Arctostaphylos regismontana*	PDERI041C0	None	None	G2	S2	1B.2
Leech's skyline diving beetle *Hydroporus leechi*	IICOL55040	None	None	G3	S2S3	
longfin smelt - San Francisco Bay-Delta DPS *Spirinchus thaleichthys pop. 2*	AFCHB03040	Endangered	Threatened	G5TNRQ	S1	
marbled murrelet *Brachyramphus marmoratus*	ABNNN06010	Threatened	Endangered	G3	S2	
Marin knotweed *Polygonum marinense*	PDPGN0L1C0	None	None	G2Q	S2	3.1
Marin western flax *Hesperolinon congestum*	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
merlin *Falco columbarius*	ABNKD06030	None	None	G5	S3S4	WL
Methuselah's beard lichen *Usnea longissima*	NLLEC5P420	None	None	G5	S4	4.2
mimic tryonia (=California brackishwater snail) *Tryonia imitator*	IMGASJ7040	None	None	G2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Mission blue butterfly *Icaricia icarioides missionensis*	IILEPG801A	Endangered	None	G5T2	S2	
monarch - California overwintering population *Danaus plexippus plexippus pop. 1*	IILEPP2012	Proposed Threatened	None	G4T1T2Q	S2	
Montara manzanita *Arctostaphylos montaraensis*	PDERI042W0	None	None	G1	S1	1B.2
Monterey vagrant shrew *Sorex vagrans paludivagus*	AMABA01072	None	None	G5T1	S2	
Myrtle's silverspot butterfly *Speyeria zerene myrtleae*	IILEPJ608C	Endangered	None	G5T1	S1	
North American porcupine *Erethizon dorsatum*	AMAFJ01010	None	None	G5	S3	
Northern Coastal Salt Marsh *Northern Coastal Salt Marsh*	CTT52110CA	None	None	G3	S3.2	
northern curly-leaved monardella *Monardella sinuata ssp. nigrescens*	PDLAM18162	None	None	G3T2	S2	1B.2
Northern Maritime Chaparral *Northern Maritime Chaparral*	CTT37C10CA	None	None	G1	S1.2	
northwestern pond turtle *Actinemys marmorata*	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
obscure bumble bee *Bombus caliginosus*	IIHYM24380	None	None	G2G3	S1S2	
Opler's longhorn moth *Adela oplerella*	IILEE0G040	None	None	G2	S2	
Oregon polemonium *Polemonium carneum*	PDPLM0E050	None	None	G3G4	S2	2B.2
Ornduff's meadowfoam *Limnanthes douglasii ssp. ornduffii*	PDLIM02039	None	None	G4T1	S1	1B.1
Pacific manzanita *Arctostaphylos pacifica*	PDERI040Z0	None	Endangered	G1	S1	1B.1
Pacific walker *Pomatiopsis californica*	IMGASJ9020	None	None	G1	S1	
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G4	S3	SSC
pappose tarplant *Centromadia parryi ssp. parryi*	PDAST4R0P2	None	None	G3T2	S2	1B.2
perennial goldfields *Lasthenia californica ssp. macrantha*	PDAST5L0C5	None	None	G3T2	S2	1B.2
Pheres blue butterfly *Icaricia icarioides pheres*	IILEPG8019	None	None	G5TX	SX	
Point Reyes horkelia *Horkelia marinensis*	PDROS0W0B0	None	None	G2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Point Reyes salty bird's-beak *Chloropyron maritimum ssp. palustre*	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Presidio manzanita *Arctostaphylos montana ssp. ravenii*	PDERI040J2	Endangered	Endangered	G3T1	S1	1B.1
Ricksecker's water scavenger beetle *Hydrochara ricksecker*i	IICOL5V010	None	None	G2?	S2?	
Robbins' broomrape *Aphyllon robbinsii*	PDORO040Q0	None	None	G1	S1	1B.1
robust spineflower *Chorizanthe robusta var. robusta*	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
rose leptosiphon *Leptosiphon rosaceus*	PDPLM09180	None	None	G1	S1	1B.1
round-headed collinsia *Collinsia corymbosa*	PDSCR0H060	None	None	G1	S1	1B.2
saline clover *Trifolium hydrophilum*	PDFAB400R5	None	None	G2	S2	1B.2
saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	ABPBX1201A	None	None	G5T3	S3	SSC
salt-marsh harvest mouse *Reithrodontomys raviventris*	AMAFF02040	Endangered	Endangered	G1G2	S3	FP
San Bruno elfin butterfly *Callophrys mossii bayensis*	IILEPE2202	Endangered	None	G4T2	S2	
San Bruno Mountain manzanita *Arctostaphylos imbricata*	PDERI040L0	None	Endangered	G1	S1	1B.1
San Francisco Bay Area leaf-cutter bee *Trachusa gummifera*	IIHYM80010	None	None	G1	S1	
San Francisco Bay spineflower *Chorizanthe cuspidata var. cuspidata*	PDPGN04081	None	None	G2T1	S1	1B.2
San Francisco campion *Silene verecunda ssp. verecunda*	PDCAR0U213	None	None	G5T1	S1	1B.2
San Francisco collinsia *Collinsia multicolor*	PDSCR0H0B0	None	None	G2	S2	1B.2
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	AMAFF08082	None	None	G5T2T3	S2S3	SSC
San Francisco forktail damselfly *Ischnura gemina*	IIODO72010	None	None	G2	S2	
San Francisco gartersnake *Thamnophis sirtalis tetrataenia*	ARADB3613B	Endangered	Endangered	G5T2Q	S2	FP
San Francisco gumplant *Grindelia hirsutula var. maritima*	PDAST470D3	None	None	G5T1Q	S1	3.2
San Francisco lessingia *Lessingia germanorum*	PDAST5S010	Endangered	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
San Francisco owl's-clover *Triphysaria floribunda*	PDSCR2T010	None	None	G2?	S2?	1B.2
San Mateo thorn-mint *Acanthomintha duttonii*	PDLAM01040	Endangered	Endangered	G1	S1	1B.1
San Mateo woolly sunflower *Eriophyllum latilobum*	PDAST3N060	Endangered	Endangered	G1	S1	1B.1
sandy beach tiger beetle *Cicindela hirticollis gravida*	IICOL02101	None	None	G5T2	S2	
Santa Cruz black salamander *Aneides niger*	AAAAD01070	None	None	G3	S3	SSC
Santa Cruz kangaroo rat *Dipodomys venustus venustus*	AMAFD03042	None	None	G4T1	S1	
Scouler's catchfly *Silene scouleri ssp. scouleri*	PDCAR0U1MC	None	None	G5T4T5	S2S3	2B.2
Serpentine Bunchgrass *Serpentine Bunchgrass*	CTT42130CA	None	None	G2	S2.2	
short-leaved evax *Hesperevax sparsiflora var. brevifolia*	PDASTE5011	None	None	G4T3	S3	1B.2
Stage's dufourine bee *Dufourea stagei*	IIHYM22010	None	None	G1G2	S1	
steelhead - central California coast DPS *Oncorhynchus mykiss irideus pop. 8*	AFCHA0209G	Threatened	None	G5T3Q	S3	SSC
Steller sea lion *Eumetopias jubatus*	AMAJC03010	Delisted	None	G3	S2	
tidewater goby *Eucyclogobius newberryi*	AFCQN04010	Endangered	None	G3	S3	SSC
Tomales isopod *Caecidotea tomalensis*	ICMAL01220	None	None	G2	S2S3	
Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010	None	None	G4	S2	SSC
two-fork clover *Trifolium amoenum*	PDFAB40040	Endangered	None	G1	S1	1B.1
Valley Needlegrass Grassland *Valley Needlegrass Grassland*	CTT42110CA	None	None	G3	S3.1	
water star-grass *Heteranthera dubia*	PMPON03010	None	None	G5	S2	2B.2
western bumble bee *Bombus occidentalis*	IIHYM24252	None	Candidate Endangered	G3	S1	
western leatherwood *Dirca occidentalis*	PDTHY03010	None	None	G2	S2	1B.2
western snowy plover *Charadrius nivosus nivosus*	ABNNB03031	Threatened	None	G3T3	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
white-rayed pentachaeta *Pentachaeta bellidiflora*	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
woodland woollythreads *Monolopia gracilens*	PDAST6G010	None	None	G3	S3	1B.2

Record Count: 126

California Native Plant Society Rare Plant Inventory

E

APPENDIX

CALIFORNIA NATIVE PLANT SOCIETY

CNPS Rare Plant Inventory

Search Results

61 matches found. Click on scientific name for details

Search Criteria: , CRPR is one of [**1A:1B:2A:2B**] , 9-Quad include [**3712263:3712264:3712244:3712253:3712243:3712254**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Acanthomintha duttonii	San Mateo thorn-mint	Lamiaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	Yes	1974-01-01	© 2011 Aaron Schusteff
Agrostis blasdalei	Blasdale's bent grass	Poaceae	perennial rhizomatous herb	May-Jul	None	None	G2G3	S2	1B.2	Yes	1974-01-01	© 2001 Doreen L. Smith
Allium peninsulare var. *franciscanum*	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G4G5T2	S2	1B.2	Yes	2001-01-01	© 2019 Aaron Arthur
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	None	None	G3	S3	1B.2	Yes	1974-01-01	© 2011 Neal Kramer
Aphyllon robbinsii	Robbins' broomrape	Orobanchaceae	annual herb (achlorophyllous)	Apr-Jul	None	None	G1	S1	1B.1	Yes	2023-03-28	© 2017 Dylan Neubauer

Arctostaphylos andersonii	Anderson's manzanita	Ericaceae	perennial evergreen shrub	Nov-May	None	None	G2	S2	1B.2	Yes	1974-01-01	© 2018 Jason Matthias Mills
Arctostaphylos franciscana	Franciscan manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	FE	None	GHC	S1	1B.1	Yes	1974-01-01	© 2015 Neal Kramer
Arctostaphylos imbricata	San Bruno Mountain manzanita	Ericaceae	perennial evergreen shrub	Feb-May	None	CE	G1	S1	1B.1	Yes	1974-01-01	© 2013 Robert Sikora
Arctostaphylos montana ssp. *ravenii*	Presidio manzanita	Ericaceae	perennial evergreen shrub	Feb-Mar	FE	CE	G3T1	S1	1B.1	Yes	1980-01-01	© 2019 Susan McDougall
Arctostaphylos montaraensis	Montara manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	None	None	G1	S1	1B.2	Yes	1974-01-01	© 2016 Neal Kramer
Arctostaphylos pacifica	Pacific manzanita	Ericaceae	evergreen shrub	Feb-Apr	None	CE	G1	S1	1B.1	Yes	1974-01-01	Aaron Schusteff
Arctostaphylos regismontana	Kings Mountain manzanita	Ericaceae	perennial evergreen shrub	Dec-Apr	None	None	G2	S2	1B.2	Yes	1994-01-01	No Photo Available
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	Fabaceae	perennial herb	(Apr-May)Jun-Oct	None	None	G2T2	S2	1B.2	Yes	2001-01-01	Neal Kramer
Astragalus tener var. *tener*	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2	Yes	1994-01-01	No Photo Available

Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1		1994-01-01	Dean Wm. Taylor 1997
Centromadia parryi ssp. *parryi*	pappose tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.2	Yes	2004-01-01	© 2016 John Doyen
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	None	None	G4?T2	S2	1B.2		1974-01-01	©2017 John Doyen
Chorizanthe cuspidata var. *cuspidata*	San Francisco Bay spineflower	Polygonaceae	annual herb	Apr-Jul(Aug)	None	None	G2T1	S1	1B.2	Yes	1994-01-01	No Photo Available
Chorizanthe robusta var. *robusta*	robust spineflower	Polygonaceae	annual herb	Apr-Sep	FE	None	G2T1	S1	1B.1	Yes	1980-01-01	No Photo Available
Cirsium andrewsii	Franciscan thistle	Asteraceae	perennial herb	Mar-Jul	None	None	G3	S3	1B.2	Yes	1974-01-01	No Photo Available
Cirsium fontinale var. *fontinale*	fountain thistle	Asteraceae	perennial herb	(Apr)May-Oct	FE	CE	G2T1	S1	1B.1	Yes	1974-01-01	No Photo Available
Cirsium occidentale var. *compactum*	compact cobwebby thistle	Asteraceae	perennial herb	Apr-Jun	None	None	G3G4T2	S2	1B.2	Yes	1974-01-01	No Photo Available
Collinsia corymbosa	round-headed collinsia	Plantaginaceae	annual herb	Apr-Jun	None	None	G1	S1	1B.2	Yes	1994-01-01	©2007 Steve Matson
Collinsia multicolor	San Francisco collinsia	Plantaginaceae	annual herb	(Feb)Mar-May	None	None	G2	S2	1B.2	Yes	1974-01-01	No Photo Available
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	None	None	G2	S2	1B.2	Yes	1974-01-01	© 2017 Steve Matson
Eriophyllum latilobum	San Mateo woolly sunflower	Asteraceae	perennial herb	May-Jun	FE	CE	G1	S1	1B.1	Yes	1974-01-01	Neal Kramer

Fritillaria biflora var. *ineziana*	Hillsborough chocolate lily	Liliaceae	perennial bulbiferous herb	Mar-Apr	None	None	G3G4T1	S1	1B.1	Yes	1994-01-01	© 2012 Toni Corelli
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2	S2	1B.2	Yes	1974-01-01	© 2004 Carol W. Witham
Gilia capitata ssp. *chamissonis*	blue coast gilia	Polemoniaceae	annual herb	Apr-Jul	None	None	G5T2	S2	1B.1	Yes	2001-01-01	© 2017 John Doyen
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2		2001-01-01	© 2017 John Doyen
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	Yes	1974-01-01	© 2013 Christopher Bronny
Hemizonia congesta ssp. *congesta*	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	None	None	G5T2	S2	1B.2	Yes	1988-01-01	© 2015 Vernon Smith
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	Asteraceae	annual herb	Mar-Jun	None	None	G4T3	S3	1B.2		1994-01-01	© 2006 Doreen L. Smith
Hesperolinon congestum	Marin western flax	Linaceae	annual herb	Apr-Jul	FT	CT	G1	S1	1B.1	Yes	1974-01-01	© 2009 Neal Kramer
Heteranthera dubia	water star-grass	Pontederiaceae	perennial herb (aquatic)	Jul-Oct	None	None	G5	S2	2B.2		2013-10-10	©2010 Louis-M. Landry

Horkelia cuneata var. *sericea*	Kellogg's horkelia	Rosaceae	perennial herb	Apr-Sep	None	None	G4T1?	S1?	1B.1	Yes	1988-01-01	© 2018 Neal Kramer
Horkelia marinensis	Point Reyes horkelia	Rosaceae	perennial herb	May-Sep	None	None	G2	S2	1B.2	Yes	1974-01-01	© 2017 John Doyen
Hypogymnia schizidiata	island tube lichen	Parmeliaceae	foliose lichen		None	None	G2G3	S2	1B.3		2014-03-01	No Photo Available
Lasthenia californica ssp. *macrantha*	perennial goldfields	Asteraceae	perennial herb	Jan-Nov	None	None	G3T2	S2	1B.2	Yes	2001-01-01	© 2013 John Doyen
Layia carnosa	beach layia	Asteraceae	annual herb	Mar-Jul	FT	CE	G2	S2	1B.1		1988-01-01	© 2007 Aaron Schusteff
Leptosiphon croceus	coast yellow leptosiphon	Polemoniaceae	annual herb	Apr-Jun	None	CE	G1	S1	1B.1	Yes	2001-01-01	© 2018 Neal Kramer
Leptosiphon rosaceus	rose leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G1	S1	1B.1	Yes	2001-01-01	© 2013 Aaron Schusteff
Lessingia arachnoidea	Crystal Springs lessingia	Asteraceae	annual herb	Jul-Oct	None	None	G2	S2	1B.2	Yes	1994-01-01	© 2008 Neal Kramer
Lessingia germanorum	San Francisco lessingia	Asteraceae	annual herb	(Jun)Jul-Nov	FE	CE	G1	S1	1B.1	Yes	1980-01-01	© 2019 Aaron Schusteff

Limnanthes douglasii ssp. *ornduffii*	Ornduff's meadowfoam	Limnanthaceae	annual herb	Nov-May	None	None	G4T1	S1	1B.1	Yes	2014-03-18	© 2021 Eva Buxton
Malacothamnus arcuatus var. *arcuatus*	arcuate bushmallow	Malvaceae	perennial deciduous shrub	Apr-Sep	None	None	G2Q	S2	1B.2	Yes	1974-01-01	© 2017 Keir Morse
Monardella sinuata ssp. *nigrescens*	northern curly-leaved monardella	Lamiaceae	annual herb	(Apr)May-Jul(Aug-Sep)	None	None	G3T2	S2	1B.2	Yes	2013-12-31	© 2014 John Doyen
Monolopia gracilens	woodland woollythreads	Asteraceae	annual herb	(Feb)Mar-Jul	None	None	G3	S3	1B.2	Yes	2010-04-06	© 2016 Richard Spellenberg
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	Boraginaceae	annual herb	Mar-Jun	None	None	G3T1Q	S1	1B.2	Yes	1984-01-01	No Photo Available
Polemonium carneum	Oregon polemonium	Polemoniaceae	perennial herb	Apr-Sep	None	None	G3G4	S2	2B.2		2008-11-03	©2018 John Doyen
Potentilla hickmanii	Hickman's cinquefoil	Rosaceae	perennial herb	Apr-Aug	FE	CE	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Sanicula maritima	adobe sanicle	Apiaceae	perennial herb	Feb-May	None	CR	G2	S2	1B.1	Yes	1974-01-01	No Photo Available
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	1B.2		1994-01-01	Neal Kramer

Silene scouleri ssp. *scouleri*	Scouler's catchfly	Caryophyllaceae	perennial herb	(Mar-May)Jun-Aug(Sep)	None	None	G5T4T5	S2S3	2B.2		2017-12-13	©2015 Vernon Smith
Silene verecunda ssp. *verecunda*	San Francisco campion	Caryophyllaceae	perennial herb	(Feb)Mar-Jul(Aug)	None	None	G5T1	S1	1B.2	Yes	1980-01-01	No Photo Available
Suaeda californica	California seablite	Chenopodiaceae	perennial evergreen shrub	Jul-Oct	FE	None	G1	S1	1B.1	Yes	1988-01-01	© 2010 Chris Winchell
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	FE	None	G1	S1	1B.1	Yes	1974-01-01	No Photo Available
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	2001-01-01	© 2005 Dean Wm Taylor
Triphysaria floribunda	San Francisco owl's-clover	Orobanchaceae	annual herb	Apr-Jun	None	None	G2?	S2?	1B.2	Yes	1974-01-01	No Photo Available
Triquetrella californica	coastal triquetrella	Pottiaceae	moss		None	None	G2	S2	1B.2		2001-01-01	No Photo Available

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SAM Force Main in Montara Replacement Project

Aquatic Resources Delineation Report

Draft Aquatic Resources Delineation Report

SAM Force Main in Montara Replacement Project

San Mateo County, California

January 9, 2026

Prepared by

EMC Planning Group

DRAFT AQUATIC RESOURCES DELINEATION REPORT

SAM FORCE MAIN IN MONTARA REPLACEMENT PROJECT

SAN MATEO COUNTY, CALIFORNIA

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January 9, 2026

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Executive Summary

EMC Planning Group conducted wetland assessment field surveys (wetland delineations) for potentially jurisdictional aquatic features (wetlands, streams, and drainages) on the SAM Force Main in Montara Replacement Project Site (Force Main Replacement), which includes approximately 2.6-mile project site between the towns of Moss Beach and El Granada, within potential water main replacement areas and equipment staging areas. The purpose of the assessment was to determine what on-site wetland/waterway features would potentially fall under the federal jurisdiction of the U.S. Army Corps of Engineers (USACE), under the state jurisdiction of the Regional Water Quality Control Board (RWQCB), and/or the California Department of Fish and Wildlife (CDFW). The features may also be subject to California Coastal Act regulations under the jurisdiction of the County of San Mateo.

The approximately 74-acre survey area is located between California Avenue in Moss Beach and east of Capistrano Road in El Granada, in San Mateo County, California. The force main replacement route runs parallel along a 2.6-mile stretch of State Route 1. Wetland assessment surveys were conducted for the project area on May 23, June 25, and July 11, 2025, at which time vegetation, soils, and hydrology data were examined throughout the project site and collected at various sampling locations.

Wetlands are defined in the Code of Federal Regulations, Section 328.3(b) as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." In the absence of excessive human disturbances or unusual or atypical circumstances, under the USACE wetland parameter criteria, an area must contain three primary hydrological parameters to be considered a wetland:

- Hydrophytic vegetation;
- Hydric soils; and
- Wetland hydrology.

Based on the updated federal regulations (*Sackett v. Environmental Protection Agency)* federal jurisdictional wetlands are defined by the three parameters listed above, and by ordinary high water marks on channel banks, wetland boundaries, and/or connectivity to a navigable water. Wetlands that are not contiguous, bordering, or neighboring with respect to other Waters of the U.S. are considered "isolated" and therefore not regulated by the USACE.

The RWQCB definition of wetland is more inclusive than that of the USACE, and only two parameters must be present. The California Coastal Commission (CCC) requires that only one of the three USACE indicators (wetland vegetation, soils, or hydrology) be present ("one parameter definition"). Further, for Waters of the State, such as natural streams that may fall under the jurisdiction of the CDFW, a channel bed and bank is jurisdictional as measured at the top of bank (TOB).

Portions of the survey area include areas within the Caltrans right of way along State Route 1. Caltrans jurisdiction over wetlands and waters involves ensuring compliance with federal and state laws. Separate calculations of potentially jurisdictional features occurring within Caltrans right of way are included in this report.

EMC Planning Group identified twenty-two potential wetland features on the Force Main Replacement project site. The delineated wetlands were classified as freshwater wet meadow, freshwater emergent wetland, and ephemeral streams or drainages, or riparian woodlands. All of these classes were determined to be seasonally flooded or saturated, with soil moisture persisting into early summer. All delineated wetlands had hydrophytic vegetation, hydric soils, and/or wetland hydrology present or had ordinary high water mark (OHWM) indicators. A total of 0.13 acres of the Force Main Replacement project site were determined to be potential jurisdictional Waters of the United States and therefore subject to Section 404 of the Clean Water Act (Table ES-2). A total of 1.83 acres of the Force Main Replacement project site were determined to be potential jurisdictional Waters of the State and therefore subject to Section 401 of the Clean Water Act, which requires certification from the state in which the discharge originate (Table ES-1, Table ES-2). Non-wetland habitats present on the site consisted primarily of annual grasslands, ornamental shrubs, Monterey pine and Monterey cypress trees, coastal scrub, and ruderal vegetation.

Ultimately, the USACE has sole authority to determine the federal jurisdictional status of waters or wetlands on any given project site, and this document will be submitted for their review. Regardless of the USACE determination of onsite jurisdiction, some or all of these delineated features may ultimately be considered jurisdictional by the RWQCB, the CDFW, and/or the County of San Mateo under Coastal Act regulations.

Table ES-1 Potentially Jurisdictional Wetland Features (Wetland)

Feature	Waters of the U.S.	Waters of the State	Coastal Commission	CA Department of Fish and Wildlife	Classification	Comments
Potential Wetland 1	0.0 acres	0.0 acres	0.117 acres	0.117 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW
Potential Wetland 2	0.0 acres	0.025 acres	0.025 acres	0.0 acres	Emergent Wetland	Potential State Jurisdictional Wetland. Hydrophytic vegetation, hydric soils, and wetland hydrology present. Roadside, isolated wetland.
Potential Wetland 3	0.0 acres	0.0 acres	0.033 acres	0.033 acres	Remnant Riparian Woodland	Potential Coastal Commission Wetland. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 4	0.0 acres	0.0 acres	0.577 acres	0.577 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. San Vicente Creek
Potential Wetland 5	0.0 acres	0.0 acres	0.087 acres	0.0 acres	Wet Meadow	Potential Coastal Commission Wetlands. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 6	0.0 acres	0.0 acres	0.013 acres	0.0 acres	Freshwater Emergent Wetland	Potential Coastal Commission Wetlands. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 7	0.0 acres	0.169 acres	0.169 acres	0.0 acres	Freshwater Emergent Wetland	Potential State Jurisdictional Wetland. Hydrophytic vegetation, hydric soils, and wetland hydrology present.
Potential Wetland 7a	0.0 acres	0.0 acres	0.029 acres	0.0 acres	Wet Meadow	Potential Coastal Commission Wetlands. Hydrophytic vegetation present.
Potential Wetland 8	0.0 acres	0.0 acres	0.321 acres	0.0 acres	Freshwater Forested Wetland	Potential State Coastal Commission Wetland. Hydrophytic vegetation present. Isolated wetlands.

Feature	Waters of the U.S.	Waters of the State	Coastal Commission	CA Department of Fish and Wildlife	Classification	Comments
Potential Wetland 9	0.0 acres	1.064 acres	1.064 acres	0.0 acres	Freshwater Emergent and Freshwater Forested Wetland	Potential State Jurisdictional Wetland. Hydrophytic vegetation, hydric soils, and possible wetland hydrology present.
Potential Wetland 10	0.0 acres	0.0 acres	0.817 acres	0.817 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. Denniston Creek.
Potential Wetland 11	0.0 acres	0.007 acres	0.007 acres	0.0 acres	Wet Meadow	Potential State and Coastal Commission wetland. Hydrophytic vegetation and hydric soils.
Potential Wetland 12	0.0 acres	0.0 acres	1.733 acres	1.733 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. Appears isolated from Denniston Creek.
Potential Wetland 13	0.0 acres	0.0 acres	0.064 acres	0.0 acres	Wet Meadow	Highly disturbed area with wetland vegetation. Covered by woodchips. Hydric vegetation present.
Potential Wetland 14	0.0 acres	0.0 acres	0.534 acres	0.534 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. Deer Creek
Total	**0.0 acres**	**1.265 acres**	**5.59 acres**	**3.811 acres**		

SOURCE: EMC Planning Group 2025

Table ES-2 Potentially Jurisdictional Aquatic Features (Non-Wetland)

Feature	Waters of the U.S.	Waters of the State	Coastal Commission	CA Department of Fish and Wildlife	Classification	Comments
Reach A	136.2 feet 0.016 acres	136.2 feet 0.031 acres	136.2 feet 0.031 acres	Potential Wetland 1 for Riparian Woodland. 0.015 acres TOB-OHWM	Ephemeral Stream/ Drainage	Potential Waters of the State. OHWM 5 feet, TOB 10 ft. Ephemeral stream.
Reach B	0 feet	207 feet 0.01 acres	207 feet 0.01 acres	0.0 acres	Artificial Drainage	Potential Waters of the State. Artificial drainage for stormwater. TOB 3 ft.
Reach C	0 feet	400 feet 0.014 acres	400 feet 0.014 acres	0.0 acres	Drainage	Potential Waters of the State. Gently sloping drainage on private parcel. No OHWM observed. TOB is ~1.5 feet in diameter.
Reach D	400 feet 0.05 acres	400 feet 0.14 acres	400 feet 0.14 acres	Potential Wetland 4 for Riparian Woodland. 0.09 acres TOB-OHWM	Perennial Stream/ Drainage	Potential Federal Waters of the US, Potential Waters of the State. OHWM 5 feet, TOB 15 ft diameter. Perennial stream, San Vicente Creek.
Reach E	0 feet	100 feet 0.007 acres	100 feet 0.007 acres	0.0 acres	Drainage/ Adjacent Wetlands	Potential Waters of the State. Wetland drainage with evidence of standing water. TOB 3 ft diameter.
Reach F	350 feet 0.040 acres	350 feet 0.121 acres	350 feet 0.121 acres	Potential Wetland 10 for Riparian Woodland. 0.18 acres TOB-OHWM	Perennial Stream/ Drainage	Potential Federal Waters of the US, Potential Waters of the State. OHWM 5 feet, TOB 15 ft diameter. Perennial stream, Denniston Creek.
Reach G	550 feet 0.063 acres	550 feet 0.19 acres	550 feet 0.19 acres	Potential Wetland 12 for Riparian Woodland. 0.13 acres TOB-OHWM	Intermittent Stream/ Drainage	Potential Federal Waters of the US, Potential Waters of the State. Intermittent stream. OHWM 5 feet, TOB 10 ft diameter.
Reach H	150 feet 0.017 acres	150 feet 0.051acres	150 feet 0.051 acres	Potential Wetland 14 for Riparian Woodland. 0.03 acres TOB-OHWM	Perennial Stream/ Drainage	Potential Federal Waters of the US, Potential Waters of the State. Perennial stream, Deer Creek. OHWM 5 feet, TOB 15 ft diameter.

Feature	Waters of the U.S.	Waters of the State	Coastal Commission	CA Department of Fish and Wildlife	Classification	Comments
Total	0.186 acres	0.564 acres	0.564acres	0.445 acres		

SOURCE: EMC Planning Group 2025

1.0 Introduction

EMC Planning Group surveyed the SAM Force Main in Montara Replacement Project (Force Main Replacement) site for potentially jurisdictional aquatic features (wetlands, streams, and drainage channels). The project site is located on public right of ways along State Route 1 between the towns of Moss Beach and El Granada, in unincorporated San Mateo County, California.

Aquatic resources delineation field surveys were conducted by EMC Planning Group biologists Rose Ashbach, M.S. and Kimiya Ghadiri on May 2, June 25, and July 11, 2025, at which time vegetation, soils, and hydrology data were examined throughout the project site and collected at various sampling locations. The surveys were conducted after the rainy season. Soil was still moist and water was still flowing in some of the creeks and drainages.

Contact information for the applicant and wetland consultant are included in Table 1-1. This report includes a discussion of the survey findings and provides a determination of whether the aquatic resources observed on the project site are considered jurisdictional and therefore subject to Section 404 of the Clean Water Act. However, the USACE has sole authority to determine the jurisdictional status of waters and wetlands on any given project site, and this document will be submitted for their review. Regardless of the USACE determination of onsite jurisdiction, some or all of these delineated features may ultimately be considered jurisdictional by the RWQCB, the CDFW, and/or the County of San Mateo under Coastal Act regulations.

Table 1-1 Contact Information

Applicant	Wetland Consultant
MSN Engineers ATTN: Josh Reece Natural Resources Practice Lead 201 N. Calle Cesar Chavez, Suite 300 Santa Barbara, CA 93103 Phone: (951) 384-0711 Email: jreece@mnsengineers.com	**EMC Planning Group Inc.** ATTN: Rose Ashbach, M.S. Associate Biologist 601 Abrego Street Monterey, CA 93940 Phone: (831) 649-1799 Email: ashbach@emcplanning.com

1.1 Location

The Force Main Replacement project site is located within public rights-of-way along State Route 1 between the towns of Moss Beach and El Granada, in unincorporated San Mateo County, California. The project is currently being designed to avoid impacts to biological resources by utilizing horizontal directional drilling where feasible. Project-related impacts will occur in staging areas, trench installation zones, and pipe layout locations. Figure 1-1, Project Location, illustrates the general location of the project area, while Figure 1-2, Aerial Photograph, shows the aerial extent of the project site. Appendix A, Site Maps, includes the preliminary construction plans. Throughout this document, the term "project site" refers to the 74-acre survey area.

1.2 Project Description

The applicant, MSN Engineers, on behalf of the Sewer Authority Mid-Coastline, proposes to replace approximately 2.5 miles of the existing ductile iron pipe (DIP) force main. The DIP portion of the force main is nearing the end of its service life. Replacing this segment will help prevent future failures and improve the overall resilience of the sewer infrastructure.

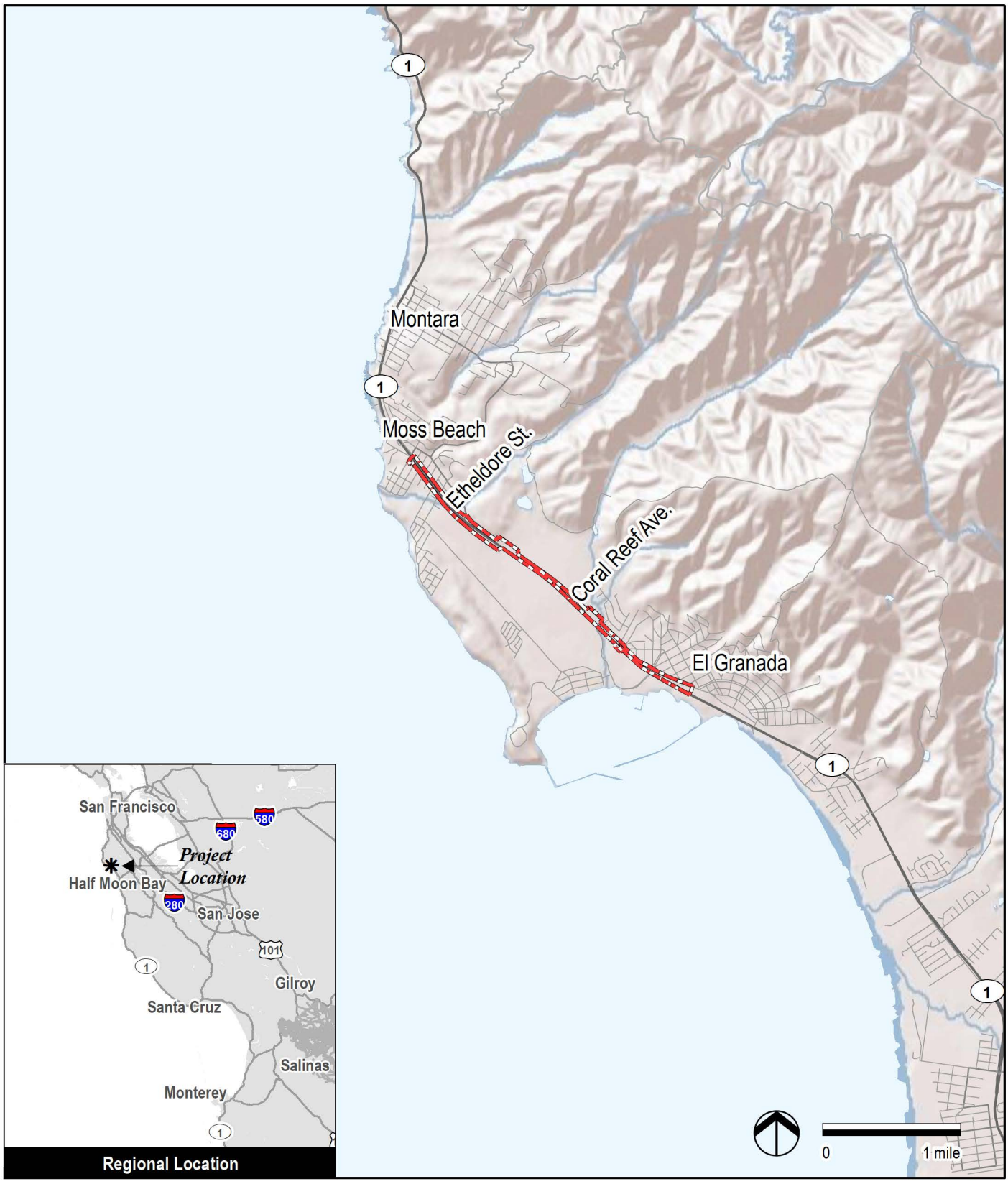
The proposed scope of work includes replacing approximately 13,395 linear feet of 12- and 14-inch DIP pipeline with high-density polyethylene (HDPE) pipe, installing air release and vacuum release valves, and constructing bypass stations. The preferred installation method is horizontal directional drilling (HDD), with open-cut trenching used where necessary.

Twenty-two potentially jurisdictional aquatic areas are located within the project area. Where the pipeline travels through aquatic features, HDD will be used to avoid construction-related impacts to environmentally sensitive areas.

1.3 Land Use

The site includes mixed land uses, primarily within Caltrans rights-of-way. In Moss Beach, the FMM corridor runs adjacent to residential areas, gas stations, roads, and open spaces. As it approaches El Granada, the alignment passes through forested areas and agricultural fields. Within El Granada, the FMM runs through open space and areas of commercial development.

Surrounding land uses and natural features include Fitzgerald Marine Reserve to the west of the alignment in Moss Beach, and Pilar Point Harbor and Mavericks Beach to the west in El Granada. San Vicente Creek, Denniston Creek, and Deer Creek cross the alignment. A large agricultural area is located within the FMM alignment north of State Route 1, with the Half Moon Bay Airport situated south of the highway and south of the agricultural fields. Both Moss Beach and El Granada contain substantial residential and commercial development surrounding the project area.



Source: ESRI 2025

Figure 1-1

Project Location Map

SAM Force Main in Montara Replacement Project
Aquatic Resources Delineation Report

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Source: ESRI 2025, MNS Engineers 2025

Figure 1-2
Aerial Photograph

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1.4 Environmental Setting

The project site is located along the Central Coast of California near Half Moon Bay, approximately 20 miles south of San Francisco. This location is within the Central Coast Bioregion, a region of the state defined by coast redwoods (*Sequoia sempervirens*) and valley oaks (*Quercus lobata*). The Central Coast Bioregion represents exceptional biological diversity and natural beauty. Extending from the San Fracisco Bay south to northern Santa Barbara County, the bioregion is bounded on the west by the Pacific Ocean and on the east by the San Joaquin Valley, Carrizo Plain, and the interior Transverse Ranges. Across the bioregion's 15,000 square miles (9 percent of California's area), physical and biological processes, combined with time and human actions, have resulted in a broad range of ecosystems, each harboring distinct assemblages of plants and animals (Tietje, et al. 2019).

The nearby coastal waters at Pillar Point Harbor to the coastal waters west of Moss Beach are a part of the Montara State Marine Reserve and Pillar Point State Marine Conservation Area. These areas were designated as protected areas in August 2009.

1.5 Topography

The project site is primarily flat within the Moss Beach, El Granada, and agricultural portions of the survey area. A sloping section occurs where the adjacent Monterey pine and cypress forested hills descend into the site. Overall, the topography slopes southwest toward the coastline, Montara State Marine Reserve, and Pillar Point State Marine Conservation Area. Elevations range from approximately 10 meters above sea level at El Granada to 20 meters at Moss Beach. The maximum slope along the alignment is approximately 2.3 percent. Figure 1-3, USGS Topographic Map presents a topographic map of the site.

1.6 Climate

The Central Coast of California has a Mediterranean climate characterized by cool, wet winters and warm, dry summers. Rainfall is uncommon between May and October, with most precipitation occurring from winter storms originating over the Pacific Ocean. January typically receives the highest rainfall, averaging 2.18 inches, and the region's average annual precipitation is approximately 26.17 inches. The nearby Pacific Ocean moderates temperatures, resulting in a maritime climate with mild conditions throughout the year. Average maximum temperatures range from 58.4°F in January to 66.8°F in September, while average minimum temperatures range from 42.9°F in January to 52.7°F in August (Western Regional Climate Center 2025).

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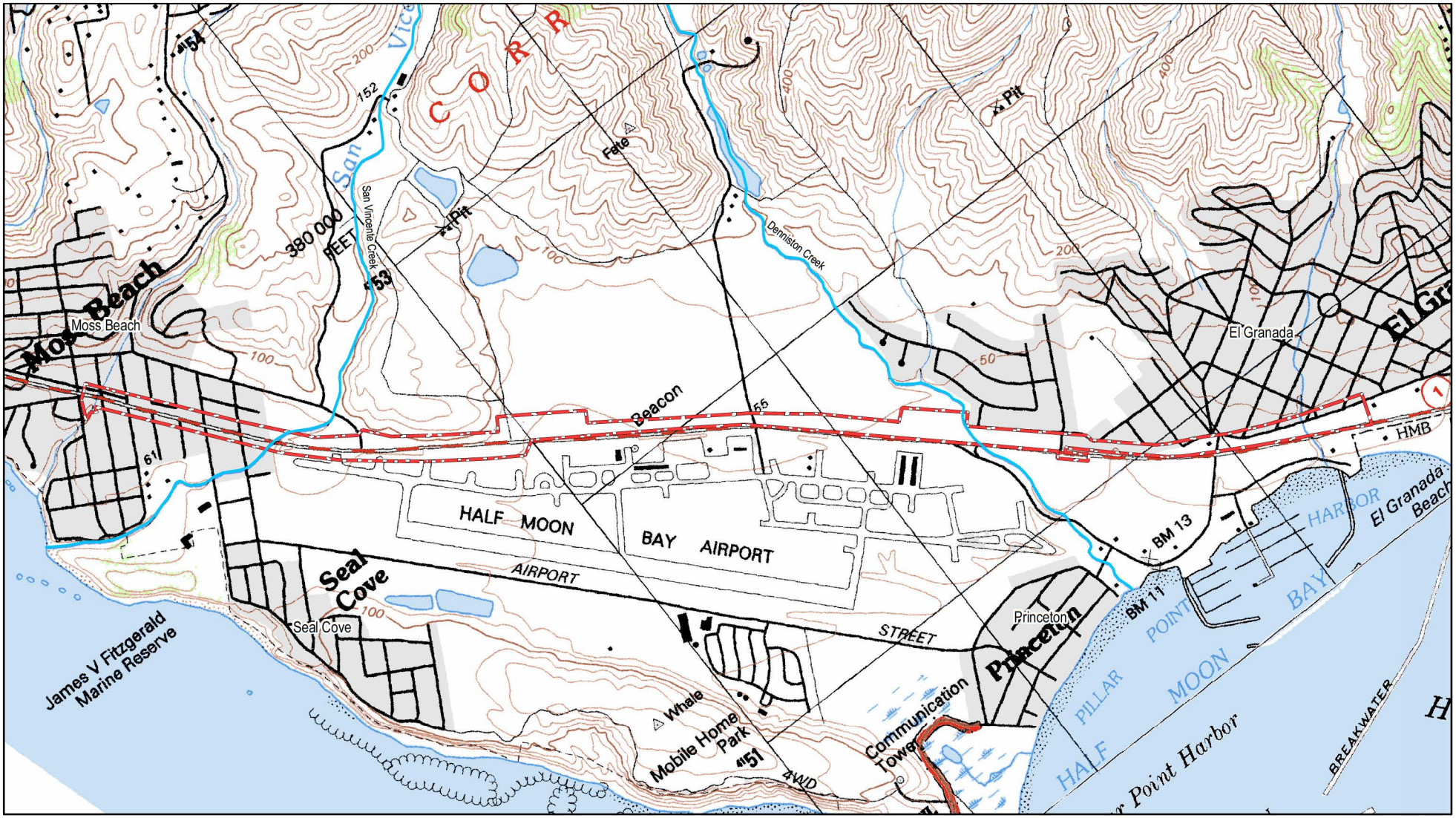

Source: ESRI 2025, MNS Engineers 2025

Figure 1-3
USGS Topographic Map

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2.0
Regulatory Background

2.1 Federal Clean Water Act

Section 404 of the Clean Water Act of 1972 regulates the discharge of dredge and fill material into "Waters of the U.S.". "Waters of the U.S." are waters such as oceans, rivers, streams, lakes, ponds, and wetlands subject to U.S. Army Corps of Engineers (USACE) Regulatory Program jurisdiction under Section 404 of the Clean Water Act. Certain artificial drainage channels and wetlands have also been considered jurisdictional "Waters of the U.S."

The U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers are in receipt of the U.S. Supreme Court's May 25, 2023, decision in the case of *Sackett v. Environmental Protection Agency*. On August 29, 2023, the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers issued a final ruling amending the regulatory definition of "waters of the United States" to conform with the *Sackett* decision.

