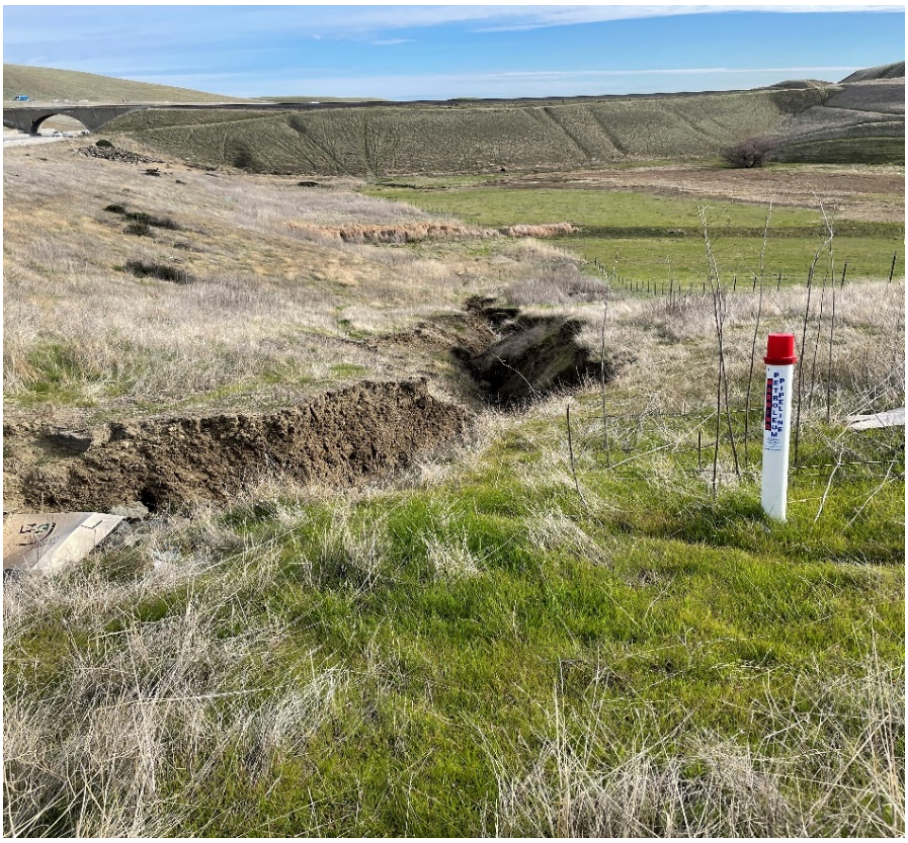
Interstate 580 Storm Damage Permanent Restoration Project

ALAMEDA COUNTY, CALIFORNIA
DISTRICT 4 – ALA – 580 (PM 4.3)
04-0P120/0417000401

Initial Study – Proposed Mitigated Negative Declaration



Prepared by the
State of California, Department of Transportation

April 2021

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General Information About This Document

What's in this document:
The California Department of Transportation (Caltrans or the Department) has prepared this Initial Study with Proposed Mitigated Negative Declaration (IS/Proposed MND) to examine the potential environmental impacts of replacing an existing down drain and backfilling an eroded embankment along eastbound Interstate 580 in Alameda County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). The document tells you why the Project is being proposed, how the existing environment could be affected by the Project, the potential impacts of each proposed activity, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document and provide comments (see options to submit comments below).

- This document may be downloaded at the following website (https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs#storm-damage-restoration-580).

- A virtual presentation on the Project is available at: (https://deavpm.wixsite.com/website-1/copy-of-Project-description) where you can find details about the Project and how to leave comments.

- Caltrans will also give the opportunity to request for a virtual public meeting. All requests must be made by the May 11, 2021 deadline.

- Caltrans values your input, and we would like to hear what you think. If you have any comments about the Project, please access the virtual public presentation scheduled for this Project from April 26, 2021 to May 25, 2021 and/or send your written comments via postal mail or email to Caltrans by the deadline.

Send comments using one of the following methods:

- **Postal Mail:**
  California Department of Transportation, District 4,
  Attn: Michael Lee
  P.O. Box 23660, MS 8-B
  Oakland, CA 94623-0660

- **Email:** Send comments via email to Michael Lee, Associate Environmental Planner at michael.lee@dot.ca.gov

- **Virtual Comment Card:** Leave a comment using the comment card feature on the virtual public presentation website during the comment period.

- Be sure to send comments by the deadline: May 25, 2021.

What happens next:

Per CEQA Section 15073, Caltrans will circulate the Initial Study with Proposed Mitigated Negative Declaration for review for 30 days. During the 30-day public review period, the public and responsible and trustee agencies can submit comments on this document to Caltrans. Caltrans will consider the comments and will respond to them after the 30-day public review period. After comments are received from the public and reviewing agencies, Caltrans may: (1) grant environmental approval to the Project, (2) conduct additional environmental studies, or (3) abandon the Project. If the Project is given environmental approval and funding is obtained, the Department could design and construct all or part of the Project.

Alternative formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Michael Lee, Office of Environmental Analysis, P.O. Box 23660, MS 8-B Oakland, CA 94623-0660 1 (510) 381-3497 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY to Voice), 1 (800) 735-2922 (Voice to TTY), 1 (800) 855-3000 (Spanish TTY to Voice and Voice to TTY), 1 (800) 854-7784 (Spanish and English Speech-to-Speech) or 711.

Initial Study with Proposed Mitigated Negative Declaration

Dist.-Co.-Rte.: 04-ALA-580-4.3	**EA:** 04-0P120 **Project ID:** 0417000401
Project Title:	Interstate 580 Storm Damage Permanent Restoration Project (The Project)
Lead agency name and address:	California Department of Transportation 111 Grand Ave, Oakland, CA 94612
Contact person and phone number	Michael Lee, Associate Environmental Planner (510) 381-3497
Project Location	Alameda County, California
General Plan Description	Transportation
Zoning	Unincorporated

Description of Project:

The California Department of Transportation (Caltrans or the Department) proposes to restore the function of an existing storm drain system and preserve the structural integrity of the surrounding embankment and highway along eastbound Interstate (I) 580 in Alameda County. Project scope includes the replacement of corrugated metal pipe, grading and shoring of the existing slope, and backfill of the eroded embankment at postmile 4.3.

Surrounding land uses and setting:

The Project site is located between the City of Livermore and the City of Tracy directly along the eastbound (EB) shoulder of I-580. Traffic along I-580 consists predominantly of commuters traveling towards Livermore and the greater Bay Area, and trucks for the transportation of goods. The unincorporated area in which the Project is located consists of rolling hills and annual grasslands that are used primarily for cattle grazing.

Other public agencies whose approval is required:

- Biological Opinion from the U.S. Fish and Wildlife Service (USFWS)
- Incidental Take Permit for California tiger salamander from California Department of Fish and Wildlife (CDFW)
- Letter of Concurrence for San Joaquin kit fox from USFWS

Lindsay A Vivian 04/19/2021

Lindsay Vivian Date
Chief, Office of Environmental Analysis
District 4, California Department of Transportation

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SCH:

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans or the Department) proposes to restore the function of an existing storm drain system and preserve the structural integrity of the surrounding embankment and highway along eastbound Interstate (I) 580 in Alameda County. The Project scope includes the replacement of corrugated metal pipe, grading and shoring of the existing slope, and backfill of the eroded embankment at post mile 4.3.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is the Department's intent to adopt an MND for this Project. This does not mean that the Department's decision regarding the Project is final. This MND is subject to change based on comments received by interested agencies and the public.

The Department has prepared an Initial Study for the I-580 Storm Damage Permanent Restoration Project (the Project) and, pending public review, expects to determine from this study that the Project would not have a significant effect on the environment for the following reasons:

The Project would have no effect on aesthetics, agriculture and forestry, air quality, cultural resources, energy, land use/planning, mineral resources, noise, population/housing, public services, recreation, tribal cultural resources, and wildfire.

In addition, the Project would have less than significant effects to geology and soils, greenhouse gasses, hazards and hazardous materials, hydrology and water quality, transportation, utilities and mandatory findings of significance.