The USACE determines the extent of its jurisdiction as defined by ordinary high water marks on channel banks, wetland boundaries, and/or connectivity to a navigable water. Wetlands are habitats with soils that are intermittently or permanently saturated or inundated. The resulting anaerobic conditions naturally select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 *Corps of Engineers Wetlands Delineation Manual* and the 2008 *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0).*

Activities that involve the discharge of fill into jurisdictional wetlands or waters are subject to the permit requirements of the USACE. Discharge permits are typically issued on the condition that the project proponent agrees to provide compensatory mitigation which results in no net loss of area, function, or value, either through wetland creation, restoration, or the purchase of credits through an approved mitigation bank. In addition to individual discharge permits, the USACE also issues nationwide permits applicable for certain activities.

Pursuant to the USACE Manuals, key criteria for determining the presence of wetlands are:

- The presence of inundated or saturated soil conditions resulting from permanent or periodic inundation by ground water or surface water; and
- A prevalence of vegetation typically adapted for life in saturated soil conditions (hydrophytic vegetation).

Explicit in the definition is the consideration of three environmental parameters: hydrology, soil, and vegetation. Positive wetland indicators of all three parameters are normally present in wetlands. The assessment of all three parameters in normal circumstances enhances the technical accuracy, consistency, and credibility of a wetland determination and is required per the USACE Manuals.

Aquatic habitats other than wetlands that are considered to be Waters of the United States were also investigated as part of this study. Their landward extent was defined following the definitions provided in the USACE regulations [33 CFR 328.4(a), (b), and (c)]:

(a) **Territorial Seas**. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles.

(b) **Tidal Waters of the United States**. The landward limits of jurisdiction in tidal waters:

  (1) Extends to the high tide line; or

  (2) When adjacent non-tidal Waters of the United States are present, the jurisdiction extends to the limits identified in (c) below.

(c) **Non-Tidal Waters of the United States**. The limits of jurisdiction in non-tidal waters:

  (1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark (OHWM);

  (2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands; or

  (3) When the water of the United States consists only of wetlands, the jurisdiction extends to the limit of the wetlands.

Tributary waters and their impoundments are under the regulatory jurisdiction of the USACE and extend to the ordinary high water mark on opposing channel banks. Tributary waters include rivers, streams, and seasonal drainage channels.

The ordinary high water mark is defined in 33 Code of Federal Regulations 328 (c)(6) as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, or the presence of litter and debris." The ordinary high water mark represents the upper limit of regular flow in non-tidal streams and rivers and serves as the lateral boundary of federally jurisdictional waters under the Clean Water Act, unless adjacent wetlands extend beyond that line. In 2008, USACE published the *Field Guide to the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008). This supplement is an approach for identifying the lateral limits of non-wetland/waters.

Areas meeting the regulatory definition of "Waters of the United States" are subject to the jurisdiction of the USACE. The USACE is the agency responsible for regulating jurisdictional wetlands/waters and for administering Section 404 of the 1972 CWA. Jurisdictional waters may include all waters used or potentially used for interstate commerce. This includes all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as jurisdictional waters, tributaries of waters otherwise defined as jurisdictional waters, the territorial seas, and wetlands adjacent to jurisdictional waters (33 CFR, Part 328, Section 328.3).

Areas not considered jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR, Part 328).

2.2 State, County, and Municipality

Regulation of land-use activities within wetlands and waters may also occur at the state, county and local municipality level. Wetland regulations administered at the state, county, and local municipality level typically expand upon the scope of federal regulations. If regulations are in place at the state, county or local municipality level, they are generally written to be inclusive of wetlands that are not subject to federal regulations. An example is hydrologically-isolated wetlands, which includes wetlands not immediately adjacent to "Waters of the United States."

California State Water Resources Control Board

The California State Water Resources Control Board and nine Regional Water Quality Control Boards (collectively, the Water Boards) are the primary regulatory authorities for protection of wetlands in California, although other agencies have additional authorities over certain geographic areas or wetland functions, especially in regard to habitat values. The Water Boards' authority is derived from California's Porter-Cologne Water Quality Control Act, which defines "Waters of the State" as "any surface water or groundwater, including saline waters, within the boundaries of the state."

Accordingly, the top of bank defines the lateral extent of state jurisdiction for stream channels and other surface waters not subject to federal jurisdiction under Section 404 of the Clean Water Act but still regulated by the State Water Resources Control Board (SWRCB) or the Regional Water Quality Control Boards (RWQCBs) under the Porter-Cologne Water Quality Control Act.

For the purpose of defining the lateral extent of Waters of the State, the top of bank generally represents the upper limit of a watercourse and marks the transition between the active channel and

the adjacent upland area. It is identified in the field by a distinct change in slope, soil type, or vegetation that indicates the boundary between areas subject to frequent or periodic inundation and those that are rarely flooded. The top of bank often coincides with the limit of bankfull flow, the stage at which water fills the channel without spilling onto the floodplain.

In 1993, by executive order, the state adopted a goal of no net loss under the California Wetlands Conservation Policy, along with a goal to "achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship, and respect for private property" (State of California 1993).

California Department of Fish and Wildlife

California Department of Fish and Wildlife (CDFW) regulates activities that may substantially divert or obstruct the natural flow, or substantially change the bed, channel, or bank of a river, stream, or lake, including associated riparian habitats, pursuant to Fish and Game Code Sections 1600–1616. This jurisdiction includes riparian wetlands and other areas adjacent to waterways that support aquatic or riparian vegetation and provide habitat for fish and wildlife. Any activity that may result in disturbance to these areas requires a Lake or Streambed Alteration Agreement (LSAA) from CDFW. The intent of this regulation is to protect the biological integrity and connectivity of aquatic and riparian ecosystems throughout the state.

California Coastal Act

California Coastal Act Section 30121 defines wetlands as "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." In further defining jurisdictional state waters under the Coastal Act, the California Coastal Commission (CCC) establishes a "one parameter" wetland definition that requires the presence of only a single wetland parameter (i.e., soils, vegetation and/or hydrology) as opposed to the three parameters required by the USACE jurisdictional wetland definition, to meet the jurisdictional wetland criteria. The single parameter rule in the Coastal Zone is primarily based on the hydric (i.e. wetland) soils definition, which states that a soil is considered hydric if it is ponded or remains saturated for a minimum period of seven consecutive days during the growing season. Any alteration of existing wetlands must comply with the regulations of the California Coastal Act, including implementation of mitigation measures as appropriate.

Finally, Section 30231 states that "the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams."

Specific California Coastal Act excerpts pertaining to coastal biological resources include:

> Section 30001: Legislative findings and declarations; ecological balance. The Legislature hereby finds and declares:
>
> (a) That the California coastal zone is a distinct and valuable natural resource of vital and enduring interest to all the people and exists as a delicately balanced ecosystem.
>
> (b) That the permanent protection of the state's natural and scenic resources is a paramount concern to present and future residents of the state and nation.
>
> (c) That to promote the public safety, health, and welfare, and to protect public and private property, wildlife, marine fisheries, and other ocean resources, and the natural environment, it is necessary to protect the ecological balance of the coastal zone and prevent its deterioration and destruction.
>
> (d) That existing developed uses, and future developments that are carefully planned and developed consistent with the policies of this division, are essential to the economic and social well-being of the people of this state and specially to working persons employed within the coastal zone.
>
> **Section 30116: Sensitive coastal resource areas. [abridged]** "Sensitive coastal resource areas" means those identifiable and geographically bounded land and water areas within the coastal zone of vital interest and sensitivity. "Sensitive coastal resource areas" include the following:
>
> (a) Special marine and land habitat areas, wetlands, lagoons, and estuaries as mapped and designated in Part 4 of the coastal plan.
>
> **Section 30231: Biological productivity; water quality.** The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.
>
> Section 30240: Environmentally sensitive habitat areas; adjacent developments.
>
> (a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

San Mateo Local Coastal Program

Coastal wetlands are also protected under California's Coastal Act (CCA) of 1976. The local coastal program for the County of San Mateo provides county oversite for permitting of within the coastal zone in San Mateo County.

Section Seven of the San Mateo County Local Coastal Program protects "sensitive habitat" including areas "in which plan or animal life or their habitats are either rare or especially valuable" and include perennial and intermittent streams and their tributaries, riparian areas, and wetland resources.

The San Mateo County Local Coastal Program defines wetland as "an area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally are found to grow in water or wet ground. Such wetlands can include mudflats (barren of vegetation), marshes, and swamps. Such wetlands can be either fresh or saltwater, along streams (riparian), in tidally influenced areas (near the ocean and usually below extreme high water of spring tides), marginal to lakes, ponds, and man-made impoundments. Wetlands do not include areas which in normal rainfall years are permanently submerged (streams, lakes, ponds and impoundments), nor marine or estuarine 7.5 areas below extreme low water of spring tides, nor vernally wet areas where the soils are not hydric. In San Mateo County, wetlands typically contain the following plants: cordgrass, pickleweed, jaumea, frankenia, marsh mint, tule, bullrush, narrow-leaf cattail, broadleaf cattail, pacific silverweed, salt rush, and bog rush. To qualify, a wetland must contain at least a 50% cover of some combination of these plants, unless it is a mudflat."

Riparian corridors are defined "by the "limit of riparian vegetation" (i.e., a line determined by the association of plant and animal species normally found near streams, lakes and other bodies of freshwater: red alder, jaumea, pickleweed, big leaf maple, narrow-leaf cattail, arroyo willow, broadleaf cattail, horsetail, creek dogwood, black cottonwood, and box elder). Such a corridor must contain at least a 50% cover of some combination of the plants listed."

Development within and adjacent to these features requires that development be designed to prevent impacts that could significantly degrade those habitats or be avoided through implementation of exclusion buffers.

For riparian corridors, exclusion buffers must extend 50 feet outward for perennial streams and 30 feet from the midpoint of intermittent streams. For wetlands buffer zones shall extend a minimum of 100 feet landward from the outermost line of wetland vegetation. This setback may be reduced to no less than 50 feet only where:

(1) no alternative development site or design is possible; and

(2) adequacy of the alternative setback to protect wetland resources is conclusively demonstrated by a professional biologist to the satisfaction of the County and the State Department of Fish and Game.

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3.0 Methods

3.1 Survey Methods

EMC Planning Group's investigation focused on identifying and mapping areas meeting the definition of wetlands and other Waters of the United States under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act, stream channels and other surface waters not subject to federal jurisdiction under Section 404 of the Clean Water Act but still regulated by the RWQC under the Porter-Cologne Water Quality Control Act, riparian habitat under the jurisdiction of CDFW, and aquatic features subject to local jurisdiction. The survey was conducted in anticipation of coordinating with the resource agencies.

Wetland identification and delineation followed the methods described in the *Corps of Engineers Wetland Delineation Manual* (USACE 1987) and the supplemental guidance contained in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008). Where differences in the two documents occur, the Regional Supplement takes precedence over the Corps Manual for applications in the Arid West Region (USACE 2008).

Specific objectives of this study were to:

- Identify and review topographical maps, aerials, and drainage information regarding the project site;
- Conduct wetland delineations within the project site boundary using requirements of the USACE Manuals; and
- Prepare a wetland delineation report identifying jurisdictional wetlands, including acreages.

Wetlands are defined in the Code of Federal Regulations, Section 328.3(b) as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." In the absence of excessive human disturbances or unusual or atypical circumstances, under the USACE wetland parameter criteria, an area must contain three primary hydrological characteristics to be considered a wetland:

- Hydrophytic vegetation;
- Hydric soils; and
- Wetland hydrology.

Some project wetland sites had standing water or highly compacted soils prohibiting soil test pit analysis. In these circumstances, the presence of hydric soils is assumed.

In the absence of adjacent wetlands, aquatic resources delineations were based on a combination of field indicators, including the ordinary high water marks (OHWM), the top of stream bank, and the outer edge of riparian vegetation to determine the limits of agency jurisdiction.

3.2 Preliminary Data Gathering

High-resolution Digital Elevation Modeling (DEM) data for the project site was obtained from the U.S. Geology Survey National Map 3D Elevation Program. This data allowed for topographic modeling for delineating wetland catchments and understanding hydrologic connectivity across the project site. Additionally, the *Soil Survey of San Mateo County, California* from the U.S. Department of Agriculture - Natural Resources Conservation Service (USDA-NRCS 2024) was reviewed for soil types present on the project site.

Jurisdictional aquatic resources were identified on field maps through the use of aerial photography, topographic mapping, soil mapping, existing wetland mapping, and project site plans. This resource review included:

- Aerial photography from Google Earth, including historical imagery (2025);
- USGS topographic quadrangle map for Montara Mountain;
- Soils information from the USDA-NRCS (2025); and
- US Fish and Wildlife Service (USFWS) National Wetlands Inventory mapping (2025).

3.3 Hydric Soil Indicators

A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part. A hydric soil is waterlogged long enough to support not only the growth of plants adapted to life in anaerobic conditions but also the regeneration of such plants.

The U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey online database was consulted as a guide to determining the general distribution of soils on the project site and whether or not they were poorly drained or had a hydric soil rating. However, hydric soils were determined to occur at a data point only if positive field indicators were present.

Soils test pits were excavated to depths of about 12-16 inches below the surface organic litter layer. The soils were evaluated from the surface through the lower layers where texture, color, and other characteristics such as indications of the oxidation/reduction of iron or organic matter

accumulation. Areas in the soil where iron is reduced often develop characteristic bluish gray colors known as gley. If a soil reverts to an aerobic state, iron in solution will oxidize and form reddish redox concentrations.

Soils formed under wetland (anaerobic) conditions typically have a characteristic low chroma matrix color, designated 0, 1, or 2, used to identify them as hydric soils. Chroma designations are determined by comparing a soil sample with a standard Munsell soil color chart. Soils with a chroma of 0 or 1 are considered hydric. Soils with a chroma of 2 must also have other indicators to be considered hydric.

Hydric soils were determined to be present if any of the soil samples met one or more of the hydric soil indicators described in the NRCS Field Indicators of Hydric Soils in the United States (USDA-NRCS 2018). Some project wetland sites had standing water or highly compacted soils prohibiting soil test pit analysis. In these circumstances, the presence of hydric soils is assumed.

3.4 Wetland Hydrology Indicators

The USACE jurisdictional wetland hydrology criterion is met if an area is inundated or saturated for a period sufficient to create anaerobic soil conditions during the growing season (described in the Arid West Supplement as a minimum of 14 consecutive days). Hydrology indicators are often the most temporary of wetland indicators. Those involving direct observation of surface water or saturated soils are usually present only during the normal wet portion of the growing season and may be absent during the dry season or during drought years. Many wetlands in the Arid West region are dry for much of the year and, at those times, may lack hydrology indicators entirely.

Wetland hydrology indicators were identified in the field using soil pits as deep as 16 inches to confirm primary indicators such as high-water table, saturation, hydrogen sulfide odor, or oxidized root channels.

3.5 Hydrophytic Vegetation Indicators

Plant species identified in the study area were assigned a wetland indicator status primarily following the USACE National Wetland Plant List online database (USACE 2025).

This wetland classification system is based on the expected frequency of occurrence in wetlands as follows:

- OBL Always found in wetlands >99 percent frequency;
- FACW (±) Usually found in wetlands 67-99 percent;
- FAC Equal in wetland or non-wetlands 34-66 percent;

- FACU Usually found in non-wetlands 1-33 percent; and
- UPL/NL Upland/Not listed (upland) <1 percent.

The Arid West Supplement describes the process for determining if hydrophytic vegetation is present. The dominant species are identified independently from each stratum of the community: trees, shrubs, herbaceous plants, and woody vines. Dominance is determined by visual estimation of species which contribute the most to establishing the character of the vegetation. Dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. A standard one square meter was used for sampling plots in the herbaceous layer.

In general, dominants are the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total cover. If greater than 50 percent of the dominant species across all strata combined have an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

To the extent possible, a wetland delineation making hydrophytic vegetation decisions should be based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year. However, wetland determinations must often be performed at other times of year, or in years with unusual or atypical weather conditions. The delineation for this project occurred on May 23, June 25, and July 11, 2025, both during and after the typical rainy season.

3.6 Ordinary High Water Indicators

In the absence of adjacent wetlands, the non-tidal waters were delineated in the field based on indicators of the ordinary high water mark and the top of bank, as appropriate to the feature type. The ordinary high water mark was identified using physical characteristics that indicate the extent of regular surface flow, including changes in soil character, vegetation, and depositional features such as water staining, sediment sorting, and scour. The top of bank was used where it represented the break in slope associated with the lateral extent of active channel processes or confinement of ordinary high flows. Riparian vegetation is present around many of the streams throughout the project site. Riparian vegetation was dominated by arroyo willow (*Salix lasiolepis*) and sitka willow (*Salix sitchensis*). However, the outer edge of riparian vegetation was used to identify the limit of disturbance regulated by the CDFW. Collectively, ordinary high water mark, top of bank, and riparian vegetation define the limits of jurisdictional aquatic resources and the extent of the streambed and bank subject to jurisdiction under state and federal regulations.

3.7 Field Methods

EMC Planning Group biologists Rose Ashbach, M.S., and Kimiya Ghadiri conducted aquatic features delineations for Waters of the United States on the project site on May 23, June 25, and July 11, 2025, at which time vegetation, soils, hydrology, ordinary high water mark, top of bank, and edge of riparian vegetation data were examined throughout the project site and collected at various sampling locations.

The routine method for wetland delineation was followed as described in the *Corps Manual and Arid West Regional Supplement* (USACE 1987, USACE 2008). Data collected at sample points were recorded on standard wetland determination data forms (Arid West Region, Version 2.0) included in Appendix B, Wetland Determination Data Forms. A total of twenty wetland determination data forms were prepared. All aquatic resources were mapped using Environmental Systems Research Institute's (ESRI) Field Maps mobile mapping application and a Trimble R1 sub-meter Global Positioning System (GPS) receiver.

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4.0 Results

The following discussion reports the soils, hydrology, and vegetation observed at the site during the surveys.

4.1 Soils

Soil survey information for the project site was obtained from the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey online database as a guide to determining the general distribution of soils on the project sites. Ten soil series have been identified as occurring within the survey area (Table 4-1, Project Site Soils; Figure 4-1 through Figure 4-4, NRCS Soils Map Segments 1-4). All are derived from alluvial parent material (NRCS 2025).

Table 4-1 Project Site Soils

Soil Series	Map Symbol	Drainage Class	Hydric Soil Rating
Typic Argiustolls, loamy-Urban land association, 5 to 1 5 percent slopes	130	Moderately well drained	No
Farallone coarse sandy loam, nearly level	FcA	Well drained	No
Denison clay loam, nearly level	DcA	Moderately well drained	No
Elkhorn sandy loam, moderately steep, severely eroded	EhE3	Well drained	No
Denison loam, sloping	DmC	Moderately well drained	No
Denison loam, nearly level	DmA	Moderately well drained	No
Gullied land (alluvial soil material)	Gu	Not Specified	No
Denison coarse sandy loam, nearly level	DeA	Moderately well drained	No
Denison loam, gently sloping	DmB	Moderately well drained	No
Farallone loam, gently sloping	FaB	Well drained	No

Source: NRCS 2025

4.2 Hydrology

Hydrological Alterations

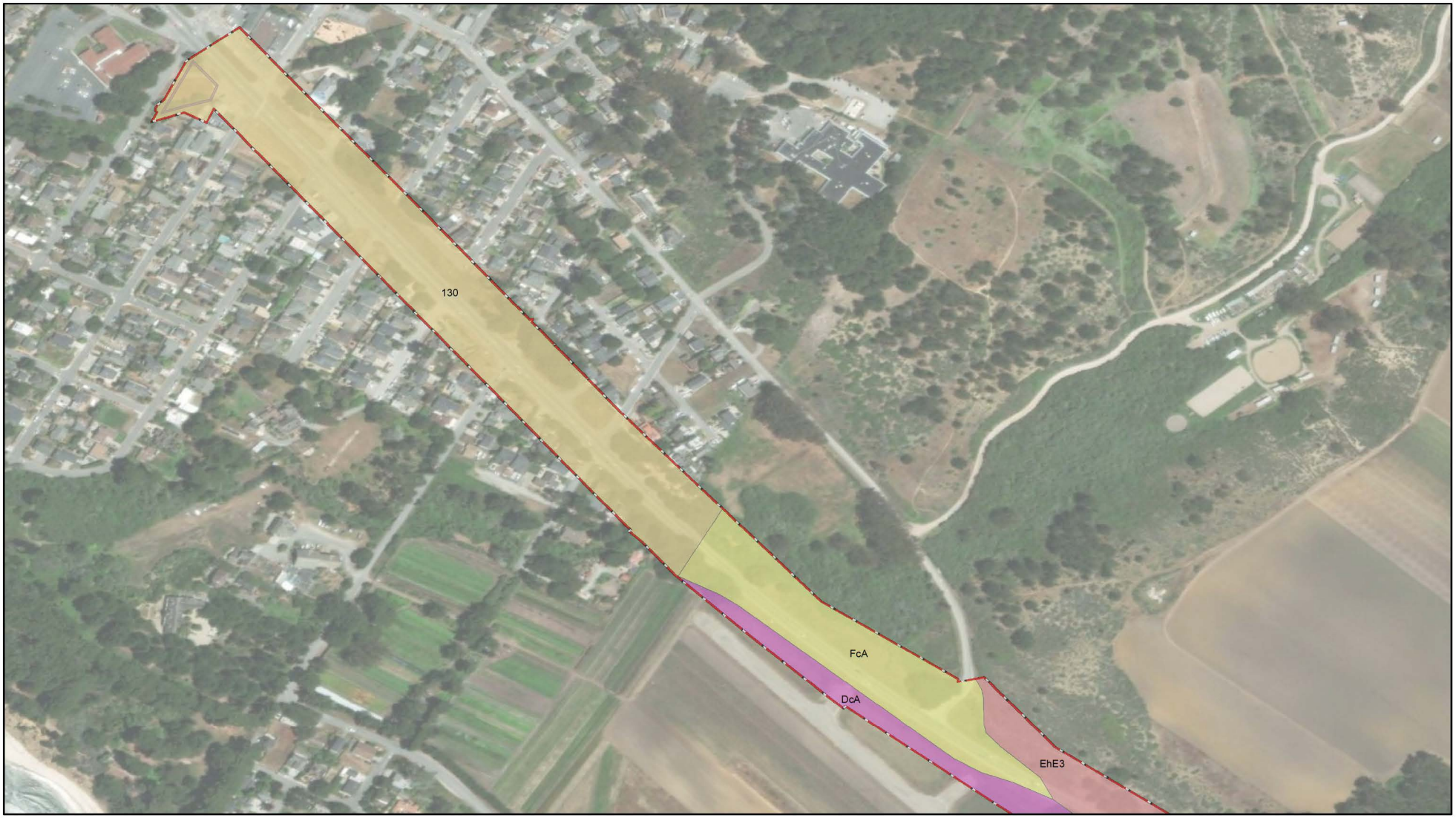
In previous decades, substantial modifications to the hydrologic regime of aquatic features at the project site have occurred. Evidence of ditching, draining, and levee construction can be observed throughout the site. The agricultural field has been graded, and levees have been constructed along State Route 1. Residential areas and roadways are drained through a network of ditches and constructed channels, while portions of Denniston Creek have been channelized to direct surface water flow.

Watershed

The U.S. Geological Survey (USGS) National Map identifies the study area within the "San Francisco Coastal South" 8-digit National Hydrography Dataset (NHD) Hydrologic Unit Code (HUC) watershed (18050006). More specifically, the study area lies in the HUC NHD 12-digit subwatershed "Denniston Creek-Frontal Pacific Ocean" (180500060205). Denniston Creek, San Vicente Creek, Deer Creek, and other small intermittent non named drainages, drain to the ocean within this watershed.

National Wetlands Inventory

A review of the National Wetlands Inventory online database was conducted to identify potential aquatic features on or adjacent to the project site (USFWS 2025). Although the National Wetlands Inventory can be used as a preliminary source to identify potential aquatic features, data is based on aerial imagery and is not a substitute for field surveys. The National Wetlands Inventory classifies wetlands on the north end of the project site as "Freshwater Forested/Shrub Wetland" habitats, which represents riparian vegetation adjacent to streams. In the central and southern portion of the project site, mapped wetlands are all classified as "Riverine" habitats. These features include intermittent, temporarily flooded, excavated wetland areas (R4SBAx) within the agricultural fields in the central portion of the project site and a roadside tributary to Denniston Creek. On the south end of the project site, intermittent, riverine features (R4SBA) are mapped at Denniston and Deer Creeks, Figure 4-5, National Wetlands Inventory Map, presents the USFWS's wetlands mapping of the project site. Other wetland features were observed in the field that are not mapped by the Inventory (USFWS 2025).



0 300 feet

Biological Survey Area

130: Typic Argiustolls, Loamy-Urban Land Association; 5-15% Slopes

FcA: Farallone Coarse Sandy Loam; Nearly Level

DcA: Denison Clay Loam; Nearly Level

EhE3: Elkhnorn Sandy Loam: Moderalty Steep, Severely Eroded

Source: ESRI 2025, EMC Planning Group 2025, NRCS 2025

Figure 4-1

NRCS Soils Map Segment 1

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0 300 feet

Biological Survey Area

EhE3: Elkhnorn Sandy Loam: Moderalty Steep, Severely Eroded

FcA: Farallone Coarse Sandy Loam; Nearly Level

DcA: Denison Clay Loam; Nearly Level

DmC: Denison Loam; Sloping

DmA: Denison Loam; Nearly Level

Source: ESRI 2025, EMC Planning Group 2025, NRCS 2025

Figure 4-2

NRCS Soils Map Segment 2

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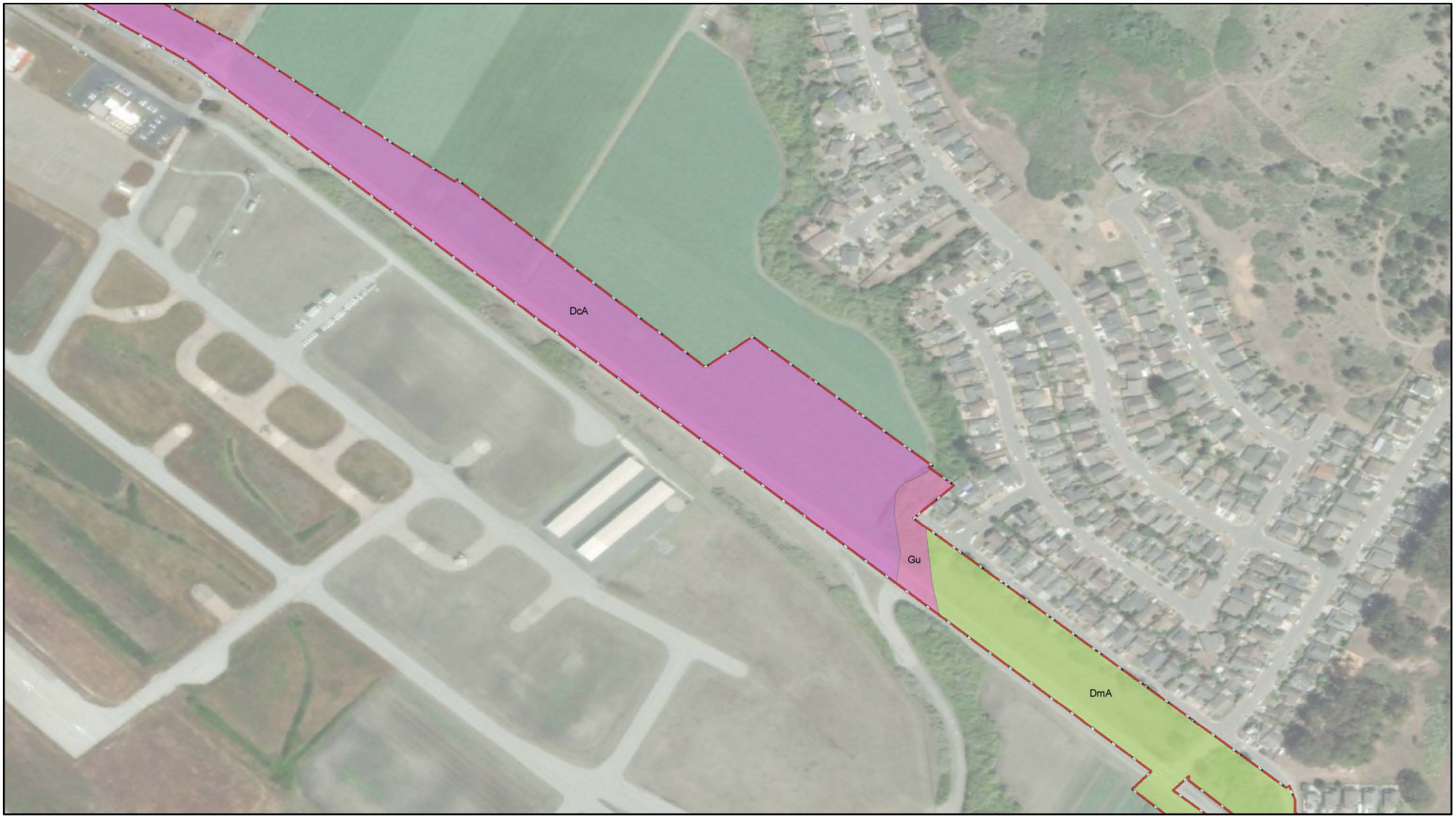

0 300 feet

Biological Survey Area | DcA: Denison Clay Loam; Nearly Level | DmA: Denison Loam; Nearly Level | Gu: Gullied Land (Alluvial Soil Material)

Source: ESRI 2025, EMC Planning Group 2025, NRCS 2025

Figure 4-3
NRCS Soils Map Segment 3

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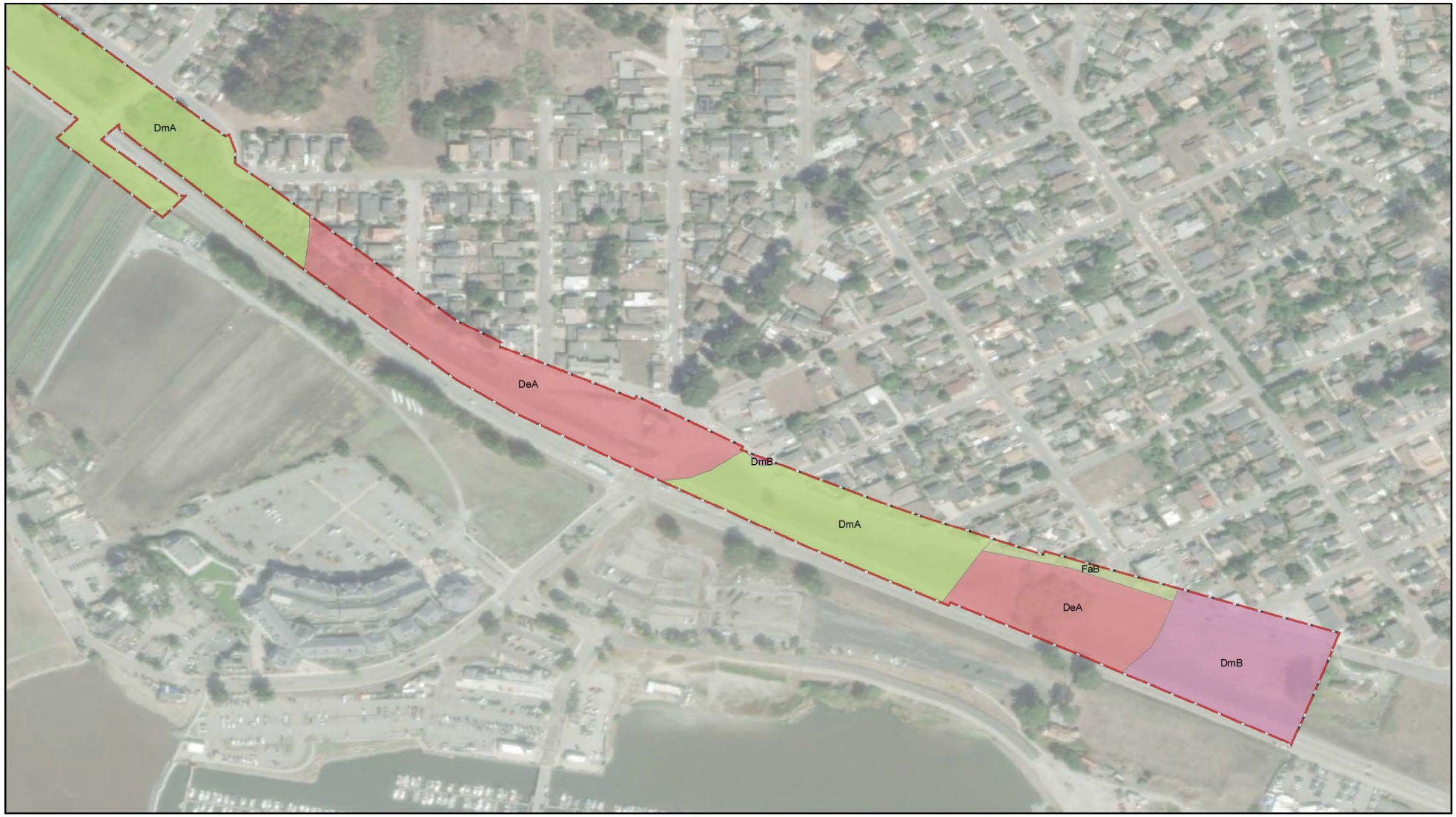

Source: ESRI 2025, EMC Planning Group 2025, NRCS 2025

0 275 feet

Biological Survey Area | DeA: Denison Coarse Sandy Loam; Nearly Level | DmA: Denison Loam; Nearly Level | DmB: Denison Loam; Gently Sloping | FaB: Farallone Loam; Gently Sloping

Figure 4-4

NRCS Soils Map Segment 4

SAM Force Main in Montara Replacement Project Aquatic Resources Delineation Report

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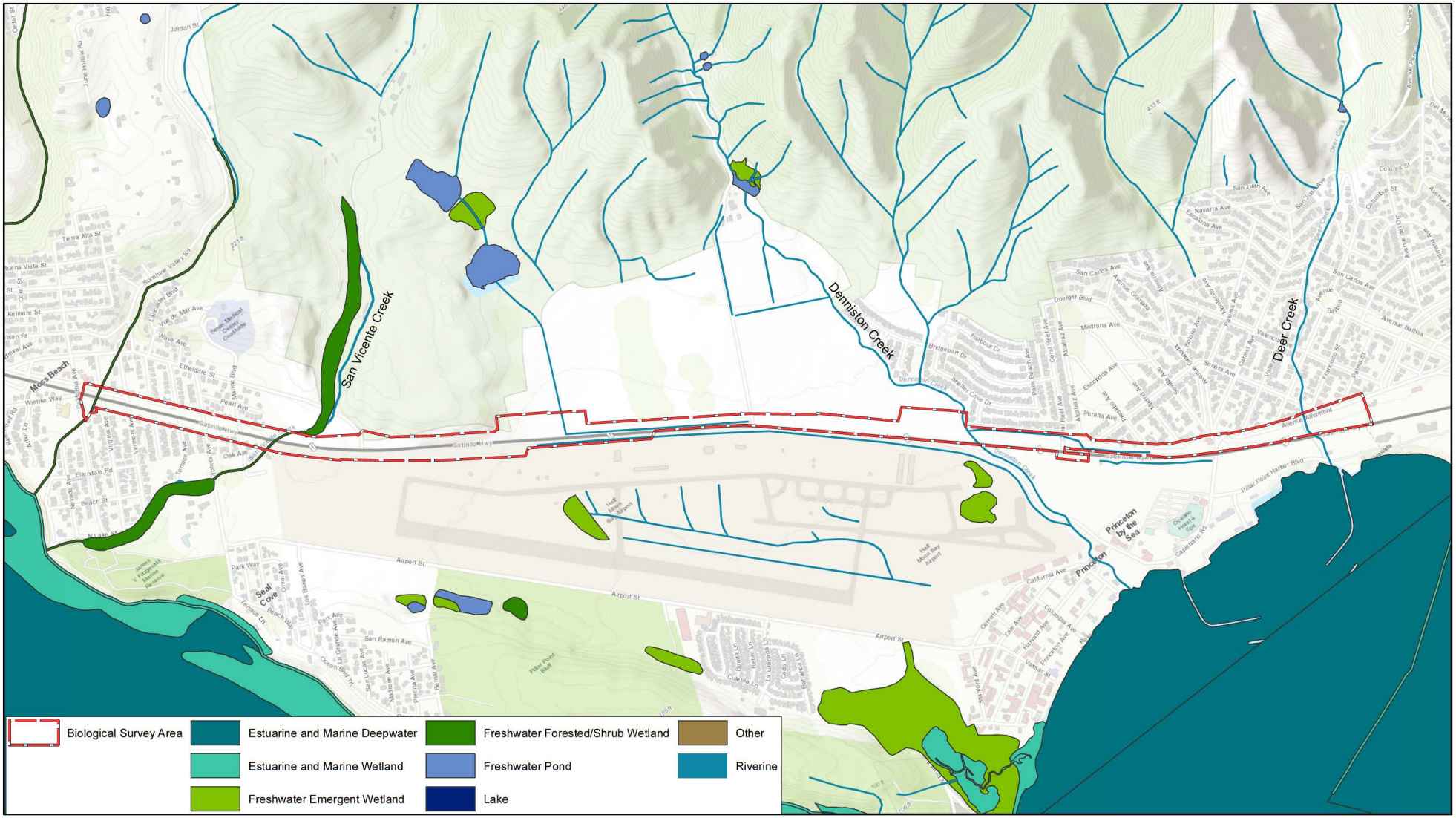

0 1000 feet

Source: ESRI 2025, MNS Engineers 2025, USFWS 2022

Figure 4-5
National Wetlands Inventory

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Water Regime

Water regimes determine characteristic wetland plant communities and wildlife habitat. These hydrologic characteristics are determined by the duration and timing of surface inundation, both yearly and long-term (flood duration and flood frequency), and by groundwater fluctuations.

The following water regime, based on the Cowardin classification system for wetlands, occurs at all project site wetlands: temporarily flooded. This occurs when surface water is present for brief periods (from a few days to a few weeks) during the growing season, but the water table usually lies well below the ground surface for the most of the season (Cowardin et al. 1995, FGDC 2013).

The USACE jurisdictional wetland hydrology criterion is met if an area is inundated or saturated for a period sufficient to create anaerobic soil conditions during the growing season (described in the Arid West Supplement as a minimum of 14 consecutive days). The wetland delineation was conducted after the rainy season. Water was present within the major creeks and drainages within the project site. Other wetland areas were identified through presence of hydrophytic vegetation, soil sampling, and evidence of hydrology. Wetland features present within the project site are listed in Table 4-2, Potentially Jurisdictional Wetland Features (Wetlands).

4.3 Vegetation

Wetland or hydrophytic vegetation conclusions are based on the wetland indicator status of species that comprise the plant community. Species in the facultative categories (FACW, FAC, and FACU) are recognized as occurring in both wetlands and non-wetlands. Most wetlands are dominated by species rated OBL, FACW, and FAC. Some wetland communities may be dominated by FACU species and cannot be identified by dominant species alone. Under those circumstances, other indicators of hydrophytic vegetation must also be considered.

Dominant wetland plant species observed on the project sites were arroyo willow, sitka willow, pacific aster (*Symphyotrichum chilense*), creek dogwood (*Cornus sericea*), pacific silverweed (*Potentilla anserina* ssp. *pacifica*), curly dock (*Rumex crispus*), water parsley (*Oenanthe sarmentosa*), tall flatsedge (*Cyperus eragrostis*), watercress (*nasturtium officinale*), cattails (*Typhus* spp.), sedges (*Carex* sp.), and rushes (*Juncus* sp.).

Upland vegetation was dominated by non-native annual grasses, wild radish (*Raphanus sativus*), wild mustard (*Hirschfeldia incana*, *Brassica nigra*), non-native ornamental invasive pincushion (*Scabiosa* sp.), iceplant (*Carpobrotus edulis*), Monterey cypress (*Hesperocyparis macrocarpa*), and others. Respective sampling of site vegetation is described below in Section 4.5.

4.4 Ordinary High Water Indicators

Surface water on the project site generally flows in a southwesterly direction through drainage channels and eventually down to ocean and sea level. These drainage channels are "Waters of the United States" subject to Corps and U.S. EPA regulation and "Waters of the State" subject to RWQCB regulation. Additionally, impacts to adjacent riparian vegetation subject to CDFW regulations. Delineation of these waters was based on the ordinary high water mark (OHWM), top of bank (TOB), and edge of riparian vegetation. Reaches within project site are listed in Table 4-3, Potentially Jurisdictional Aquatic Features (Non-Wetlands).

Physically, the drainage channels exhibited defined beds and banks. Field indicators of an ordinary high water mark included sediment deposits, recent bank erosion, scour lines, and downed or disturbed vegetation. In many reaches, dense riparian vegetation along the top of bank made direct mapping of OHWM and TOB indicators difficult or impossible due to impassable vegetation. Where these indicators were not accessible, their locations were estimated and the edges of riparian vegetation were mapped.

Table 4-2 Potentially Jurisdictional Wetland Features (Wetland)

Feature	Waters of the U.S.	Waters of the State	Coastal Commission	CA Department of Fish and Wildlife	Classification	Comments
Potential Wetland 1	0.0 acres	0.0 acres	0.117 acres	0.117 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW
Potential Wetland 2	0.0 acres	0.025 acres	0.025 acres	0.0 acres	Emergent Wetland	Potential State Jurisdictional Wetland. Hydrophytic vegetation, hydric soils, and wetland hydrology present. Roadside, isolated wetland.
Potential Wetland 3	0.0 acres	0.0 acres	0.033 acres	0.033 acres	Remnant Riparian Woodland	Potential Coastal Commission Wetland. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 4	0.0 acres	0.0 acres	0.577 acres	0.577 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. San Vicente Creek

Feature	Waters of the U.S.	Waters of the State	Coastal Commission	CA Department of Fish and Wildlife	Classification	Comments
Potential Wetland 5	0.0 acres	0.0 acres	0.087 acres	0.0 acres	Wet Meadow	Potential Coastal Commission Wetlands. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 6	0.0 acres	0.0 acres	0.013 acres	0.0 acres	Freshwater Emergent Wetland	Potential Coastal Commission Wetlands. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 7	0.0 acres	0.169 acres	0.169 acres	0.0 acres	Freshwater Emergent Wetland	Potential State Jurisdictional Wetland. Hydrophytic vegetation, hydric soils, and wetland hydrology present.
Potential Wetland 7a	0.0 acres	0.0 acres	0.029 acres	0.0 acres	Wet Meadow	Potential Coastal Commission Wetlands. Hydrophytic vegetation present.
Potential Wetland 8	0.0 acres	0.0 acres	0.321 acres	0.0 acres	Freshwater Forested Wetland	Potential State Coastal Commission Wetland. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 9	0.0 acres	1.064 acres	1.064 acres	0.0 acres	Freshwater Emergent and Freshwater Forested Wetland	Potential State Jurisdictional Wetland. Hydrophytic vegetation, hydric soils, and possible wetland hydrology present.
Potential Wetland 10	0.0 acres	0.0 acres	0.817 acres	0.817 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. Denniston Creek.
Potential Wetland 11	0.0 acres	0.007 acres	0.007 acres	0.0 acres	Wet Meadow	Potential State and Coastal Commission wetland. Hydrophytic vegetation and hydric soils.
Potential Wetland 12	0.0 acres	0.0 acres	1.733 acres	1.733 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. Appears isolated from Denniston Creek.

Feature	Waters of the U.S.	Waters of the State	Coastal Commission	CA Department of Fish and Wildlife	Classification	Comments
Potential Wetland 13	0.0 acres	0.0 acres	0.064 acres	0.0 acres	Wet Meadow	Highly disturbed area with wetland vegetation. Covered by woodchips. Hydric vegetation present.
Potential Wetland 14	0.0 acres	0.0 acres	0.534 acres	0.534 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. Deer Creek
Total	**0.0 acres**	**1.265 acres**	**5.59 acres**	**3.811 acres**		

SOURCE: EMC Planning Group 2025

Table 4-3 Potentially Jurisdictional Aquatic Features (Non-Wetland)

Feature	Waters of the U.S.	Waters of the State	Coastal Commission	CA Department of Fish and Wildlife	Classification	Comments
Reach A	136.2 feet 0.016 acres	136.2 feet 0.031 acres	136.2 feet 0.031 acres	Potential Wetland 1 for Riparian Woodland. 0.015 acres TOB-OHWM	Ephemeral Stream/ Drainage	Potential Waters of the State. OHWM 5 feet, TOB 10 ft. Ephemeral stream.
Reach B	0 feet	207 feet 0.01 acres	207 feet 0.01 acres	0.0 acres	Artificial Drainage	Potential Waters of the State. Artificial drainage for stormwater. TOB 3 ft.
Reach C	0 feet	400 feet 0.014 acres	400 feet 0.014 acres	0.0 acres	Drainage	Potential Waters of the State. Gently sloping drainage on private parcel. No OHWM observed. TOB is ~1.5 feet in diameter.
Reach D	400 feet 0.05 acres	400 feet 0.14 acres	400 feet 0.14 acres	Potential Wetland 4 for Riparian Woodland. 0.09 acres TOB-OHWM	Perennial Stream/ Drainage	Potential Federal Waters of the US, Potential Waters of the State. OHWM 5 feet, TOB 15 ft diameter. Perennial stream, San Vicente Creek.
Reach E	0 feet	100 feet 0.007 acres	100 feet 0.007 acres	0.0 acres	Drainage/ Adjacent Wetlands	Potential Waters of the State. Wetland drainage

Feature	Waters of the U.S.	Waters of the State	Coastal Commission	CA Department of Fish and Wildlife	Classification	Comments
						with evidence of standing water. TOB 3 ft diameter.
Reach F	350 feet 0.040 acres	350 feet 0.121 acres	350 feet 0.121 acres	Potential Wetland 10 for Riparian Woodland. 0.18 acres TOB-OHWM	Perennial Stream/ Drainage	Potential Federal Waters of the US, Potential Waters of the State. OHWM 5 feet, TOB 15 ft diameter. Perennial stream, Denniston Creek.
Reach G	550 feet 0.063 acres	550 feet 0.19 acres	550 feet 0.19 acres	Potential Wetland 12 for Riparian Woodland. 0.13 acres TOB-OHWM	Intermittent Stream/ Drainage	Potential Federal Waters of the US, Potential Waters of the State. Intermittent stream. OHWM 5 feet, TOB 10 ft diameter.
Reach H	150 feet 0.017 acres	150 feet 0.051acres	150 feet 0.051 acres	Potential Wetland 14 for Riparian Woodland. 0.03 acres TOB-OHWM	Perennial Stream/ Drainage	Potential Federal Waters of the US, Potential Waters of the State. Perennial stream, Deer Creek. OHWM 5 feet, TOB 15 ft diameter.
Total	**0.186 acres**	**0.564 acres**	**0.564acres**	**0.445 acres**		

SOURCE: EMC Planning Group 2025

4.5 Jurisdictional Aquatic Features

Field data are presented on Wetland Determination Data Forms for the Arid West in Appendix B, Wetland Determination Data Forms. Table 4-2 provides a summary of the field data provided in Appendix B with the locations of sample points shown on Figure 4-6 through Figure 4-9, Potentially Jurisdictional Aquatic Features Segments 1-4. Photographs of jurisdictional features within the project site are included in Figure 4-10 through Figure 4-13, Site Photographs 1-4. Wetland classification follows the methods described in Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1995), currently used by the USFWS National Wetlands Inventory, and an earlier USFWS classification system known as Circular 39 (Shaw and Fredine 1956).

EMC Planning Group identified 22 potential wetland features on the project site (Wetlands 1-14 and Reaches A-H). Sampling and field analysis were conducted wherever possible.

Wetlands were classified as freshwater wet meadow, freshwater emergent wetland, riparian woodlands. Many of these classes were determined to be seasonally flooded or saturated, with soil

moisture persisting into early summer. All wetland features had hydrophytic vegetation, and many had hydric soils and wetland hydrology present.

Reaches consisting of streams and drainages (non-wetland features) were classified as intermittent, ephemeral, or perennial. All reaches had a defined top of bank, though an ordinary high water mark was not present or identifiable for all stream and drainage features.

Wetlands and reaches have been separated in order to quantify jurisdiction below top of bank, and ordinarily high water mark (Reaches), as well as, riparian areas, and distinct wetland features (Wetlands).

It is not known how long the various site wetland features typically pond water, and the extent of wetland vegetation and ponded water varies greatly during each year and between years depending on the timing and amount of rainfall.

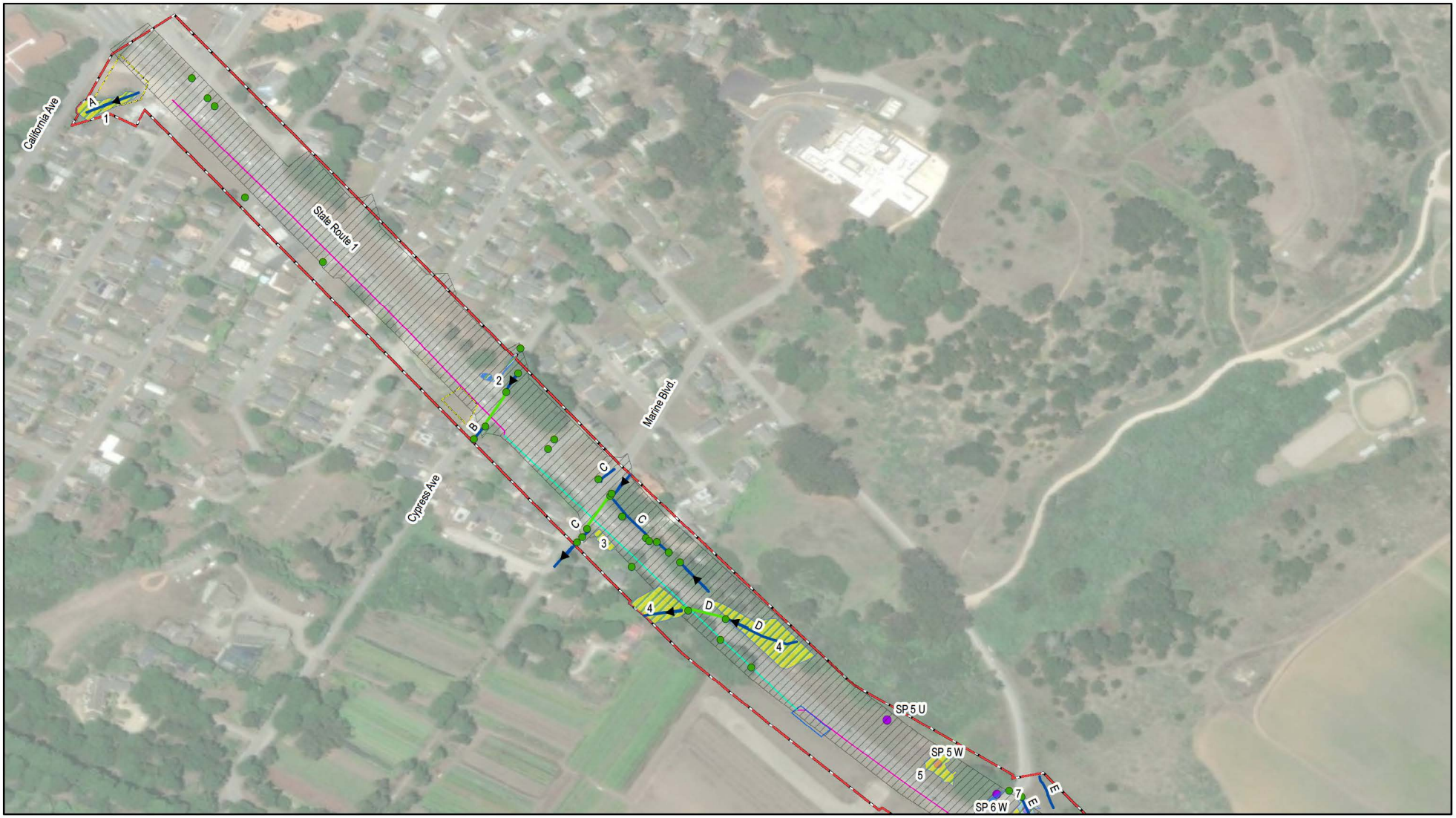
Five stream reaches are connected to navigable waters and may be considered jurisdictional by the USACE and RWQCB. Three of these reaches are isolated from navigable waters and therefore not considered jurisdictional under USACE but likely jurisdictional under the RWQCB. Three wetlands had all three parameters but are isolated from other wetlands, and are therefore jurisdictional by the RWQCB. One wetland was two parameter and is considered jurisdictional by RWQCB. All wetlands are likely jurisdictional under the CCC definition. Riparian vegetation associated with stream reaches are jurisdictional under the California Department of Fish and Wildlife.

The following provides a brief description of each wetland feature identified on the project site and shown on Figure 4-6 through Figure 4-9, Potentially Jurisdictional Aquatic Features Segments 1-4.

Wetland 1 Riparian Shrub Forest

Wetland 1 is classified by the National Wetlands Inventory as Freshwater Forested/Shrub Wetland and by this assessment as Riparian Shrub Forest and a part of an intermittent unnamed stream (USFWS 2025). It is located adjacent to the staging area on the north side of the project area, just south of California Ave and west of State Route 1. The reach provides intermittent flows which from a series of culverts and riverine feature further upslope. (Figure 4-6, Potentially Jurisdictional Aquatic Features Segment 1 and Figure 4-10, Site Photographs 1, Photo 1). Soil moisture persists into the summer in wet years with a high-water table.

The Riparian Shrub Forest comprises 0.117 acres within the BSA and surrounds Reach A, an intermittent riverine system. Dominant species within this wetland include willows (*Salix* spp.), California blackberry (*Rubus ursinus*), Nasturtium (*Tropaeolum majus*), stinging nettle (*Urtica dioica*), and curly dock (*Rumex crispus*). Upland areas outside of the riparian area were mowed nonnative grasses.



Source: ESRI 2025, EMC Planning Group 2025

Figure 4-6

Potentially Jurisdictional Aquatic Features Segment 1

SAM Force Main in Montara Replacement Project Aquatic Resources Delineation Report

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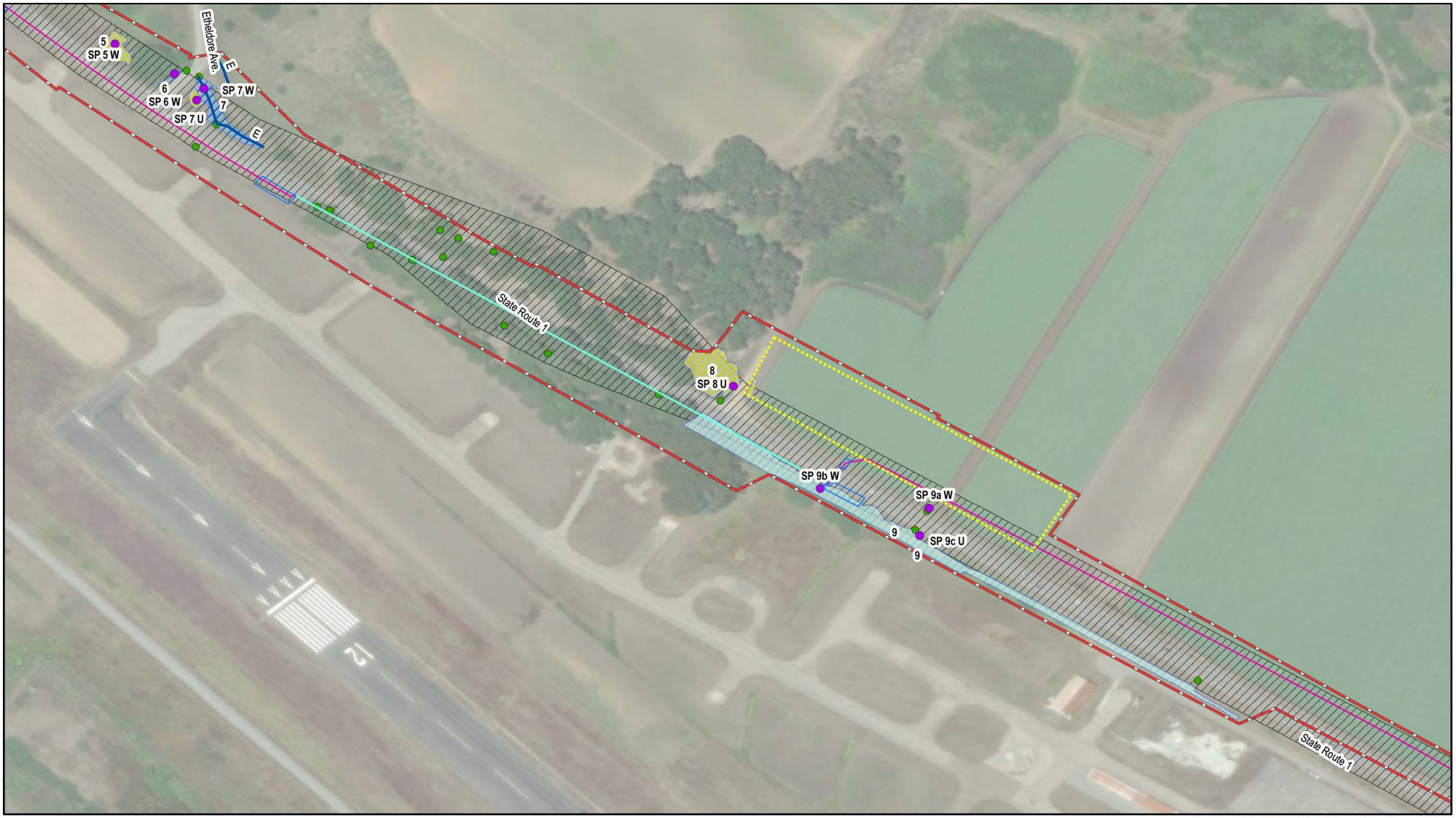

Source: ESRI 2025, EMC Planning Group 2025

Figure 4-7

Potentially Jurisdictional Aquatic Features Segment 2

SAM Force Main in Montara Replacement Project Aquatic Resources Delineation Report

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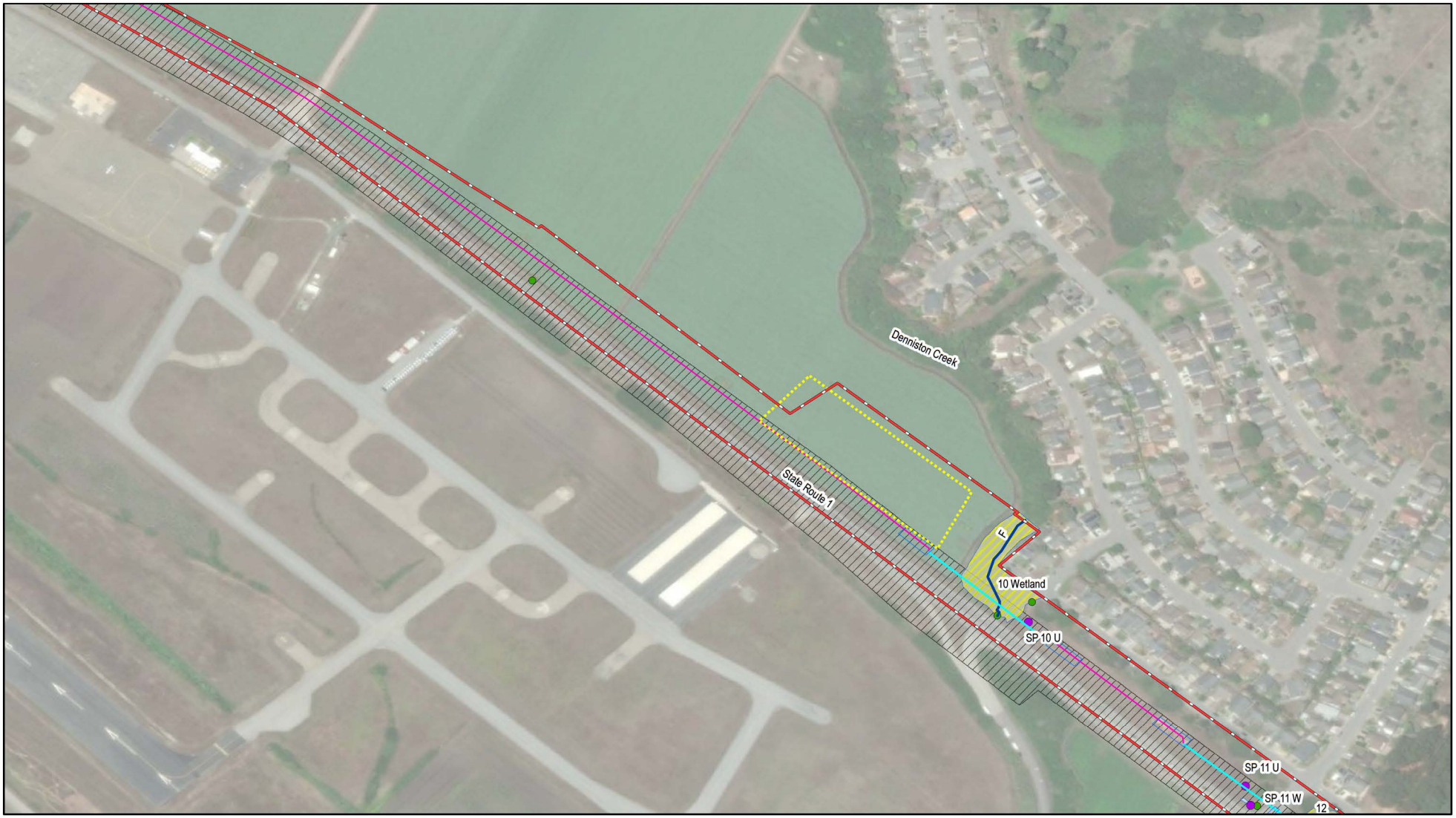

0 300 feet

Survey Area
One Parameter Wetland
Riparian Woodland
Two Parameter Wetland
Three Parameter Wetland
Soil Pit (SP)
Culvert
Drainage
HDD
Begin HDD
Staging
Caltrans Right of Way
Main

Source: ESRI 2025, EMC Planning Group 2025

Figure 4-8
Potentially Jurisdictional Aquatic Features Segment 3

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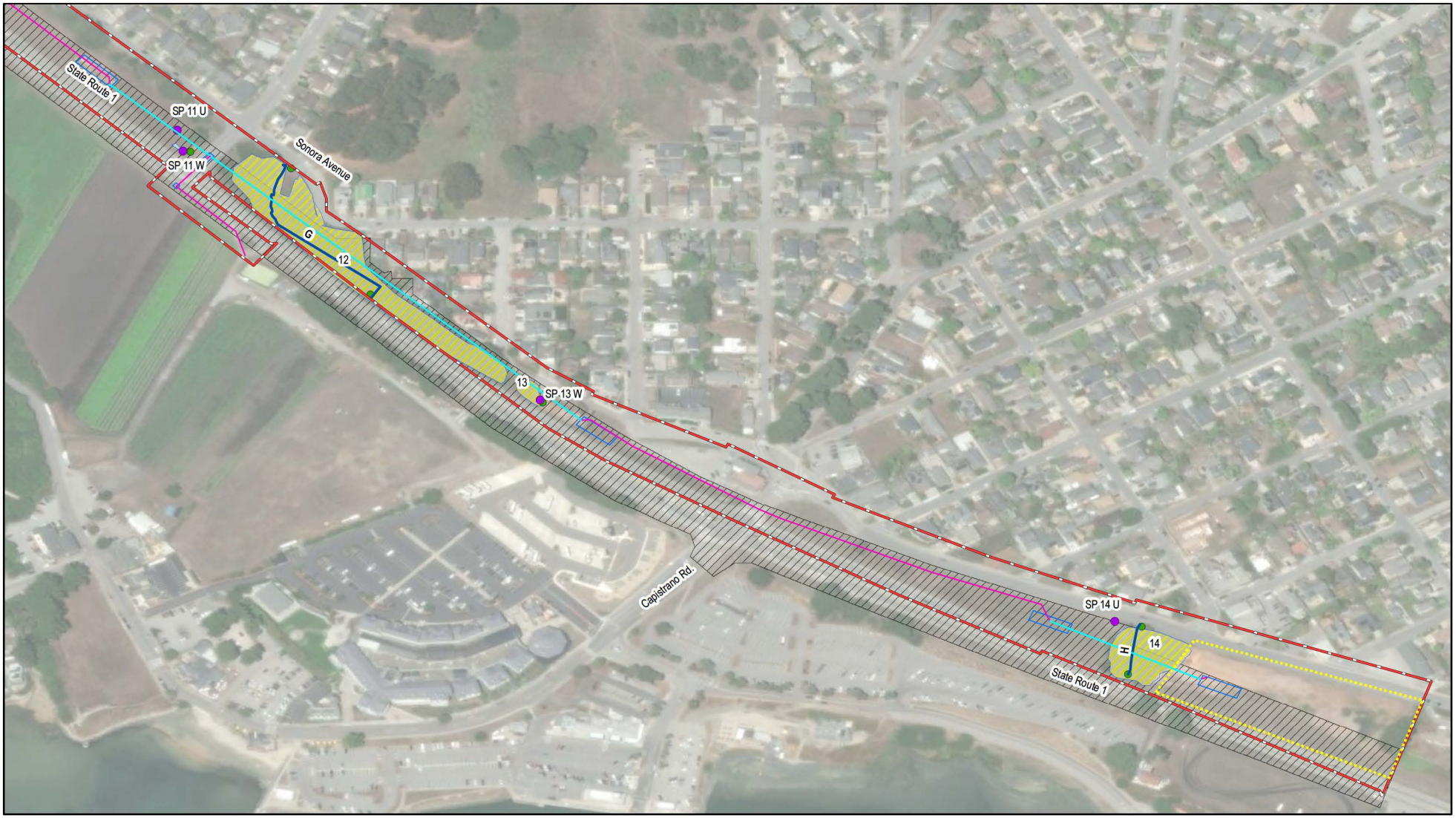

Source: ESRI 2025, EMC Planning Group 2025

Figure 4-9

Potentially Jurisdictional Aquatic Features Segment 4

SAM Force Main in Montara Replacement Project Aquatic Resources Delineation Report

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Photo 1. Willows dominating Wetland 1, Reach A.

Photo 2. Emergent vegetation at Wetland 2.

Photo 3. Wetland 4. Forested shrub wetland surrounding San Vicente Creek.

Photo 4. Wetland 5. Wet meadow. Recently mowed. Dominated by *Juncus* sp.

Photo 5. Wetland 7. Channel with *Carex* sp. and adjacent meadow.

Photo 6. Wetland 8. Forested shrub wetland located adjacent to agricultural fields.

Source: EMC Planning Group 2025

Figure 4-10

Site Photographs 1

SAM Force Main in Montara Replacement Project

Aquatic Resources Delineation Report

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Photo 1. Wetland 9. Mowed uplands and emergent plants in channel

Photo 2. Emergent vegetation at Wetland 9.

Photo 3. Possible wetland vegetation growing within agricultural fields.

Photo 4. Wetland 10, Denniston Creek. Riparian woodland adjacent to agricultural field.

Photo 5. Wetland 10, Denniston Creek. Channel below Riparian woodland.

Photo 6. Wetland 11. Mowed grassland and wet meadow.

Source: EMC Planning Group 2025

Figure 4-11

Site Photographs 2

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Photo 1. Wetland 12 pool of water at Sonora Ave culvert.

Photo 2. Forested Wetland 12 at culvert crossing State Route 1.

Photo 3. Wetland 13. Disturbed wet meadow.

Photo 4. Wetland 14, Deer Creek. Forested wetland adjacent to residential development.

Photo 5. Wetland 14. Deer Creek forested wetland and adjacent grassland.

Photo 6. Reach A. Channel from California Ave.

Source: EMC Planning Group 2025

Figure 4-12

Site Photographs 3

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Photo 1. Reach B. Excavated channel with water.

Photo 2. Reach C. Artificial drainage channel.

Photo 3. Looking towards the end of Reach E.

Photo 4 . Reach F, Denniston Creek.

Photo 5. Reach G, at Sonora Ave, with abundant wetland vegetation and standing water.

Photo 6. Reach H and dense riparian vegetation.

Source: EMC Planning Group 2025

Figure 4-13

Site Photographs 4

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Soil located at the site is mapped as typic Argiustolls, loamy-Urban land association, 5 to 1 5 percent slopes and is moderately well drained (NRCS 2025). Due to the absence of adjacent wetlands, Wetland 1 was defined by the edge of riparian vegetation without hydric soils or hydrology. Standing water was present within Reach A and the presence of hydric soils was assumed.

Wetland 1 was classified as a one parameter riparian woodland, jurisdictional under CDFW and the CCC. Associated Reach A is considered a Water of the U.S. and a Water of the State, and is subject to permitting and regulatory authority of the USACE, the RWQCB, and the CCC (See Reach A).

The current project plans show the staging area overlapping with the 3,100 square feet of riparian woodland.

Wetland 2 Emergent Wetland

Wetland 2 is not classified by the National Wetlands Inventory (USFWS 2025). It is classified by this assessment as an emergent wetland. It is located within the town of Moss Beach at the north intersection of State Route 1 and Cypress Avenue. Wetland 2 is a roadside wetland that is poorly drained and seasonally saturated with water and with soil moisture persisting into the summer in wet years (Figure 4-6, Potentially Jurisdictional Aquatic Features Segment 1 and Figure 4-10, Site Photographs 1, Photo 2). This concave wetland has an area of approximately 0.025 acres. The dominant plant species was hydrophytic panicled bull rush (*Scirpus microcarpus*), seep monkey flower (*Erythranthe guttata*), tall flatsedge, cattails, and rushes. Standing water and saturated soils were observed throughout the wetland. The surrounding areas were dominated by Monterey cypress and non-native annual grasses.

Soil located at the site is mapped as typic Argiustolls, loamy-Urban land association, 5 to 1 5 percent slopes and is moderately well drained (NRCS 2025). Standing water was present and the presence of hydric soils was assumed.

Wetland 2 was determined to be a freshwater emergent wetland with hydrophytic vegetation, hydric soils, and wetland hydrology present. Wetland 2 is a three-parameter wetland that is isolated from other wetland areas, therefore, meets the criteria for Waters of the State.

Current project plans show pipe staging at Wetland 2. Avoiding the wetland area would mitigate any impacts. If avoidance is not possible, 0.025 acres of Waters of the State would be impacted.

Wetland 3 Riparian Woodlands/Freshwater Forested/Shrub Wetland

Wetland 3 is not classified by the National Wetlands Inventory (USFWS 2025). Based on this assessment, it is classified as a remnant riparian woodland. The feature was identified by the presence of dominant willow (*Salix* spp.) and its proximity to the larger riparian woodland (Wetland 4) associated with San Vicente Creek. The area is sloped and likely experiences water saturation during the wet season; however, no surface hydrology was observed at the time of survey, and no

soil sample was collected. The mapped riparian woodland encompasses approximately 0.033 acres (Figure 4-6, Potentially Jurisdictional Aquatic Features Segment 1).

Dominant vegetation consisted of hydrophytic *Salix* spp. The surrounding area includes paved roads and private residential parcels. Soils at the site are mapped as Typic Argiustolls, Loamy–Urban Land Association, 5–15 percent slopes, which are moderately well drained and not considered hydric (NRCS 2025).

Wetland 3 was determined to be a remnant riparian woodland supporting hydrophytic vegetation but lacking hydric soils and wetland hydrology. It is therefore classified as a one-parameter wetland. Although isolated from other mapped wetlands, Wetland 3 may be jurisdictional under the authority of the California Coastal Commission and/or the California Department of Fish and Wildlife (CDFW).

Current plans avoid impacts to Wetland 3 through horizontal directional drilling.

Wetland 4 Freshwater Forested Wetland/Riparian Woodland

Wetland 4 is classified by the National Wetlands Inventory as a Freshwater Forested/Shrub Wetland and corresponds to San Vicente Creek (USFWS 2025). This feature is classified by this assessment as a Freshwater Forested Wetland/Riparian Woodland. It is located southwest of Marine Boulevard and is bisected by State Route 1. San Vicente Creek drains the coastal mountains north of the project site and flows beneath State Route 1. At the project site, the creek is a perennial stream surrounded by riparian shrubs. The riparian area encompasses approximately 0.577 acres within the BSA.

Dominant vegetation includes hydrophytic *Salix* spp. (Figure 4-6, Potentially Jurisdictional Aquatic Features Segment 1, and Figure 4-10, Site Photographs 1, Photo 3). Surrounding land uses include private residential parcels to the south and west, and non-native annual grasslands and Monterey cypress trees to the east.

Soils mapped in the vicinity include Typic Argiustolls, Loamy–Urban Land Association (5–15% slopes), and Farallone Coarse Sandy Loam (nearly level) (NRCS 2025). Although soil maps do not indicate hydric soils, field observations documented a shallow water table and soil saturation within the creek channel (Reach D).

Wetland 4 is a one parameter riparian woodland and considered jurisdictional by CDFW and the CCC. See Reach D for jurisdictional authority below TOB.

Current plans avoid impacts to Wetland 4 through horizontal directional drilling.

Wetland 5 Group Wet Meadow

Wetland 5 is located south of the main residential area of Moss Beach, between Marine Boulevard and Etheldore Street. It is not classified in the National Wetlands Inventory (USFWS 2025). The feature supports wetland vegetation but lacks hydric soils (soil pit 5) and wetland hydrology (Figure 4-7, Potentially Jurisdictional Aquatic Features Segment 2, and Figure 4-10, Site Photographs 1, Photo 4). The wetland area is approximately 0.087 acres within the BSA.

Vegetation identification was limited due to recent mowing; however, the prevalence index confirmed hydrophytic vegetation, with dominant species including rushes (*Juncus* spp.) and California blackberry (*Rubus ursinus*). Surrounding upland areas were dominated by *Baccharis pilularis* and non-native grasses.

Based on site observations, Wetland 5 was identified as a wet meadow characterized by hydrophytic vegetation. Because hydric soils and hydrology are absent, this feature qualifies as a one-parameter isolated wetland. Wetland 5 may be subject to jurisdiction under the CCC.

Current plans avoid impacts to Wetland 5, as pipeline installation is proposed on the other side of State Route 1.

Wetland 6 Freshwater Emergent Wetland

Wetland 6 is not classified in the National Wetlands Inventory (USFWS 2025). It is a small roadside wetland likely formed from constructed channels for runoff from Etheldore Street. The wetland is seasonally inundated, although no standing water was present during the survey. The feature is approximately 0.013 acres within the BSA (Figure 4-7, Potentially Jurisdictional Aquatic Features Segment 2).

Dominant hydrophytic vegetation observed included *Juncus patens*, *Carex* sp., *Phalaris aquaticus*, and *Rumex crispus*. Upland species such as *Hesperocyparis macrocarpa* were also present. Soil pit 6 (wetland) confirmed hydric conditions, with sandy soils displaying redox features. Hydrology was evidenced by oxidized rhizosphere conditions.

Based on these findings, Wetland 6 was determined to be a freshwater emergent wetland meeting all three parameters—hydrophytic vegetation, hydric soils, and wetland hydrology. As an isolated feature, it is not considered a water of the U.S. but meets the criteria for Waters of the State.

Current plans avoid impacts to Wetland 6, as pipeline installation is proposed on the other side of State Route 1.

Wetland 7 Group Freshwater Emergent Wetland/Wet Meadow

Wetland 7 Group is not classified by the National Wetlands Inventory (USFWS 2025). This wetland receives runoff from adjacent hills and roadways via excavated channels and is seasonally flooded, with water persisting into late spring and early summer and encompasses approximately

0.169 acres within the BSA (Figure 4-7, Potentially Jurisdictional Aquatic Features Segment 2, and Figure 4-10, Site Photographs 1, Photo 5). Adjacent to the excavated channel, wetland vegetation covers 0.029 acres of upland slopes within the BSA.

Dominant hydrophytic vegetation in both the channel and the meadow includes spreading rush (*Juncus patens*), sedges., and California aster, with knotweed (*Persicaria* sp.) also dominating the channel. Upland species in the surrounding area include coffee berry (*Frangula californica*) and coyote brush (*Baccharis pilularis*). Soil pit 7 (wetland) within the excavated channels were very soft near the surface, over clay below, with redox features observed below 10 inches and evidence of standing water. In the meadow area, Soils from soil pit seven (upland)) were compacted, and pits could not be sampled deeper than three inches; no hydric soil indicators were observed in these areas.

Based on field observations, the Wetland 7 channel (Reach E and adjacent vegetation) was identified as a freshwater emergent wetland, with hydrophytic vegetation, hydric soils, and wetland hydrology present. As such, it qualifies as a three-parameter wetland. As an isolated feature, it is not considered a water of the U.S., however the Wetland 7 channel meets the criteria for Waters of the State. In contrast, the adjacent wet meadow was determined to be a one-parameter wetland, supporting hydrophytic vegetation but lacking hydric soils and wetland hydrology. However, the wet meadow may still be considered jurisdictional under the CCC.

Current plans avoid impacts to Wetland 7, as pipeline installation is proposed on the other side of State Route 1.

Wetland 8 Forested Shrub Wetland

Wetland 8 is not classified in the National Wetlands Inventory (USFWS 2025). This area drains slopes forested slopes above and terminates in a forested shrub wetland area that is dominated by willows with a culverted channel that passes under State Route 1 (Figure 4-7, Potentially Jurisdictional Aquatic Features Segment 2, and Figure 4-10, Site Photographs 1, Photo 6).

This wetland has an area of approximately 0.32 acres within the BSA. The dominant plant species was hydrophytic willows, California aster, and California blackberry. Soil was assessed from a soil pit (8) within the forested woodland and did not show hydric properties.

A road bisects the area, with a gentle slope supporting numerous rushes, sedges, and California aster that are regularly mowed. This zone appears to be hydrologically connected to the forested wetland but is partially disconnected by the graded road separating the two areas. The mowed zone lies adjacent to the agricultural fields.

Wetland 8 was determined to be a one parameter freshwater forested wetland with hydrophytic vegetation. Wetland 8 is jurisdictional under the California Coastal Commission.

Current plans avoid impacts to Wetland 8.

Wetland 9 Freshwater Emergent Wetland

Wetland 9 consists of a long, channelized wetland that runs parallel to State Route 1 and is classified by the National Wetlands Inventory as Riverine (USFWS 2025). It functions as a tributary to Denniston Creek and is seasonally flooded, with water persisting into summer (Figure 4-7, Potentially Jurisdictional Aquatic Features Segment 2, and Figure 4-11, Site Photographs 2, Photos 1–2). The wetland has an approximate area of 1.06 acres within the BSA.

Dominant plant species include hydrophytic spreading rush, sedges, pacific silverweed, California bullrush (*Schoenoplectus californicus*), and California aster. Soil pits (9a, 9b, 9c) did not exhibit clear redoximorphic features; however, soils were compacted, clayey, and shallow. Areas with standing water were not sampled due to inaccessibility.

Wetland 9 was determined to be a freshwater emergent wetland characterized by hydrophytic vegetation. It contains wetlands with one-, two-, and three-parameter indicators. The three-parameter wetlands occur in isolated culverted areas but remain connected to Waters of the U.S. through one- and two-parameter wetlands. Wetland 9 also meets the criteria for Waters of the State.

Current plans avoid impacts to Wetland 9 via horizontal directional drilling. However, the pipeline crosses State Route 1 at the location of Wetland 9. If access to the bypass vault can be completed without above found work, no impacts are expected. If above ground work is needed, approximately 100 square feet of wetland may be temporarily impacted to Waters of the State.

Agricultural Field

Agricultural fields north of State Route 1 and Wetland 9 are highly disturbed due to routine tilling, planting, and irrigation. Patches of wetland vegetation were observed in less disturbed areas of the fields, particularly around telephone poles; however, a formal assessment of these potential wetlands was not possible due to property access restrictions. In areas where soils remain relatively undisturbed, common wetland species such as curly dock, California aster, and rushes were documented. Additionally, the National Wetlands Inventory identifies a Riverine system, tributary to Denniston Creek, as passing through these agricultural fields (USFWS 2025). Possible wetland vegetation was observed in pockets around telephone poles during the field assessment; however, these areas were highly disturbed due to agricultural use and do not appear connected (Figure 4-7, Potentially Jurisdictional Aquatic Features Segment 2, Figure 4-8, Potentially Jurisdictional Aquatic Features Segment 3, and Figure 4-11, Site Photographs 2, Photo 3).

Current plans trench pipeline into the agricultural fields. However, no impacts to wetlands are expected due to the regular impacts from tilling and agriculture within the proposed pipeline alignment and avoidance of undisturbed areas around telephone poles.

Wetland 10 Riparian Woodland

Wetland 10 consists of a stream channel (Reach F) and riparian woodland that passes under State Route 1 is classified by the National Wetlands Inventory as Riverine, and is also known as Denniston Creek (USFWS 2025). This perennial creek flows between residential development and agricultural fields, encompassing an area of approximately 0.82 acres within the BSA (Figure 4-8, Potentially Jurisdictional Aquatic Features Segment 3, and Figure 4-11, Site Photographs 2, Photos 4–5).

Dominant vegetation within the wetted channel included water parsley, watercress, and creek dogwood. The surrounding riparian woodlands were dominated by arroyo and sitka willows. Hydric soils were inferred based on the presence of standing water within the channel (Reach F). However, the steep banks of the channel make hydrology and hydric soils unlikely in the surrounding riparian woodlands.

Wetland 10 is classified as a one parameter riparian woodland, jurisdictional by CDFW and the CCC. See Reach F for jurisdiction below TOB.

Current plans avoid impacts to Wetland 10 through horizontal directional drilling.

Wetland 11 Wet Meadow

Wetland 11 is an isolated wetland that was not classified by the National Wetlands Inventory (USFWS 2025). The feature was identified by the presence of a gentle swale and hydrophytic vegetation rabbitsfoot grass (*Polypogon monspeliensis*), hyssop loosestrife (*Lythrum hyssopifolia*), tall flatsedge, and sea barley (*Hordeum marinum*). No evidence of standing water was observed. However hydric soils were present (soil pits 11 (wetland/upland)). This wet meadow has an approximate area of 0.007 acres within the BSA. (Figure 4-9, Potentially Jurisdictional Aquatic Features Segment 4, and Figure 4-11, Site Photographs 2, Photo 6).

Wetland 11 was determined to be a two-parameter wet meadow, with hydrophytic vegetation and hydric soils. This wetland meets the criteria for Waters of the State and would also be jurisdictional by the CCC.

Current plans avoid impacts to Wetland 11 through horizontal directional drilling.

Wetland 12 Riparian Woodland

Wetland 12 consists of a stream channel and riparian woodland that runs parallel to Sonora Avenue and State Route 1 before passing under State Route 1. The National Wetlands Inventory classifies this feature as Riverine and maps it as a tributary to Denniston Creek (USFWS 2025); however, field observations suggest that it is hydrologically isolated. A large pool of water was observed at the culvert outlet where runoff from upslope along Sonora Avenue is conveyed. The riparian woodland encompasses approximately 1.73 acres within the BSA.

Dominant vegetation within the wetted channel included swam smartweed (*Persicaria hydropiperoides*), curly dock, willows, and creek dogwood. The surrounding forested wetlands were dominated by arroyo and sitka willow. Hydric soils were inferred within the channel based on the presence of standing water (Reach G) (Figure 4-9, Potentially Jurisdictional Aquatic Features Segment 4, and Figure 4-12, Site Photographs 3, Photos 1–2). However, the steep banks of the channel make hydrology and soils unlikely in the surrounding riparian woodlands.

Wetland 12 was determined to be a one parameter riparian woodland and is considered jurisdictional under CDFW and the CCC. See associated Reach G for jurisdiction below the top of bank.

Current plans avoid impacts to Wetland 12 through horizontal directional drilling.

Wetland 13 Wet Meadow

Wetland 13 was likely an extension of Forested Wetland 12, however, mowing and the placement of woodchips have isolated this wetland. The feature was identified by the presence of numerous rushes emerging through the woodchips. No evidence of standing water was observed, and hydric soils were absent (soil pit 13), likely due to the accumulation of woodchips. This wet meadow has an approximate area of 0.064 acres within the BSA.

Dominant vegetation included California blackberry, rushes, and California aster (Figure 4-9, Potentially Jurisdictional Aquatic Features Segment 4, and Figure 4-12, Site Photographs 3, Photo 3).

Wetland 13 was determined to be a one-parameter wet meadow, with hydrophytic vegetation present but isolated from Waters of the United States. This wetland may, however, be jurisdictional under the CCC.

Current plans avoid impacts to Wetland 13 through horizontal directional drilling.

Wetland 14 Riparian Woodland

Wetland 14 consists of a stream channel (Reach H) and riparian woodland that flows through residential development in El Granada before eventually passing under State Route 1. The National Wetlands Inventory classifies this feature as Riverine and identifies it as Deer Creek (USFWS 2025). Flowing water was observed within the channel during the July site visit. The forested wetland encompasses approximately 0.534 acres within the BSA.

Wetland 14 is a one-parameter riparian woodland dominated by arroyo and Sitka willows. See Reach H for information on aquatic stream features (Figure 4-9, Potentially Jurisdictional Aquatic Features Segment 4, and Figure 4-12, Site Photographs 3, Photos 4–5).

Wetland 14 is considered a riparian woodland under the jurisdiction of the CDFW. Wetland 14 would also be jurisdictional by the CCC. See Reach H for jurisdiction below TOB.

Current plans avoid impacts to Wetland 14 through horizontal directional drilling.

Streams and Drainages Reach A

Reach A is classified by the National Wetlands Inventory as a Freshwater Forested/Shrub Wetland and by this assessment as an intermittent, unnamed stream surrounded by riparian shrub forest (USFWS 2025). It is located adjacent to the staging area on the north side of the project area, just south of California Avenue and west of State Route 1. The reach conveys intermittent flows originating from a series of culverts and a riverine feature located further upslope (Figure 4-6, Potentially Jurisdictional Aquatic Features Segment 1, and Figure 4-12, Site Photographs 3, Photo 6)).

Reach A within the BSA is approximately 136 feet in length, with an OHWM averaging five feet in width and a TOB width of approximately 10 feet. Dominant plant species within the wetland include willow, California blackberry, nasturtium (*Tropaeolum majus*), stinging nettle (*Urtica dioica*), and curly dock. Upland areas adjacent to the forested wetland support mowed non-native grasses.

Soil located at the site is mapped as typic Argiustolls, loamy-Urban land association, 5 to 1 5 percent slopes and is moderately well drained (NRCS 2025). Standing water was present within Reach A and the presence of hydric soils was assumed.