With the following mitigation measure incorporated, the Project would have less than significant effects to biological resources.

> **Mitigation Measure Bio – 1: On-site and Off-site restoration of temporary and permanent impacts**
> Compensatory mitigation for impacts to species habitat in the form of habitat restoration and preservation would be provided at a 3:1 ratio for permanent impacts, and a 1:1 ratio for temporary impacts. Mitigation for permanent impacts would occur off-site, while restoration for temporary impacts would occur on-site. Mitigation plans would be further developed and refined during the design phase.

Melanie Brent — Date
Deputy District Director, Environmental Planning and Engineering
California Department of Transportation, District 4

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this Project. Please see the checklist beginning on page 29 for additional information.

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

DETERMINATION:

On the basis of this initial evaluation (choose one):

☐ I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would be prepared.
☒ I find that although the Project could have a significant effect on the environment, there would 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 would be prepared.
☐ I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐ I find that the 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 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 Project, nothing further is required.

Melanie Brent Date
Deputy District Director, Environmental Planning and Engineering
California Department of Transportation, District 4

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Acronyms and Abbreviations

AB	Assembly Bill
AC	Asphalt concrete
AMM	Avoidance, Minimization, and Mitigation measure
ARB	California Air Resources Board
BMP	best management practices
BO	biological opinion
BSA	Biological Study Area
CAFE	Corporate Average Fuel Economy
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CE	Categorical Exclusion
CEQA	Categorical Environmental Quality Act
CH_4	methane
CO_2	carbon dioxide
CMP	corrugated metal pipe
CNDDB	California Natural Diversity Database
CTP	California Transportation Plan
ECR	Environmental Commitments Record
EFP	equivalent fluid earth pressure
EO	Executive Order
ESA	Environmentally Sensitive Area
FHWA	Federal Highway Administration
GHG	greenhouse gas
GWP	global warming potential
H&SC	Health and Safety Code
HFC	hydrofluorocarbon
IPCC	International Panel on Climate Change
I	Interstate
IS	Initial Study
IS/Proposed MND	Initial Study/Proposed Mitigated Negative Declaration
ITP	Incidental Take Permit
LCFS	Low Carbon Fuel Standard
LOC	letter of concurrence
$MMTCO_2e$	million metric tons of carbon dioxide equivalent
MPO	Metropolitan Planning Organization
MTC/ABAG	Metropolitan Transportation Commission/Association of Bay Area Governments
NAHC	Native American Heritage Commission
NES	Natural Environmental Study
NHTSA	National Highway Traffic Safety Administration
N_2O	nitrous oxide
NPDES	National Pollutant Discharge Elimination System
OCRS	Office of Cultural Resource Studies
PM	post mile

PJD	preliminary jurisdictional determination
PQS	Professionally Qualified Staff
RCEM	Road Construction Emissions Model
ROW	right-of-way
RSP	rock slope protection
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SCS	Sustainable Communities Strategy
SHS	State highway system
SF_6	sulfur hexafluoride
SWDR	Stormwater Data Report
SWPPP	Stormwater Pollution Prevention Plan
TCE	temporary construction easement
The Project	I-580 Storm Damage Permanent Restoration Project
TMDL	total maximum daily load
TMP	traffic management plan
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGCRP	United States Global Change Research Program
USFWS	United States Fish and Wildlife Service
VIA	Visual Impact Assessment
VMT	vehicle miles traveled
WEAT	worker environmental awareness training
WPCP	Water Pollution Control Plan
WQS	Water Quality Study

Chapter 1 – Project Information

1.1 Location

The California Department of Transportation (Caltrans or the Department) proposes the Interstate 580 Storm Damage Permanent Restoration Project (Project) to restore an existing damaged storm drain system and eroded embankment along Interstate (I) 580 at post mile (PM) 4.3 within an unincorporated area of Alameda County. The Project site is located between the City of Livermore and the City of Tracy directly along the eastbound shoulder of I-580 (see **Figure 1**). Traffic along I-580 consists predominantly of commuters traveling towards Livermore and the greater Bay Area, and trucks for the transportation of goods. The unincorporated area consists of rolling hills and annual grasslands that are used primarily for cattle grazing.

The Project is located in a rural area of the Altamont Pass, which provides low mountain scenic views within the Diablo Range along the highway. The pass is also used for wind energy generation, with five known wind farms consisting of over 4,000 turbines located within the area (Mobile Ranger 2016).

Caltrans has deemed the Project necessary due to continued failure of the embankment slope that is likely to undermine the integrity of the roadway pavement along I-580. Failing to address the embankment could contribute to more costly repairs that would require lane closures and more impacts to I-580. Caltrans is the lead agency under the California Environmental Quality Act (CEQA) and has prepared this Initial Study with Proposed Mitigated Negative Declaration (IS/Proposed MND). This document examines the potential environmental effects that may occur as a result of the proposed Project.

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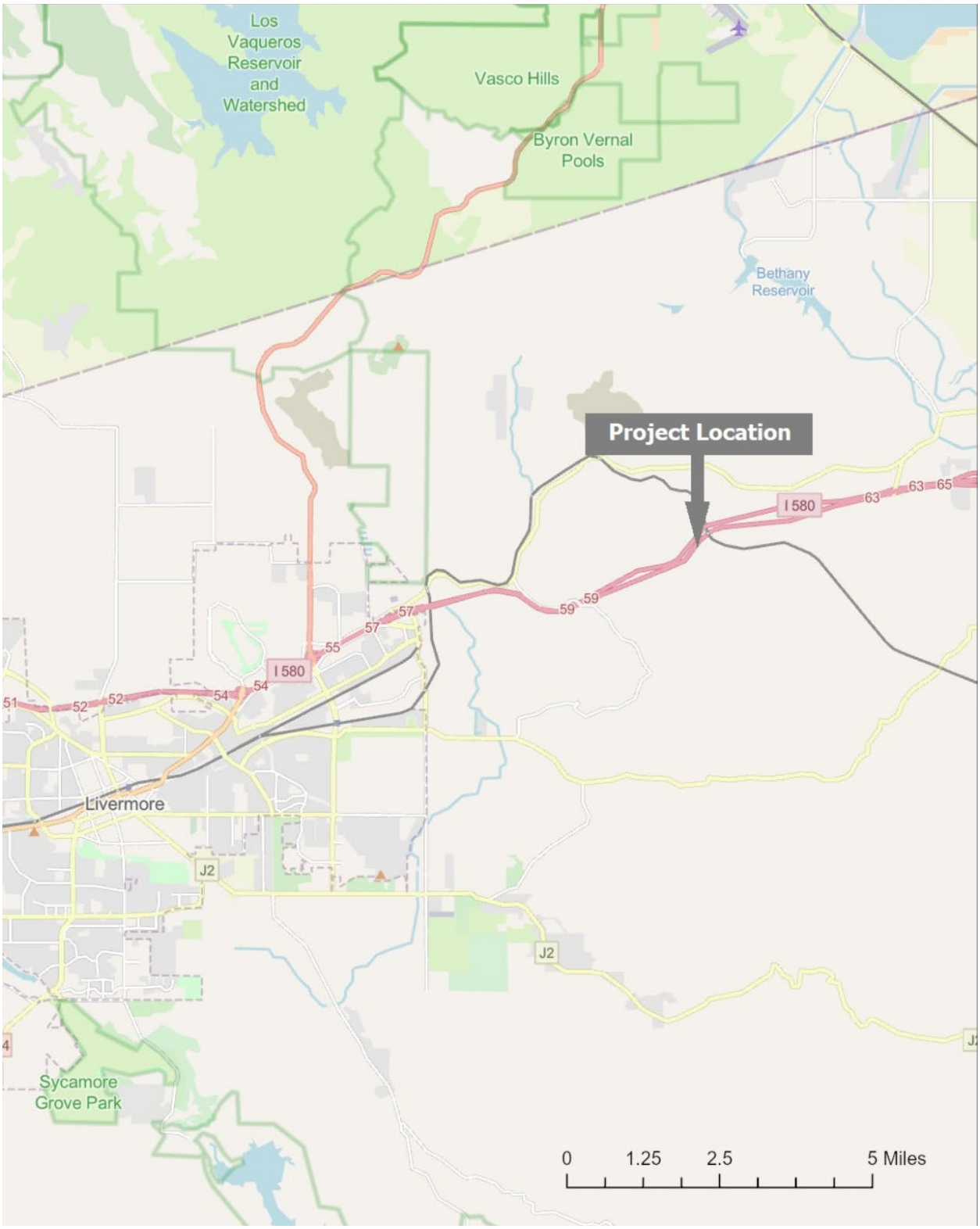

Figure 1: Project Location

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1.2 Purpose and Need

The purpose of the Project is to restore the function of the storm drain system and preserve the structural integrity of the embankment and highway in a safe and economic manner, thus preventing a failure of the roadway, including lanes of traffic.