With standing water, a high water table, and soil saturation within its bed and banks, Reach A functions as an intermittent stream that ultimately drains toward the Fitzgerald Marine Reserve. Based on these characteristics, Reach A is considered a Water of the U.S. and a Water of the State, and is subject to permitting and regulatory authority of the USACE, the RWQCB, and the CCC. Areas of riparian vegetation (Wetland 1) would be subject to the jurisdiction of CDFW.

Current plans show the staging area overlapping with 136 feet of Reach A, with potential impacts around 1,360 square feet.

Streams and Drainages Reach B

Reach B drains a portion of the residential development in the town of Moss Beach, flowing south through a series of manmade channels and culverts before exiting the survey area at Cypress Avenue and continuing toward the Fitzgerald Marine Reserve. Reach B is approximately 207 feet in length within the BSA, with an average top of bank width of three feet (Figure 4-6, Potentially Jurisdictional Aquatic Features Segment 1, and Figure 4-13, Site Photographs 4, Photo 1).

Soil located at the site is mapped as typic Argiustolls, loamy-Urban land association, 5 to 1 5 percent slopes and is moderately well drained (NRCS 2025). Standing water was present within Reach B, although likely derived from urban inputs, and the presence of hydric soils was assumed. Due to the urban nature of the artificial drainage, dominant vegetation consisted of annual grasses.

Surface water was observed within the manmade channels during the site visit. Reach B functions as an artificial drainage feature that conveys stormwater through the developed portion of Moss Beach. Given its potential hydrologic connection, Reach B may be considered a tributary of San Vicente

Creek and may meet the criteria for Waters of the State. As such, it may fall under the permitting and regulatory authority of the RWQCB and the CCC.

Current plans avoid impacts to Reach B.

Streams and Drainages Reach C

Reach C drains a portion of the residential development in the town of Moss Beach, flowing south through a series of manmade channels and culverts before exiting the survey area at Marine Avenue and continuing toward the Fitzgerald Marine Reserve. Reach C is approximately 400 feet in length within the BSA, with an average top of bank width of two feet ((Figure 4-6, Potentially Jurisdictional Aquatic Features Segment 1, and Figure 4-13, Site Photographs 4, Photo 2).

Soil located at the site is mapped as typic Argiustolls, loamy-Urban land association, 5 to 1 5 percent slopes and is moderately well drained (NRCS 2025). Reach C is lined with concrete to the north of State Route 1. Due to the urban nature of the artificial drainage, dominant vegetation consisted of weedy ornamental and annual grasses.

No surface water or OHWM was observed within the manmade channels during the site visit. Reach C functions as an artificial drainage feature that conveys stormwater through the developed portion of Moss Beach. Given its potential hydrologic connection, Reach C may be considered a tributary of San Vicente Creek and may meet the criteria for Waters of the State. As such, it may fall under the permitting and regulatory authority of the RWQCB and the CCC.

Current plans avoid impacts to Reach C.

Streams and Drainages Reach D

Reach D is classified by the National Wetlands Inventory as a Freshwater Forested/Shrub Wetland and by this assessment as a perennial stream, San Vicente Creek (USFWS 2025). It is located southwest of Marine Boulevard and is bisected by State Route 1. San Vicente Creek conveys perennial flows originating from the coastal mountains north of the project site and flows beneath State Route 1. (Figure 4-6, Potentially Jurisdictional Aquatic Features Segment 1, and Figure 4-12, Site Photographs 4, Photo 6).

Dominant vegetation along the upland slopes includes hydrophytic *Salix* spp. (Figure 4-6, Potentially Jurisdictional Aquatic Features Segment 1, and Figure 4-10, Site Photographs 1, Photo 3). No vegetation was located in the banks due to the frequent flow regime. Field observations documented a shallow water table and soil saturation within the creek channel.

Reach D is approximately 400 feet in length within the BSA, with an OHWM averaging five feet in width and a TOB width of approximately 15 feet.

With standing water, annual water flows, and soil saturation within its bed and banks, Reach D functions as a perennial stream that ultimately drains toward the Fitzgerald Marine Reserve. Based

on these characteristics, Reach D is considered a Water of the U.S. and a Water of the State, and is subject to permitting and regulatory authority of the USACE, the RWQCB, and the CCC. Adjacent riparian woodlands (Wetland 4) are considered subject to the jurisdiction of CDFW.

Current plans avoid impacts to Reach C through horizontal directional drilling.

Streams and Drainages Reach E

Reach E includes two manmade channels that drain a portion of Montara Mountain, south of Moss Beach. Reach E is approximately 375 feet in length within the BSA, with an average TOB width of two feet (Figure 4-7, Potentially Jurisdictional Aquatic Features Segment 2, and Figure 4-13, Site Photographs 4, Photo 3).

Dominant hydrophytic vegetation in both the channel and the meadow includes spreading rush (*Juncus patens*), sedges., and California aster, with knotweed) also dominating the channel. Upland species in the surrounding area include coffeeberry and coyote brush. Soil pit 7 (wetland) within the excavated channels were very soft near the surface, over clay below, with redox features observed below 10 inches and evidence of standing water. In the meadow area, Soils from soil pit seven (upland)) were compacted, and pits could not be sampled deeper than three inches; no hydric soil indicators were observed in these areas.

Due to the presence of wetlands beyond the TOB for the lower channel (Wetland 7), only 100 feet of channel are described here. Reach E likely exhibits standing water and soil saturation within its bed and banks, Reach E functions as an isolated wetland channel and would meet the criteria for Waters of the State. As such, it may fall under the permitting and regulatory authority of the RWQCB and the CCC.

Current plans avoid impacts to Reach E, as pipeline installation is located on the other side of State Route 1.

Streams and Drainages Reach F

Reach F is classified by the National Wetlands Inventory as Riverine and by this assessment as a perennial stream, Denniston Creek (USFWS 2025). This perennial creek flows between residential development and agricultural fields, located hugging the western extent of residential development in the town of El Granada. Denniston Creek conveys perennial flows originating from the coastal mountains north of the project site and flows beneath State Route 1 (Figure 4-8, Potentially Jurisdictional Aquatic Features Segment 3, and Figure 4-13, Site Photographs 4, Photo 4).

Dominant vegetation within the wetted channel included water parsley, watercress, and creek dogwood. The surrounding riparian woodlands were dominated by arroyo and sitka willows. Hydric soils were inferred based on the presence of standing water within the channel.

Reach F is approximately 350 feet in length, with an OHWM averaging five feet in width and a TOB width of approximately 15 feet.

With standing water, annual water flows, and soil saturation within its bed and banks, Reach F functions as a perennial stream that ultimately drains to the Pacific Ocean at Pillar Point Harbor. Based on these characteristics, Reach F is considered a Water of the U.S. and a Water of the State, and is subject to permitting and regulatory authority of the USACE, the RWQCB, and the CCC. Adjacent riparian woodlands (Wetland 10) are considered subject to the jurisdiction of CDFW.

Current plans avoid impacts to Reach F through horizontal directional drilling under the reach and associated riparian vegetation.

Streams and Drainages Reach G

Reach G is classified by the National Wetlands Inventory as Riverine and by this assessment as an intermittent stream and potential tributary of Denniston Creek (USFWS 2025). The reach flows between residential development and State Route 1 near Coral Reef Avenue and Sonora Avenue in the town of El Granada. Reach G conveys intermittent flows originating from the coastal mountains north of the project site (Figure 4-9, Potentially Jurisdictional Aquatic Features Segment 4, and Figure 4-13, Site Photographs 4, Photo 5).

Reach G is approximately 550 feet in length within the BSA, with an OHWM averaging five feet in width and a TOB width of approximately ten feet.

Dominant vegetation within the wetted channel included swam smartweed, curly dock, willows, and creek dogwood. The surrounding forested wetlands were dominated by arroyo and sitka willow. Hydric soils were inferred within the channel based on the presence of standing water. Hydric soils were inferred based on the presence of standing water within the channel.

With standing water, intermittent flows, and soil saturation within its bed and banks, Reach G functions as an intermittent stream that ultimately drains to the Pacific Ocean at Pillar Point Harbor. Based on these characteristics, Reach G is considered a Water of the U.S. and a Water of the State, and is subject to permitting and regulatory authority of the USACE, the RWQCB, and the CCC. Adjacent riparian woodlands (Wetland 12) are considered subject to the jurisdiction of CDFW.

Current plans avoid impacts to Reach G through horizontal directional drilling under the reach and associated riparian vegetation.

Streams and Drainages Reach H

Reach H s classified by the National Wetlands Inventory as Riverine and by this assessment as an intermittent creek (Deer Creek) (USFWS 2025). The reach flows between residential development and State Route 1, located near Avenue Alhambra in the town of El Granada. Reach H conveys intermittent flows originating from the coastal mountains north of the project site and continues

beneath State Route 1 (Figure 4-9, Potentially Jurisdictional Aquatic Features Segment 4, and Figure 4-13, Site Photographs 4, Photo 6).

Reach H is approximately 150 feet in length, with an OHWM averaging five feet in width and a TOB width of approximately 15 feet.

Dominant vegetation within the wetted channel included California blackberry and water parsley. The surrounding forested wetlands were dominated by arroyo and Sitka willows. Hydric soils were inferred based on the presence of standing water within the channel

With standing water, intermittent flows, and soil saturation within its bed and banks, Reach H functions as an intermittent stream that ultimately drains to the Pacific Ocean at Pillar Point Harbor. Based on these characteristics, Reach H is considered a Water of the U.S. and a Water of the State, and is subject to permitting and regulatory authority of the USACE, the RWQCB, and the CCC. Adjacent riparian woodlands (Wetland 14) are considered subject to the jurisdiction of CDFW.

Current plans avoid impacts to Reach H through horizontal directional drilling under the reach and associated riparian vegetation.

4.6 Caltrans Right of Way

The survey area includes areas within the Caltrans right of way along State Route 1, as shown on Figures 4-6 through 4-9, Potentially Jurisdictional Aquatic Features Segments 1-4. For purposes of coordination with Caltrans, the following table, Table 4-4, Caltrans Right of Way: Potentially Jurisdictional Wetland Features, and Table 4-5 Caltrans Right of Way: Potentially Jurisdictional Aquatic Features, identifies the portions of mapped wetland areas and stream reaches within the Caltrans right of way. Calculations were made by utilizing GIS to clip aquatic features based on their location within the Caltrans right of way parcel boundaries and calculating area and length.

Table 4-4 Caltrans Right of Way: Potentially Jurisdictional Wetland Features (Wetland)

Feature	USACE	RWQCB	CCC	CDFW	Feature	Comments
Potential Wetland 1	0.0 acres	0.0 acres	0.0 acres	0.0 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW
Potential Wetland 2	0.0 acres	0.03 acres	0.03 acres	0.0 acres	Emergent Wetland	Potential State Jurisdictional Wetland. Hydrophytic vegetation, hydric soils, and wetland hydrology present. Roadside, isolated wetland.
Potential Wetland 3	0.0 acres	0.0 acres	0.02 acres	0.02 acres	Remnant Riparian Woodland	Potential Coastal Commission Wetland. Hydrophytic vegetation present. Isolated wetlands.

Feature	USACE	RWQCB	CCC	CDFW	Feature	Comments
Potential Wetland 4	0.0 acres	0.0 acres	0.43 acres	0.43 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. San Vicente Creek
Potential Wetland 5	0.0 acres	0.0 acres	0.09 acres	0.0 acres	Wet Meadow	Potential Coastal Commission Wetlands. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 6	0.0 acres	0.0 acres	0.01 acres	0.0 acres	Freshwater Emergent Wetland	Potential Coastal Commission Wetlands. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 7	0.0 acres	0.16 acres	0.16 acres	0.0 acres	Freshwater Emergent Wetland	Potential State Jurisdictional Wetland. Hydrophytic vegetation, hydric soils, and wetland hydrology present.
Potential Wetland 7a	0.0 acres	0.0 acres	0.03 acres	0.0 acres	Wet Meadow	Potential Coastal Commission Wetlands. Hydrophytic vegetation present.
Potential Wetland 8	0.0 acres	0.0 acres	0.29 acres	0.0 acres	Freshwater Forested Wetland	Potential State Coastal Commission Wetland. Hydrophytic vegetation present. Isolated wetlands.
Potential Wetland 9	0.0 acres	0.30 acres	0.30 acres	0.0 acres	Freshwater Emergent and Freshwater Forested Wetland	Potential State Jurisdictional Wetland. Hydrophytic vegetation, hydric soils, and possible wetland hydrology present.
Potential Wetland 10	0.0 acres	0.0 acres	0.22 acres	0.22 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. Denniston Creek.
Potential Wetland 11	0.0 acres	0.007 acres	0.007 acres	0.0 acres	Wet Meadow	Potential State and Coastal Commission wetland. Hydrophytic vegetation and hydric soils.
Potential Wetland 12	0.0 acres	0.0 acres	1.38 acres	1.38 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. Appears isolated from Denniston Creek.
Potential Wetland 13	0.0 acres	0.0 acres	0.064 acres	0.0 acres	Wet Meadow	Highly disturbed area with wetland vegetation. Covered by woodchips. Hydric vegetation present.
Potential Wetland 14	0.0 acres	0.0 acres	0.35 acres	0.35 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW. Deer Creek
TOTAL	0.0 acres	0.49 acres	3.38 acres	2.4 acres		

Table 4-5 Caltrans Right of Way: Potentially Jurisdictional Aquatic Features (Non-Wetlands)

Feature	USACE	RWQCB	CCC	CDFW	Feature	Comments
Reach A	0 feet	0 feet	0 feet	0.0 acres	Ephemeral Stream/ Drainage/ Riparian Woodland	Potential Waters of the State. OHWM 5 feet, TOB 10 ft. Ephemeral stream.
	0 acres	0 acres	0 acres			
Riparian Area Reach A	0 acres	0 acres	0 acres	0.0 acres	Riparian Woodland	Riparian Woodland above TOB jurisdictional by CCC and CDFW
Reach B	0 feet	181 feet	181 feet	0.0 acres	Artificial Drainage	Potential Waters of the State. Artificial drainage for stormwater. TOB 3 ft.
	0 acres	0.01 acres	0.01 acres			
Reach C	0 feet	389 feet	389 feet	0.0 acres	Drainage	Potential Waters of the State. Gently sloping drainage on private parcel. No OHWM observed. TOB is ~1.5 feet in diameter.
	0 acres	0.014 acres	0.014 acres			
Reach D	314 feet	314 feet	314 feet	Potential Wetland 4 for Riparian Woodland. 0.07 acres OHWM to TOB	Perennial Stream/ Drainage/ Riparian Area	Potential Federal Waters of the US, Potential Waters of the State. OHWM 5 feet, TOB 15 ft diameter. Perennial stream, San Vicente Creek.
	0.04 acres	0.11 acres	0.11 acres			
Reach E	0 feet	266 feet	266 feet	0.0 acres	Drainage/ Adjacent Wetlands	Potential Waters of the State. Wetland drainage with evidence of standing water. TOB 3 ft diameter.
	0 acres	0.02 acres	0.02 acres			
Reach F	92 feet	92 feet	92 feet	Potential Wetland 10 for Riparian Woodland. 0.02 acres OHWM to TOB	Perennial Stream/ Drainage/ Riparian Area	Potential Federal Waters of the US, Potential Waters of the State. OHWM 5 feet, TOB 15 ft diameter. Perennial stream, Denniston Creek.
	0.01 acres	0.03 acres	0.03 acres			
Reach G	458 feet	458 feet	458 feet	Potential Wetland 12 for Riparian Woodland. 0.06 acres OHWM to TOB	Intermittent Stream/ Drainage/ Riparian Area	Potential Federal Waters of the US, Potential Waters of the State. Intermittent stream. OHWM 5 feet, TOB 10 ft diameter.
	0.05 acres	0.11 acres	0.11 acres			
Reach H	115 feet	115 feet	115 feet	Potential Wetland 14 for	Perennial Stream/ Drainage/ Riparian Area	Potential Federal Waters of the US, Potential Waters of the State. Perennial stream, Deer Creek. OHWM 5 feet, TOB 15 ft diameter.
	0.01 acres	0.04 acres	0.04 acres			

Feature	USACE	RWQCB	CCC	CDFW	Feature	Comments
				Riparian Woodland. 0.03 acres OHWM to TOB		
Total	**0.11 acres**	**0.334 acres**	**0.334 acres**	**0.18 acres**		

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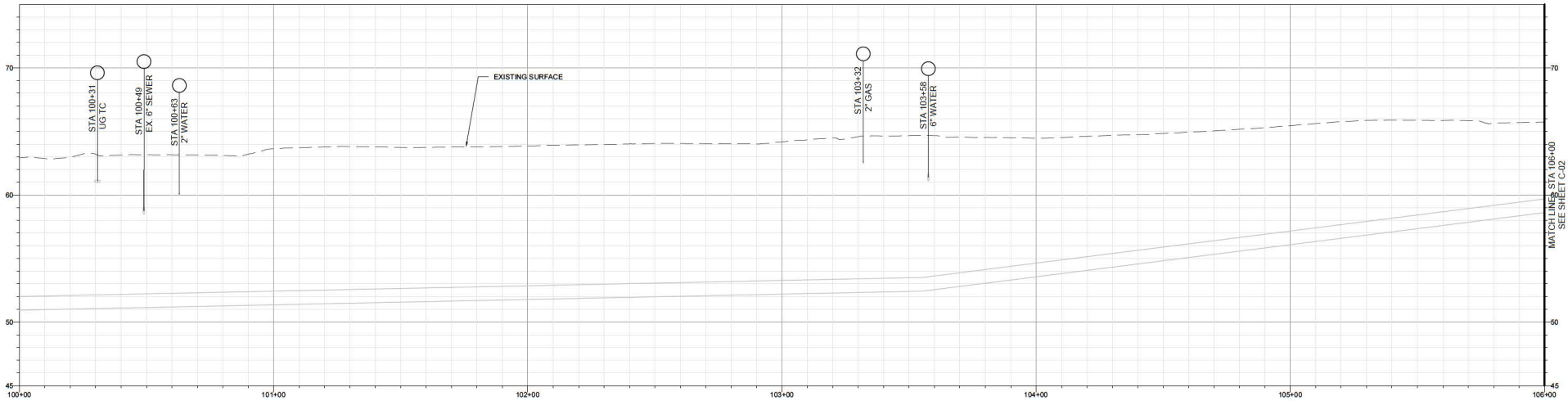
Site Plans

A

APPENDIX



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

M&H Bypass Routing

Above Ground

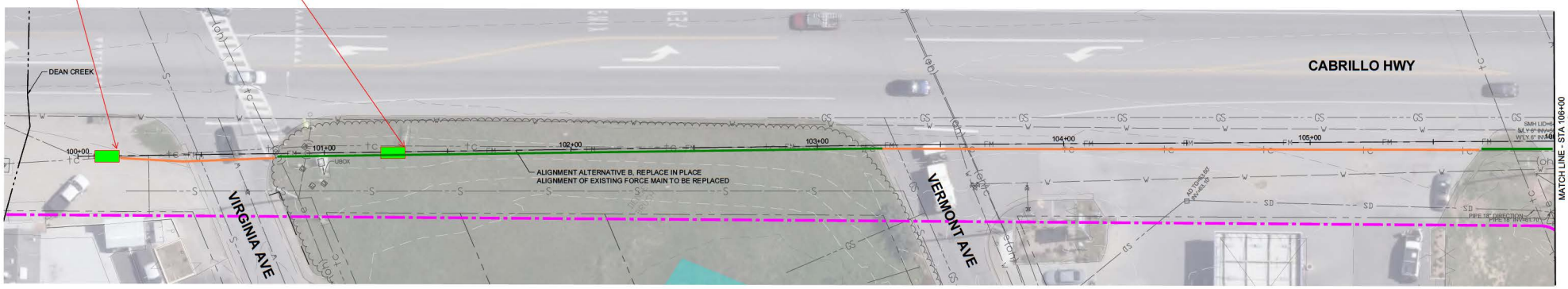
Underground

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

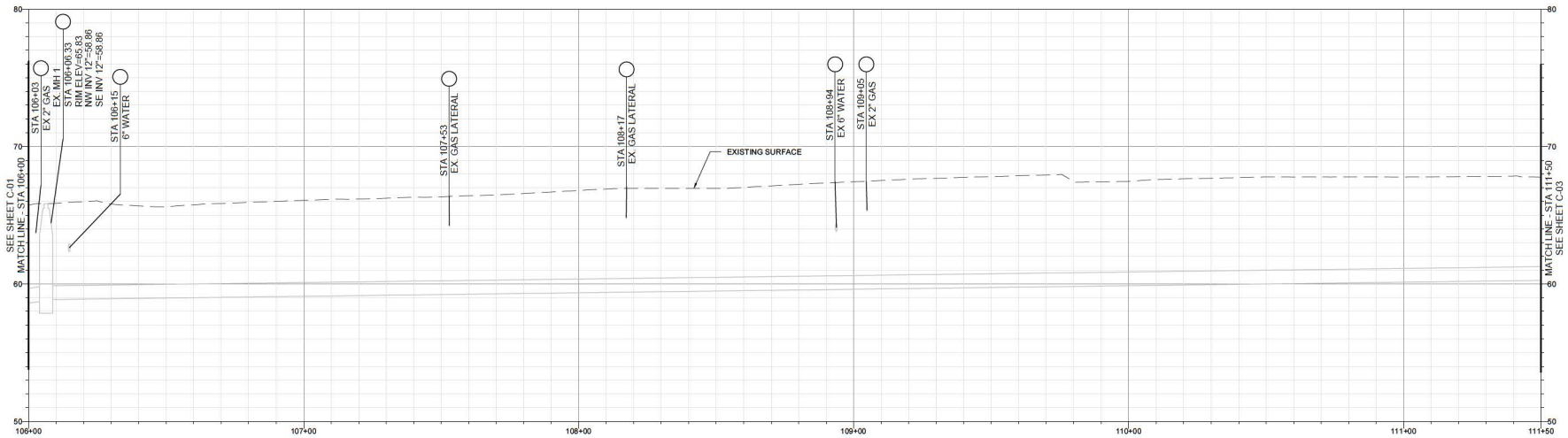
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 1

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-01

SHEET NUMBER: 4 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

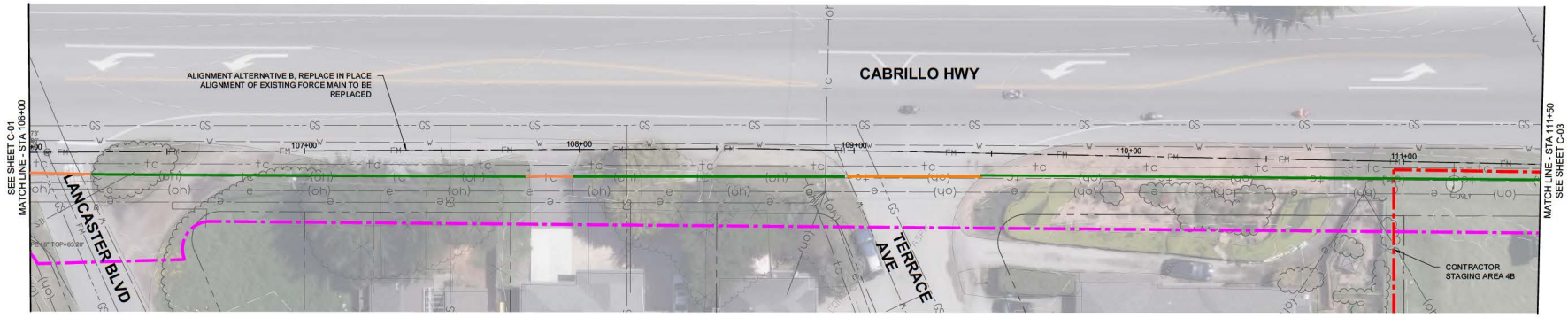
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 2

PROJECT NUMBER: SAMCS.240160
DRAWING NUMBER: C-02
SHEET NUMBER: 5 OF 28

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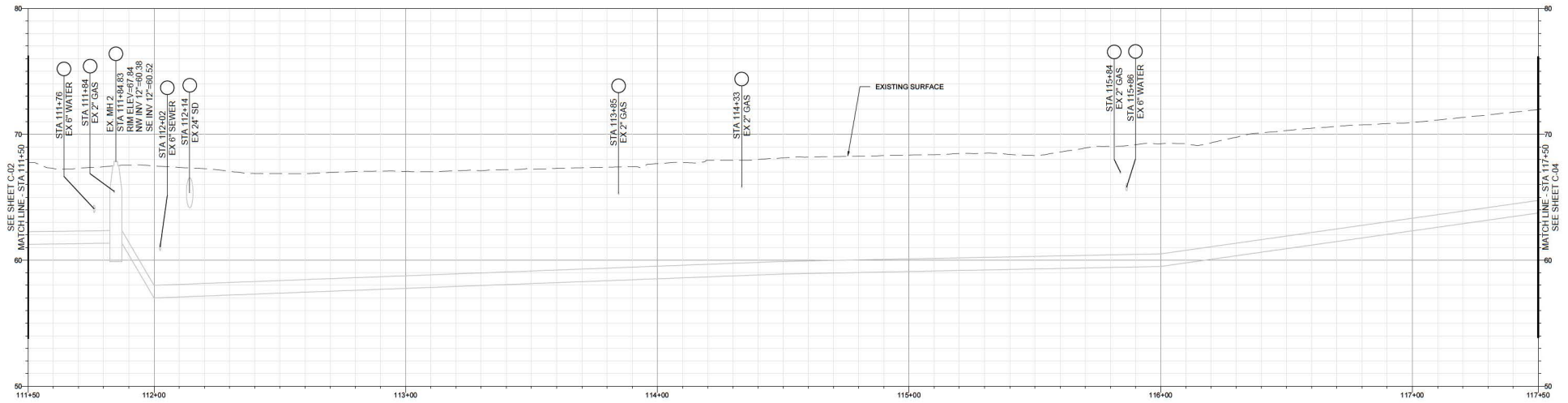


PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

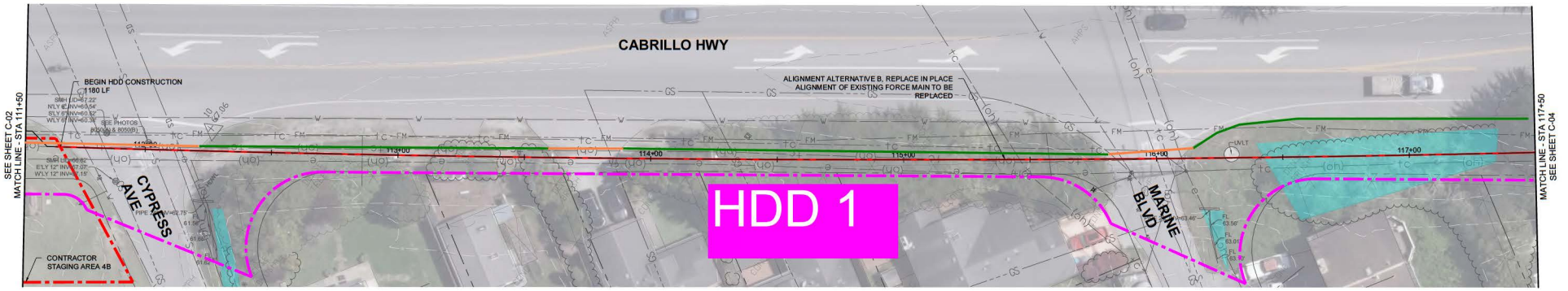
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

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0 1/2 1 2

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

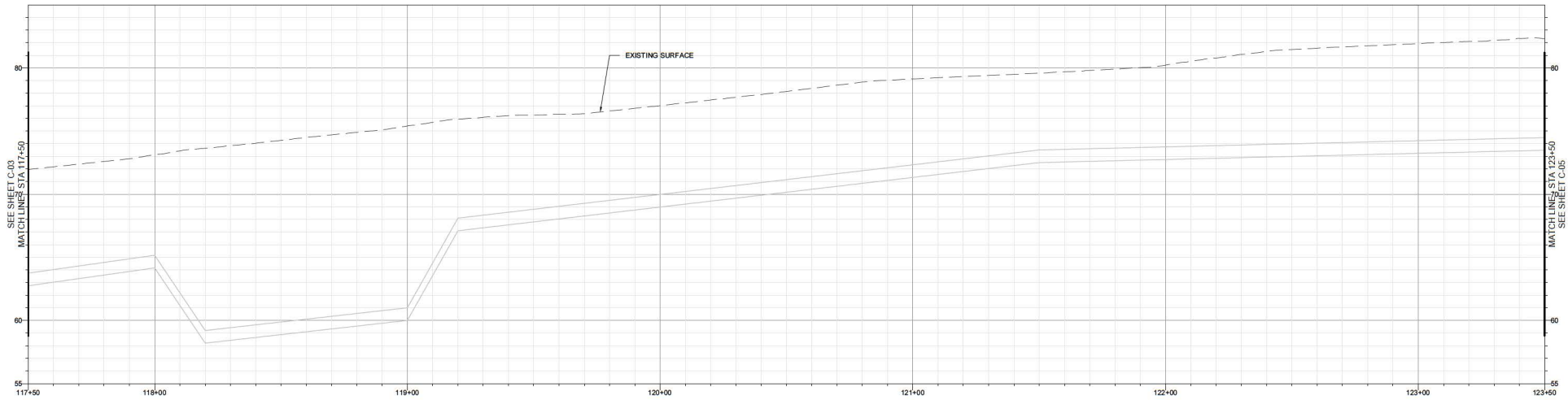
PROJECT NUMBER: SAMCS.240160

PLAN AND PROFILE - 3

DRAWING NUMBER: C-03

SHEET NUMBER: 6 OF 28

Mon 04 Aug 25 - 03:41:04 PM - By: Kiko Dolan - C:\GeoProjects\SAMCS Sewer Authority Mid-Coast\SAMCS_SAVE\SE Montara FM\C-03\sheet.PDF - Utility



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

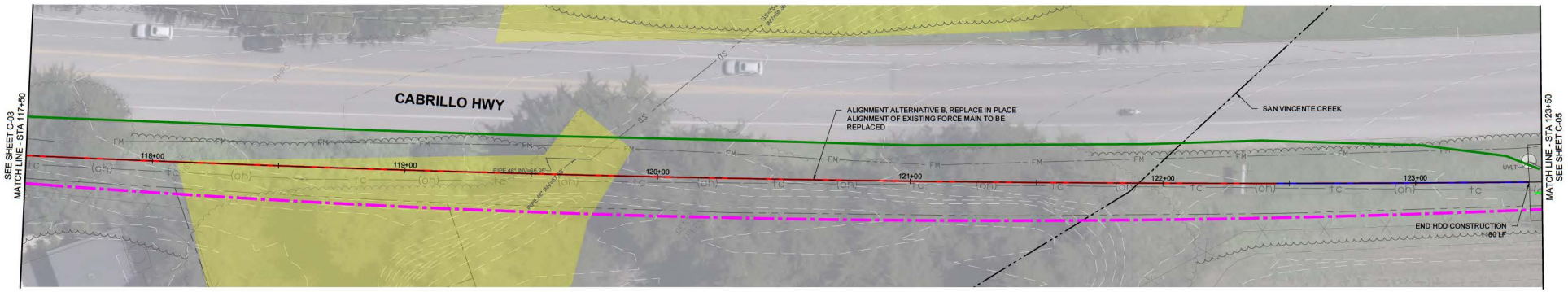
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

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0 1/2 1 2

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT

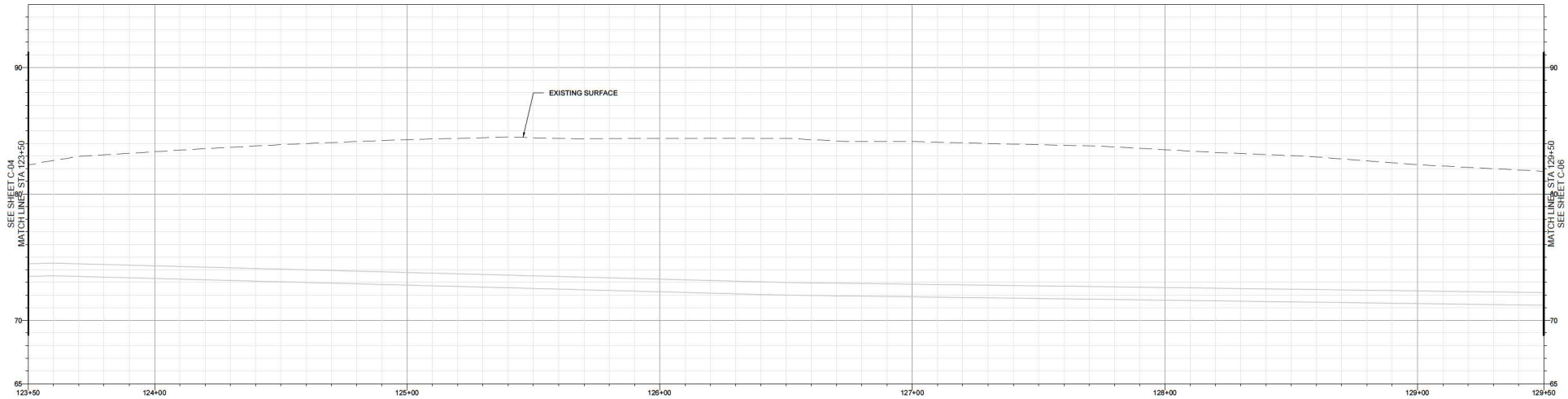
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 4

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-04

SHEET NUMBER: 7 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

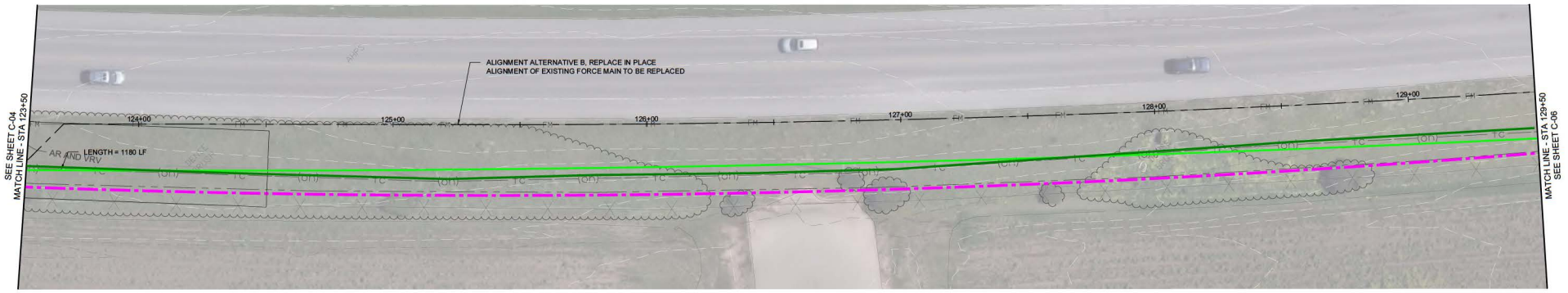
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

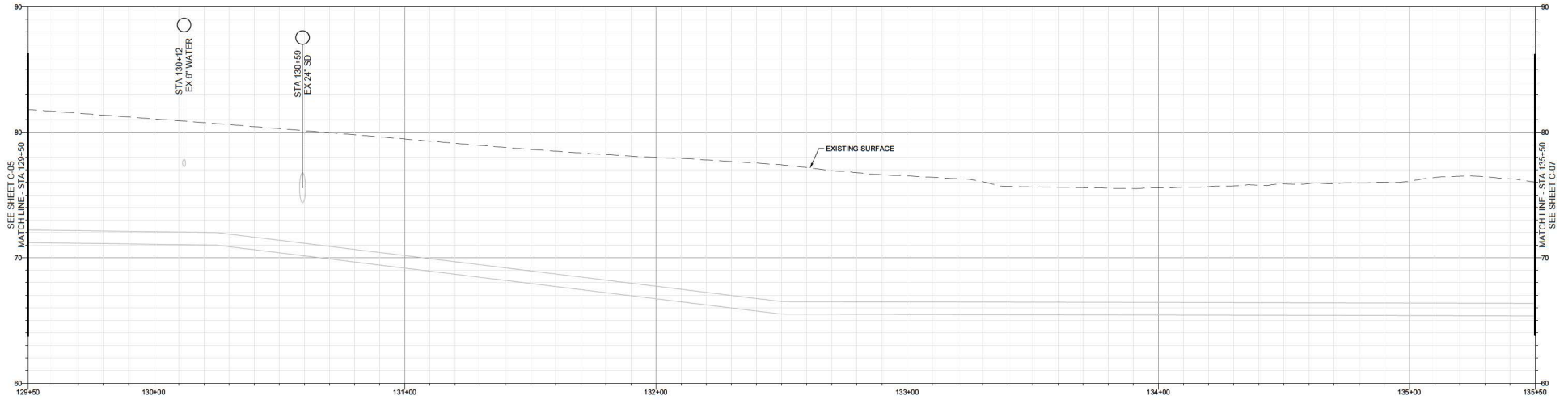
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 5

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-05

SHEET NUMBER: 8 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY

PLAN

20' 10' 0 20' 40'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

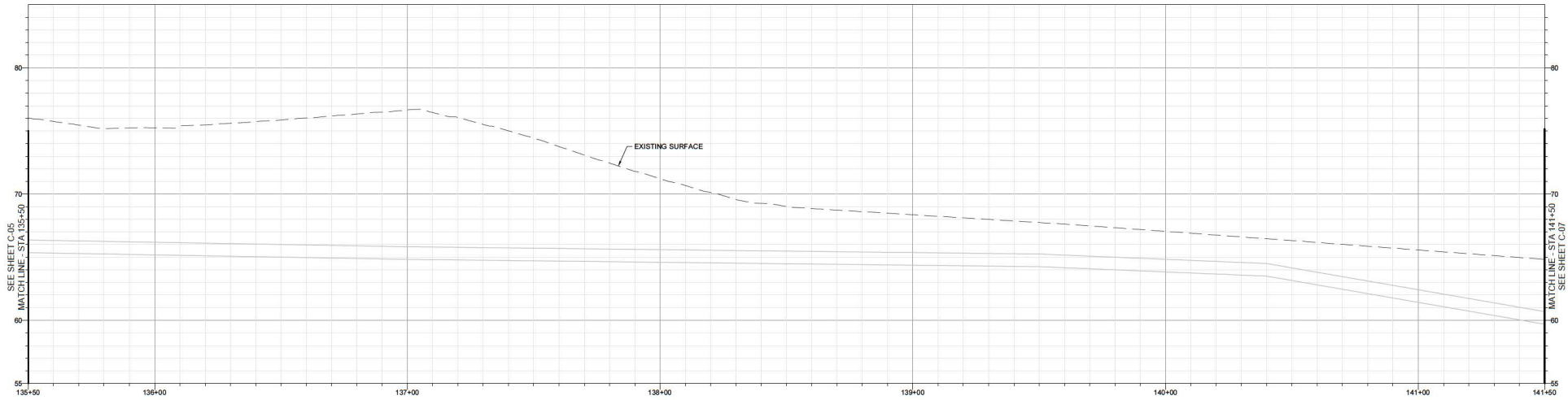
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 6

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-06

SHEET NUMBER: 9 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

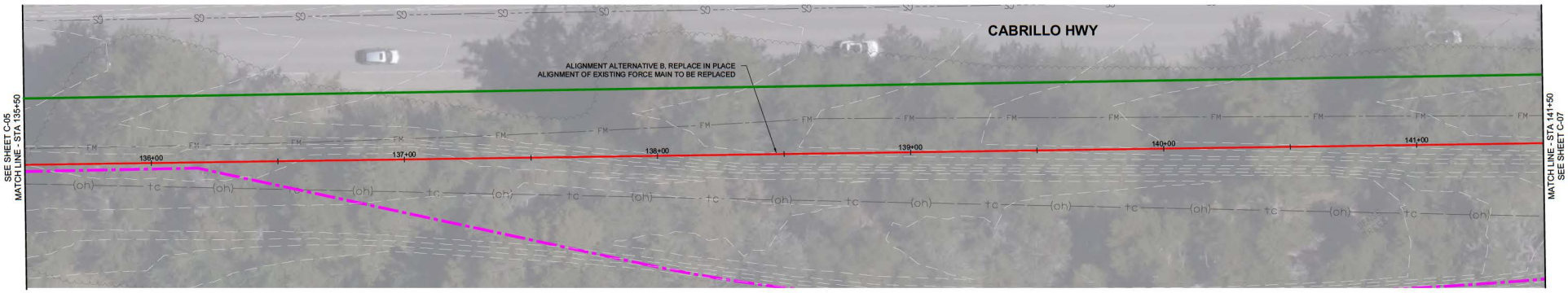
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER — NICHOLAS E. PANOFSKY — C75006 — Exp. 12-31-2025 — CIVIL — STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 7

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-07

SHEET NUMBER: 10 OF 28

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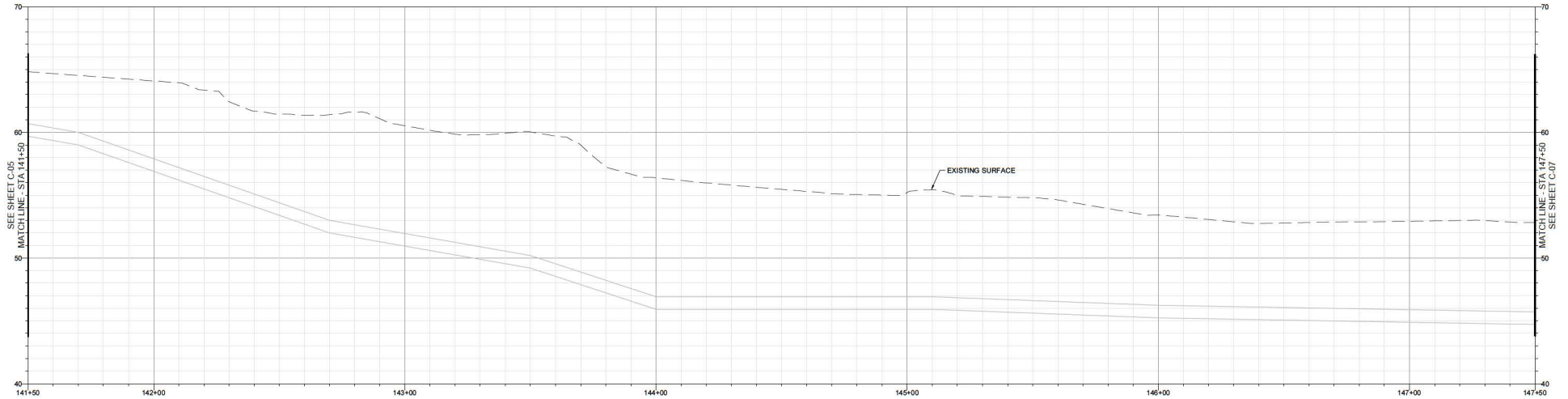


PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

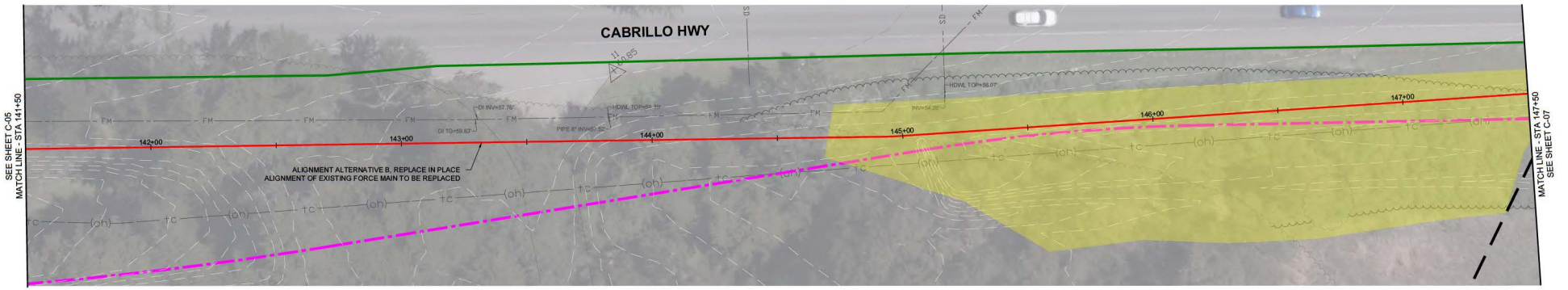
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 8

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-08

SHEET NUMBER: 11 OF 28

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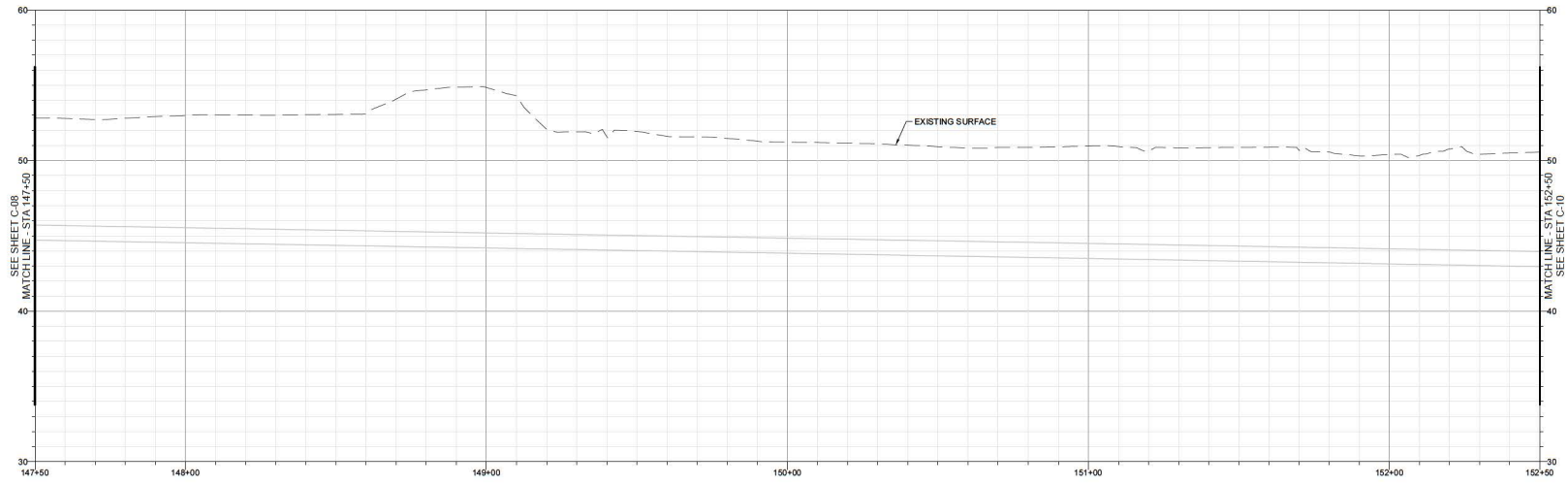


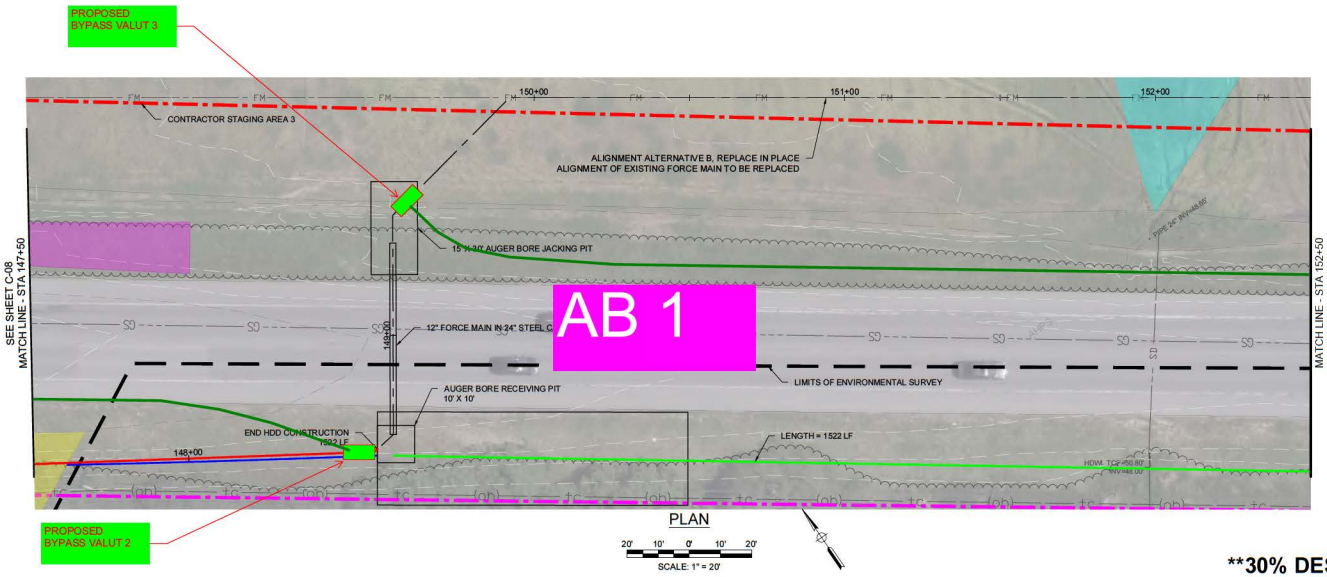
PROFILE

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION



PLAN

SCALE: 1" = 20'

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- BORING LOCATION / ID
- HDD STAGING AREA (100 x 30)
- HDD ACCESS ROAD (15)

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

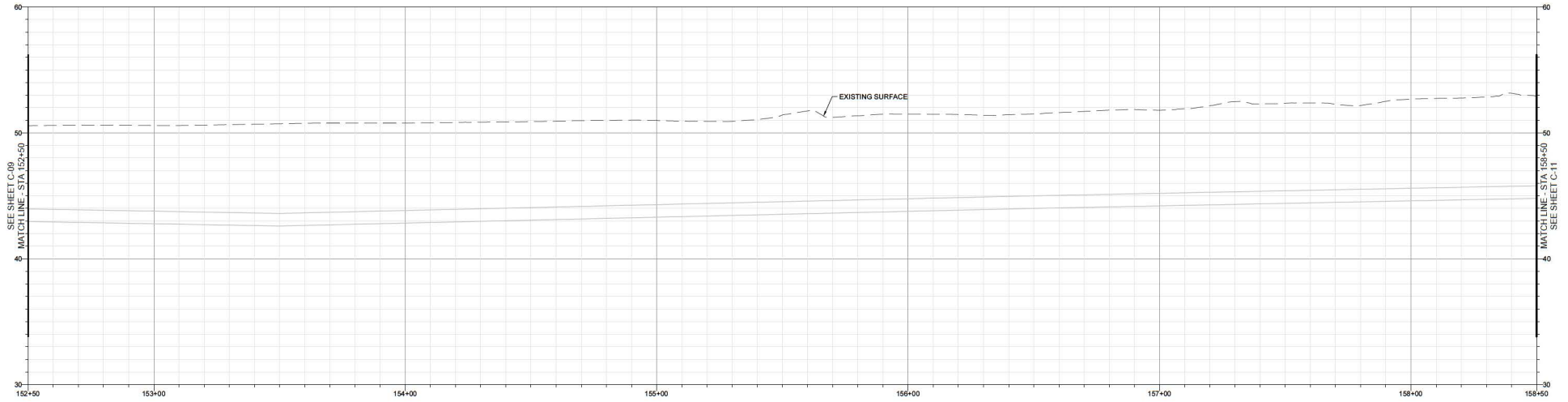
0 1/2 1 2
THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 9

PROJECT NUMBER: SAMCS.240160
DRAWING NUMBER: C-09
SHEET NUMBER: 12 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

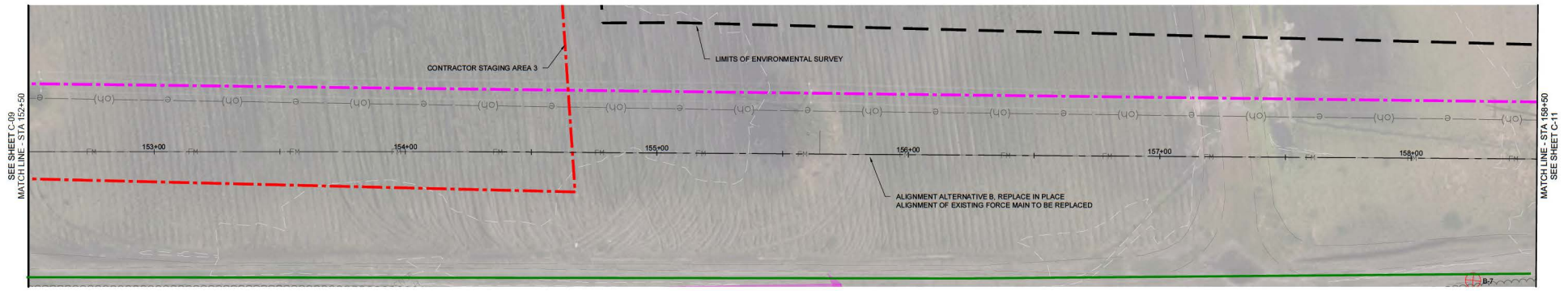
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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San Jose, CA 95110
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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

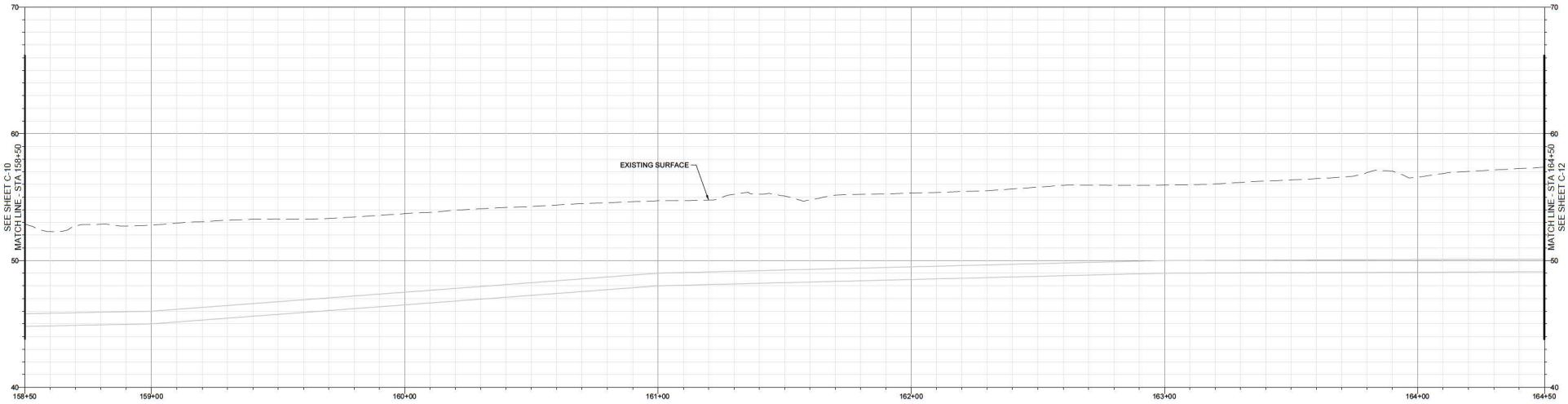
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 10

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-10

SHEET NUMBER: 13 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY

PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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2025 Gateway Place, Suite 328
San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

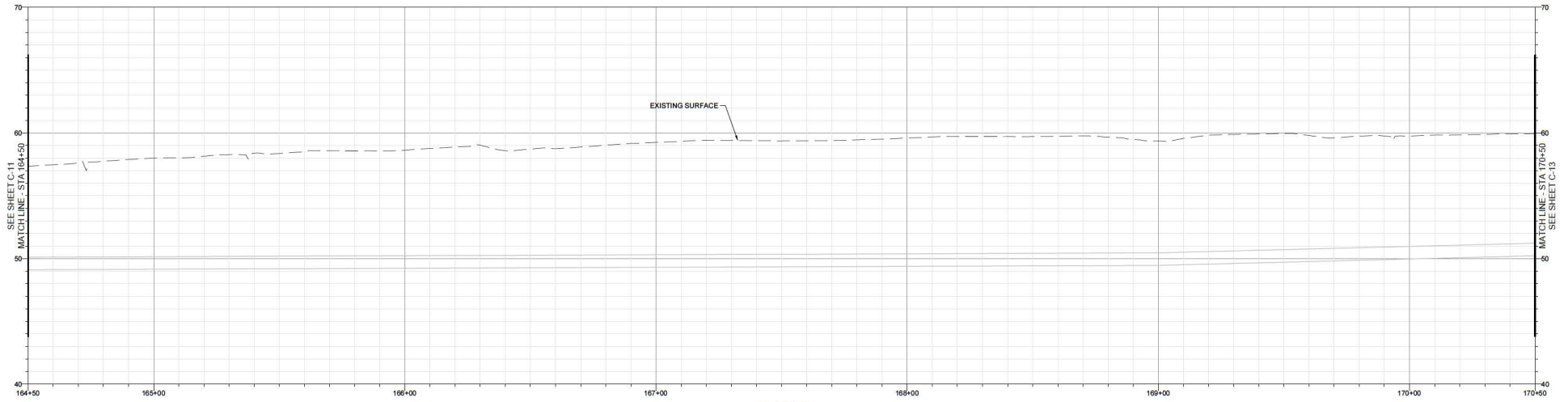
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 11

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-11

SHEET NUMBER: 14 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

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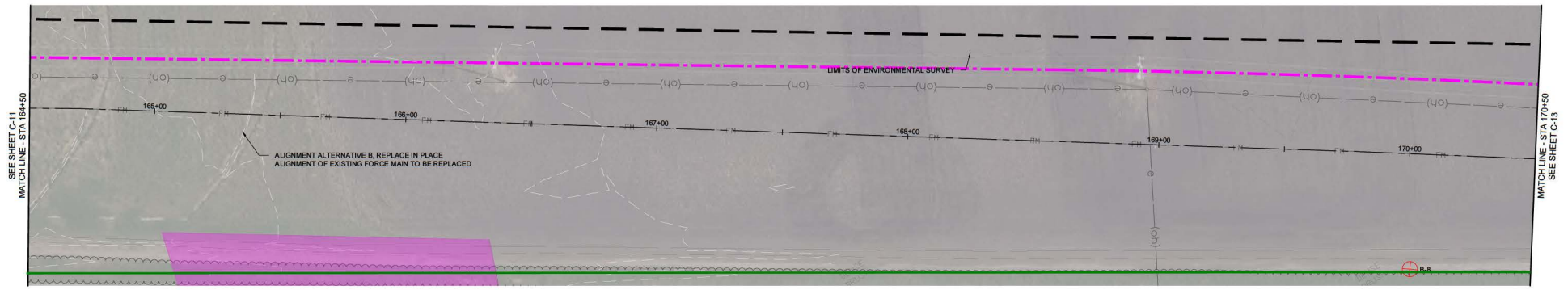
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

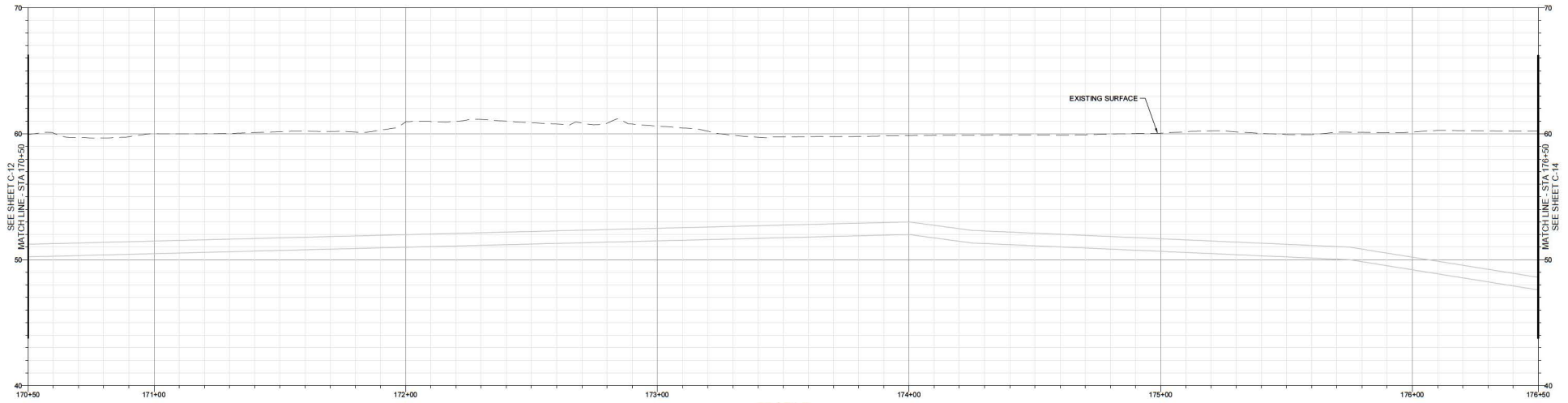
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 12

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-12

SHEET NUMBER: 15 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

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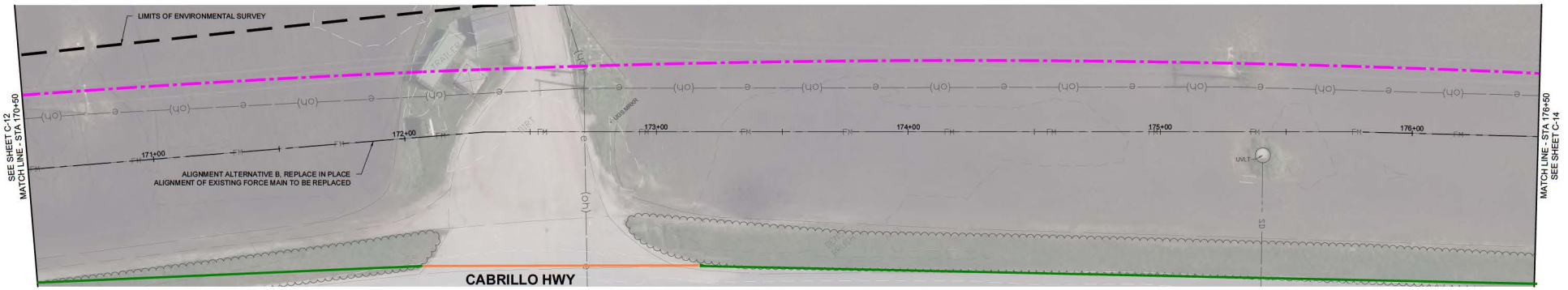
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

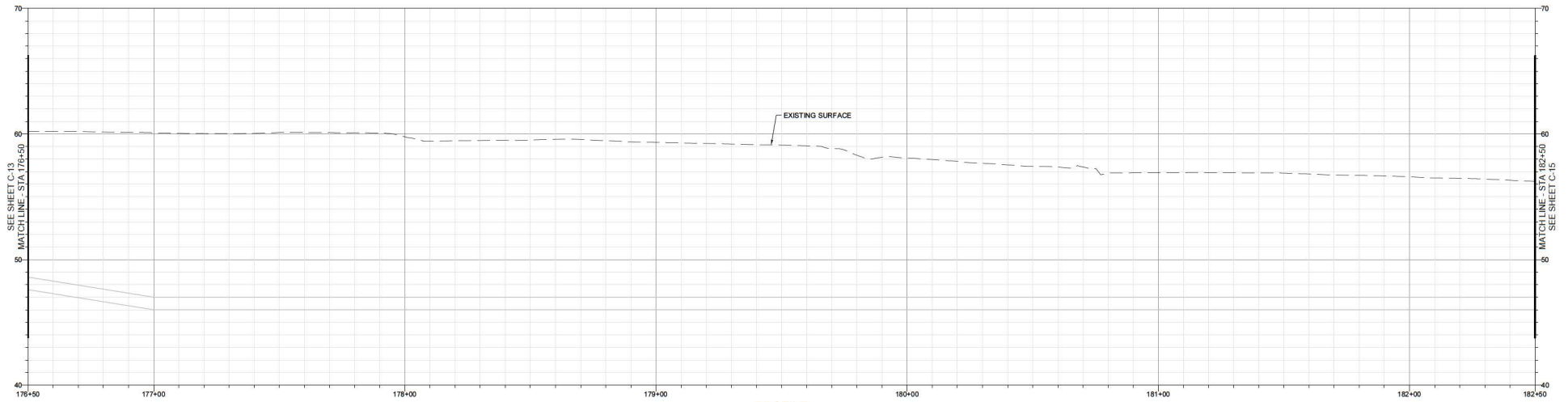
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 13

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-13

SHEET NUMBER: 16 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

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PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

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0 1/2 1 2

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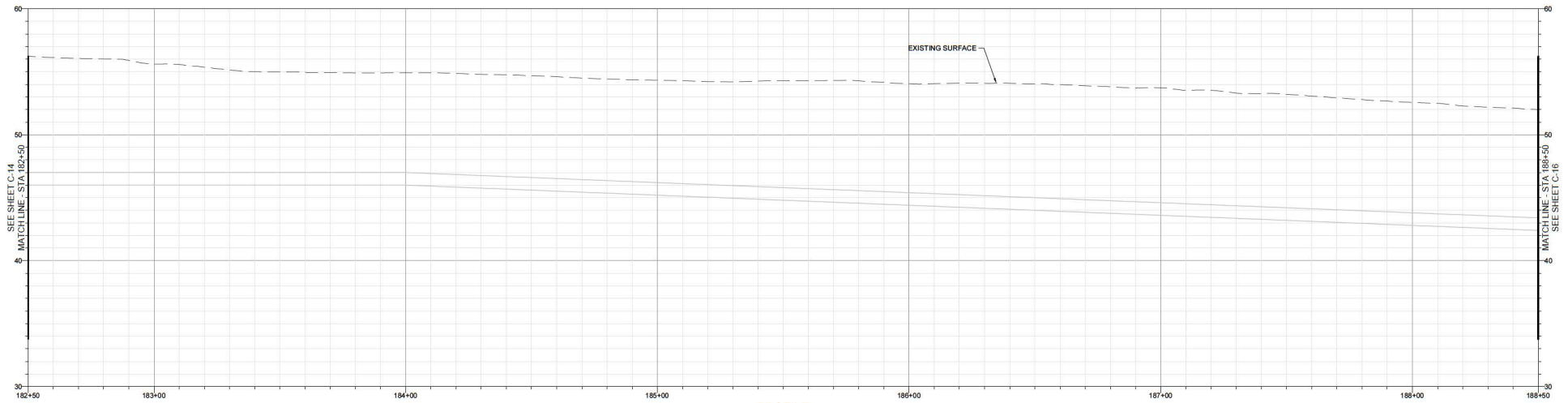
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 14

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-14

SHEET NUMBER: 17 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

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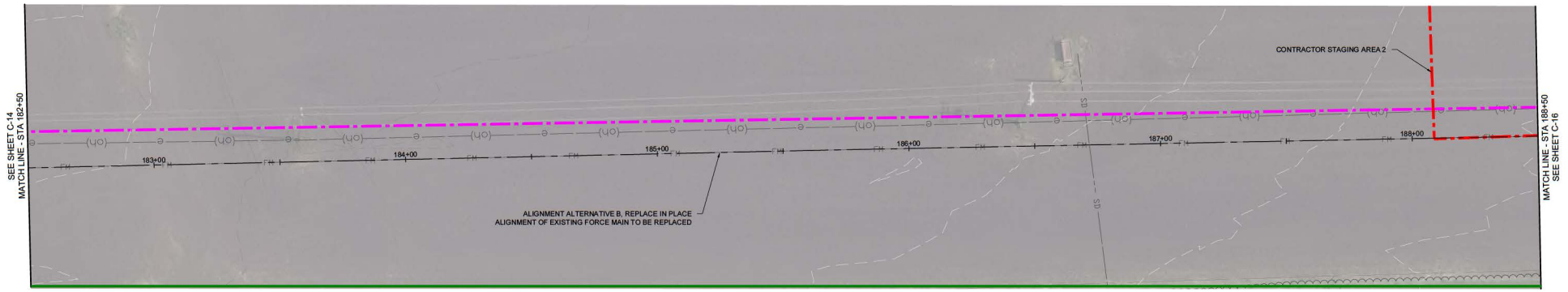

PLAN

20' 10' 0' 10' 20'

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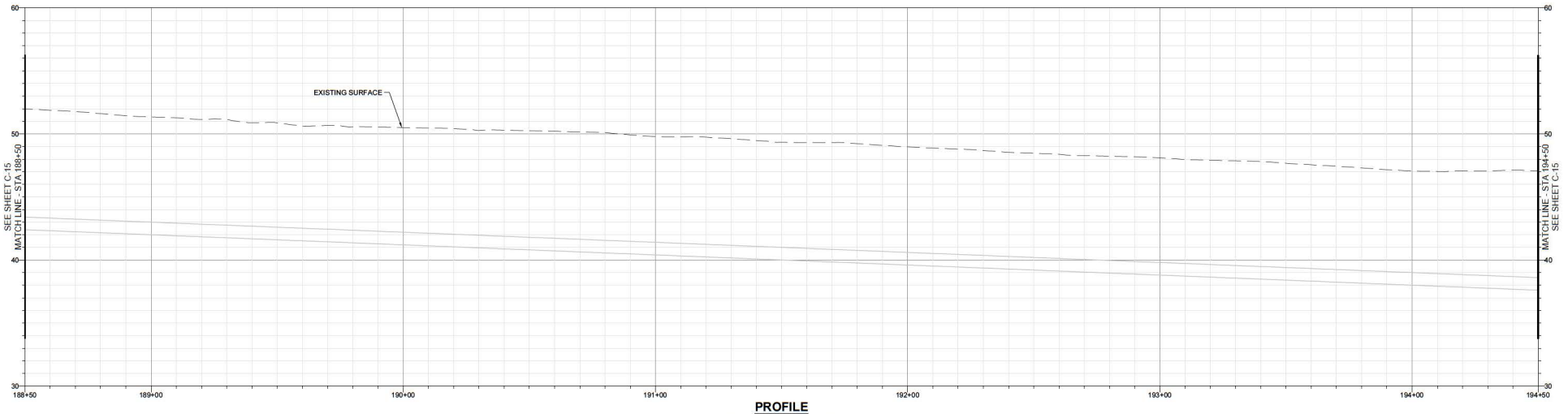
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 15

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-15

SHEET NUMBER: 18 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

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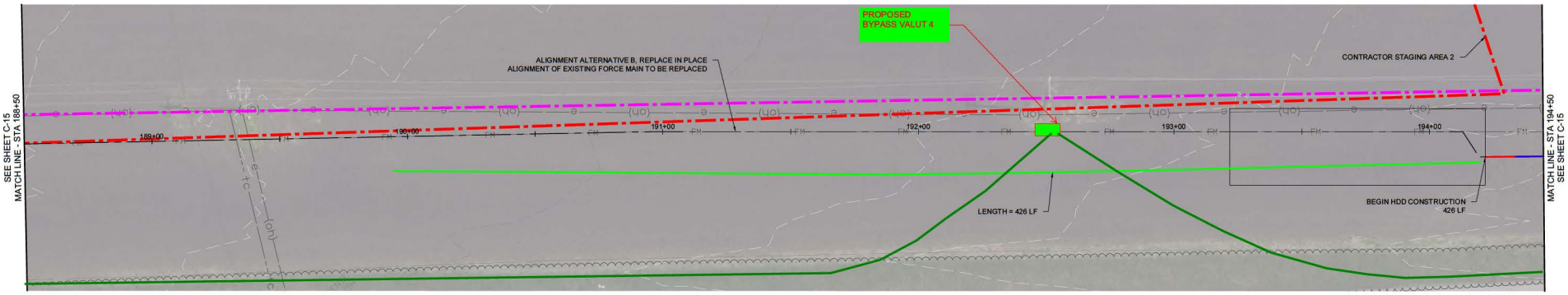
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

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SCALE: 1" = 20'

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R.C.E. 75006

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REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

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SCALE: AS SHOWN

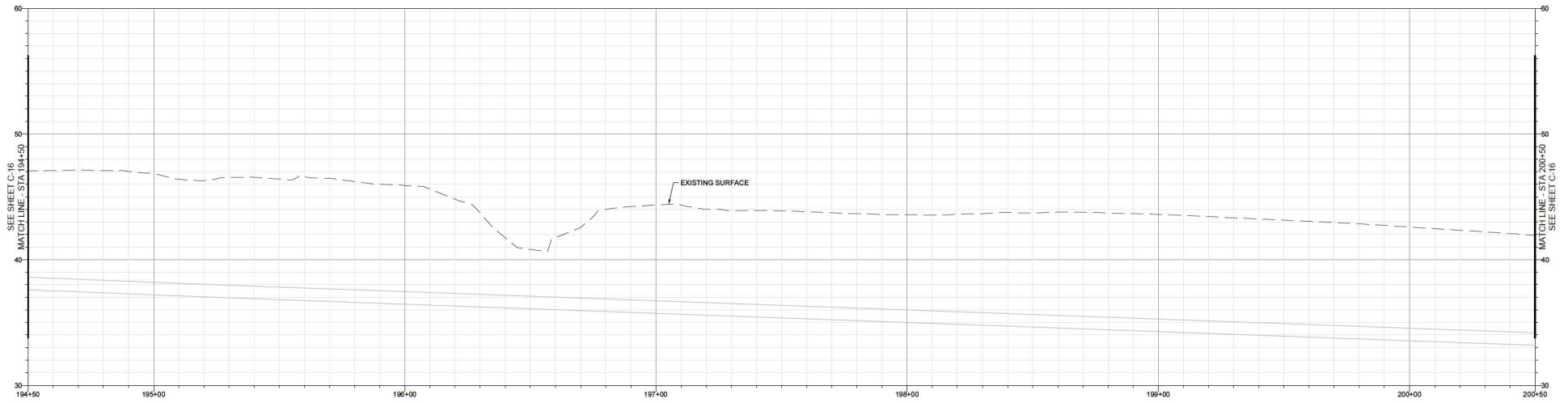
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 16

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-16

SHEET NUMBER: 19 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
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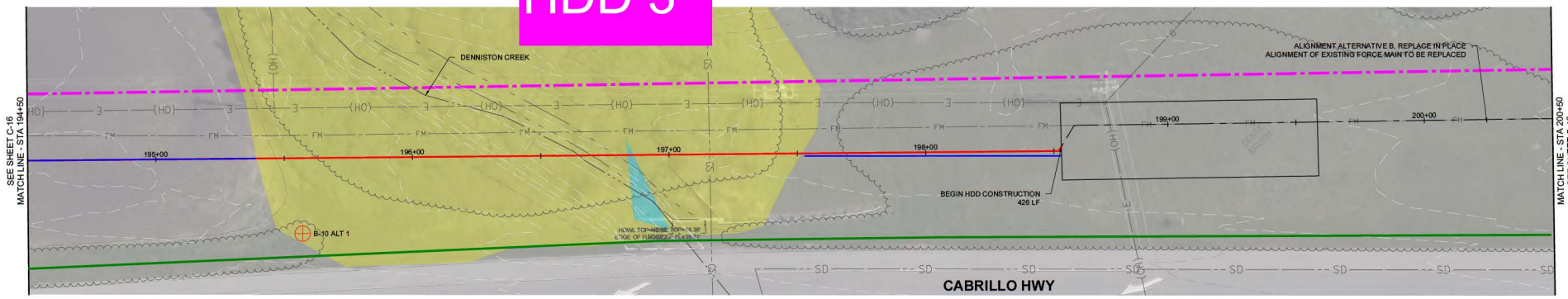
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY

HDD 3



PLAN

20' 10' 0' 10' 20'

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		KAD	30% PLANS

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DATE

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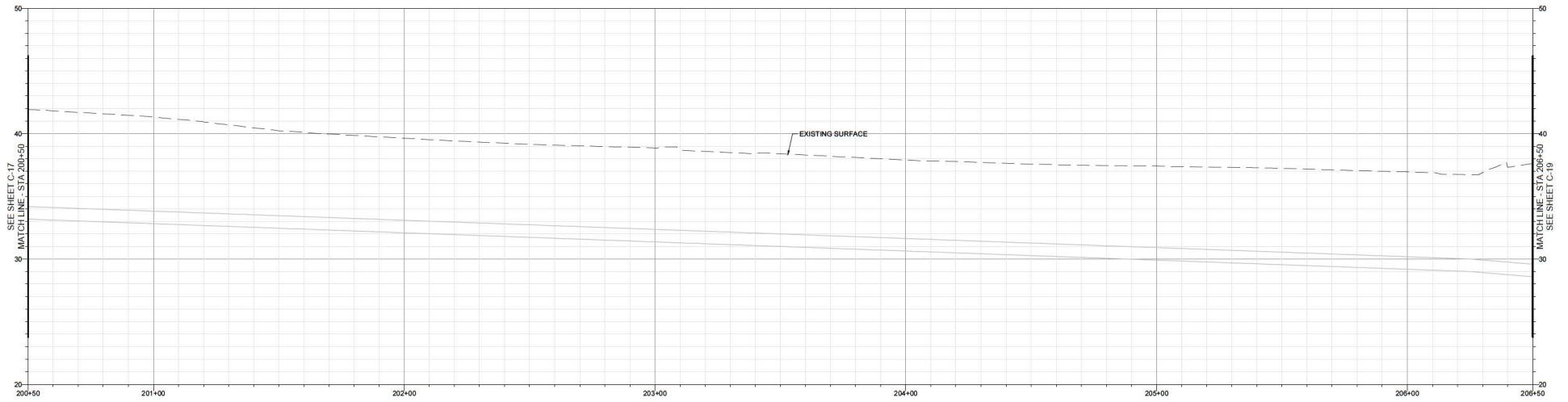
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 17

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-17

SHEET NUMBER: 20 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

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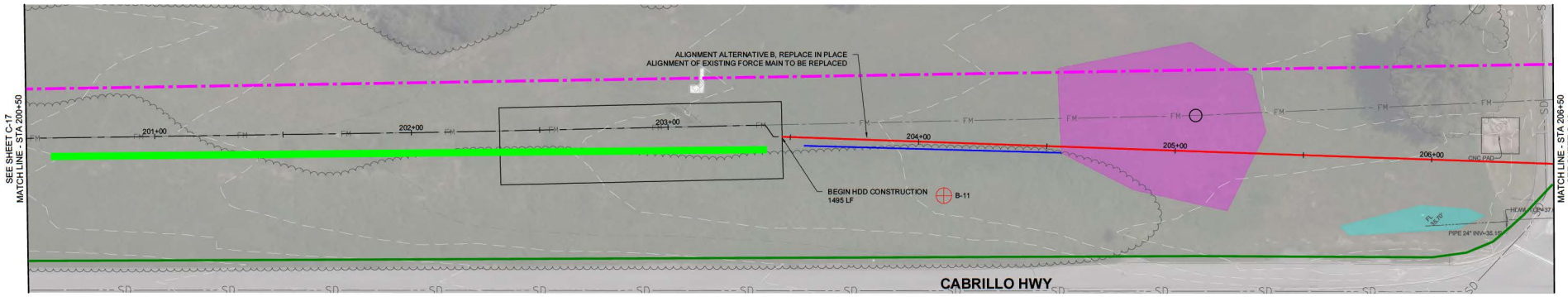
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

HDD 4

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

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SCALE: AS SHOWN

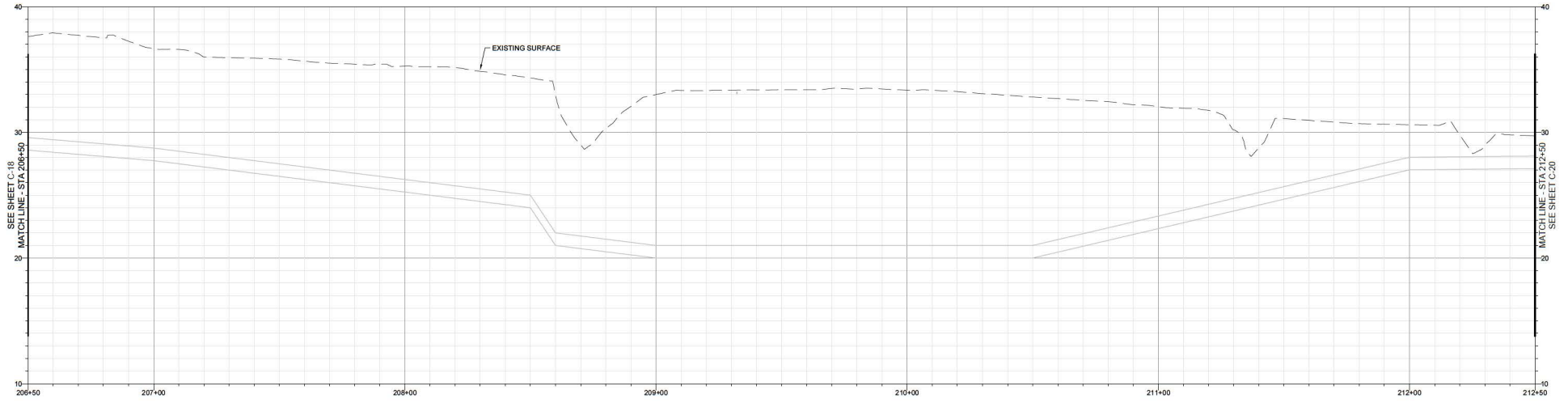
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 18

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-18

SHEET NUMBER: 21 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

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- B-# BORING LOCATION / ID
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- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
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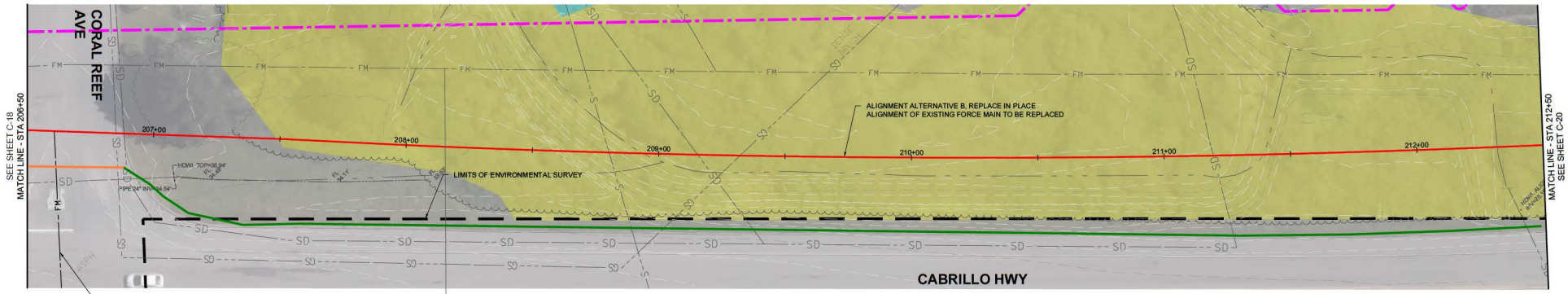
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

AB 2

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY
		KAD

MNS
2025 Gateway Place, Suite 328
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805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
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NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

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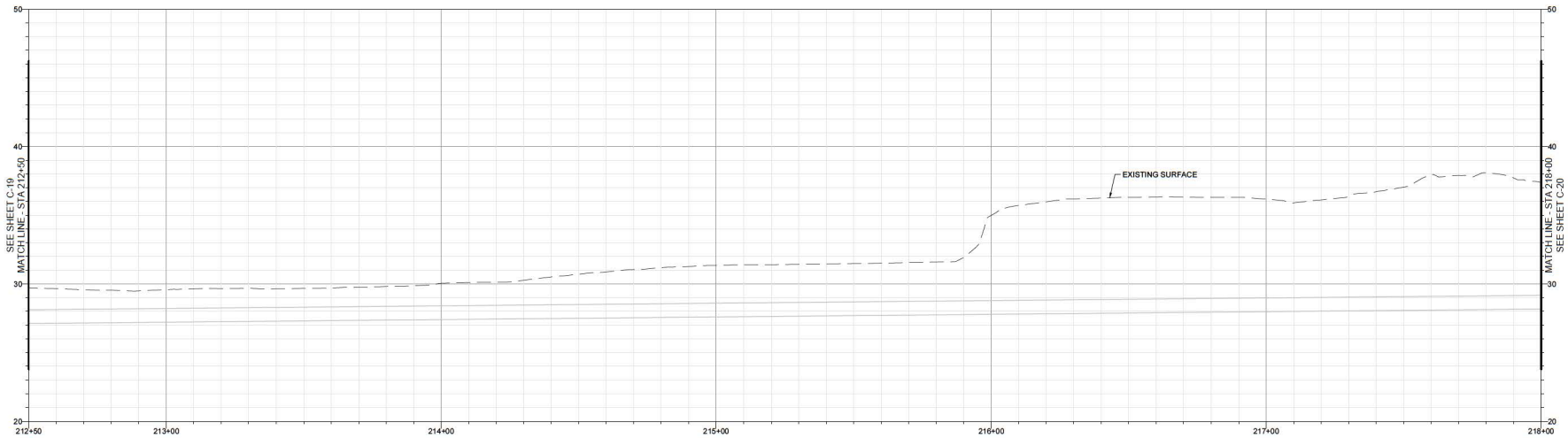
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 19

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-19

SHEET NUMBER: 22 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
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- SET BACK FROM SENSITIVE HABITAT (100LF)
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- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 10 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