The need for restoration and embankment repair was identified by Caltrans, concluding that if the Project is not addressed, erosion would further degrade the structural integrity of the highway and ultimately impact the safety of the highway.

1.3 Project Description

The Project proposes to replace the existing 12-inch-diameter by 30-foot-long corrugated metal pipe (CMP) down drain with a new 18-inch-diameter by 410-foot-long CMP down drain that begins at the highway shoulder and terminates at the toe of slope. The first 85 feet of the north side of this proposed down drain would be buried to limit visibility of the facility from the highway, while the remaining 325 feet would be exposed. All 410 feet of the down drain would be placed along the edge of the existing embankment. Pipe anchor assemblies would be used to secure the down drain in place, while a tee energy dissipator and rock slope protection (RSP) drainage system would be provided to slow the flow of water at the terminus of the down drain. Layouts of the down drain and tee energy dissipator can be found in **Appendix E**.

The current eroded embankment area, as shown in **Figure 2,** is 500 feet long by 20 feet wide and an average of 15 feet deep. The eroded embankment would be backfilled using a combination of RSP and imported borrow material, which must be free of unsuitable materials, such as weeds, concrete, and other mixed debris. Due to the vast size of the eroded gully area, 1,000 cubic yards of imported borrow material would be needed for backfill. Dewatering of the embankment gully may be required depending on weather conditions during construction. Details of the dewatering design would be developed during the design phase of the Project.

1.4 Project Footprint

The Project footprint consists of all areas subject to ground disturbance, which includes the proposed access area, the vegetated and unvegetated shoulder of eastbound I-580, the eroded slope, and Staging Area 1 to the northwest of the Project footprint **(see Figure 3)**. Caltrans is also considering Staging Area 2 (**see Figure 4**) only if Staging Area 1 is inadequate for the Project. However, environmental impacts for both staging areas have been studied and quantified. There is a sliver of adjacent private property just beyond the current fence line to the south of the Project. Caltrans would require a temporary construction easement (TCE) from a private property owner during Project construction.

Figure 2: Eroded Embankment

1.5 Construction Methods

Construction of the Project would require up to 240 working days to complete and is anticipated to begin in July 2023 and conclude in August 2024. Caltrans is expected to conduct work between April 15 and October 15 to avoid the typical wet season. Ground-disturbing activities would commence in late July 2023 and continue through October 2023, and restart in April 2024 and run through August 2024. Construction activities would be done during daytime hours, with no nighttime or weekend work anticipated.

Various pieces of equipment would be used to construct the Project. Excavators and bulldozers would be used to construct and regrade the embankment in benches. Trucks would be used to haul material into and out of the work zone. Saw cut machines would be used to cut existing pavement in areas where drainage systems are required to be reconstructed. Mobile concrete mixers and vibrators would be used to place Portland cement concrete for drainage inlet construction. The use of special construction mats may be required to allow operation of earth moving equipment to access the embankment slope.

During the first stage of construction, temporary K-rail would be placed along the edge of travel way on the inside edge of the shoulder. Construction activities have the potential to require one travel lane for an added safety buffer. That will be determined during the design phase of the Project. Clearing and grubbing of the Project area would be conducted to remove scrub, trash, vegetation, and the existing damaged down drain.

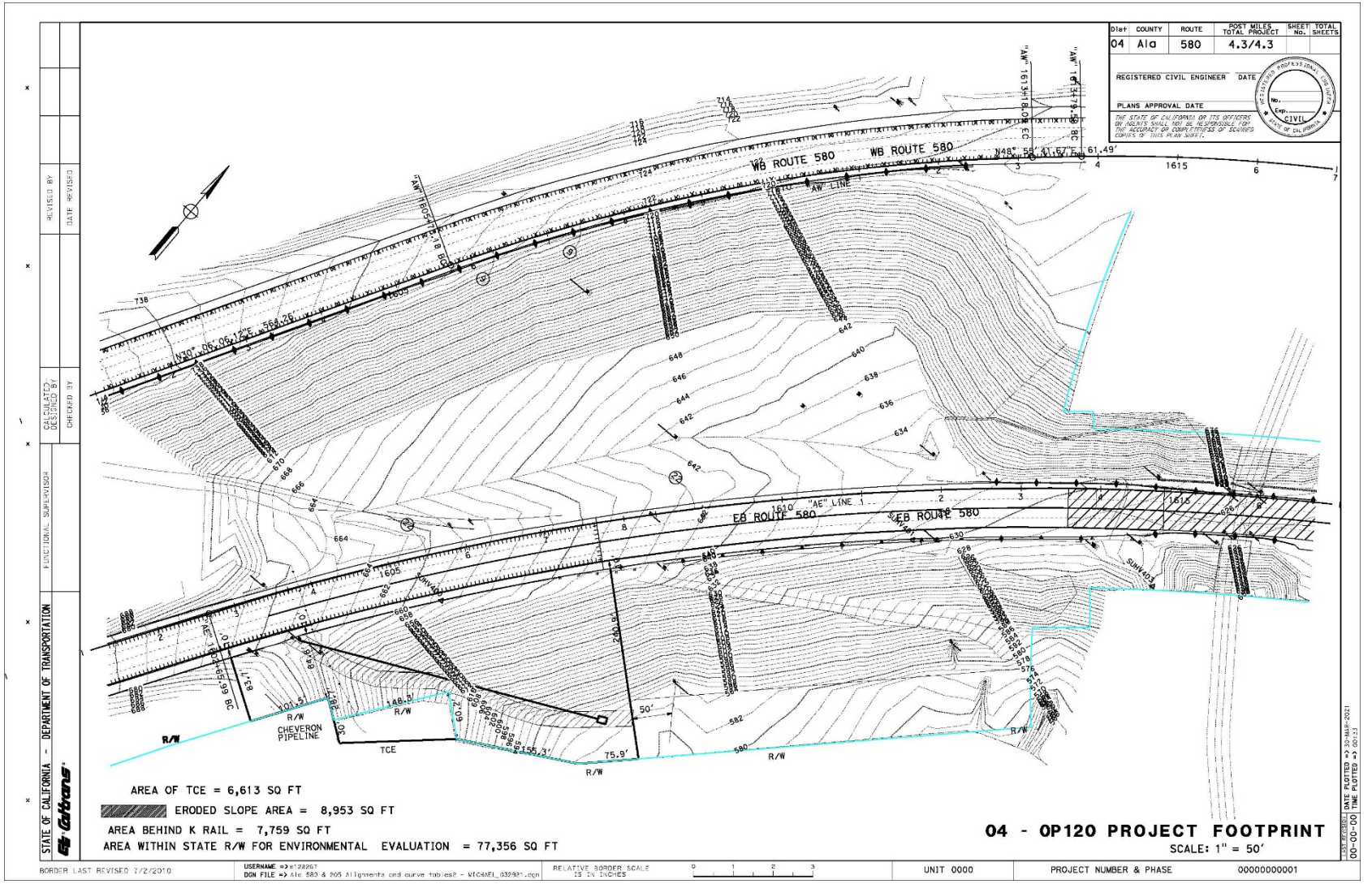

Figure 3: Project Footprint

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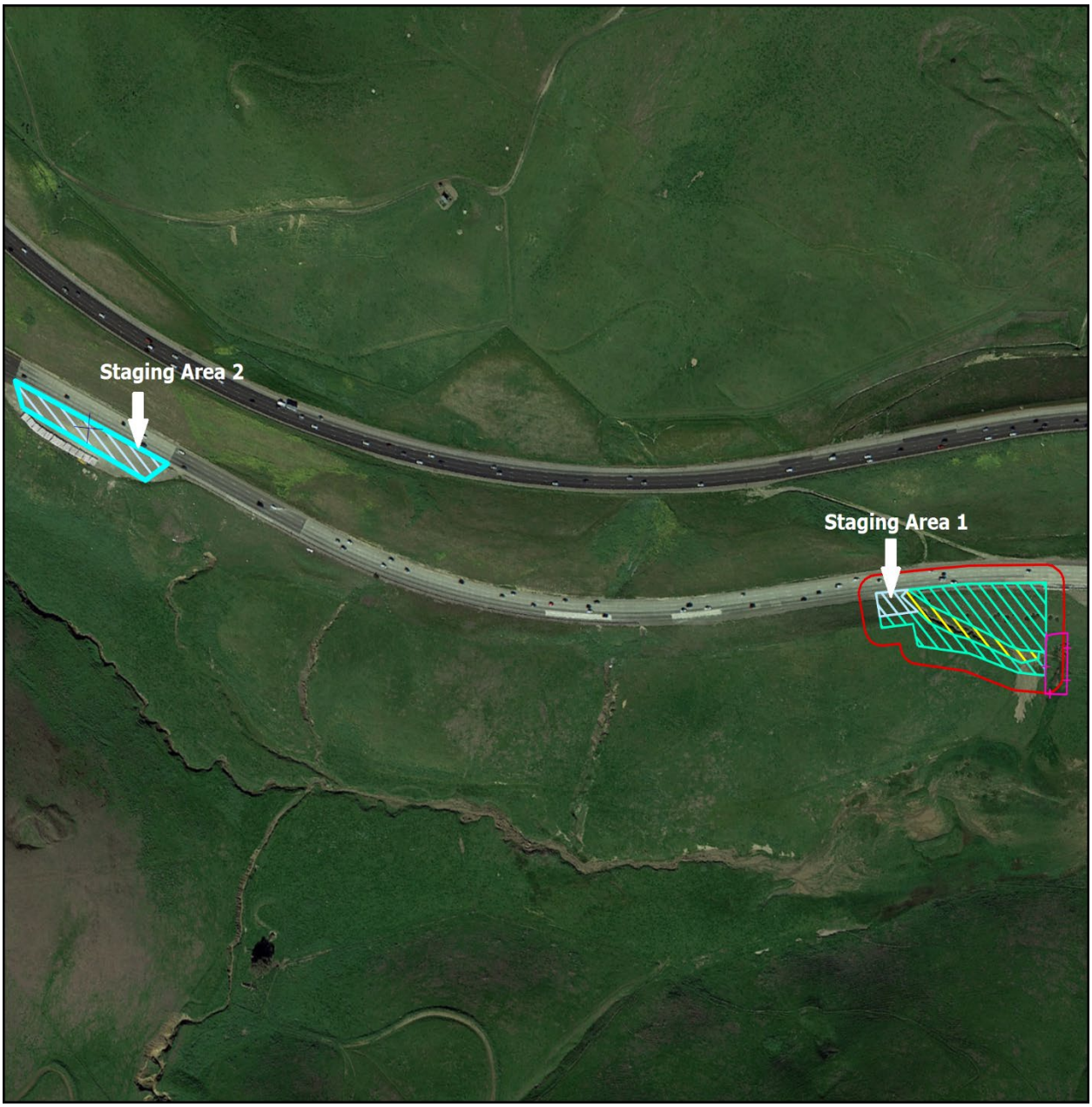

Figure 4: Staging Areas 1 and 2

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Preparation of the embankment slope would also be conducted during this stage to receive the imported borrow fill material.

The existing CMP down drain (12 inches by 30 feet) would be removed. Reconstruction of the embankment slope would then begin using a layering method in a bottom-up manner. RSP would be laid down in the upper 120 feet of the gully and imported borrow material would then be used to fill in the gaps in the RSP and compacted down to rebuild the embankment to original conditions. RSP would be placed to within 1.5 feet of original ground and borrow material would be placed and compacted on top of the RSP to original grade. The remainder of the gully would be backfilled with imported borrow material only.

Following reconstruction of the embankment, the new drainage system would be installed along the edge of the reconstructed embankment. This system would consist of an 18-inch-diameter by 410-foot-long CMP down drain; replacement of the asphalt concrete (AC) dike along the edge of the outside shoulder; an entrance taper at the beginning of the down drain; and an 11-foot by 8-foot by 1.5-foot energy dissipator at the toe end of the down drain.

After construction of the new drainage system, erosion control measures would be installed over the embankment slope. The temporary K-rail would then be removed.

1.6 Excavation, Grading, and Backfill

A total of 50 cubic yards of existing debris from the eroded slope would be removed prior to placement of imported borrow material. In addition, the side slope of the gully would be cut to create a stable slope at a ratio no steeper than 3:1 before backfilling. Any compaction requirements would follow Caltrans standard specifications. Erosion control best management practices (BMPs) would be incorporated following completion of restoration work on the slope and drainage system to help stabilize the site.

Following gully excavation and slope cutting activities mentioned above, a keyway would be excavated into the bottom of the eroded gully extending 120 feet from the upper portion of the embankment. Geotextile fabric would then be placed in the bottom of this section of the gully prior to placing the RSP, which would be placed within 1.5 feet of original grade. It would consist of rock material that is 9 inches in diameter and a median weight of 60 pounds. The rock would be spread in layers by bulldozers or other suitable equipment and would be placed so there would be a minimum number of voids. Larger rocks would be placed on the outside surface of the slope protection. The voids of the RSP would be backfilled with imported borrow material during placement of the RSP. The top 1.5 feet would consist of compacted imported borrow. The remaining portions of the embankment gully would be backfilled with imported borrow material only.

There is an active 8-inch-diameter Chevron petroleum pipeline that runs north-south through the Project site. Caltrans would coordinate with Chevron during the design

phase to inform them of the Project prior to construction to avoid any potential damage to their existing pipeline.

1.7 Proposed Drainage System

The Project would reconstruct the existing drainage system by replacing the damaged 12-inch-diameter by 30-foot-long CMP down drain with an 18-inch-diameter by 410-foot-long CMP down drain (see **Figure 3**). See 1.3 Project Description and 1.6 Excavation, Grading, and Backfill for more details.

Currently, the existing down drain and erosional gully drain into a freshwater creek that runs parallel to I-580 but is outside the Project footprint (Mountain House Creek). The new down drain would terminate at the toe of slope, and an energy dissipator would be constructed at the toe of slope to slow the flow of water exiting the drain. The dissipator would be comprised of RSP and would connect to the down drain via a “tee-shaped” corrugated steel pipe connection. Water exiting the down drain would flow out of two outlets onto the RSP dissipator pad. The dissipator pad would be 132 cubic feet in volume (11 feet × 8 feet × 1.5 feet in depth). RSP would be placed to a depth of 1.5 feet below original grade prior to installation of the dissipator (see **Appendix E**).

1.8 Access and Staging

Access to and from the Project site would utilize the shoulder behind the temporary K-rail barrier to enter the site and drive down the embankment slope. Construction vehicles would enter and exit along the road shoulder. To exit the site, vehicles would drive up the embankment slope, drive onto the shoulder behind the temporary K-rail barrier, and merge onto I-580. Temporary traffic control measures shall be provided in a traffic management plan (TMP) to ensure traffic safety during construction. A total of 500 feet of the eastbound shoulder would be closed for the duration of construction. It is possible the closure of a single lane of traffic would be required during construction; this would be evaluated during the design phase.

The Project is proposing two separate areas for staging and materials storage as shown in **Figure 4**. Staging Area 1 consists of 0.13 acre and lies directly adjacent to the shoulder along the western side of the Project footprint. This area would lie behind the proposed temporary concrete K-rail barrier and would be used minimally. Larger construction equipment would be stored at an off-site location. Staging Area 2 consists of 0.65 acre and is primarily designated as an emergency vehicle runoff area. This area is located off-site 0.45 mile west of the Project footprint. Caltrans Design would evaluate both staging areas during the design phase of the Project and recommend a preferred area to the contractor prior to construction.