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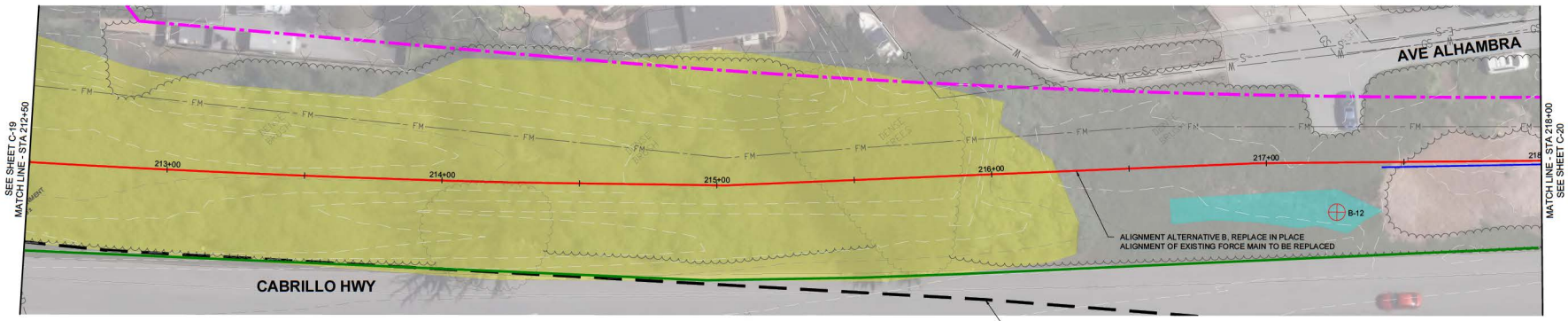
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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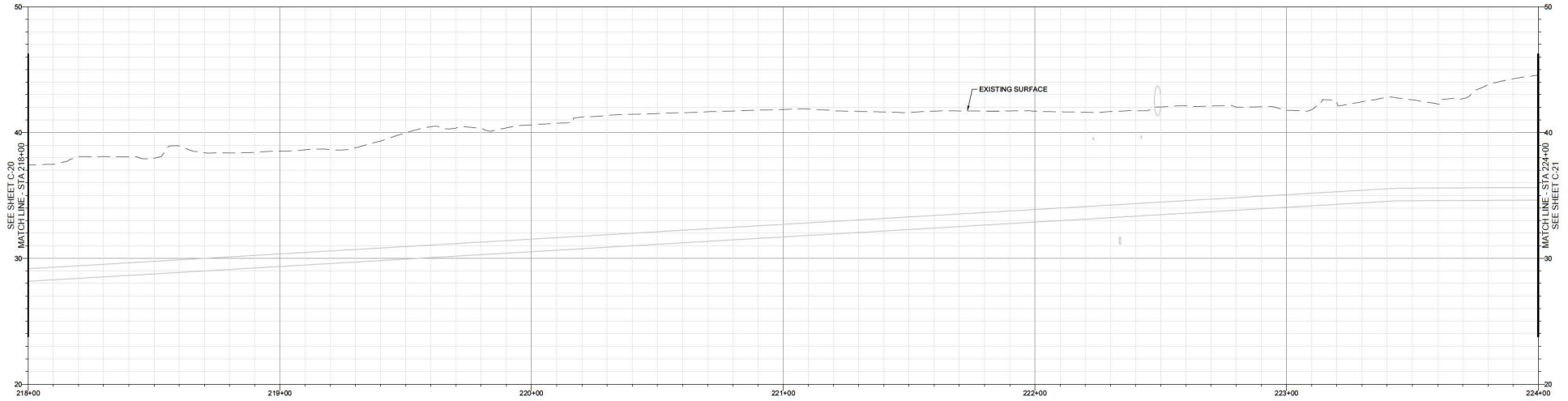
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 20

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-20

SHEET NUMBER: 23 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

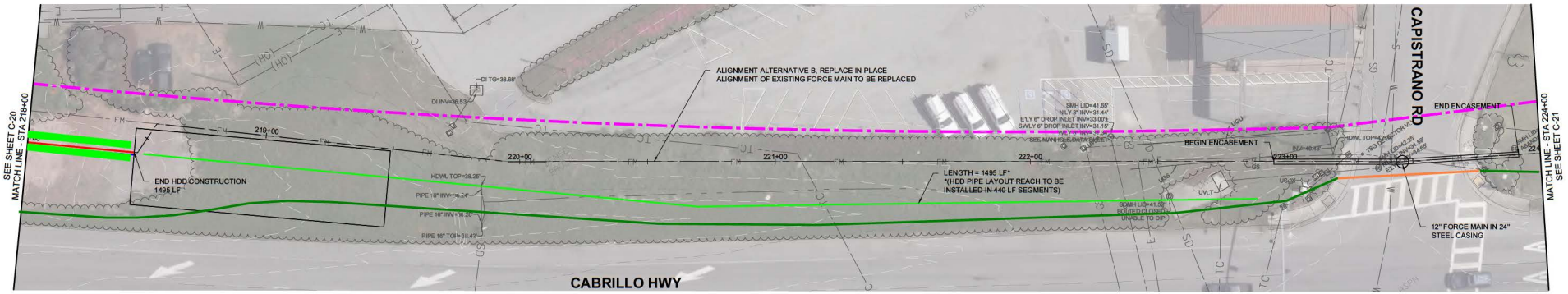
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

MNS
2025 Gateway Place, Suite 328
San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT

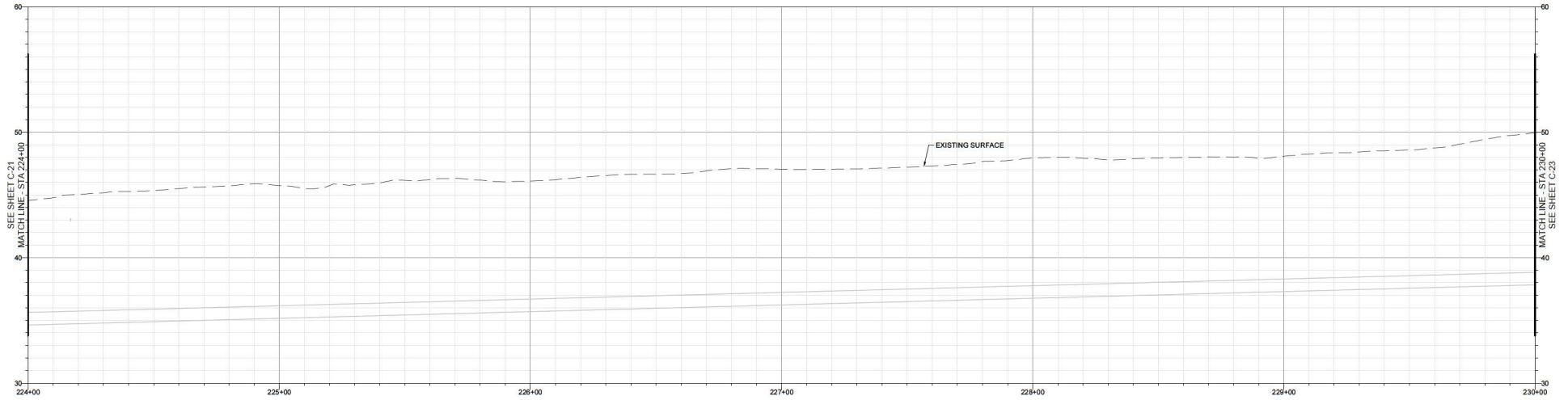
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 21

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-21

SHEET NUMBER: 24 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

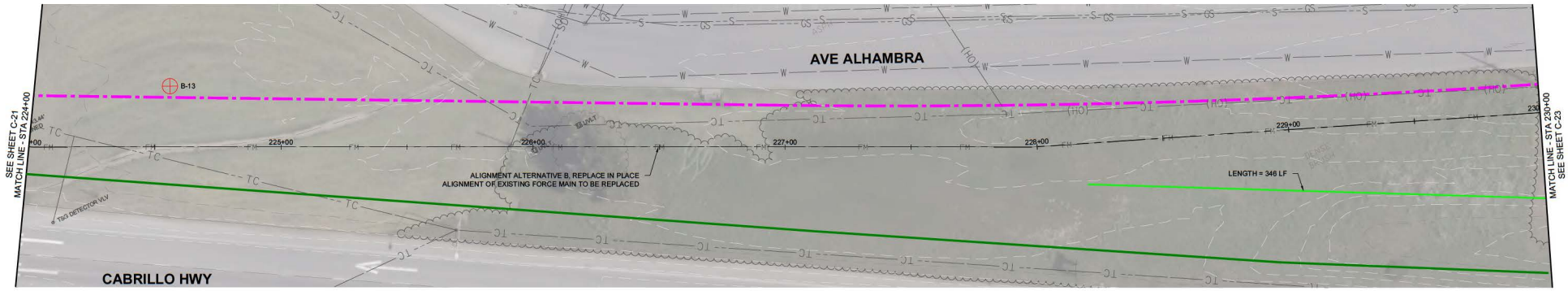
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

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San Jose, CA 95110
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DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

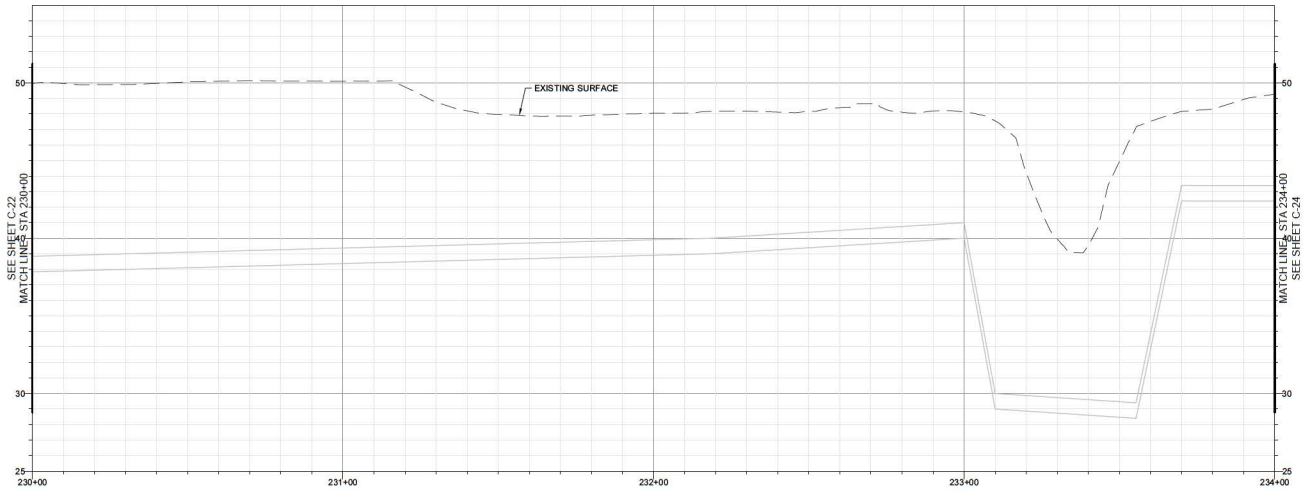
PLAN AND PROFILE - 22

PROJECT NUMBER: SAMCS.240160

DRAWING NUMBER: C-22

SHEET NUMBER: 25 OF 28

© Dwg/Projects/SAMCS Sewer Authority Mid-Coast/SAMCS_SAVE/SE Montara Mod Dwg/SAMCS Standard.ctb - Ashley



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

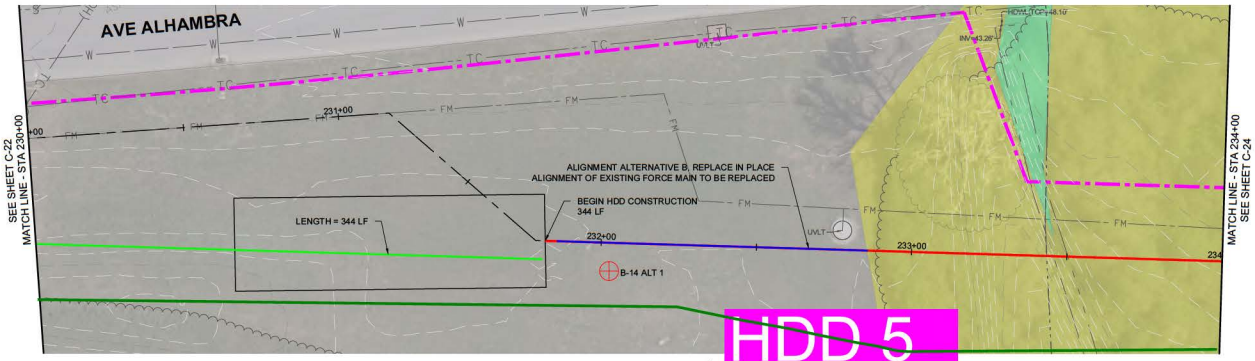
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 × 50 HDD STAGING AREA
- 16 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

MNS
2025 Gateway Place, Suite 328
San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

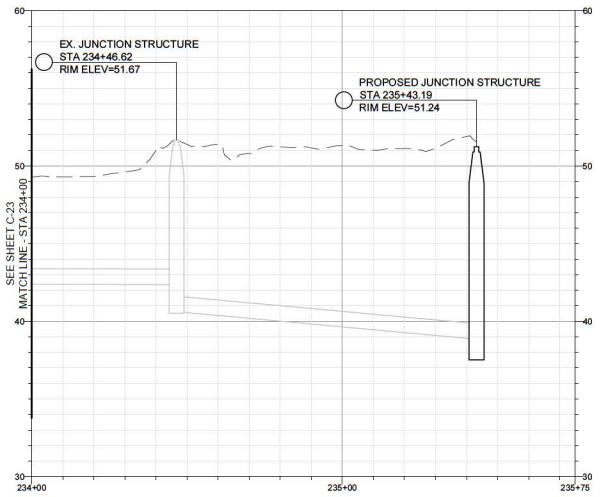
MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PROJECT NUMBER: SAMCS.240160

PLAN AND PROFILE - 23

DRAWING NUMBER: C-23

SHEET NUMBER: 26 OF 28



PROFILE

20' 0' 20'

HORIZ: 1" = 20'
VERT: 1" = 4'

CONSTRUCTION NOTES

(XX) KEYNOTE DESCRIPTION

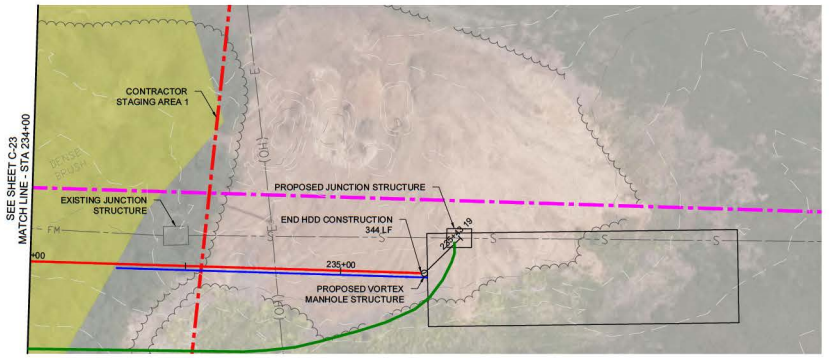
(XX) KEYNOTE DESCRIPTION

GENERAL LEGEND

- HDD CONSTRUCTION REACH
- HDD HDPE PIPE LAYOUT REACH
- SET BACK FROM SENSITIVE HABITAT (100LF)
- CONTRACTOR STAGING AREA
- CALTRANS RIGHT OF WAY
- B-# BORING LOCATION / ID
- 100 / 50 HDD STAGING AREA
- 10 HDD ACCESS ROAD

ENVIRONMENTALLY SENSITIVE AREAS

- WETLAND
- FRESHWATER FORESTED
- COASTAL PRAIRIE
- COASTAL SCRUB
- LIMITS OF ENVIRONMENTAL SURVEY



PLAN

20' 10' 0' 10' 20'

SCALE: 1" = 20'

****30% DESIGN - NOT FOR CONSTRUCTION****

REV	DATE	BY	DESCRIPTION
		KAD	30% PLANS

MNS
2025 Gateway Place, Suite 328
San Jose, CA 95110
805-692-6921 | www.mnsengineers.com

DESIGNED:	NAB
DRAWN:	KAD
CHECKED:	NEP
QA/QC:	TNH
CONSTRUCTABILITY:	RE

NICHOLAS E. PANOFSKY
PRINCIPAL ENGINEER
R.C.E. 75006

DATE

REGISTERED PROFESSIONAL ENGINEER NICHOLAS E. PANOFSKY C75006 Exp. 12-31-2025 CIVIL STATE OF CALIFORNIA

0 1/2 1 2

THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.

SCALE: AS SHOWN

MONTARA FORCE MAIN REPLACEMENT PROJECT
SEWER AUTHORITY MID-COASTSIDE

PLAN AND PROFILE - 24

PROJECT NUMBER: **SAMCS.240160**

DRAWING NUMBER: **C-24**

SHEET NUMBER: **27** OF **28**

Wetland Determination Data Forms

B

APPENDIX

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 7/11/25

Applicant/Owner: State: CA Sampling Point: Wetland 1

Investigator(s): RA Section, Township, Range: SS, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal terrace Local relief (concave, convex, none): Convex Slope (%): 45%

Subregion (LRR): LRRC Lat: 37.5469 Long: -122.5137 Datum: WGS 84

Soil Map Unit Name: 130: Typic Argistolls, Loamy-Urban Land Association 5-15% slopes NWI classification: Riverine

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

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

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

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

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

Remarks:

Located adjacent to the staging area on the north side of the project area, just south of California Ave and west of State Route 1. The reach provides intermittent flows which from a series of culverts and riverine feature further upslope. River channel is surrounded by riparian woodlands

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix lasiolepis	100	YES	FACW
2.			
3.			
4.			
	100 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1. Rubus ursinus	20	YES	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Tropaeolum majus	20	Yes	UPL
2. Urtica diotica	20	Yes	FAC
3. Rumex crispus	5		FAC
4.			
5.			
6.			
7.			
8.			
	45 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Area with standing water at lower culvert, dry at upper culvert. Weedy slopes with nasturtium. Mowed grassland at upland outside or riparian banks.

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Standing water present at lower culvert. Hydric soil assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Water present at lower culvert.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 6/25/25

Applicant/Owner: State: CA Sampling Point: Wetland 2

Investigator(s): RA Section, Township, Range: SS, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal terrace Local relief (concave, convex, none): Convex Slope (%): 45%

Subregion (LRR): LRRC Lat: 37.5246 Long: -122.5104 Datum: WGS 84

Soil Map Unit Name: 130: Typic Argistolls, Loamy-Urban Land Association 5-15% slopes NWI classification: None

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

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

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

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

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

Remarks:

Wet, flooded roadside wetland. Well developed emergent vegetation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Scirpus microcarpus	40	Yes	
2. Nasturtium officinale	20	Yes	
3. Erythranthe guttata	15		
4. Cyperus eragrostis	15		
5. Typha angustifolia	10		
6. Juncus sp.	10		
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Lots of wetland vegetation along roadside. Extends ond the edge of Cypress Road.

SOIL

Sampling Point: Wet 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Standing water present. Hydric soil assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Standing water present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 6/25/25

Applicant/Owner: State: CA Sampling Point: Upland 5

Investigator(s): RA Section, Township, Range: SS, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRRC Lat: 37.5218 Long: -122.5072 Datum: WGS 84

Soil Map Unit Name: Farallone coarse sandy loam NWI classification: None

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

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

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

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

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

Remarks:

Mowed grassland area with many rushes. We assessed the area, but was not a wetland

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Juncus patens	30	Yes	FACW
2. Annual grass	20	Yes	FACU
3. Avena barbata	10		UPL
4. Rubus ursinus	10		FAC
5. Achillea millifollium	10		FACU
6. Baccharis pillularis	10		UPL
7. Madia sp.	5		UPL
8. Yerba buena	5		FACU
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .5 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Vegetation recently mowed. Difficult to identify species on annual grasses.

SOIL

Sampling Point: Upland 5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No hydric soil in adjacent plot with hydrophytic vegetation. Soil compacted.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No hydrology. Site very dry. Soil compacted.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 6/25/25

Applicant/Owner: State: CA Sampling Point: Wet 5

Investigator(s): RA Section, Township, Range: SS, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRRC Lat: 37.521449 Long: -122.506742 Datum: WGS 84

Soil Map Unit Name: Farallone coarse sandy loam NWI classification: None

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

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

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

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

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

Remarks:

Mowed grassland area with many rushes. Wetland vegetation with no soils or hydrology. One parameter wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Juncus patens	50	Yes	FACW
2. Annual grass	30	Yes	FACU
3. Baccharis pillularis	10		UPL
4. Cortidiaria jubata	10		FACU
5.			
6.			
7.			
8.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .5 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 50	x 2 = 100
FAC species _____	x 3 = _____
FACU species 40	x 4 = 120
UPL species 10	x 5 = 50
Column Totals: 100 (A)	270 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes x No _____

Remarks:

Vegetation recently mowed. Difficult to identify species on annual grasses.

SOIL

Sampling Point: Wetland 5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	leaf litter	100						leaf litter at soil surface
2-8	10YR 1:3	100					Sandy loam	leaf litter at soil surface

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No hydric soil in adjacent plot with hydrophytic vegetation. Soil compacted. Soil Pit 5 Wetland.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No evidence of hydrology

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 6/25/25

Applicant/Owner: State: CA Sampling Point: 6 Wetland

Investigator(s): RA Section, Township, Range: SS, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRRC Lat: 37.521196 Long: -122.506261 Datum: WGS 84

Soil Map Unit Name: Farallone coarse sandy loam NWI classification: None

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

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

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

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

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

Remarks:

Engineered drainage ditch to culvert. Drains roadside along Ethlenore Road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Juncus patens	50	Yes	FACW
2. Cenchrus clandestinus	10		FACU
3. Holcus lanatus	10		FAC
4. Carex	10		FAC
5. Rumex crispus	5		FAC
6. Phalaris aquatica	5		FACU
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 50	x 2 = 100
FAC species 25	x 3 = 75
FACU species 15	x 4 = 60
UPL species _____	x 5 = _____
Column Totals: 90 (A)	235 (B)

Prevalence Index = B/A = 2.6

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Roadside channel with wetland vegetation.

SOIL

Sampling Point: Wetland 6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	60	10YR 5/8	40	C	M	Loamy sand	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Sandy redox matrix. Soil pit 6 wetland (SP 6 W).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☑ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Absence of vegetation that seems to be due to the result of standing water. No upland point taken due to existing road.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 7 Upland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRRC Lat: 37.520993 Long: -122.506071 Datum: WGS 84

Soil Map Unit Name: Farallone coarse sandy loam, nearly level NWI classification: None

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

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

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

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

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

Remarks:

Some of the area is mowed. Wetland soil likely present. Soil compacted and suitable sample not obtained. Wetland vegetation expanding beyond the channel banks.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Symphyotrichum chilense	40	Yes	FAC
2. Rumex acetosella	25		FAC
3. Helminthotheca echioides	20		FAC
4. Rubus ursinus	5		FAC
5. Juncus patens	5		FACW
6. Phalaris aquatica	5		FACU
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust 0

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 5	x 2 = 10
FAC species 90	x 3 = 270
FACU species 5	x 4 = 20
UPL species _____	x 5 = _____
Column Totals: 100 (A)	300 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

low growing vegetation at the top of bank of wetland channel.

SOIL

Sampling Point: Wetland 6

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					silty clay	Compact soil

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil too compact to dig soil pit. Soil pit 7 upland (SP 7 U).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

No standing water or hydrology.

1-2 parameter wetland. Soil pit should be assessed during wet conditions.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 6/25/25

Applicant/Owner: State: CA Sampling Point: 7 Wetland

Investigator(s): RA, KG Section, Township, Range: SS, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRRC Lat: 37.521187 Long: -122.506055 Datum: WGS 84

Soil Map Unit Name: Farallone coarse sandy loam, nearly level NWI classification: None

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

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

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

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

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

Remarks:

Engineered channel. Evidence of sanding water. Drains roadside along Ethlenore Road and Montara Mountain slopes.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Symphyotrichum chilense	30	Yes	FAC
2. Persicaria hydropiperoides	15		OBL
3. Juncus patens	15		FACW
4. Epilobium brachycarpum	15		FAC
5. Rumex crispus	5		FAC
6. Helminthotheca echioides	5		FAC
7. Brassica rapa	5		FACU
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust 10

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	15	x 2 =	30
FAC species	55	x 3 =	165
FACU species	5	x 4 =	
UPL species		x 5 =	
Column Totals:	90 (A)		210 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Channel vegetation. Areas of algae cover.

SOIL

Sampling Point: Wetland 7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/1	100					Loam	
10-16	10YR 2/1	50	10YR 5/8	30	C	M	Clay sand	
			10YR 5/1	10	C	M		

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Very soft above, clay below. Redox below 10". Soil pit 7 wetland (SP 7 W).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☑ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☑ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Evidence of standing water within channel. Dried algal crust and soil cracks.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 8 Wetland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.518538 Long: -122.501787 Datum: WGS 84

Soil Map Unit Name: Denison Loam, sloping NWI classification: None

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

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

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

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

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

Remarks:

Culvert with no standing water. 2/1 parameter wetland. Woodland 1 parameter, culvert area 2/3 parameter.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1. Salix laseolepis	30	Yes	FACW
2. Salix sitchensis	70	Yes	FACW
3.			
4.			
5.			
	100 = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Symphyotrichum chilense	30	Yes	FAC
2. Conium maculatum	5		FACW
3. Rubus ursinus	5		FAC
4.			
5.			
6.			
7.			
8.			
	40 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species 105	x 2 =	210
FAC species 35	x 3 =	105
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: 130 (A)		315 (B)

Prevalence Index = B/A = 2.4

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Very dense canopy of willow.

SOIL

Sampling Point: Wetland 8

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-2	Duff organic material	100						Organic
2-6	10YR 2/1	100					sandy clay loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil inaccessible due to steep drop off and dense vegetation. Soil pit samples within riparian area. Soil pit 8 wetland (SP 8 W).

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

No upland point take because the wetland is surrounded by agricultural land and developed roads.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 6/25/25

Applicant/Owner: State: CA Sampling Point: 9a Wetland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.5177 Long: -122.50 Datum: WGS 84

Soil Map Unit Name: Denison clay loam, nearly level NWI classification: R4SBA

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

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

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

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

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

Remarks:

Area draining agricultural field at culvert location. Area regularly watered. Culvert drains to wetland on south side of State Route 1.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Potentilla argentea	60	Yes	OBL
2. Cyperus eragrostis	10		FACW
3. Lolium perenne	10		FAC
4. Polypogon monspeliensis	5		FACW
5. Lythrum hyssopifolium	5		OBL
6. Helminthotheca echioides	5		FAC
7. Rumex crispus	5		FAC
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	15	x 2 =	30
FAC species	20	x 3 =	60
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		155 (B)

Prevalence Index = B/A = 1.5

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Hydric vegetation

SOIL

Sampling Point: Wetland 9a

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-12	10YR 2/1	100					sandy clay loam	No redox

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

No redox, possibly due to disturbed agricultural environment and frequent tilling.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

No hydrology, soil is moist, wet year round from agriculture. Sprinklers present. no evidence of standing water. Wetland plants surrounded by culvert.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 7/11/25

Applicant/Owner: State: CA Sampling Point: 9b Wetland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.517852 Long: -122.500996 Datum: WGS 84

Soil Map Unit Name: Denison clay loam, nearly level NWI classification: R4SBA (riverine)

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

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

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

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

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

Remarks:

Roadside wetland, excavated channel, parallel to leveed roadway. Slope recently mowed. Willows transition to emergent wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix sitchensis	100	Y	FACW
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1. Rubis ursinus	50	Y	FAC
2.			
3.			
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Symphyotrichum chilense	25	Yes	FAC
2. Carex sp.	25	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species 100	x 2 = 200
FAC species 100	x 3 = 300
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: 200 (A)	500 (B)

Prevalence Index = B/A = 2.5

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Hydric vegetation

SOIL

Sampling Point: Wetland 9b

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-12	10YR 3/1	95	10YR 5/8	5	RM	M	sandy clay loam	Sandy redox

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Soil pit taken from outside of shrub cover. Not accessible within survey area.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No hydrology within public access. Possible wet channel below fence line.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 7/11/25

Applicant/Owner: State: CA Sampling Point: 9c Wetland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.517408 Long: -122.505183 Datum: WGS 84

Soil Map Unit Name: Denison clay loam, nearly level NWI classification: R4SBA (riverine)

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

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

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

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

Hydrophytic Vegetation Present?	Yes x	No _____	**Is the Sampled Area within a Wetland?** Yes x (1 parameter) No _____
Hydric Soil Present?	Yes _____	No x	
Wetland Hydrology Present?	Yes _____	No x	

Remarks:

Roadside wetland, excavated channel, parallel to leveed roadway. Slope recently mowed. Willows transition to emergent wetland. Wetland on private land. Hyrophytic veg on mowed right of way.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Symphyotrichum chilense	30	Yes	FAC
2. Potentilla argentea	30	Yes	OBL
3. Juncus patens	30	Yes	FACW
4. Cyperus eragrostis	10	No	FACW
5.			
6.			
7.			
8.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	40	x 2 =	80
FAC species	30	x 3 =	90
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	100 (A)		200 (B)

Prevalence Index = B/A = 2

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Hydric vegetation. Upland area consists of mowed picris echiodes.

SOIL

Sampling Point: Wetland 9c

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-12	10YR 3/1	100						

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil pit taken from outside of emergent vegetation. Not accessible within survey area.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No hydrology within public access. Possible within channel outside of fence line.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 10 Upland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.509931 Long: -122.787735 Datum: WGS 84

Soil Map Unit Name: Denison Loam, nearly level NWI classification: R4SBA (riverine)

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

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

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

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

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

Remarks:

Denniston Creek upland area

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Avena barbata	50	Yes	UPL
2. Festuca myuros	10	No	FACU
3. Bromus hordeaceous	10	No	FACU
4. Festuca perrene	10	No	FAC
5. Plantago lanceolata	5	No	FAC
6. Achillea millefolium	5	No	FACU
7. Bromus diandrus	5	No	UPL
8. Raphnus sativus	5	No	UPL
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 15	x 3 = 35
FACU species 25	x 4 = 100
UPL species 60	x 5 = 300
Column Totals: 100 (A)	425 (B)

Prevalence Index = B/A = 4.25

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Recently mowed grassland. Upland vegetation.

SOIL

Sampling Point: 10 Upland

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					Sandy clay loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Soil very hard, not able to dig past three inches.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 10 Wetland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.510048 Long: -122.488014 Datum: WGS 84

Soil Map Unit Name: Gullied Land, Alluvial Material NWI classification: R4SBA (riverine)

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

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

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

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

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

Remarks:

Intermittent stream flowering from culvert, Denniston Creek.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1. Salix lasiolepis	30	Yes	FACW
2. Cornus sericea	10	No	FACW
3. Salix sitchensis	40	Yes	FACW
4.			
5.			
	80 = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Nasturtiumn officionale	40	Yes	OBL
2. Helmenotheca echioides	5	No	FAC
3. Sonchus olerace	5	No	UPL
4. Equisetum	5	No	FAC
5. Rubus urcinus	5	No	FAC
6. Conium maculata	5	No	FACQ
7. Oenanthe sarmentes	5	No	OBL
8.			
	70 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Dense understory and overstory

SOIL

Sampling Point: Wetland 10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

No soil pit. Hydric vegeation and standing water. Hydric soil assumed

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 6in

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

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Surface water present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 11 Upland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.508468 Long: -122.485799 Datum: WGS 84

Soil Map Unit Name: Denison Loam, nearly level NWI classification: R4SBA (riverine)

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

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

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

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

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

Remarks:

No Notable redox. Area recently mowed. Not a wetland.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Lolium perenne	40		FACU
2. Festuca myuros	29		UPL
3. Avena barbata	10		FAC
4. Hordeum marinum	5		FAC
5. Medicago polymorpha	5		FACU
6. Trifolium angustifolium	5		FACU
7. Pesicaria punctata	5		FACW
8. Linum bienne	1		UPL
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	5	x 2 =	10
FAC species	15	x 3 =	35
FACU species	50	x 4 =	200
UPL species	30	x 5 =	150
Column Totals:	100 (A)		395 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Recently mowed grassland. Upland vegetation. There is a low percentage of wetland plants throughout the meadow area.

SOIL

Sampling Point: 11 Upland

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/3	100					Sandy clay loam	No redox

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No redox

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 11 Wetland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.509300 Long: -122.485751 Datum: WGS 84

Soil Map Unit Name: Denison Loam, nearly level NWI classification: R4SBA (riverine)

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

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

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

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

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

Remarks:

Two parameter wetland. No hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Lythrum hyssopifolia	40	Yes	OBL
2. Polypogon monspeliensis	30	Yes	FACW
3. Hordeum murinum	20	Yes	FAC
4. Pesicaria punctata	10	No	OBL
5.			
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	30	x 2 =	60
FAC species	20	x 3 =	60
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	100 (A)		170 (B)

Prevalence Index = B/A = 1.7

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Recently mowed grassland. Plant ID from cut floral heads. Area has been dry for a while. Plants are senescent.

SOIL

Sampling Point: 11 Wetland

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	98	7YR 5/8	2	RM	M	Silty loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Dark matrix with 2% redox features.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Possible hydrology in wet winters after rainfall. No hydrology during assessment.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 12 Upland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37. Long: -122. Datum: WGS 84

Soil Map Unit Name: Denison Loam, nearly level NWI classification: R4SBA (riverine)

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

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

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

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

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

Remarks:

Area is mowed and managed. No wood-chips present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Festuca myuros	45	Yes	UPL
2. Avena fatua	15	No	UPL
3. Bromus diandrus	10	No	UPL
4. Amsincia sp.	10	No	UPL
5. Carduus pychnosephalus	5	No	UPL
6. Fragaria californica	5	No	UPL
7. Bromus hordeaceous	5	No	FACU
8. Trifolium campestri	5	5	UPL
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species 5	x 4 = 20
UPL species 95	x 5 = 470
Column Totals: 100 (A)	_____ (B)

Prevalence Index = B/A = 4.7

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Upland between riparian woodland and small wood-chipped wetland.

SOIL

Sampling Point: 12 Upland

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5 YR 3/3	100					Sandy loam	No Redox

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No Redox

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No Hydology

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 12 Wetland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.508204 Long: -122.484937 Datum: WGS 84

Soil Map Unit Name: Denison Loam, nearly level NWI classification: R4SBA (riverine)

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

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

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

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

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

Remarks:

ponded water at culvert. Channel drys and moved through dense riparian woodland, unnamed creek.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Pesicaria hydropieroides	75	Yes	OBL
2. Cornus alba	10	No	FACW
3. Rumex crispus	5	No	FAC
4. Lolium perenne	5	No	FAC
5. Raphnus sativus	5	No	UPL
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	75	x 1 =	75
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	_____	x 4 =	_____
UPL species	5	x 5 =	25
Column Totals:	100 (A)		150 (B)

Prevalence Index = B/A = 1.5

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Standing water present. Vegetation is emergent and on slopes of banks.

SOIL

Sampling Point: 12 Wetland

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

No Soil Pit, Sanding water, Hydric soil assumed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Channelized stream from residential area. Pool with tadpoles.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 13 Wetland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal Terrace Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.506258 Long: -122.482845 Datum: WGS 84

Soil Map Unit Name: Denison coarse sandy loam, nearly level NWI classification: None

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

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

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

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

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

Remarks:

Vegetation within roadway, area of frequent mowing, heavily wood-chip coverage. 1 parameter wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Juncus patens	60	Yes	FACW
2. Rubus ursinus	10	No	FAC
3. Avena fatua	10	No	UPL
4. Symphyotrichum chilense	5	No	FAC
5. Persicaria hydropieroides	5	No	OBL
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	60	x 2 =	120
FAC species	15	x 3 =	45
FACU species		x 4 =	
UPL species	5	x 5 =	25
Column Totals:	90 (A)		195 (B)

Prevalence Index = B/A = 2.2

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☑ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Area heavily wood-chipped. Vegetation growing through layer of wood-chips. Bare ground cover is dominated by wood-chips.

SOIL

Sampling Point: 13 Wetland

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
1-4	Woodchips							woodchips
5-12	10YR 3/1	100						sandyloam

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Areea covered in 4+ inches of woodchips. Juncus growing through mulch.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 14 Upland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal Terrace Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.504449 Long: -122.478128 Datum: WGS 84

Soil Map Unit Name: Denison coarse sandy loam, nearly level NWI classification: R4SBA

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

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

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

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

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

Remarks:

Outside of wetland area and riparian vegetation. Mowed field. Plants not in bloom due to mowing.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Avena fatua	40	Yes	UPL
2. Cenchrus clandestinus	10	No	FACU
3. Convulvulus arvensis	5	No	UPL
4. Picris echioides	5	No	FAC
5. Geranium molle	5	No	UPL
6.			
7.			
8.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 5	x 3 = 15
FACU species 10	x 4 = 40
UPL species 50	x 5 = 250
Column Totals: 65 (A)	305 (B)

Prevalence Index = B/A = 4.7

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

Mowed grassland. Grasses not flowering. Managed open space.

SOIL

Sampling Point: 14 Upland

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/2	100					Sandy loam	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

No redox. Sand. Some small organic pieces.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

No hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Montara Force Main Replacement Project City/County: Moss Beach/ San Matteo County Sampling Date: 5/23/25

Applicant/Owner: State: CA Sampling Point: 14 Wetland

Investigator(s): RA, KG Section, Township, Range: 5S, 6W, Mount Diablo PM,

Landform (hillslope, terrace, etc.): Coastal Terrace Local relief (concave, convex, none): concave Slope (%): 0-30

Subregion (LRR): LRRC Lat: 37.504351 Long: -122.477866 Datum: WGS 84

Soil Map Unit Name: Denison coarse sandy loam, nearly level NWI classification: R4SBA

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

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

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

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

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

Remarks:

Unable to map TOB or OHWM due to dense vegetation.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10m x 10m)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus radiata	3	No	UPL
2.			
3.			
4.			
	3 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10m x 10m)			
1. Salix lasiolepis	40	Yes	FACW
2. Salix sitchensis	10	No	FACW
3. Rhamnus alternus	10	No	FACU
4.			
5.			
	60 = Total Cover		
Herb Stratum (Plot size: 5m x 5m)			
1. Oenanthe sarmentes	25	Yes	FACW
2. Rubus ursinus	10	No	FAC
3. Hedra helix	10	No	UPL
4. Delairea odorata	5	No	FAC
5. Fumaria officionalis	5	No	OBL
6.			
7.			
8.			
	55 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☑ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

Very dense overstory. Under developed wetland vegetation, high flooding with steep banks. No flood plain. Some upland vegetation within wetland plot due to canopy and vegetation on banks.

SOIL

Sampling Point: 14 Wetland

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Perennial water, flowing water. Hydric soil assumed. No soil put dug.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Flowing water, riverine system. Deer Creek. Intermittent stream-bed. Temporarily flooded. Not possible to map TOB or OHWM due to dense vegetation. Hydrology present.

SAM Force Main in Montara Replacement Project

Archaeological Phase I Survey Report

Archaeological Phase I Survey Report

SAM Force Main in Montara Replacement Project

Half Moon Bay and El Granada, San Mateo County, California

September 26, 2025

Prepared by

EMC Planning Group

ARCHAEOLOGICAL PHASE I SURVEY REPORT

SAM FORCE MAIN IN MONTARA REPLACEMENT ROJECT

HALF MOON BAY AND EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

PREPARED FOR

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September 26, 2025

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1.0 Introduction and Summary of Findings

1.1 Introduction

The purpose of the archaeological Phase I pedestrian survey is in support of permitting for replacements to the wastewater service lines located along the central coast of California in San Mateo County. SAM is a Joint Powers Authority created by an agreement between the Granada Sanitary District, the Montara Sanitary District, and the City of Half Moon Bay in 1976. SAM is a public agency that provides wastewater treatment services and contract collection maintenance service for the City of Half Moon Bay and communities of El Granada, Miramar, Montara, Moss Beach and Princeton Harbor. Caltrans will be a significant stakeholder involved in all stages of Project development including planning, design, construction and long-term operation and maintenance, as the facilities will be located within Caltrans right of way. The Project consists of construction of approximately 13,395 linear feet of HDPE pipe and associated valves and bypass stations.

To ensure that the project does not affect historical resources or unique archaeological resources as defined in the CEQA Guidelines (14 CCR §15064.5), EMC Planning Group Registered Professional Archaeologist Vanessa Potter, M.A., reviewed archival sources and completed a pedestrian survey to assess the archaeological sensitivity of the project area. Ms. Potter's resume is included in Appendix A. She meets the professional standards for archaeology as set forth by the Secretary of the Interior's Professional Qualifications Standards.

The results of this assessment are considered confidential and not to be publicly disclosed or discussed.

1.2 Summary of Findings

Cultural resources were encountered during the pedestrian survey. Two previously-documented cultural resources were noted from a database record search of the project area conducted through the Northwest Information Center (NWIC) at Sonoma State University. There are eighteen (18) known resources within a ¼ mile radius of the project area. The Sacred Lands File Search results were positive. Therefore, this report recommends several mitigation measures which would ensure potential impacts associated with historical resources or unique archaeological resources are less than significant during the course of ground disturbance.

2.0
Previous Studies and Archival Research

2.1 Record Search Results

Results were received from the NWIC on May 13, 2025 are included in Appendix B. As indicated on the summary table of the letter (NWIC File No. 24-1661), there are two known resources within the project area (Table 1) and eighteen within a quarter-mile radius (Table 2).

Table 1 Resources Within Project Area

Primary #	Trinomial	Site Type
P-41-000203	CA-SMA-000203	San Vincente Creek Site: Indigenous Habitation Debris
P-41-000550	N/A	El Granada: Historic town

Source: Northwest Information Center 2025

Table 2 Resources Within ¼ Mile of Project Area

Primary #	Trinomial	Site Type
P-41- 000060	CA-SMA-000056	Nelson 406: Indigenous Habitation Debris
P-41- 000061	CA-SMA-000057	Nelson 408: Indigenous Habitation Debris
P-41- 000062	CA-SMA-000058	Nelson 409: Indigenous Habitation Debris
P-41- 000063	CA-SMA-000059	Nelson 410: Indigenous Site
P-41- 000064	CA-SMA-000060	Nelson 411: Indigenous Site
P-41- 000065	CA-SMA-000061	Nelson 412: Possible Shellmound
P-41- 000066	CA-SMA-000062	Nelson 413: Possible Shellmound
P-41- 000067	CA-SMA-000063	Nelson 414: Possible Shellmound
P-41- 000068	CA-SMA-000064	Nelson 415: Indigenous Habitation Debris
P-41- 000076	CA-SMA-000073	Moss Beach Site: Lithic scatter
P-41- 000135	CA-SMA-000133	Indigenous Habitation Debris
P-41- 000142	CA-SMA-000140	Indigenous Habitation Debris
P-41- 000180	CA-SMA-000180H	Princeton Hotel
P-41- 000239	CA-SMA-000241	Indigenous Habitation Debris
P-41- 000531	CA-SMA-000365H	Hotel El Granada
P-41- 000643	n/a	Moss Beach Hotel
P-41- 000645	n/a	322 California Street (building)

Source: Northwest Information Center 2025

Table 3, Reports Within Project Area, presents the results of sixteen previous surveys undertaken within the project area.