1.9 Utilities

There is an active 8-inch-diameter Chevron petroleum pipeline that runs north-south through the Project site. However, the Project would not require relocation of the pipeline. The existing sandbags covering the pipeline would be removed unless otherwise advised by Chevron.

The Project would not involve any trenching activities, lighting, or tying into existing power. Additionally, no utility relocations or service disruptions are anticipated as part of this Project.

1.10 Vegetation and Tree Removal

The Project would require grubbing and clearing of existing vegetation within the Project footprint. Following completion of the Project, erosion control would be applied to the final grade, which may include the following: imported topsoil, soil amendment, hydroseed and hydromulch, rolled erosion control product(s), and/or a linear sediment barrier. The hydroseed mix would include native grasses, forbs, and/or shrubs that are appropriate for the area. Potential screens may be placed to hide any glare or potential visibility of the CMP. The area is open, annual grassland and there are no trees in the Project area; no tree removal is anticipated.

1.11 Right of Way Requirements and Easements

A TCE would be required for construction of the Project. This Project would require a TCE of 0.15 acre of privately owned land adjacent to Caltrans' right-of-way (ROW) (see **Figure 3**). The TCE would be needed in order to access and repair the erosional damage that has occurred within this area. Caltrans would work with the property owner to obtain this easement prior to commencement of construction.

1.12 Permits/Approvals

The Project may require permits or approvals from the following agencies:

- U.S. Fish and Wildlife Service (USFWS) – Biological Opinion (BO)
- U.S. Fish and Wildlife Service - Letter of Concurrence for San Joaquin kit fox
- California Department of Fish and Wildlife (CDFW) – Incidental Take Permit (ITP) for California tiger salamander

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Chapter 2 – California Environmental Quality Act Evaluation

This chapter evaluates potential environmental impacts of the Project, as described in Chapter 1 as they relate to the CEQA checklist to comply with State CEQA Guidelines (Title 14 California Code of Regulations, Division 6, Chapter 3, Section 15091).

2.1 CEQA Environmental Checklist

This checklist identifies the physical, biological, social, and economic factors that might be affected by the Project. In many cases, background studies performed in connection with the Project would indicate that there are no impacts to a particular resource. A NO IMPACT answer reflects this determination. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

Project features, which can include both design elements of the Project and standardized measures that are applied to all or most Caltrans projects, such as BMPs and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the Project and have been considered prior to any significance determinations documented below. This checklist incorporates by reference the information contained in Chapter 1.

2.1.1 Aesthetics

A Visual Impact Assessment was prepared and approved on October 1, 2020.

Affected Environment

The Project is within a portion of I-580 that is designated as an 'Eligible Scenic Highway', located in a rural area of the Altamont Pass. It is characterized by rolling hills with annual grasslands and is also a common travel route for commuters who work in the Bay Area and live on the eastern side of the Altamont Pass. Direct visibility is limited from the eastbound direction of the highway, and only visible very briefly from the number one and two lanes in the westbound direction. There are scattered areas of small shrubs grouped in drainages and other more protected areas, as well as in less exposed areas within grasslands.

CEQA Significance Determinations for Aesthetics

Except as provided in Public Resources Code Section 21099, would the Project:

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

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

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

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

No Impact – The Project is compatible with the existing visual character of I-580 and would not affect scenic vistas or important views. Installation and operation of the CMP down drain would be integrated along the existing slope embankment via pipe anchor assemblies. The down drain would also maintain a low visibility to vehicles due to the steep grade of the slope and would not substantially alter the visual quality of the highway. A total of 85 feet of the down drain would also be buried from the entrance taper downwards to further reduce potential visibility from the roadway. After installation, the slope would be restored to existing grade using imported borrow material. Minimal vegetation removal is expected, and the finished slope would be treated with erosion control, which would include hydroseed and hydromulch treatment. This mix would contain grasses and shrubs that are appropriate for the area. This vegetation would also help to screen the CMP from any potential glare that could be visible to the traveling public heading eastbound.

The Project would not have a substantial adverse effect on a scenic vista and would be visually consistent with the character of the surrounding area. The Project would not substantially damage scenic resources including trees, rock outcroppings, or historic buildings within the Scenic Highway and would not substantially degrade the existing visual character or quality of public views of the site and surroundings. This Project would not create a new source of substantial light or glare. Inclusion of the Aesthetics AMMs listed in **Appendix C** would ensure that the Project would not adversely affect the visual quality or visual character of the surrounding area. There would be no impact.

2.1.2 Agriculture and Forest Resources

CEQA Significance Determinations for Agriculture and Forest Resources

Would the Project:

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

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

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

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

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

No Impact – The Project is not located on agricultural or forested land. The Project is located on designated Grazing Land and is frequently used for cattle grazing and ranch operations by an adjacent landowner (Department of Conservation 2016a). The Project would not convert agricultural land to non-agricultural uses or forest land to non-forested uses, or result in changes to the existing environment that could result in conversion of agricultural land, forest land, or conflict with a Williamson Act contract. There would be no impact.

2.1.3 Air Quality

CEQA Significance Determinations for Air Quality

Would the Project:

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

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

c) Expose sensitive receptors to substantial pollutant concentrations?

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

No Impact – The Project would not conflict with or obstruct the implementation of an applicable air quality plan, result in a cumulatively considerable net increase in any criteria pollutant, expose sensitive receptors to substantial pollutant concentrations, or result in other emissions that adversely affect a substantial number of people. Construction air pollutants are expected to be minimal to negligible. Potential impacts to air quality, including violation of air quality standards, criteria pollutants, exposure of sensitive receptors to pollutants and creation of odors, are not anticipated based on the proposed scope of the Project.

2.1.4 Biological Resources

A Natural Environmental Study (NES) for the Project was prepared and approved on October 16, 2020.

Affected Environment

The Project is located within the California Coastal Range in eastern Alameda County. Caltrans biologists established a Biological Study Area (BSA) for the Project for purposes of evaluating those natural resources present within the Project area and to assess how this Project may affect those resources. This Project is located within the hills and intermountain valleys of the northern Diablo Range. The Diablo Range extends for 130 miles along the west side of the San Joaquin Valley from the Carquinez Strait to Coalinga. Much of the BSA is located within the Altamont Pass, a low mountain pass in the Diablo Range, and is within the inner portion of the southern element of the Coast Range.

The BSA for this Project comprises 3.78 acres, which includes the Project footprint, access area, and a 50-foot buffer around the Project footprint (**Figure 3**). The majority of the BSA is within Caltrans' ROW and includes the eastbound lane of I-580, the vegetated and unvegetated shoulder, as well as the eroded slope. A total of 0.86 acre of the BSA is outside of Caltrans' ROW, and is located on private property (as delineated by the fence line in **Figure 3**). Some work would occur on private property, and a TCE would be required to re-establish the crumbling embankment and to repair the fence line, comprising 0.15 acre.

Existing Waters and Wetlands

Near the BSA, Mountain House Creek flows from an enclosed culvert to the east, where it travels under the Union Pacific Railroad to a daylighted section that flows parallel to the mainline of I-580. The daylighted section of Mountain House Creek connects to a series of seasonal emergent wetlands, about 400 feet from the BSA on private land (**Figure 5**). These connected, persistent emergent wetlands are found within a depression between two hills, extend from either side of the channelized Mountain House Creek, and are fed in part by runoff from I-580.

Within and adjacent to the BSA is a wetland that is likely regulated by the U.S. Army Corps of Engineers (USACE) and Central Valley Regional Water Quality Control Board (RWQCB). This emergent wetland is fed by a combination of a culvert that travels beneath I-580 at the edge of the BSA and the daylighted portion of Mountain House Creek. A total of 0.132 acre of the wetland is located within the BSA. Caltrans processed a preliminary jurisdictional determination (PJD) with USACE to determine the extent of the existing wetland in relation to the Project footprint. The PJD was completed on March 31, 2021, determining that the Project footprint would not overlap or affect the wetland, as shown in **Figure 5**. As a result, discharge into the wetland due to Project activities is not anticipated.

Land Cover Types

There are five land cover types that have been identified within the BSA. The exact acreage of each type is listed in **Table 1** and types are shown in **Figure 5**.

Table 1: Land Cover Types within the BSA

Land Cover Type	Total Area within BSA (Acres)
Annual Grassland	2.48
Buckwheat Scrub	0.24
Fresh Emergent Wetland	0.15
Barren Soil	0.07
Paved Road	0.84
Total	3.78

Reference: Natural Environmental Study, 2020

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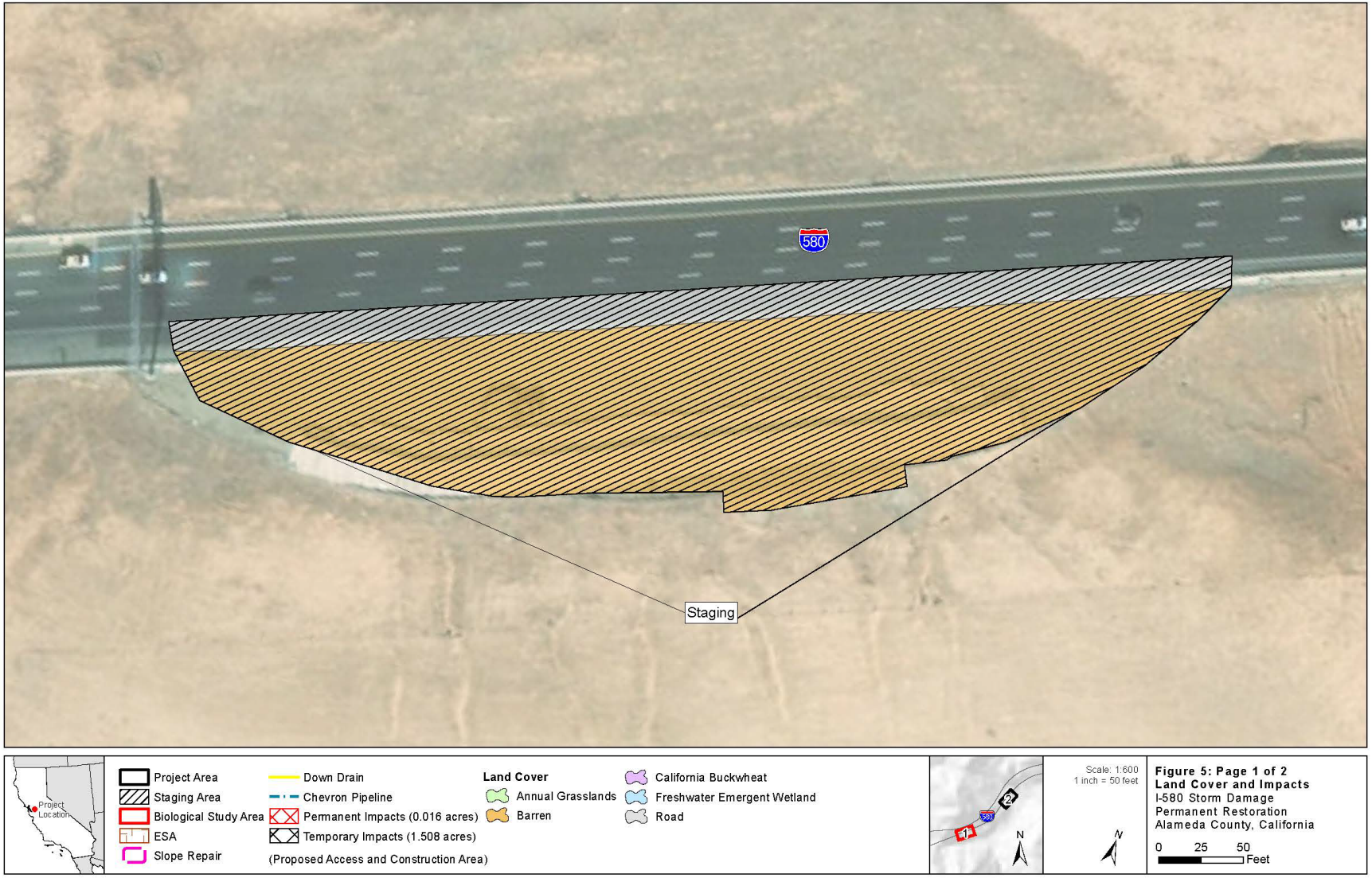

Figure 5: Land Cover Types and Wetlands

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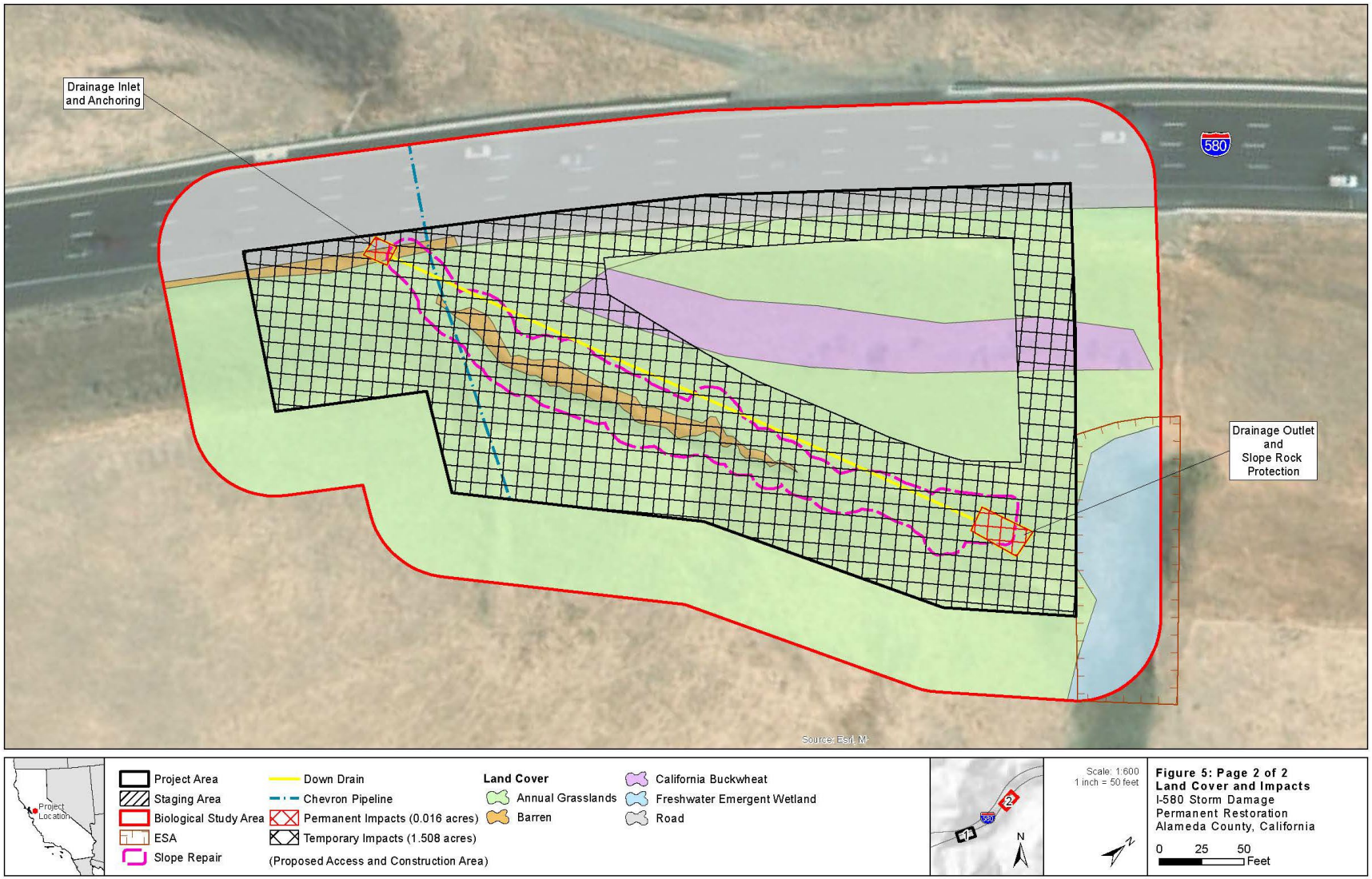

Figure 5: Land Cover Types and Wetlands, page 2

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Surveys and Survey Dates

A wildlife habitat assessment was conducted by Caltrans biologists on November 19, 2019. Caltrans subsequently conducted a wetland delineation on April 1, 2020 to evaluate the condition and proximity of the existing wetland to the Project area. Botanical studies were conducted on May 19, 2020 and July 30, 2020, and no rare plant surveys were conducted. Vegetation type mapping was also utilized to classify the vegetation within the BSA. No tree survey was conducted for the Project, as no trees occur within the BSA.