Table 3 Reports Within Project Area

Project No.	Author and Year	Title
S-003011	Hastings, Richard 1975	Archaeological and Architectural Field Survey at Proposed Drainage Realignment Project
S-003064	Soule, William 1978	Cultural Resources Field Survey Report
S-003082	Dietz, Stephen A. and Thomas L. Jackson 1970	An Archaeological and Historical Reconnaissance of a Portion of the San Mateo County Coastside
S-004890	Buss, Margaret 1981	Archaeological Survey Report for a Proposed Shoulder Widening on Portions of 04-SM-1 30.9/35.0, 04210-103410
S-005395	Nissen, Karen M. and Sean Swezey 1976	Assessment of Archaeological Resources, San Mateo County Mid-Coastside Waste-Water Management Plan for Thomas Reid Associates, Palo Alto, California.
S-005819	California Department of Transportation 1982	Historic Properties Survey Report, Proposed Devil's Slide Bypass Project from Half Moon Bay Airport to Linda Mar Boulevard in Pacifica, San Mateo County, 04-SM-1, 34.0/41.0, 04132-926000-3CULT
S-010761	California Department of Transportation, District 4 1989	Archaeological Survey Report, proposed shoulder widening, pavement resurfacing, and widening of the Pilarcitos Creek Bridge on Route 1, 04-SMA-1 P.M. 26.4/35.4, 04-SMA-92 P.M. 0.0/0.2, 4336-121900
S-010965	Clark, Matthew, R. 1989	District "Local Improvement District 1989-1 Water Extension Project" in El Granada, San Mateo County, California
S-013234	Clark, Matthew, R. 1991	Initial Archaeological Evaluation of Two Parcels at Highway 1, Oak Avenue, and Marine Boulevard, Moss Beach, San Mateo County, California; San Mateo County Assessor's Parcel Numbers 037-182-030 and 037-182-020 & 080
S-013475	Dolan, Patricia, M. 1990	Archaeological Survey Report, cross culvert on Route 1, 04-SM-1 P.M. 32.65 04336-130420
S-022934	Clark, Matthew, R. 2000	An Archaeological Reconnaissance of the Alfaro Property on State Route 1 (APN 037-171-190) in the Community of Moss Beach, San Mateo County, California
S-038121	Rose, Kathyrn 2010	Archaeological Survey Report for the Proposed Maintenance Overlay of State Route 1, San Mateo County, California: 04-SMA-1, PM 34.8/37.9, EA 1E2401
S-043974	Pacific Legacy, Inc. 2011	Half Moon Bay Airport Taxiway and Access Road Improvements Project, Cultural Resources Survey and Evaluation Report
S-046031	Hammerle, Esme 2013	PG&E Distribution Program, Cultural Field Survey Report, Half Moon Bay 1102 Reconductor, Project No.: 30981774
S-046397	Spillane, Tim 2014	Archaeological Overview and Assessment: Indigenous Sites of the GGNRA, 2014
S-057675	Busse, Lindsay 2023	Historic Property Survey Report, Middle Mile Broadband Network Along State Route 1, 04-SM-1, PM R29.034 to R48.05, EA 04-1Y960, E-FIS 04-2300-0049

Source: Northwest Information Center 2025

2.2 Sacred Lands File Search

EMC Planning Group sent a request to the California Native American Heritage Commission (NAHC) for a Sacred Lands File search. The Sacred Lands File search provides a starting place in locating areas of potential adverse impact within proposed project areas. The tribal representatives on the contact list may be able to provide information on cultural resources or traditional cultural properties.

A response letter from the NAHC was received on August 8, 2025, which indicated that the results were positive for the Township 5 South, Range 6 West Section of the Half Moon Bay and Montara Mountain quad maps (Appendix C). Inquiry letters to tribal members on the contact list were sent out on August 8, 2025 and any tribal response will be documented.

3.0 Background

3.1 Setting and Environment

The project alignment is located south of the City of Half Moon Bay, San Mateo County, California between the cities of Montara and El Granada. It runs between the Pacific Ocean and the Santa Cruz Mountains. The project alignment is approximately 2.5 miles long. There are developed areas with commercial businesses on a section that runs north-south through the central part of the property.

The chronological periods described below help to provide context in how cultural material types have changed over time. Many of these changes are indicative of environmental or climactic adaptations.

Pre-Paleoindian Period 17,000-12,000 Before Common Era (BCE)

A hypothesis describes migrating peoples as utilizing the coastal route, otherwise known as "the kelp highway." This hypothesis suggests that deglaciation of the outer coast of North America's Pacific Northwest after ~17,000 years ago created a corridor rich in aquatic and terrestrial resources along the Pacific Coast and allowed for easier travel by boat.

Paleoindian Period 12,000-10,000 (BCE)

During this timeframe one hypothesis describes a land migration of peoples from the Asian continent to North America.

The people at this time were nomadic hunter-gathers that lived in groups of 100 to 150 people (Locks et al. 2020). During the Paleoindian Period megafauna such as the mammoth and mastodon were hunted and the atlatl, a new type of weapon technology, was invented (Locks et al. 2020).

Early Archaic / Milling Stone Era 10,000- 4,000 BCE

During the Milling Era slabs, cobble tools, and hand stones were developed to process foods such as seeds and nuts (Waugh and Basgall 2008; Mojave Desert 2025). The decline of megafauna hunting during this period resulted in less percentages of projectile points being seen in the archaeological record.

3,500-600 BCE-Early Period in Central California

The technology being used during the Early Period in Central California was the mortar and pestle (Jones 1996). The mortar and pestle were used for the processing of not only food items such as acorns, which was a staple food item in the Californian Native American diet, but also nonfood items (Jones 1996). In addition, "the mortar and pestle have been correlated with high population density, storage sedentism, and complex sociopolitical organization" (Jones 1996, 243).

1250-1769 CE- Late Period in Central California

Trade was disrupted during this period, which is indicated by the lack of obsidian seen in the archaeological deposits. Shell bead production increased and there was a shift from a nomadic lifestyle to a more sedentary lifestyle. This lifestyle shift is seen at an archaeological site in which, "growth increment of mussel shells indicate that site inhabitants collected mussels during all seasons" (Jones and Schwitalla 2008; referring to Kennett and Bottman 2006).

San Mateo County is rich in fresh water with two major water systems located near to the project alignment. San Vincente Creek runs through Montara and Denniston Creek runs through El Granada. Both empty into the Pacific Ocean. Although the historic course of the creeks may have run differently over time, they would have offered indigenous peoples a wide-range of resources.

3.2 Native American Settlements (Pre-Contact)

One of the major pre-contact villages in the Half Moon Bay area was Lamchin. It is part of the Ramaytush territory. The Lamchin and Puichon tribes were neighboring tribes to the village of Pruristac of the Aramai tribe and were closely related as proven in the mission records (Ramaytush 2025).

Other pre-contact villages were overseen by the Chiguan tribelet such as those near Pilarcitos Creek, Pillar Point, and Montara.

Although important gathering places, villages were not considered to be discreet socio-cultural units (Leventhal 1994: 304). Elite inter-marriage, personal trade relationships, ritualistic gatherings, and more, created political and economic zones that overlapped differing territories beyond the boundaries of a village. While each independent tribe had its own leadership, the district head of the Ramaytush Ohlone maintained social and political relations through the intermarriage of his children across the whole of Ramaytush territory (Ramaytush 2025).

3.3 European Settlements

The Spanish Portola expedition came through contemporary El Granada and Half Moon Bay in 1769 when the diary of Father Juan Crespi made reference to a creek believed to have been called Pilarcitos. After the Mission San Francisco de Asís was established in 1776 and up until 1833, the

mission also known as Mission Dolores ran cattle on this coastal area. They called it "Corral de Tierra. In 1839 the Mexican Governor granted all the land from Medio Creek to Montara Mountain to Francisco Guerrero-Palomares, a Mexican soldier who had served in the army. Eventually his widow inherited the land and was subdivided for her two sons. After the land was further subdivided, the new owners would make improvements to the land, particularly by planting eucalyptus trees to provide wind breaks and to create a sense of the familiar from their home countries of Europe (2021 Dye).

The city of Half Moon Bay began as an agricultural outpost to the Mission San Francisco de Asís. The earliest Mexican land grant of the area is the Rancho Corral de Tierra Vasquez. The rancho was originally 4,436-acres (17.95 km^2). It was given in 1839 by Governor Pro-Tem Manuel Jimeno to José Tiburcio Vásquez. José Tiburcio served as a soldier at the San Francisco Presidio and was an administrator and major domo of Mission Dolores in Yerba Buena. A domo is a lay member of the church who holds a position of authority or leadership within their community.

As of 1894, smaller tracts were being divided and sold in the 20 to 40 acre amounts along the coast. Large tracts were owned in the center of the rancho. The Ocean Shore Railroad was incorporated in 1905 to develop a railroad line between San Francisco and Santa Cruz. The railroad company planned on selling lots and building up the city of Balboa and marketing it as Granda where high-end entertainment, parks, piers and boulevards would cater to a more influential buyer (Dye 2021). The railroad could not manage the financial burden and by 1921 had sold of most of its land holdings to farmers (Dye 2021).

4.0
Archaeological Survey

4.1 Methods and Constraints

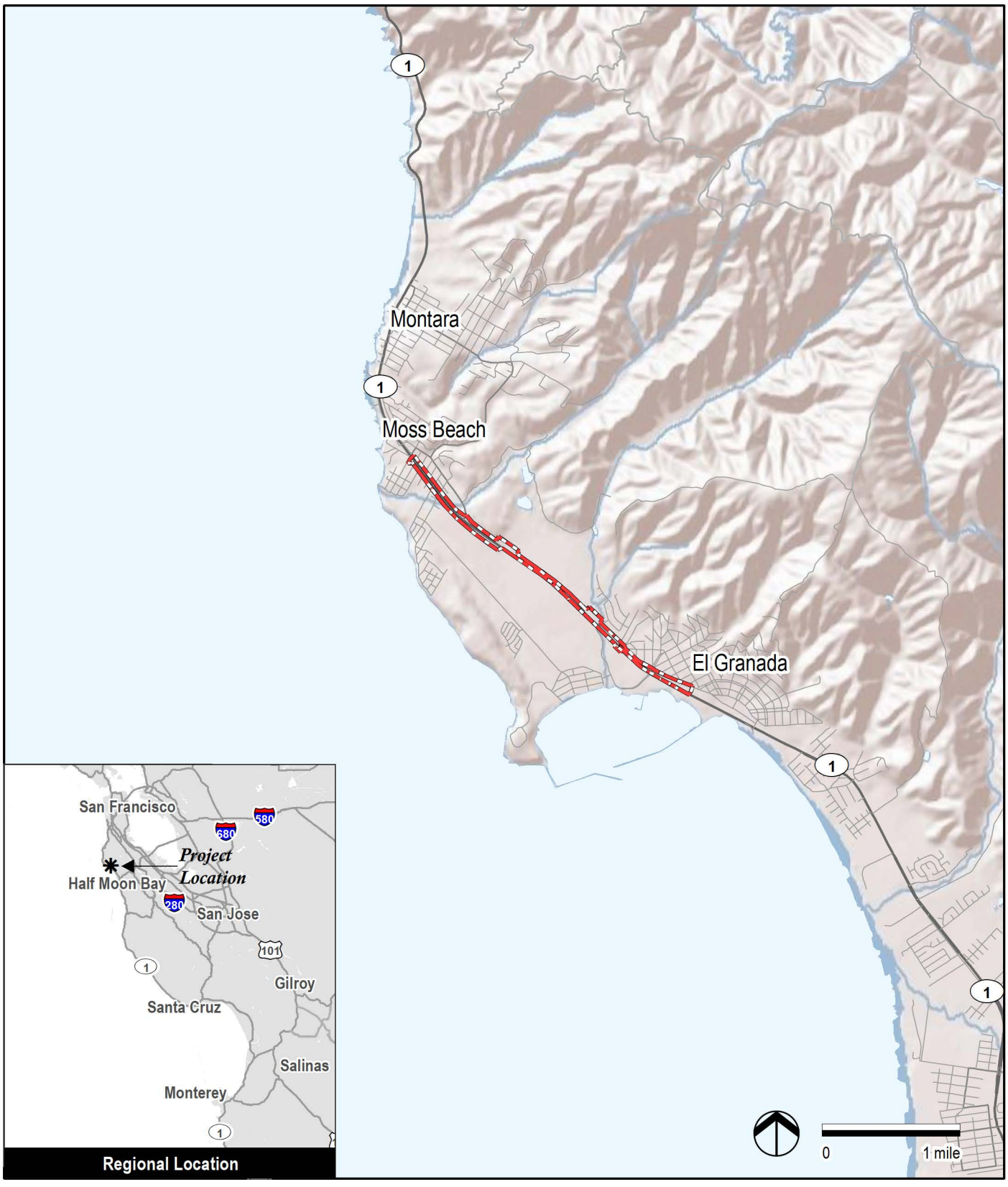
On May 7, 2025 Vanessa Potter, MA, RPA, was on site at the project alignment. Figure 1, Project Location, presents the regional and vicinity location of the project site. The property is in San Mateo County and is located on the Half Moon Bay and Montara USGS 7.5' Quad maps. The area surveyed consists of a total pedestrian coverage of approximately two and a half linear miles. Figure 2, Aerial Photograph, presents the project boundary, as well as surrounding features and land uses.

A pedestrian survey is done by walking a project area in evenly spaced parallel lines. The archaeological pedestrian survey was done to determine if there were surface traces of historic or pre-contact indigenous materials in the project area.

Pre-contact indigenous cultural resources could include, but are not limited to ground stone such as manos and metates, flaked stone, fire-altered rocks, shell, (both discarded from consumption and shell ornamentation such as beads or pendants) and midden soils. Cultural resources that are not moveable include post holes, cairns, and stacked rock walls or alignments. Historic-era cultural resources could include, but are not limited to glass shards, ceramics, and coins (50+ years old). Features include fences (both wooden and metal) concrete pads, structures, irrigation ditches, and so forth. Figure 3, Representative Photos, presents representative pictures of the project site.

4.2 Results

Cultural resources were observed in the southeastern-most portion of the project area during the pedestrian survey. A historic glass shard, white-glazed ceramic sherd, and a broken bivalve were located on the ground surface between Francisco Street and Columbus Street, off of Alhambra Avenue and to the east of Cabrillo Highway. These items are part of a disturbed context. It is possible that the bivalve is an ecofact or part P-41-000-549 based on a map received from the Northwest Information Center. P-41-000-549 is listed as the El Granada Ocean Shore Railroad Station. No resources were found that could be associated with site P-41-000-203, the site containing indigenous habitation debris, which is northwest of the current finds.



Source: ESRI 2025

Project Site

Figure 1

Project Location Map

SAM Force Main in Montara
Replacement Project Phase I
Archaeological Survey Report

0 1000 feet

Staging Areas
Trenchless Drilling (Pot.)
Alignment Alternative B
Archaeological Survey Area
Alignment Alternative A
Alignment Alternative C

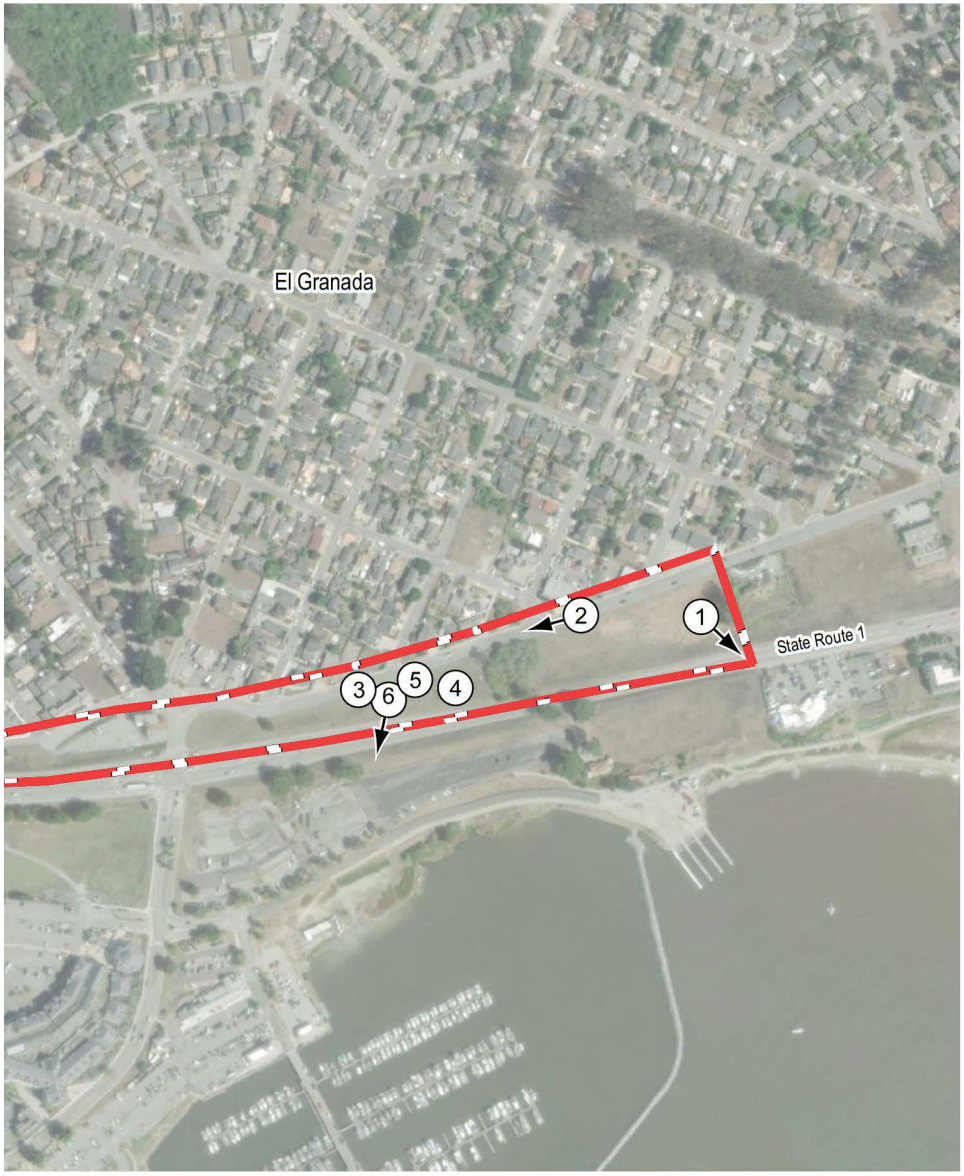
Source: ESRI 2025, MNS Engineers 2025

Figure 2
Aerial Photograph

(1) Vegetation at Highway 1, Caltrans ROW.

(2) Vegetation at Alhambra Near Francisco Street.

(3) Window glass shard, Alhambra and Columbus Street.



Project Site

Source: Google Earth 2025
Photographs: EMC Planning Group 2025

(4) Historic materials between ROW and Avenue Alhambra.

(5) Broken bivalve between ROW and Avenue Alhambra.

(6) Rise near photo 5, broken bivalve

Figure 3
Site Photographs

5.0 Recommendations

It is possible that both historic and indigenous cultural materials are under the ground surface.

The following are recommended to ensure potential impacts to cultural and/or tribal cultural resources are mitigated to a less-than-significant level:

Recommendations

CR-1 **Cultural Resource Discovery Procedures.** In the event archaeological resources are encountered during ground disturbing activities; contractor shall temporarily halt or divert excavations within a 50 meter (165 feet) of the find until it can be evaluated. All potentially significant archaeological deposits shall be evaluated to demonstrate whether the resource is eligible for inclusion on the California Register of Historic Resources, even if discovered during construction. If archaeological deposits are encountered, they shall be evaluated and mitigated simultaneously in the timeliest manner practicable, allowing for recovery of materials and data by standard archaeological procedures. For prehistoric archaeological sites, this data recovery involves the hand-excavated recovery and non-destructive analysis of a small sample of the deposit. Historic resources shall also be sampled through hand excavation, though architectural features may require careful mechanical exposure and hand excavation.

Any previously undiscovered resources found during construction activities shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance by a qualified Archaeologist. Significant cultural resources consist of but are not limited to stone, bone, glass, ceramics, fossils, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites.

CR-2 **Human Remains Discovery Procedures.** In the event that human remains (or remains that may be human) are discovered at the project site, Public Resource Code Section 5097.98 must be followed. All grading, mowing, or earthmoving activities shall immediately stop within 50 meters (165 feet) of the find. The San Mateo County Corner will be notified immediately, and the coroner shall be permitted to examine the remains as required by California Health and Safety Code Section 7050.5(b).

Section 7050.5 requires that excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If human remains are determined as those of Native American origin, the project proponent shall comply with the state relating to the disposition of Native American burials that fall within the jurisdiction of the NAHC (Public Resource Code [PRC] § 5097). The coroner shall contact the Native American Heritage Commission (NAHC) to determine the most likely descendant(s) (MLD). The MLD shall complete his or her inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The MLD will determine the most appropriate means of treating the human remains and associated grave artifacts, and shall oversee the disposition of the remains. In the event the NAHC is unable to identify an MLD or the MLD fails to make a recommendation within 48 hours after being granted access to the site, the landowner or his/her authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity within the project area in a location not subject to further subsurface disturbance if: a) the Native American Heritage Commission is unable to identify the MLD or the MLD failed to make a recommendation within 48 hours after being allowed access to the site; b) the descendent identified fails to make a recommendation; or c) the landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the Native American Heritage Commission fails to provide measures acceptable to the landowner.

CR-3: **Develop and Implement a Cultural Resources Monitoring Plan.** Prior to ground disturbance, a Cultural Resources Monitoring Plan (CRMP) will be drafted by a qualified archaeologist. The CRMP will involve coordination with the Project Team (Contractors, Engineers, etc.) to develop a Project-specific plan for cultural resources monitoring during Project construction. The CRMP should include areas where monitoring is required by both a qualified archaeologist, as well as a Native American monitor with demonstrable association with the Project Area. An important element of the plan will be a description of the known archaeological resources (including the types of artifacts likely be to be encountered during monitoring). The CRMP will include a background section that discusses the environmental setting, cultural setting, and the results of the records and literature search at the NWIC. The plan should include a research design for conducting an Extended Phase I study at the start of construction. In addition, the CRMP will include standard operating procedures and methods for monitoring, including Project personnel, a description of the monitor's duties, a description of the communication process, and a description of the training program for the Project proponent/construction personnel. The plan will detail how any sampling of the excavated soil will occur, authorizing the monitor to stop work in the event resources are

found, and any other logistical information such as providing the monitor sufficient notice of when soil disturbance will occur. The plan will also outline procedures for addressing unanticipated archaeological discoveries, cultural resources, human remains, or sacred sites encountered during construction. Procedures will be designed to adequately address treatment of cultural resources under California Environmental Quality Act (CEQA) guidelines (Article 5: Section 15064.5) should they be discovered during Project activities.

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Vanessa Potter Resume

A

APPENDIX

Vanessa Potter, MA, RPA

REGISTERED PROFESSIONAL ARCHAEOLOGIST

PROFESSIONAL EXPERIENCE

Ms. Potter joined EMC Planning Group in June 2023 and is a Registered Professional Archaeologist (RPA) that meets the Secretary of Interior's Standards and Guidelines for her field.

Ms. Potter is responsible for conducting archaeological surveys, database inquiries, cultural sensitivity trainings, Sacred Lands records searches, assisting agencies with Native American consultation, leading archaeological testing, and making recommendations for listing through the California Register of Historical Resources (California Register) and the National Register of Historic Places (NRHP). Other responsibilities include preparing cultural resources sections of environmental documentation in compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

Ms. Potter has worked in Anthropology since 2000, and specializes in field archaeology, site protection, ethnography, osteology, artifact analysis, and data recovery curation. Previous work experience includes founding her own ethnography company. She also held positions within the anthropology departments of San Jose State University, The University of Arizona, The University of Hawaii, the Cultural Resources Department of California Parks and Recreation, and the National Park Service through the Great Basin Institute.

PROFESSIONAL AFFILIATIONS:

Society for California Archaeology

EDUCATION

M.A. San Jose State University, Applied Anthropology, 2010

B.A. University of Hawaii, Manoa; Anthropology, 2000

AWARDS

- Microgrant in Applied Anthropology from San Jose State University, 2009

PUBLICATIONS

Relocation, Assessment, and Limited Testing at Devils Postpile National Monument Sites, Madera County, California, 2025

An Inventory of Paleoindian Ornamentation, Current Research in the Pleistocene, Volume 22, 2005

Archaeology Monitoring Report, 157 Grand Avenue, Pacific Grove, Monterey County, California, Hotel Development, 2025.

A class III cultural resources survey of 5.36 acres near Cortaro Farms Road, Pima County, Arizona: Desert Son Survey, Tucson, Arizona: WestLand Resources, 2005.

A class III cultural resources survey of approximately 0.1 acres in Willcox, State Route 186: SR 186 Willcox ADOT permit, Tucson, Arizona: WestLand Resources, 2005.

A class III cultural resources survey of approximately 3.5 acres near State Route 77, for the Steam Pump Development, Oro Valley, Pima County, Arizona, Tucson, Arizona: WestLand Resources, 2005.

A class III cultural resources survey of approximately 6.9 acres for State Route 287 in Casa Grande, Arizona: SR 287 Casa Grande ADOT permit, Tucson, Arizona: WestLand Resources, 2005.

Class III cultural resources survey of 54.35 acres near Snyder Hill Road and Desert Sunrise Trail: Snyder Hill Estates, Tucson Arizona: WestLand Resources, 2005

A class III cultural resources survey of 2.28 acres near River Road and First Avenue, Pima County, Arizona, 1090 East River Road due diligence, Tucson, Arizona: WestLand Resources, 2005

A class III cultural resources survey at the Highway 80 and Country Club 35-acre property, Cochise County, Arizona, Tucson, Arizona: WestLand Resources, 2006

A class III cultural resources survey of 21 acres at Pima Mine Road, Pima County, Arizona, Tucson, Arizona: WestLand Resources, 2006

A class III cultural resources survey of 55 acres west of Benson, Cochise County, Arizona, Tucson, Arizona: WestLand Resources, 2006

NWIC Records Search

B

APPENDIX

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA, COLUSA, CONTRA COSTA, DEL NORTE, HUMBOLDT, LAKE, MARIN, MENDOCINO, MONTEREY, NAPA, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLARA, SANTA CRUZ, SOLANO, SONOMA, YOLO

Northwest Information Center
Sonoma State University
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5/13/2025

NWIC File No.: 24-1661

Vanessa Potter
EMC Planning
601 Abrego St.
Monterey, CA 93940

Re: 24-139 Montara Force Main Replacement Project

The Northwest Information Center received your record search request for the project area referenced above, located on the Montara Mountain USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a ¼ mi. radius:

Resources within project area:	P-41-000203, P-41-000550
Resources within ¼ mi. radius:	[18] Please see attached list, page 3
Informal Resources within ¼ mi. radius:	C-402
Reports within project area:	[16] Please see attached list, page 4
Reports within ¼ mi. radius:	[48] Please see attached list, page 5

Resource Database Printout (list):	☐ enclosed	☒ not requested	☐ nothing listed
Resource Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (list):	☐ enclosed	☒ not requested	☐ nothing listed
Report Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Report Digital Database Records:	☐ enclosed	☒ not requested	☐ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Built Environment Resources Directory:	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed

CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Maps:	☒ enclosed	☐ not requested	☐ nothing listed
Local Inventories:	☐ enclosed	☒ not requested	☐ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed
Shipwreck Inventory:	☐ enclosed	☒ not requested	☐ nothing listed

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, please reference the record search number listed above. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Annette Neal

Researcher

Resources In 1/4 mi. Buffer

PrimCo	PrimNo
P-41-	000060
P-41-	000061
P-41-	000062
P-41-	000063
P-41-	000064
P-41-	000065
P-41-	000066
P-41-	000067
P-41-	000068
P-41-	000076
P-41-	000135
P-41-	000142
P-41-	000180
P-41-	000239
P-41-	000531
P-41-	000549
P-41-	000643
P-41-	000645

Reports Within Project Area

DocCo	DocNo
S-	003011
S-	003064
S-	003082
S-	004890
S-	005395
S-	005819
S-	010761
S-	010965
S-	013234
S-	013475
S-	022934
S-	038121
S-	043974
S-	046031
S-	046397
S-	057675

Reports In 1/4 mi. Buffer

DocCo	DocNo
S-	003026
S-	003136
S-	009369
S-	009370
S-	009374
S-	009725
S-	009746
S-	009748
S-	010512
S-	011127
S-	015969
S-	016130
S-	016475
S-	016701
S-	017545
S-	017903
S-	018924
S-	019316
S-	020392
S-	021026
S-	021891
S-	022092
S-	022152
S-	022288
S-	022306
S-	022383
S-	022387
S-	022391
S-	022394
S-	023398
S-	023868
S-	025080
S-	025402
S-	025600
S-	026107
S-	029888
S-	030432
S-	031019
S-	031048
S-	034118
S-	035039
S-	035392
S-	036461

DocCo	DocNo
S-	036558
S-	048146
S-	053442
S-	053659
S-	057535

NAHC Correspondence

C

APPENDIX

NATIVE AMERICAN HERITAGE COMMISSION

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nahc@nahc.ca.gov

August 7, 2025

Vanessa Potter
EMC Planning Group

Via Email to: potter@emcplanning.com

Re: Montara Force Main Replacement Project, San Mateo County

To Whom It May Concern:

As requested, a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed based on information submitted for the above referenced project. The results were positive. Please contact the Amah Mutsun Tribal Band of Mission San Juan Bautista and the Ohlone Indian Tribe on the attached list for more information. Be aware that tribes do not always record their sacred sites in the SLF, nor are they required to do so. As such, an SLF search is not a substitute for consultation with all tribes that are traditionally and culturally affiliated with a project's geographic area.

Attached is a list of Native American tribes that are traditionally and culturally affiliated with the project's geographic area. Please contact all of the listed tribes as they may have information about sacred sites within the project area that is not listed with the NAHC.

If within two weeks of notification, a response has not been received, the Commission requests that you follow up with a telephone call or email to ensure that the project information was received.

If you receive notification of a change of address or phone number from a tribe, please inform the NAHC so that we can assure that our lists contain current information.

In addition to engaging in tribal consultation, you should consult the appropriate regional California Historical Research Information System (CHRIS) information center to determine whether it has information regarding the presence of recorded archaeological sites within the project area.

If you have any questions or need additional information, please contact me at Mathew.lin@nahc.ca.gov

Sincerely,

Mathew Lin

Mathew Lin, MPP
Cultural Resources Analyst

Attachment

SAM Force Main in Montara Replacement Project

Paleontological Identification Report

SAM Force Main in Montara Replacement Project

Paleontological Identification Report

SAM Force Main in Montara Replacement Project
Montara, Moss Beach, El Granada, CA
San Mateo County, SR-1
December, 2025

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Paleontological Identification Report

SAM Force Main in Montara Replacement Project
Montara, Moss Beach, El Granada, CA
San Mateo County, SR-1
December, 2025
STATE OF CALIFORNIA
Department of Transportation

Prepared By: A. Wayne Thompson Date 12/15/2025

A. Wayne Thompson,
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Recommended for
Approval By: _____ Date: _____

Carlos M. Mora, PE
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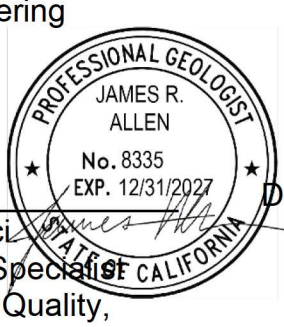

Approved By: _____ Date: Dec. 17, 2025

James R. Allen, PG 8335, M.Sci
Senior Engineering Geologist, Specialist
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Noise, and Paleontology
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Alternative Formats:

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Executive Summary

The purpose of this Paleontological Identification Report is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project potentially may affect paleontological resources. The California Department of Transportation (Caltrans) has prepared this Paleontological Identification Report under its responsibilities pursuant to the California Environmental Quality Act and its assumption of responsibility under the National Environmental Policy Act.

The report will evaluate the known and potential paleontological resources associated with the geology within the Project alignment (Figure 1), which has potential of containing non-renewable paleontological resources (Appendix C). The horizontal study area for the Project includes the proposed right-of-way (ROW), Construction Disturbance Limits, and Environmental Corridor for the Project. The vertical study area for this PIR is estimated to be approximately 20 feet below ground surface (BGS), but since a draft Geotechnical Report for the Project is not yet available, this point cannot yet be confirmed yet.

The Lead Agency for the SAM Force Main in Montara Replacement Project is the Sewer Authority Mid-Coastside (SAM) and it is a Coastal Zone Project. No fossils have been found in the project corridor, but the geological layers found there are known to be Ice Age and to contain vertebrate fossils (Appendix C). Found in the immediate project vicinity (less than 2,000 feet) are *Mammuthus* (Mammoths), *Megalonyx* (Jefferson's Giant Ground Sloths), Bison (*Bison latifrons Appendix B*), *Camelops* (Camels), and *Equus* (Horses). Appendix C lists our background survey of all the fossil sites and fossils near the SAM Force Main in Montara Replacement Project that turned up in our background research as well as requested museum records search. The recent discovery of the Giant Bison (*Bison latifrons)* fossil site (Thompson, 202X, Photo Log below) this past January in Tku sediments (see Photos and Geologic Map below) within less than 2000 feet from the southern terminus of the project corridor speaks to the sensitive nature of the rock units that could potentially be involved in excavations here.

The geological rock layers of importance in the project footprint are the Quaternary Marine Terrace horizons 2-4 (Qmt2, Qmt3, Qmt4). Additionally, there is a potential for two rock layers found adjacent to the project, the Monterey Formation and the Purisima Formation, both also containing important vertebrate and invertebrate fossils (Appendix C), to potentially be found below ground surface below the mapped Quaternary sediments once earthwork is underway.

The Geotech Survey, including both the GDR and GBR (Geotechnical Data and Baseline Reports), the Grading Plan, including the depth and method of trenching, drilling, and grading that will be needed, have both not been completed yet so we are not at liberty to speculate whether those two layers might be found BGS (Below Ground Surface). In the project vicinity (within 2000 of the Project) the Purisima and Monterey Formations are both known to produce Miocene-Pliocene (5-9 million year old) Cetaceans (Whales, Dolphins, Porpoises), *Dusignathine* Walruses, *Callorhinus* Fur Seals, sharks, fish, and other important vertebrate and invertebrate creatures.

As a cost-effective recommendation, due to the paleontological sensitivity of the formations within the project corridor that may be disturbed and negatively impacted, it is recommended to complete a combined Paleontological Evaluation Report-Paleontological Mitigation Plan (PER-PMP) so as to mitigate the negative impacts to negligible levels. These components will help ensure that regulatory compliances are met.

Chapter 2 Project Description and Setting

2.1 Introduction

The purpose of this Paleontological Identification Report is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project potentially may affect paleontological resources. Paleontological resources, or fossils, are afforded protection by environmental legislation set forth under the California Environmental Quality Act and the National Environmental Policy Act.

2.1.1 Caltrans Policy

Caltrans and local project sponsors, as part of the project delivery process, are obligated to conduct paleontological studies in response to federal and state laws and regulations. Local project sponsors must comply with local laws and ordinances. Caltrans complies with local laws and ordinances when practicable but is not obligated to do so. If rock units with a high paleontological potential ranking may be impacted by a project, avoidance, minimization, and/or mitigation measures must be considered.

2.2 Definition and Significance of Paleontological Resources

Paleontological resources are the remains or traces of once-living organisms that are preserved in the geologic record as fossils. Paleontological resources can include body fossils (e.g., bones, teeth, shells, leaves), trace fossils (e.g., tracks, trails, burrows, coprolites), and microfossils (e.g., pollen grains, spores, diatoms). Fossils are generally considered to be older than about 11,700 years (the end of the Pleistocene Epoch), but organic remains older than middle Holocene age (about 5,000 years) can also be considered to represent fossils because they are part of the record of past life. Paleontological resources also include fossil localities and the formation or rock unit containing fossils or with the potential to contain fossils.

Fossils are considered important scientific and educational resources because they serve as direct and indirect evidence of past life and are used to understand the history of life on Earth, and of past environments, ecosystems, and climates. Fossils can answer questions relating to patterns and processes of evolution and extinction, and how life has responded to changes in climates and environments through time.

Occurrences of fossil resources are based on the geologic formations, or layers of rock, that contain them. The probability for finding fossils in a project area can be predicted from

previous records of fossils recovered from the geologic formations present in and adjacent to the study area.

The SVP (2010, 2025) defines significant paleontological resources as “fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecological, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than the middle Holocene (i.e., older than about 5,000 radiocarbon years).” According to the SVP’s definition, fossils may be considered to be significant if one or more of the following criteria apply:

1. The fossils provide information on the evolutionary relationships and developmental trends among organisms, living or extinct.
2. The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein.
3. The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas.
4. The fossils demonstrate unusual or spectacular circumstances in the history of life.
5. The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

There are two generally recognized types of paleontological significance, the second of which is exemplified in the SAM Force Main in Montara Replacement Project Site:

> National - A National Natural Landmark eligible paleontological resource is an area of national significance (as defined under 36 CFR 62) that contains an outstanding example of fossil evidence of the development of life on earth. This is the only codified definition of paleontological significance.
>
> Scientific - Definitions of a scientifically significant paleontological resource can vary by jurisdictional agency and paleontological practitioner. Caltrans. 2017.

2.2.1 Scientific Significance

Fossils vary in their preservation, abundance, and distribution. Therefore, not all fossils are considered scientifically significant. Scientifically significant paleontological resources are fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information.

2.2.2 Paleontological Resource Assessment Criteria

Evaluating the potential effects to paleontological resources involves assigning paleontological potential rankings to individual geologic units based on the potential for the unit to contain scientifically significant fossils. The ranking systems are based on both the

relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils, and the sensitivity of these fossils to adverse impacts.

Caltrans uses a tripartite scale for assessing paleontological potential. This scale consists of high potential, low potential, and no potential.

High Potential - Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with extremely limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and ranked as highly sensitive. High sensitivity includes the potential for containing: 1) abundant vertebrate fossils; 2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; 3) areas that may contain datable organic remains older than Recent, including Neotoma (sp.) middens; or 4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.

Low Potential - This category includes sedimentary rock units that: 1) are potentially fossiliferous, but have not yielded significant fossils in the past; 2) have not yet yielded fossils, but possess a potential for containing fossil remains; or 3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation. However, as excavation for construction gets underway it is possible that new and unanticipated paleontological resources might be encountered. If this occurs, a Construction Change Order (CCO) must be prepared in order to have a qualified Principal Paleontologist evaluate the resource. If the resource is determined to be significant, monitoring and mitigation is required.

No Potential - Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. For projects encountering only these types of rock units, paleontological resources can generally be eliminated as a concern when the Preliminary Environmental Analysis Report is prepared and no further action taken.

BLM (Bureau of Land Management) has its own system for classifying areas according to their potential to contain paleontological resources which must also be taken into consideration when working on land under BLM jurisdiction.

2.3 Project Location and Description

Figure 1: Project Location Map

The SAM Force Main in Montara Replacement Project is located in San Mateo County. The environmental corridor for this predominantly flat low lying project occupies the west and east sides of State Route 1 in the towns of El Granada, Montara, and Moss Beach. The project setting is a high-traffic recreational, industrial, residential, and agricultural section of State Highway 1. At the time of this report, no grading plan or geological borehole study is available to assess the depth of excavations that are intended along the project footprint in relation to the underlying geological formations. Nonetheless, using surficial geological maps can give an insight into the potential underlying geological structures and the identities of those structures (Formations)

This flat coastal area in the region of the Project is a marine terrace that formed during a relatively higher stand of the sea about 100,000 years ago. Note the old wave-cut cliffs to the east and partly dissected higher terraces. Although originally incised horizontally into the rising terrane, the ancient terrace surface is gently folded into a northwest-plunging syncline (a rock layer(s) folded down). The lowest elevation coincides with the deepest part of the embayment at Half Moon Bay; the terrace surface rises both to the north and to the south (Lajoie, 1986, Anderson, 2001).

The higher elevation of this same terrace west of the Half Moon Bay airport has been caused by uplift on the Seal Cove Fault, one splay of the San Gregorio Fault Zone. The amount of uplift on the Seal Cove Fault is thought to be small compared to its strike-slip displacement, but the rates of modern and recent strike slip on this fault are controversial (Simpson and others, 1997; Sedlock, 1999).

This deformed marine terrace here in the project corridor consists of eroded rocks of the Miocene to Pliocene Purisima Formation (about 5 to 3 Ma) overlain by a thin veneer of younger, unconsolidated Quaternary (Ice Age) sediments. The Purisima Formation forms the relatively resistant rocks that make up Pillar Point to the west of the Seal Cove Fault. At El Granada, however, the unconsolidated sediment at the top of the terrace is at sea level, and erosion by waves is much more rapid here. The rate of coastal erosion became even greater after installation of the breakwater in 1960 (Mathieson and others, 1997).

2.4 Regulatory Setting

2.4.1 Federal Laws & Regulations

If federal funding is used to finance a project, an evaluation of the potential impacts on paleontological resources may be required of the regulating body. Federal protections for scientifically significant paleontological resources include the *Code of Federal Regulations* Title 54, Subtitle III, Division A: Historic Preservation, 2016, the *Paleontological Resources Protection Act* (PRPA 2022), the *Code of Federal Regulations Title 49* (CFR49), the *Federal Land Policy and Management Act* (FLPMA) of 1976, the *National Environmental Policy Act* (NEPA) of 1969, the *National Historic Preservation Act* (NHPA) of 1966, the *Federal-Aid Highway Act* (FHA) of 1935, and the *Antiquities Act* (AA) of 1906. Perhaps most significantly in terms of the Federal regulations affecting project sites, the recent 2022 BLM multi-agency overhaul of the Paleontological Resources Protection Act is the most sweeping legislation yet to affect fossil conservation within federal scenarios. BLM, 2022.

2.4.1.1; The Antiquities Act (AA) of 1906 (16 United States Code [USC] 431-433)
Although there is no specific mention of natural or paleontological resources in the Act itself, or in the Act's uniform rules and regulations (Title 43 Part 3, Code of Federal Regulations [43 CFR 3]), the term "objects of antiquity" has been interpreted to include fossils by the National Park Service (NPS), the Bureau of Land Management (BLM), the

U.S. Forest Service (USFS), and other federal agencies. Permits to collect fossils on lands administered by federal agencies are authorized under this Act. However, due to the large gray areas left open to interpretation due to the imprecision of the wording, agencies are hesitant to interpret this act as governing paleontological resources. Nonetheless the Act states that:

> "Any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffern both fine and imprisonment, in the discretion of the court."

2.4.1.2; Federal-Aid Highway Act (FHA) of 1935 and 1956

In 1956, the Federal-Aid Highway Act, which initiated the interstate highway program, set aside federal funds for the protection and recovery of historic, archeological and paleontological resources threatened by highway construction. The FHA of 1956 grants authority in Section 305 (20 USC 78, 78a) to highway projects to use federal funds to salvage paleontological sites affected by those projects. Caltrans, 2018.

2.4.1.3; National Historic Preservation Act (NHPA) of 1966, (54 USC 300101 et seq, 16 USC 470, Section 106).

The NHPA provides leadership and financial and technical assistance to foster prehistoric and historic preservation of the resources of the United States and of the international community in partnership with states, Indian tribes, Native Hawaiians, and local governments (NPS, 2006:36).

Section 106 of the NHPA does not apply to paleontological resources unless the paleontological specimens are found in culturally related contexts (e.g., a fossil rhino femur was included as a ceremonial offering or a culturally-related site such as petrified wood locale used as a chipped stone quarry).

In such instances the materials are considered cultural resources and are treated in the manner prescribed for the site in question: mitigation being almost exclusively limited to sites determined eligible for, or listed on, the National Register of Historic Places. Caltrans, 2008.

Section 106 of the NHPA directs federal agencies to consider the effects of undertakings on significant cultural resources. Some federal agencies apply Section 106 to fossils found in association with prehistoric or historical resources. Noncompliance of the Section 106 process may result in the issuance of a finding that the federal agency prevented meaningful review of the proposed action and did not meet the requirement of federal law.

2.4.1.4; The National Environmental Policy Act (NEPA) of 1969,

As amended (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258 § 4(b), Sept. 13, 1982) recognizes the continuing responsibility of the Federal Government to

"preserve important historic, cultural, and natural aspects of our national heritage . . ." (Sec. 101 [42 USC § 4321]) (#382).

With the passage of the Paleontological Resources Preservation Act (PRPA 2009/2022), paleontological resources are considered to be a significant resource and it is therefore now standard practice to include paleontological resources in NEPA studies in all instances where there is a possible impact. NEPA was enacted to promote “efforts which will prevent or eliminate damage to the environment and [...] preserve important historic, cultural, and natural aspects of our national heritage” (NPS, 2006).