Special-Status Species

A total of 35 special-status plant species and two natural communities of concern were initially considered to be present within or around the Project area. Out of these 35 species and two communities, six special-status plant species were further identified as having some potential to occur, based on the presence of marginal-quality habitat and nearby occurrences. These plants include big tarplant (*Blepharizonia plumosa*), brittlescale (*Atriplex depressa*), California alkali grass (*Puccinellia simplex*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), diamond-petalled California poppy (*Eschscholzia rhombipetala*), and heartscale (*Atriplex cordulata*). Based on survey data, literature reviews, and analyses of previous Caltrans projects within the general vicinity, Caltrans biologists determined that special-status plants are unlikely to occur in the Project footprint and concluded that protocol-level rare plant surveys were not needed. Each of these plant species was determined to have a low potential to occur within the BSA, with the closest California Natural Diversity Database (CNDDB) occurrence at nearly 1 mile away (California alkali grass).

Thirty-seven special-status wildlife species were evaluated for their potential to occur with the BSA. Of the 37 species that were initially considered, seven individual wildlife species were determined to have some potential to occur within the BSA. These species are California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), San Joaquin kit fox (*Vulpes macrotis mutica*), American badger (*Taxidea taxus*), northern harrier (*Circus hudsonius*), white-tailed kite (*Elanus leucurus*), and burrowing owl (*Athene cunicularia*).

Migratory birds and bat species were also considered for their potential to occur within the BSA. Habitat within the BSA was determined to be of marginal quality for foraging birds due to the high level of disturbance within and around the eroded slope. In addition, no bats or evidence of roosting bats were observed during field visits, nor are there any known occurrences of special-status bats within 5 miles of the BSA. A complete species evaluation table that lists all special-status plant and wildlife species, their federal and state listings, and known occurrences can be found in **Appendix D**.

Out of the seven special-status wildlife species determined to have some potential to occur in the BSA, California red-legged frog (*Rana draytonii*) and California tiger salamander (*Ambystoma californiense*) were determined to have a moderate to high

potential to occur within the BSA. The California red-legged frog is federally listed as threatened, while the California tiger salamander is state and federally listed as endangered. Caltrans is conducting formal section 7 consultation with the USFWS and has determined the Project could result in the take (i.e., injury, harm, death of individuals) of the frog or salamander. Caltrans would obtain a BO from the USFWS. Additionally, Caltrans would obtain an ITP from the CDFW for California tiger salamander. This BO will authorize Caltrans to take listed species so long as Caltrans implements established avoidance and minimization measures (AMMs) and takes reasonable and prudent measures to reduce the likelihood of take. In addition, through consultation, Caltrans has determined the Project has a lower likelihood of resulting in take of San Joaquin kit fox as the Project area is outside the current occupied range of the species. The San Joaquin kit fox is federally listed as endangered and state listed as threatened. Caltrans will request a letter of concurrence (LOC) for the kit fox, because all potential effects to the species would be minimal and discountable.

California Tiger Salamander
There are 11 documented occurrences of the California tiger salamander within 2 miles of the BSA (CDFW 2020), four of which are within the species' known 1.3-mile dispersal range and recorded within ponds, streams, or wetlands. The closest known occurrence is 0.56 mile away from the BSA. Although, there are no occurrences documented within the BSA, there are documented occurrences of California tiger salamander in ponds within 1.3 miles (known dispersal range) of the Project site. This makes it possible that salamanders could travel through or estivate within the Project footprint as they migrate between breeding habitats. Caltrans concludes that California tiger salamanders have the potential to occur in grassland habitats within and adjacent to the BSA and could potentially breed in the nearby wetland directly adjacent to the Project footprint. Excavation activities to remove the existing damaged storm drain system and grubbing and grading activities could result in an incidental take of the salamander.

California Red-legged Frog
There are two documented occurrences of the red-legged frog from ponds within 1 mile of the BSA (CDFW 2020). Additionally, there are numerous ponds and streams visible on aerial imagery within 1 mile of the Project footprint that could provide suitable breeding habitat for the frog. The closest known occurrence is 0.5 mile away from the BSA. The emergent wetland within the BSA also provides suitable, non-breeding habitat for the red-legged frog. Adults and juveniles originating from these ponds and streams may utilize the Project area for dispersal and movements between occupied sites. As such, California red-legged frogs have potential to occur in grassland habitat within the BSA. Excavation activities to remove the existing damaged storm drain system and grubbing and grading activities could result in incidental take of the frog.

San Joaquin Kit Fox
There are 17 occurrences of San Joaquin kit fox within 5 miles of the Project; two occurrences are within 2.5 miles of the BSA (CDFW 2020). The closest known occurrence was logged in 1986 approximately 0.8 mile away from the BSA. Most of the occurrences are located to the south of the BSA near the California Aqueduct and all

occurrences were recorded prior to 2000. This species is rare and sparsely distributed within the northern portion of its range (Orloff et al. 1986, Smith et al. 2006, Clark et al. 2007), including Alameda County, and the presence of suitable habitat and CNDDB records nearby suggest that San Joaquin kit foxes may intermittently be present in low numbers in the region. However, the BSA is at the periphery of the species' range, and the potential that the species would occur within the BSA during the limited construction work window is low.

American Badger
There are two occurrences of American badger recorded within 2 miles of the BSA (CDFW 2020), with the closest known occurrence approximately 1.75 miles from the BSA. The grasslands within the BSA provide suitable habitat for this species, but they are of marginal quality due to continual human disturbance associated with I-580. As a result, American badgers are more likely to forage or disperse through the BSA rather than establish permanent dens should they occur within the BSA. This Project is unlikely to directly impact the badger.

Burrowing Owl
There are three known occurrences of the burrowing owl within 2 miles of the BSA. These occurrences are located in undeveloped hilly grassland areas south and east of the highway (CDFW 2020). The closest known occurrence is 1.2 miles from the BSA. Suitable habitat for this species is present within the BSA and burrows may potentially occur in areas within the BSA where vegetation is short. However, Caltrans biologists did not observe the species during field surveys within or near the BSA and potential for occurrence is low.

White-tailed Kite, Northern Harrier, Other Birds, and Bats
Habitat within the BSA is of marginal quality for white-tailed kite, northern harrier, and other foraging birds and bats due to the high level of disturbance within and around the eroded slope. Grassland habitat types within the BSA may be used by one or more bird species for foraging and some species may nest among grassland habitats in the vicinity of the BSA. However, white-tailed kites, northern harriers, and other raptors are not expected to nest within or around the BSA due to the lack suitable nesting habitat including trees and shrubs. The BSA does not contain any suitable roosting sites for bats and the Project is not anticipated to have a direct or indirect effect on bat species' roosting habitat.

CEQA Significance Determinations for Biological Resources

Would the Project:

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

Less Than Significant with Mitigation – The California tiger salamander and California red-legged frog have potential to occur within the Project footprint and this Project has the potential to adversely affect both species (i.e., through harassment, harm, injury, or mortality as a result of construction activities). Activities with the highest potential to affect both species include initial site preparation, accessing the Project footprint, use of heavy equipment for excavation and backfill, handling of stockpiles and stored materials, as well as the installation of the drainage system.