Section 102(2)(A) of NEPA requires that all federal agencies “utilize a systematic, interdisciplinary approach” to make informed, publicly supported decisions regarding environmental issues (NPS, 2006). Section 102 also specifies the cooperation of agencies to:

(B) identify and develop methods and procedures, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decision making along with economic and technical considerations:

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

D)

(i) the environmental impact of the proposed action,
(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
(iii) alternatives to the proposed action,
(iv) the relationship between local short-term uses of man’s environment and the maintenance
and enhancement of long-term productivity, and
(v) any irreversible and irretrievable commitments of resources which would be involved in the
proposed action should it be implemented.

(E) study, develop, and describe appropriate alternatives to recommended courses of action in any
proposal which involves unresolved conflicts concerning alternative uses of available resources.

Noncompliance of the NEPA process may result in penalties, including the delay of approval or withdrawal
of a proposed action.

2.4.1.5; Federal Land Policy and Management Act (FLPMA) of 1976, (43 USC 1701–1787)

The FLPMA requires that public lands be managed in a manner that will protect the quality of their scientific values. It was established as a public land policy to “provide for the management, protection, development, and enhancement of the public lands” (BLM and Office of the Solicitor, 2001).

FLPMA requires federal agencies to manage public lands so that environmental, historic, archeological, and scientific resources are preserved and protected, where appropriate. Although FLPMA does not refer specifically to fossils, the law does protect scientific resources, which includes significant fossils, including vertebrate remains.

The law requires that public lands be inventoried so that the data can be used to make informed land-use decisions, and requires permits for the use, occupancy, and development of the certain public lands, including the collection of significant fossils for scientific purposes.

FLPMA regulates the use and development of public lands and resources through easements, licenses, and permits. Criminal and/or civil penalties may be imposed for violations of FLPMA, including up to 12 months imprisonment and $1,000 in fines.

2.4.1.6; Omnibus Public Lands Management Act for Paleontological Resources Preservation (OPLMA-PRP) of 2009

Omnibus Act (Public Law 111-011, Title VI, Subtitle D) is the birthplace of today's 2022 PRPA and in part applies to the confidentiality of paleontological locality information and other important protections for paleontological resources. This is what would become the PRPA of 2022. For paleontological resources use permits, Section 6304 of OPLMA states:

> "(c) Permit Specifications - A permit for the collection of a paleontological resource issued under this section shall contain such terms and conditions as the Secretary deems necessary to carry out the purposes of this subtitle. Every permit shall include requirements that—
> (3) Specific locality data will not be released by the permittee or repository without the written permission of the Secretary."

In accordance with the FOIA, 5 U.S.C. Section 552(b), the nascent PRPA establishes particular criteria for withholding certain paleontological records under Exemption 3. Specifically, Section 6309 states,

> "Information concerning the nature and specific location of a paleontological resource shall be exempt from disclosure under Section 552 of Title 5, United States Code, and any other law unless the Secretary determines that disclosure would:
>
> (1) Further the purposes of this subtitle:
>
> (2) Not create risk of harm to or theft or destruction of the resource or the site containing the resource: and
>
> (3) Be in accordance with other applicable laws."

On March 30, 2009, from withinside the Omnibus Public Land Management Act, PRPA directed the Department of Agriculture (U.S. Forest Service) and the Department of the Interior (National Park Service, Bureau of Land Management, Bureau of Reclamation,

and Fish and Wildlife Service) to manage and protect paleontological resources on Federal land using scientific principles and expertise.

The National Park Service established National Fossil Day stemming from the directive to establish a program to increase public awareness about the significance of paleontological resources and to promote the scientific and educational values of fossils. The National Fossil Day partnership consists of more than 380 partners across the U.S. including museums, science and teacher organizations, universities, libraries, agencies, fossil sites, amateur fossil groups and others interested in fossils.

Congress officially recognized the scientific importance of paleontological resources on some federal lands by declaring that fossils from these lands are federal property that must be preserved and protected. The OPLMA-PRP codifies existing policies of the BLM, National Park Service, U.S. Forest Service, Bureau of Reclamation, and U.S. Fish and Wildlife Service, and provides the following:

- Uniform criminal and civil penalties for illegal sale and transport, and theft and vandalism of fossils from federal lands
- Uniform minimum requirements for paleontological resource-use permit issuance (terms, conditions, and qualifications of applicants)
- Uniform definitions for "paleontological resources" and "casual collecting"
- Uniform requirements for curation of federal fossils in approved repositories
- Federal legislative protections for scientifically significant fossils for projects that take place on federal lands (with certain exceptions such as DOD). If any portion of the Project occurs on federally-managed lands (i.e., BLM) federal protections for paleontological resources on those lands apply under NEPA, FLPMA, and OPLA-PRP.

Each federal agency is responsible for implementing their own guiding regulations for enacting the OPLMA-PRP. For example, the BLM utilizes Handbook H-8270-1 (General Procedural Guidance for Paleontological Resource Management), and the United States Forest Service is proposing rules under 36 CFR Parts 261 and 291.

2.4.1.7; Code of Federal Regulations (CFR) Title 54 of 2014

CFR (Subtitle III, Division A: Historic Preservation) began slow for paleontology, but picked up later: Language that was useful for scientific and educational purposes was not highlighted in CFR 54, but it does have some minor impact on the legislative landscape of mitigation paleontology as a process sidenote. For example, "prehistoric and historic resources" was replaced by "historic properties" because the definition of "historic properties" includes archeological sites. And as in the historical development of the current CFR 49 PRPA, paleontological mitigation legislation builds off a scaffold of archeological legislation, regardless that the two have completely unique landscapes. Under §100707 "Confidentiality of Information" the regulation states:

> "Information concerning the nature and specific location of a System resource that is endangered, threatened, rare, or commercially valuable, of mineral or paleontological objects within System units, or of objects of cultural patrimony within System units, may be withheld from the public in response to a request under section 552 of title 5 unless the Secretary determines that—

(1) disclosure of the information would further the purposes of the System unit in which the resource or object is located and would not create an unreasonable risk of harm, theft, or destruction of the resource or object, including individual organic or inorganic specimens: and
(2) disclosure is consistent with other laws protecting the resource or object."

CFR 54 bears little, but recognizable, weight on the management of protected federal paleontological resources. (Pub. L. 113–287, §3, Dec. 19, 2014, 128 Stat. 3106.)

2.4.1.8; Paleontological Resources Protection Act (PRPA CFR 49) of 2022

This landmark paleontological protections Act was modeled after the Archaeological Resources Protection Act of 1979, as amended (16 U.S.C. 470aa-470mm) and amends title 43 of the Code of Federal Regulations by adding the new part 49 in order to implement the Paleontological Resources Preservation Act of 2009. Historically, this law was moved forward by the DOI (Department of the Interior, specifically the BLM/FWS, Bureau of Land Management and Fish and Wildlife Service). This interior department law was updated throughout 4 government offices on August 1st, 2022. The coordinated efforts of the Bureau of Reclamation, U.S. Fish and Wildlife Service, the USDA Forest Service, and the National Park Service along with critical guidance from SVP allowed for a refinement and coordination between these multiple stakeholders for the final enactment of this legislation. Each Department has its own contribution.

Together PRPA and the regulations at Part 49 require the bureau to do the following:

1. Manage paleontological resources using scientific principles and expertise.
2. Maintain a program of inventory and monitoring of paleontological resources.
3. Establish an education program to increase public awareness about paleontological resources.

The regulations also intends to:

Implement a program of permitting for the collection of paleontological resources.
Require bureaus to preserve paleontological objects for the public in approved museum collections.

Provide for casual collection of common non-vertebrate fossils by the public without a permit (BLM and Reclamation lands only).

PRPA applies to lands managed by the BLM, the Bureau of Reclamation, the U.S. Fish and Wildlife Service, the National Park Service and the USDA Forest Service. All of these bureaus, except for the USDA Forest Service, are part of the Department of the Interior and are covered by this regulation. The USDA Forest Service published similar regulations in 2015 at 36 CFR § 291.

A paleontological resource may not be collected from Federal land without a permit issued under this subtitle (PRPA Section 6304). 43 CFR § 49.100 requires: “Any person who collects paleontological resources must have a permit issued by the appropriate bureau unless the activity qualifies as casual collection.” Specific to the BLM, the permittee must possess advanced training and education in a field of study that is relevant to the proposed work, but attainment of an advanced degree is not required.

An applicant must show that they possess the experience and qualifications to carry out the work that would be authorized by the permit. Thus a permittee may demonstrate that they are qualified to do one type of study, but not be qualified to do another. Additionally, as an alternative to creating multiple categories of permits, the BLM recognized that each project is unique and that applicants should be qualified and equipped to do the work that they propose instead of fitting into pre arranged permit categories.

Following the separation of paleontological resources from cultural/archeological resource in CEQA (2015), PRPA also now separates the two into distinct categories while also encouraging cooperation between the two disciplines (for example see Caltrans SER, Ch. 28)

> “Paleontological resource means any fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest, and that provide information about the history of life on earth. The term does not include:
>
> (1) Any materials associated with an archaeological resource (as defined in section 3(1) of the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470bb(1)): or
>
> (2) Any cultural item (as defined in section 2 of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001)).” 36 CFR 291.5 “Paleontological resource” Accessed on 2022-11-05 at:
>
> https://www.ecfr.gov/current/title-36/chapter-II/part-291#p-291.5(Paleontological%20resource)

2.4.2 State Laws & Regulations

2.4.2.1; California Coastal Act (CCA) of 1976 (2025 PRC, Division 20, Section 30244)

The California Coastal Act of 1976, 2025 Version, Section 30244 states that “Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.”

2.4.2.2; California Environmental Quality Act (CEQA)

CEQA defines a resource as “historical” if it can be listed in the California Register of Historic Resources. CEQA creates three categories of “historical resources” that can gain entry into the Register: Mandatory Historical Resources, Presumptive Historical Resources, and Discretionary Historical Resources. Fossils don’t fall into any of these categories, are not considered “historical”, are not listed in the Register, and are thus afforded protections as “prehistoric resources” in Appendix G and elsewhere in the Act as described below. Following the footsteps of CEQA (2015) with the separation of cultural/historic archeological resources from prehistoric paleontological resources, PRPA now also separates the two into distinct categories.

The California Environmental Quality Act applies to discretionary projects proposed by private or commercial entities as well as state or local-level agencies that require approval to determine if there are historic or prehistoric resources within the Project Site and whether ground-disturbing activities associated with the project have the potential to impact those historical resources.

Chapter 1, Section 21002, of CEQA states that:

> “It is the policy of the state that public agencies should not approve projects as proposed if there are feasible alternatives or feasible mitigation measures available which would substantially lessen the significant environmental effects of such projects, and that the procedures required are intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects… The procedures, types of activities, persons, and public agencies required to comply with the California Environmental Quality Act (CEQA) are defined in the Guidelines for Implementation of CEQA (State CEQA Guidelines), as amended on March 18, 2010 (Title 14, Section 15000 et seq. of the California Code of Regulations [i.e., 14 CCR Section 15000 et seq.) and further amended January 4th, 2013. CEQA Guidelines (Article 1, Section 15002(a)(3)) states that CEQA is intended to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.”

Paleontological resources are explicitly afforded protection by CEQA, specifically in Appendix G, Section V(c), which addresses the potential for adverse impacts to unique paleontological resources, sites, or geological features. A key tenet in the CEQA Environmental Checklist is: “Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?” (State CEQA Guidelines Section 15064.5 and Appendix G, Section V, Part C). Under CEQA, the treatment of paleontological resources is usually conducted in accordance with guidance from the Society for Vertebrate Paleontology, the Bureau of Land Management, United States Forest Services, or other agencies. Treatment usually consists of identification, assessment, and mitigation for potential impacts to significant paleontological resources.

2.4.2.3; California PRC Section 5097.2, Division 5, Chapter 1.7: 1939/1965 [CHAPTER 1.7. Archaeological, Paleontological, and Historical Sites [5097 - 5097.7]] ([5001 - 5873] Division 5 added by Stats. 1939, Ch. 94.)

(Chapter 1.7 added by Stats. 1965, Ch. 1136.)

SURVEY NEEDED TO DETERMINE IF PROPOSED CONSTRUCTION ON STATE LAND WILL POTENTIALLY DISTURB PALEONTOLOGICAL RESOURCES.
DIVISION 5. PARKS AND MONUMENTS

"Upon receipt of plans for a proposed construction project upon state lands, the department may conduct an archaeological site survey on the affected state lands in order to determine whether the lands may contain any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological sites, including fossilized footprints, inscriptions made by human agency, rock art, or any other archaeological, paleontological, or historical feature. The department shall submit to the state agency, by or on whose behalf the project is to be constructed, its recommendations concerning the preservation, photographing, recording, or excavation for, any archaeological, paleontological, or historical features which may be located upon the lands." (Amended by Stats. 1992, Ch. 192, Sec. 1. Effective January 1, 1993.)

2.4.2.3; California PRC Section 5097.3, Division 5, Chapter 1.7: 1993

SURVEYS, EXCAVATIONS, OR OTHER OPERATIONS MAY BE CONDUCTED ON STATE LAND IN ORDER TO PRESERVE PALEONTOLOGICAL RESOURCES

"The state agency, by or on whose behalf public works are to be constructed on state lands, may undertake such surveys, excavations, or other operations on the state lands as it determines to be necessary to preserve or record any archaeological, paleontological or historical features, including rock art, which may be located on the lands, after receiving the recommendations of the department, or the state agency may contract with the department to undertake those operations. The department may carry out the operations." (Amended by Stats. 1992, Ch. 192, Sec. 2. Effective January 1, 1993.)

2.4.3 Agencies with Jurisdiction

The project corridor is within the Caltrans right of way and may not require permits at this time.

2.4.4 Local Regulatory Setting

2.4.4.1; San Mateo County General Plan, 1986

<u>County General Plan Policies Historical development: I.a.2: 1973 Conservation and Open Space Element</u>

The 1973 Conservation and Open Space Element of the General Plan included a discussion of County archaeological and paleontological resources and addressed issues affecting their preservation. Policy statements were developed to aid in the protection of these resources through continued identification, study and management of excavation sites.

II.a.1.f: Paleontological and Archaeological Sites

Sites which yield information or evidences of earlier historic cultures; areas of cultural, social or economic importance to earlier people's daily lives or spiritual traditions (e.g., petroglyphs, ritual sites, hunting or gathering areas); grounds potentially rich in fossils.

2.B: Information on Paleontological/Archaeological Resources…

Paleontological resources or prehistoric fossils have also been discovered in the County. Examples of these limited resources have been discovered in exposed bluffs above the ocean bench along the coast. These sites contained molluscan fossils from the Pleistocene Period.

II.a.2: Ruin of Archaeological/Paleontological Resources

A number of archaeological/paleontological sites throughout the County have been destroyed because of vandalism, urban development, agricultural production, new roadway construction, water resource projects and similar kinds of activities. As urbanization spreads, the vulnerability of sites to disturbance also increases. Unfortunately, archaeological/paleontological sites are not renewable resources. Protecting archaeological resources often provides the benefit of knowing how past cultures developed as well as how man was able to adapt to the environment. This educational reward is considered to be significant, because it forms the basis from which the present day activities of mankind can be compared and judged.

3.a.2: Section 6324.5 of the Resource Management District implements the policies of the 1973 Conservation and Open Space Element.

This section requires a survey by a qualified professional to be performed whenever there is substantial indication that an archaeological or paleontological site may exist within a project area. Further, when such a site is discovered during construction work which could damage the site, work is to be suspended pending an investigation by qualified professionals in accordance with certain procedures. This section also prohibits the destruction of primary sites and requires the professional excavation of other sites prior to development.

3.3.1.2 III.B. County Ordinances

1. Coastal Development District

The policies and regulations of this overlay district protect and preserve significant historic, architectural, archaeological and paleontological resources located within the Coastal Zone. The guidelines, however, developed to protect archaeological/paleontological sites require the use of location maps to determine the proximity of new development to a site. These maps are quite out of date. To ensure that the presence of these resources is considered when new development proposals are reviewed, these maps need to be updated.

2. Resource Management District

The provisions of the Resource Management District to protect archaeological/paleontological resources by requiring site surveys, cessation of

construction work and excavation by qualified professionals are suitable protection techniques. These methods, however, apply only to lands zoned Resource Management and Planned Agricultural District. In order to protect resources located countywide, these techniques need to be expanded.

Definitions;
Historic Landmark: Any historic resource, district or paleontological site that has exceptional scientific, historic, cultural, archaeological, aesthetic character, interest, or value. Home Based Trip : A trip which starts or ends at the home.

Historic Resource: Buildings, structures, signs, features, sites, places, areas or other objects of scientific, educational, cultural, architectural, archaeological, historical or paleontological significance to the citizens of the County.

3.3.1.3 General Plan Policies will…

Protect Archaeological/Paleontological Sites
Protect archaeological/paleontological sites from destruction in order to preserve and interpret them for future scientific research, and public educational programs.

Registration of Significant Archaeological/Paleontological Sites:
Recommend State and/or national register status for significant archaeological/ paleontological sites.

Archaeological/Paleontological Resource Data Base
Maintain and update a comprehensive archaeological/paleontological data base.

Discovering Unrecorded Archaeological/Paleontological Sites
Support comprehensive studies to discover unrecorded archaeological and paleontological sites, particularly in areas under pressure for development.

3.4 San Mateo County Local Coastal Plan (LCP), 2021

1.25 Protection of Archaeological/Paleontological Resources:
Based on County Archaeology/Paleontology Sensitivity Maps, determine whether or not sites proposed for new development are located within areas containing potential archaeological/paleontological resources. Prior to approval of development proposed in sensitive areas, require that a mitigation plan, adequate to protect the resource and prepared by a qualified archaeologist/ paleontologist be submitted for review and approval and implemented as part of the project.

10.24 Definition of Fragile Resources
Define fragile resources as: (1) exposed rocky cliff faces, steep slopes as defined in the Hazards Component, and hilly coastal terraces (e.g., San Pedro Bluff and Devil's Slide), (2) all sensitive habitats defined in the Sensitive Habitats Component, and archaeological/paleontological resources.

Appendix 10.A; Definitions Uniqueness/Special Interest:

Historic, paleontological, natural, geological - must be outstanding and unusual along the San Mateo Coast to be rated High.

11.18 Sensitive Habitats

Conduct studies by a qualified person agreed by the County and the applicant during the planning and design phases of facilities located within or near sensitive habitats and archaeological/paleontological resources to determine the least disruptive locations for improvements and the methods of construction

3.5 Midcoast Community Council: Montara-to-El Granada Community Plan, 1985
NOTE; No mention of paleontological, archeological, etc. protections appear in this most recent Community Plan.

2.5 Geologic Setting

Knowledge of the project geology and stratigraphy is needed to assess paleontological resource potential. It is important to know what rock units are present in the project area, what makes up the units, the depth of these units, and their paleontological potential as graded by the Caltrans sensitivity ranking system.

2.5.1 Regional Geologic Setting

There are an extremely wide variety of geologic outcrops in the San Francisco Bay Area representing an incredible array of conditions, time blocs, and ancient environments (Sections below in Figure 3). The regional geologic setting of the project study area has been influenced by three main factors: (1) the slow, long-term motion of the North American crustal tectonic plate as it moves relative to the northwest-moving Pacific Plate; (2) the more rapid changes in global climate during the last few million years; and (3) the explosive recent growth of human population (Anderson, 2001). We will focus here on the second factor due to its major influence on the local geology of the SAM Force Main in Montara Replacement Project Corridor, although the other two processes have been and are also at work.

Superimposed on the slow lateral displacement and uplift of the faulted crustal blocks in the project region are changes in the relative position of sea level and the shoreline, caused in turn my shifts in global climate. There are erosional changes imposed on the landscape due to changes in sea level caused by this global climate change, tectonic uplift and down drop. These interacting driving forces of global relative sea level change during the most recent Quaternary times (Ice Ages) have caused a “staircase” of sorts to be cut and eroded into the coastal landscape.

2.5.2 Local Geologic Setting (Project Area)

The BGS (Below Ground Surface) layers that have the potential to be encountered during excavation associated with the Project can only be alluded to and assuming they may be encountered in the forthcoming Geotechnical Borehole study and only fully confirmed with

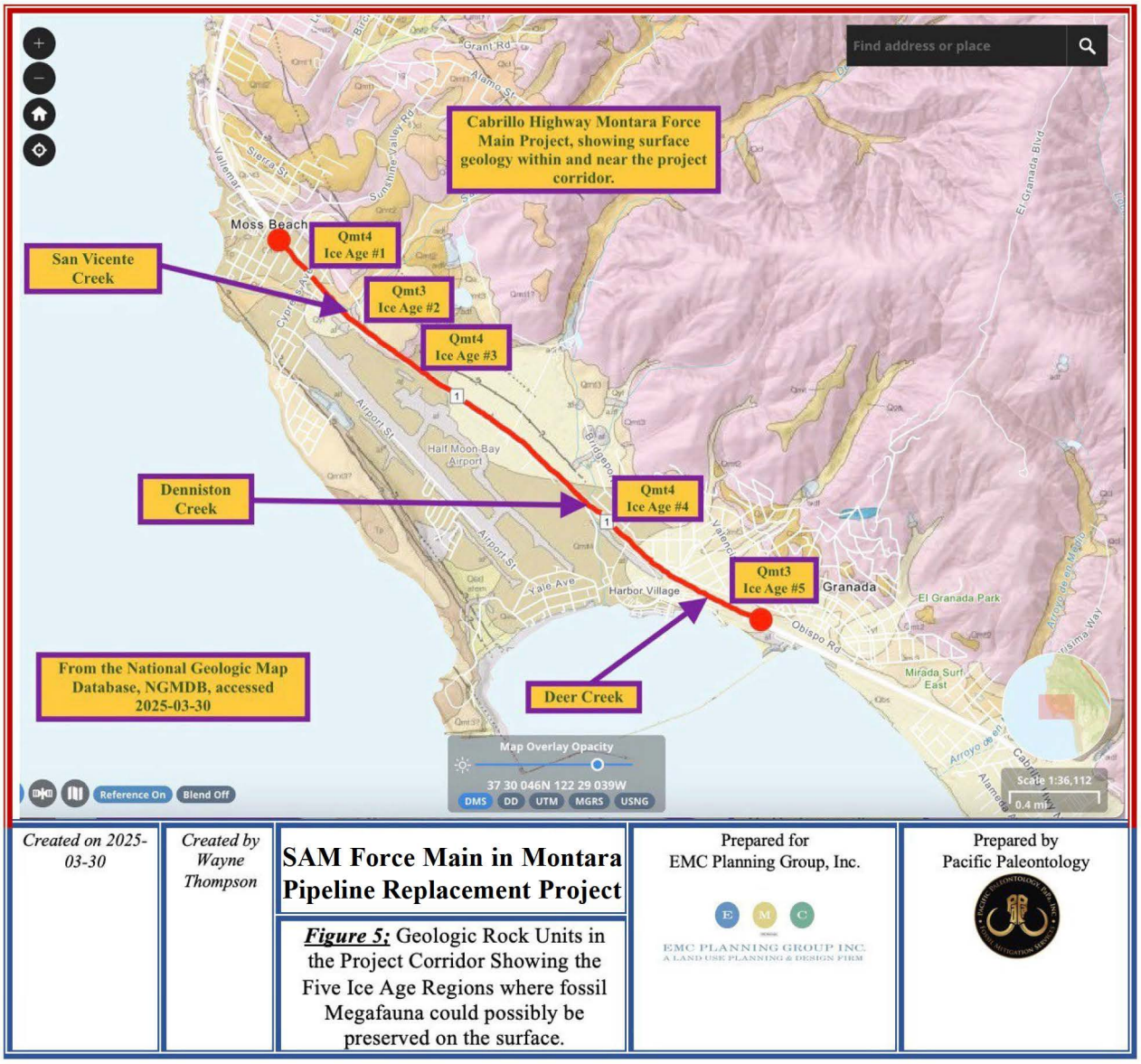
onsite monitoring. Three geological units reported and mapped at the ground surface (National Geologic Map Database) within the project corridor may potentially contain fossils, based on prior discoveries: Quaternary Marine Terraces 2, 3, and 4 (Qmt2, Qmt3, and Qmt4). These are Ice Age marine terraces, vestiges of the ancient shorelines in the far-distant past that preserve the record of both the tectonic and biologic evolutionary history of the area. Two additional geological layers, the Purisima Formation below the Ice Age Marine Terraces and the Monterey Formation below that, may also potentially be discovered onsite.

The flat coastal area in the region of El Granada to Montara is a marine terrace that formed during a relatively higher stand of the sea about 100,000 years ago. Note the old wave-cut cliffs to the east and partly dissected higher terraces. Although originally incised horizontally into the rising terrane, the ancient terrace surface is gently folded into a northwest-plunging syncline (plunging rock fold). The lowest elevation coincides with the deepest part of the embayment at Half Moon Bay; the terrace surface rises both to the north and to the south (Lajoie, 1986, Anderson, 2001).

The higher elevation of this same terrace west of the Half Moon Bay airport has been caused by uplift on the Seal Cove Fault, one splay of the San Gregorio Fault Zone. The amount of uplift on the Seal Cove Fault is thought to be small compared to its strike-slip displacement, but the rates of modern and recent strike slip on this fault are controversial (Simpson and others, 1997; Sedlock, 1999).

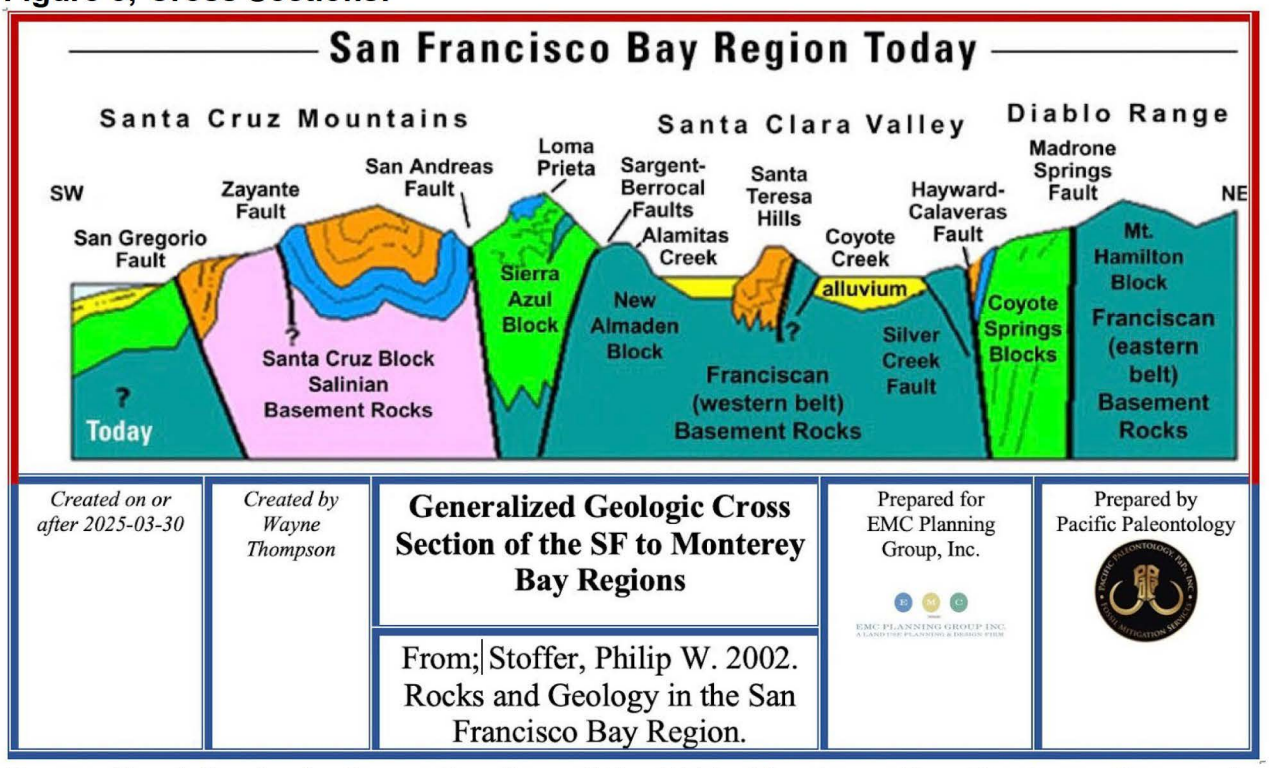
The deformed marine terrace here in the project corridor consists of eroded rocks of the Miocene to Pliocene Purisima Formation (about 5 to 3 Ma) overlain by a thin veneer of younger, unconsolidated Quaternary (Ice Age) sediments. The Purisima Formation forms the relatively resistant rocks that make up Pillar Point to the west of the Seal Cove Fault. At El Granada, however, the unconsolidated sediment at the top of the terrace is at sea level, and erosion by waves is much more rapid here. The rate of coastal erosion became even greater after installation of the breakwater in 1960 (Mathieson and others, 1997).

Figure 2: Geologic Map of the Project Area



Created on 2025-03-30	*Created by Wayne Thompson*	**SAM Force Main in Montara Pipeline Replacement Project**	Prepared for EMC Planning Group, Inc.	Prepared by Pacific Paleontology
		Figure 5: Geologic Rock Units in the Project Corridor Showing the Five Ice Age Regions where fossil Megafauna could possibly be preserved on the surface.		

Figure 3; Cross Sections:



Generalized Geologic Cross Section of the SF to Monterey Bay Regions. Our project site is near the San Gregorio Fault Block all the way to the left in this diagram.

Chapter 3 Paleontological Resource Identification

3.1 Fossil Locality Search

3.1.1 Methods

A comprehensive online public paleontological records search was conducted as part of this initial Paleontological Initiation Report (PIR) and the results are summarized in Appendix C below. A museum records search request was also initiated from the California Academy of Science.

3.1.2 Results

Review of the local geological literature included a review of fossil resources recovered within those rock layers and the sediments that are found in the project corridor. In terms of prior published study and work in this area of San Mateo County: Moss Beach, El Granada, and Montara, there are relatively few records on the topic of fossil resources, with only occasional published records within larger reports on other topics. The museum and private collection records, however, tell a different story; one in which the area has been documented as having a wealth of records of both vertebrate and invertebrate fossils.

Thirteen Localities that have produced documented fossil sites in the immediate local vicinity of the project area (Montara, Moss Beach, El Granada, Half Moon Bay) have been recorded

in museum records as evidenced in public and requested records and an additional fifteen fossil sites in San Mateo County were evidenced in public museum record searches (Appendix C below).

3.2 Literature Review

3.2.1 Methods

Literature review entails a search of online databases as well as the author's own physical library and research, both in the field and manuscripts in progress. These records include peer reviewed journals, geologic maps, dissertations/theses, etc. This research is essential for estimating the potential impact to non-renewable paleontological resources that the current project may have.

Perhaps most importantly, records of important vertebrate fossils were documented close to the northern terminus, in some cases as less than 2000-feet from the project, with the discovery of extinct Pliocene Walruses that lived here, *Dusignathus santacruzensis* to the north in Montara and an extinct Quaternary *Bison cf. B. latifrons* dig site under 2,000-feet away from the southern terminus of the project in El Granada. The *Bison* site was recently discovered just this past January, 2025, and represents a lake or stream environment (see Photos below) with the fluvial or lacustrian sediments preserved sub-tidally here from a time when the sea level was hundreds of feet lower during the last Ice Age than it is at the present day (Thompson, 202X).

3.2.2 Results

The Museum of Paleontology at U.C. Berkeley (Appendix C) records 6 important vertebrate fossil species within less than a mile from the Project site, including Pliocene Phocoenids (porpoises), whales, Monodontid dolphins, and Walruses in addition to Ice Age *Bison* and primitive horses, *Equus*.

The California Academy of Sciences Department of Invertebrate Zoology and Geology lists three important fossil specimens from nearby the Project corridor in Moss Beach. One is a Pectin, *Patinopectin lohri*, important for age determinations. Another is an ecologically important echinoderm; a sand dollar. And the third is a Pholad clam, a drilling bivalve found in nearshore marine environments.

The Department of Vertebrate Paleontology at the L.A. County Museum of Natural History (Appendix C) lists three important marine vertebrate species from the Miocene-Pliocene of the Half Moon Bay area: *Delphinus occiduus, (= Lonchodelphis occiduus) n. sp., Leidy, 1868, Callorhinus gilmorei,* Berta & Demere, 1986*, Odobenidae indet.* (Allen, 1880), and cf. *Dusignathus santacruzensis,* Kellogg, 1927, all most likely from the same rock layer that is found less than a mile from the Project corridor.

Lastly, several hundred fossil occurrences can be found within a border somewhat wider; from between 2 and 15 miles from the project. These other localities record Neogene collections (The Neogen includes the Quaternary, Pliocene, and Miocene Periods and is

aged from 11,700-23 million years ago), totaling an extremely long and complete record of the evolution of life in coastal San Mateo County with both vertebrates and invertebrates on record.

3.3 Paleontological Field Survey

A pre-grading paleontological field survey is essential to prospect for existing exposed fossils on the surface of the project corridor and to assess the surface geology. A windshield survey is conducted first, then if there is exposed bedrock a boots survey is conducted.

A Paleontological Windshield Survey was completed On June 17th, 2025 for exposed native bedrock along the length of the SAM Force Main in Montara Replacement Project corridor in El Granada, Moss Beach, and Montara where grading will be occurring. We did not find any evidence that native bedrock was exposed at the surface in the project corridor that was free of farmland vegetation and other vegetative cover or other obstructions. Because no native bedrock is exposed, there will not be any fossils visible for a Boots Field Survey.

3.3.1 Methods

There is thus no need at this time for a surface Boot Reconnaissance Pre-Grading Field Survey to be conducted for this project. Once grubbing/tree removal and grading begins, we can begin to take a look at the sub-surface geological conditions that exist below ground cover. That process will be delineated in the Paleontological Mitigation Plan, once we reach that stage.

3.3.2 Results

Due to vegetative cover obscuring bedrock in the project corridor, no results are available at this time.

Chapter 4 Recommendations

4.1 Required Actions

4.1.1 Avoidance, Minimization, and/or Mitigation

In conclusion the SAM Force Main in Montara Replacement Project lies within and nearby paleontologically-productive geological strata (formations). Three of these formations are “most-common” in museum paleontological collections and consistently produce important fossils: The Miocene marine Monterey Shale Formation (nearby and potentially subsurface), the Miocene to Pliocene marine Purisima Formation (nearby and potentially subsurface), and the Pleistocene Marine Terrace geological units 2, 3, and 4, which produce terrestrial Ice Age megafauna (these Ice Age geological units are mapped as occurring within the project corridor).

Other horizons have also recently proven to be paleontologically productive, producing a notable newly-discovered horizon within less than a half mile of the project corridor, the Tku horizon. This horizon has recently (January, 2025, independent research by the current author) produced a large abundance of Ice Age megafauna, including *Bison latifrons* and potentially *Mammuthus* and *Megalonyx*.

There is thus potential to negatively impact paleontological resources by earth moving construction equipment within the project corridor. Avoiding impacts to these paleontological resources is not an available option for this project because the stratigraphic formations/rock units extend too far laterally and potentially vertically to avoid impacts.

We thus recommend minimizing impacts through mitigation. We recommend producing a Paleontological Evaluation Memo, PEM (in place of a more extensive PER; Paleontological Evaluation Report). A Paleontological Mitigation Plan for the SAM Force Main in Montara Replacement Project will be necessary. A combined PER-PMP can be a viable alternative if warranted once the results of the Final Geotech Survey have been produced.

4.1.2 Limitations

Any changes in the project scope, particularly project footprint and locations or depths of ground disturbance, will obviously necessitate re-evaluation of impacts to paleontological resources.

4.2 Resource Agency Coordination

4.2.1 Required Contacts

Lead agencies for these types of project components may include the CCC and require a well-developed LCP.

4.2.2 Permits and Land Access

Coastal Zone Paleontological Permitting is distinct from other areas and work to begin that process sufficiently early enough to be ready for the regulatory work needed.

4.3 Paleontological Mitigation Plan

4.3.1 Outline

The Paleontological Mitigation Plan (PMP) will include the following recommended Caltrans components. Optionally, the mitigation plan below may be combined with a Paleontological Evaluation Report.

SECTION 1 Mitigation Requirements Summary
SECTION 2 Introduction to Paleontological Mitigation Plan
SECTION 3 Summary of Monitoring Scope of Work on the Project Site
SECTION 4 Recommended Construction Monitoring Locations of Higher Importance
SECTION 5 Standard Paleontological Field Excavation Methods
SECTION 6 Scope of Recovery for Protected Artifacts
SECTION 7 Decision Thresholds for Fossil Recovery
SECTION 8 Reporting Schedule
SECTION 9 Lab Methods, Accessioning, and Curation Requirements
SECTION 10 Paleontological Mitigation Plan Reviews and Updates as Necessary
SECTION 11 Paleontological Stewardship Notice
SECTION 12 Employee Paleontological Awareness Training Program (WEAP/WEAT)
SECTION 13 Employee Health and Safety Plan

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Appendix B Preparer's Qualifications

This report was prepared by Wayne Thompson.

Wayne is ***Qualified Principal Paleontologist and CEO*** at Pacific Paleontology. Wayne has 48 years of experience as a professional paleontologist and paleontological consultant doing field research, publishing, paleontological resource impact assessments and surveys, and is a former U.S. Geological Survey, Menlo Park, Paleontologist. He is currently the Cultural Resources Commissioner for the City of Scotts Valley, the Paleontological Collections Advisor for the Santa Cruz Museum of Natural History, a Research Associate at the California Academy of Sciences and the U.C. Berkeley Museum of Paleontology. He has experience preparing CEQA and NEPA environmental documentation and mitigation measures such as Paleontological Evaluation Reports, Paleontological Mitigation Plans and Reports and designing and managing environmental compliance monitoring programs. He has experience creating and presenting WEAP Environmental Education programs, and site paleontological supervision and monitoring. Mr. Thompson is a paleontologist with a diverse background in paleontological research and publication, fieldwork, environmental law, museum collections, paleontological mitigation, governance, administration, education, and outreach. More about Wayne**.**

Appendix C Fossil Locality Records Search Results

Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
UCMP #					
UCMP #125955	Half Moon Bay, CA	Miramontes Pt. South	Purisima Fm.	Miocene	*Monodontidae*

UCMP #95962	Moss Beach 4, CA	USGS M1216	Purisima Fm.	Miocene, Hemphillian	*Phocoenidae*
UCMP #1460	Moss Beach 3, CA	V6849	Purisima Fm.	Miocene, Hemphillian	*Cetacea*
UCMP #137566	El Granada, CA	Surfer's Beach	n/a	Pleistocene Rancholabrean	*Bison latifrons*
UCMP #65318	Half Moon Bay, CA	Moss Beach	Purisima Fm.	Miocene, Hemphillian	*Dusignathus santacruzensis*
UCMP #67536	Half Moon Bay, CA	Moss Beach	n/a	Quaternary	Equus
Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
CASIZG #					
CASIZG # 34018	Moss Beach	Near Mouth of San Vicente Creek, CASG Loc. #34018	Purisima	Miocene-Pliocene	*Echinodermata Clypeastroida (Sand dollar)*
CASIZG #54827	Moss Beach	Near Mouth of San Vicente Creek, CASG Loc.#34437	Purisima	Miocene-Pliocene	*Pholadidae (Clam)*
CASIZG #69970	Moss Beach	Near Mouth of San Vicente Creek, CASG Loc. #	Purisima?	Pleistocene, QMT-4	*Patinopectin lohri (Pectin)*
Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
LACMVP #					
25482	Half Moon Bay	?	?	late Miocene	*Delphinus occiduus, (= Lonchodelphis occiduus) n. sp., Leidy, 1868*
75485	Half Moon Bay	?	Purisima Fm.	Pliocene, Gelasian	*Callorhinus gilmorei,* Berta & Demere, 1986, *Odobenidae indet.* (Allen, 1880)

152096 (= USGS locality M1245; UCMP V-6531)	Moss Beach	Rivermouth?	Purisima Fm.	Pliocene, Messinian	cf. *Dusignathus santacruzensis,* Kellogg, 1927
Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
LACMIP #					
Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
SCMNH #					
n/a					
Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
PGMNH #					
n/a					
Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
PBDB #					
n/a					
Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
UWBMIP #					
n/a					
Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
USNM Smithsonian Institution					
USNM 23891	Moss Beach	100’ west of the mouth of San Vicente Creek	Purisima Fm.	late Miocene-e. Pliocene	*Dusignathus santacruzensis*

		in JV Fitzgerald Marine Reserve. (Potentially correlates to CASIZG Loc. #34018)			
Spec. #	Gen Locality	Spec. Loc	Geologic Unit	Age	Taxa
Other non-Site Records					
UCMP #varies	San Mateo	Mussel Rock	Purisima	Miocene, Hemphillian	Aves, Pontoporidae, *Bison sp., Camelops, Equus, Glossotherium sp., Glossotherium harlani (=Paramylodon), Uria (Alcidae)*
UCMP #67774, 68128	San Mateo	Thornton Beach	Purisima, Quaternary deposits	Miocene, Hemphillian, Quaternary, Pleistocene, Irvingtonian	*Cetacea, Mammuthus sp., Mammuthus columbi*
UCMP #varies	San Mateo	Pomponio State Beach	Purisima	Miocene, Hemphillian	Pinnipeds, cetaceans, osteichthyans, chondrichthyans, aves, bivalves, gastropods, etc.
UCMP #86441, 86442	San Mateo	San Gregorio Beach	Purisima	Miocene, Hemphillian	*Cetacea*
UCMP #93081, 74037	San Mateo	San Vicente Creek	Purisima	Miocene, Hemphillian	Odobenidae
UCMP#125955, 128446, etc.	San Mateo	Miramontes Point, Miramontes Point S2 (9 mi S. of project in HMB)	Purisima & etc.	Miocene, Hemphillian to Quaternary, Pleistocene	Odobenidae, Aves, Delphinapterinae, *Thalassoleon mcnallyae*
UCMP #39203, 117253, 117252	San Mateo	Tunitas Creek & beach N.	Purisima	Miocene, Hemphillian	*Cetacea, Pontoporidae, Designates santacruzensis*

SCMNH #9607.01-9607.05	San Mateo	Ano Nuevo	Purisima	Pliocene	*Neptunea* sp.
SCMNH #9626-9626.01	San Mateo	Ano Nuevo	Purisima	Pliocene	*Miopleiona oregonensis*
SCMNH #9995	San Mateo	Tunitas Beach	Purisima	Pliocene	Marine mammal bone
SCMNH #21111-21112	San Mateo	Ano Nuevo	Purisima	Pliocene	*Miopleiona sp.* & *Pectin*
UCMP #236084	San Mateo	Thornton Beach	Merced Fm.	Pleistocene	*Enhydra*
UCMP V#99851	San Mateo	San Gregorio Beach	Purisima	Miocene, Hemphillian	*Hexanchus sp., Carcharodon sp., Phocoenidae indet. (species "c" of Barnes), cf. Eubalaena informal sp. 1, etc.*
20543	SF Peninsula	Thornton Beach	Qls; Quaternary landslide	Irvingtonian	*Mammuthus meridionalis*
LACMIP; 37674 (USGS-M2147)	Ano Nuevo, CA	Green Oaks Creek	Qmt; Quaternary Marine Terrace	late Pleistocene	17 species of bivalves, gastropods, barnacles

Appendix D Photo Log

Fossil *Bison latifrons* vertebra from Tku sediments near the southern terminus of the project being prepared in Pacific Paleontology's Monterey Labs.

Appendix E Preliminary Project Plans for Construction

There are no preliminary plans for potential construction related impacts to paleontology resources.