Construction activities would permanently impact 0.012 acre of annual grassland as a result of constructing the new drainage system and repairing the eroded embankment. Construction activities would also temporarily impact 1.25 acres of annual grassland and 0.04 acre of California buckwheat scrub as a result of access and staging activities. These habitats may provide aestivation, foraging, and dispersal habitat for the salamander and frog. Caltrans will implement several avoidance and minimization measures as part of this Project to minimize the extent of habitat disturbance and likelihood of taking a listed species.

Caltrans is in the process of consulting with USFWS and CDFW to determine the effects on these species due to the proposed Project. Mitigation to offset the loss of salamander and frog habitat and potential take of both species – such as in the form of harm or mortality – would be required. Caltrans proposes to implement **Mitigation Measure BIO – 1** (On-site and Off-site Compensatory Restoration of Temporary and Permanent Impacts) to reduce potentially significant impacts to the salamander and frog to a less-than-significant level with mitigation. This measure would require on-site and off-site restoration of temporarily and permanently affected areas.

Caltrans plans to offset the temporary and permanent loss of California red-legged frog and California tiger salamander habitat through the purchase of mitigation credits at a mitigation bank. Based on discussions with USFWS, Caltrans has determined that only impacts to California buckwheat scrub and annual grasslands cover types would require mitigation to offset the temporal and permanent loss of frog and salamander habitat. Temporary impacts to these land cover types would total 1.295 acres, and Caltrans would conduct on-site restoration at a 1:1 ratio. The Project would also result in the permanent loss of 0.012 acre of these habitats; Caltrans will mitigate for this loss off-site at a 3:1 ratio (0.04 acre of mitigation credits). Credits would likely be purchased from the Ohlone West Conservation Bank.

AMM #8 (Develop and Implement Worker Environmental Awareness Training [WEAT]) would also be implemented to ensure construction personnel are aware of the potential presence of listed species in the Project area. Personnel would be trained in how to identify listed species and what measures to take should a species be encountered in the Project area (e.g., stopping all work until the species could be moved out of the area). This species-specific measure, in conjunction with proposed **AMMs 3, 5, 6, 7, 9, 11, and 17** (see **Appendix C**), would reduce potential adverse effects to the frog and salamander to a less-than-significant level.

Mitigation Measures

Mitigation Measure Bio – 1: On-site and Off-site Restoration of Temporary and Permanent Impacts
Compensatory mitigation for impacts to species habitat in the form of habitat restoration and preservation would be provided at a 3:1 ratio for permanent impacts, and a 1:1 ratio for temporary impacts. Restoration for permanent impacts would occur off-site through the purchase of mitigation credits from the Ohlone West Conservation Bank, while restoration for temporary impacts would occur on-site. Mitigation plans would be subject to modification during the Project's design phase.

Other Listed Species that May Be Affected by the Proposed Project

San Joaquin kit fox was determined to have a low potential to occur in the Project footprint and BSA. The BSA provides limited habitat for the San Joaquin kit fox, and the area, if used, would likely support dispersal activities only (no breeding or sheltering). In addition, this species would be visibly observable should one traverse the Project site, and the fox would be easily avoidable. The Project is also unlikely to adversely affect this species due to a lack of recent observations in the area (more than 20 years). Coordination with USFWS through an LOC will ultimately determine the potential for this species.

The AMMs listed in **Appendix C** would reduce the potential for effects to this species during Project construction. Species-specific measures for San Joaquin kit fox include pre-construction surveys (Measure #3), biological monitoring (Measure #5), notifying the Agency-approved Biologist of listed species found on site (Measure #6), storing materials properly (Measure #11), trash control (Measure #20), and restrictions on bringing pets on-stie (Measure #22). Because the Project would occur on the margins of the known current range of San Joaquin kit fox, and because AMMs would be implemented to protect any transient individuals that may enter the BSA, the potential for effects to San Joaquin kit fox is negligible.

Burrowing owl has limited potential to occur within the BSA. Pre-construction surveys for the species would be conducted though Caltrans does not anticipate this species will occur on-site. Any potential burrowing owl burrows would be assessed prior to construction as part of conducting pre-construction surveys for this Project. Because there have been no observed sighting of owls or burrows, direct impacts to species are not expected to occur as a result of the proposed Project. Any active burrows that are detected within or adjacent to the BSA would be avoided. Species-specific measures included in the Staff Report on Burrowing Owl Mitigation from the California Department of Fish and Game (CDFG 2012), along with Measure #3 and Measure #6 from the AMMs, would reduce the potential for effects to this species.

American badger, white-tailed kite, northern harrier, other foraging birds or bats as mentioned in the Special-Status Species section above, are not expected to occupy

active burrows, nests, or roosts within the BSA based on field surveys and literature reviews. See the White-tailed Kite, Northern Harrier, Other Birds, and Bats section above for more details. Caltrans biologists conclude that the implementation of biological resource AMMs discussed in **Appendix C** would further reduce the potential for effects to these species during Project construction to a negligible level.

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 U.S. Fish and Wildlife Service?

No Impact – There are no **riparian habitats** or **sensitive natural communities** within or around the BSA. Mountain House Creek within the Project area does not constitute riparian habitat. Documented occurrences of these types of habitats or communities around the Project footprint are sycamore alluvial woodland located 15 miles away from the BSA, and valley sink scrub located 8 miles away. Following field studies and literature reviews, Caltrans biologists concluded that neither valley sink scrub nor sycamore alluvial woodland, or any other natural communities of concern are present within the BSA or have potential to be affected by the Project.

The Project would result in 0.016 acre of permanent effects to land cover within the Project footprint (repair of the eroded slope), including 0.012 acre of annual grassland and 0.002 acres of barren ground. The Project would temporarily affect 1.35 acres of vegetation within the BSA, including annual grassland (1.25 acres), California buckwheat (0.04 acres), and barren ground (0.06 acres). None of these land cover types are considered riparian habitat or natural communities.

Furthermore, the Project would attempt to limit the disturbance of other land cover types within the BSA, and all temporarily disturbed areas would be restored within one year of Project construction. The AMMs listed in **Appendix C** would further reduce the potential for indirect effects to land cover within the Project footprint.

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 – There is an existing **wetland** within the BSA. However, it is right outside the Project footprint as shown in **Figure 5** and discussed in the waters and wetlands section. The Project has been developed to avoid direct impacts to this wetland, and construction activities involving drainage replacement and slope repair would not affect or overlap with it. Silt fencing would be installed around the portion of the wetland boundary that lies within the BSA to ensure that construction personnel and equipment do not enter the wetland. Additionally, the proposed dissipator pad would maintain existing drainage patterns and reduce the likelihood erosion and siltation would affect the wetland or Mountain House Creek in the future. The AMMs listed in **Appendix C** and Caltrans' BMPs would further reduce the potential for any direct and indirect impacts to the wetland and Mountain House Creek. As a result, no direct or

indirect effects to federal wetlands or waters of the state are anticipated to occur as a result of this Project and this impact would be less than significant.

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?

No Impact – There are no waterways that support fish within or adjacent to the BSA. Caltrans complied with State Senate Bill 857 (Fish Passage) (SHC Article 3.5) by conducting a fish passage assessment for this Project. The first pass assessment did not identify any barriers to anadromous fish associated with the Project. The Project would not modify any crossing structures and would avoid impacts to stream crossings. As a result, the Project would not affect the movement of any native resident or migratory fish species.

The project is located within both a natural landscape block and an essential connectivity area that may provide corridors for wildlife movement. The small scope of the Project as well as the short duration of construction would not have a measurable effect on wildlife corridors or species movement through Altamont Pass. The final design of the Project also does not include any barriers or structures that would further limit the movement of species along the southern side of I-580. The highway also acts as a barrier to wildlife movement through the Project footprint. Traffic on I-580 likely inhibits movement both directly through vehicular mortality and indirectly through population fragmentation and isolation. Based on these conditions, the Project would not interfere with established native resident or migratory wildlife corridors.

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

No Impact – The Project would not conflict with any local policies or ordinances that protect biological resources, nor are there any local ordinances that apply to this Project.

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 would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

2.1.5 Cultural Resources

CEQA Significance Determinations for Cultural Resources

Would the Project:

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

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

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

No Impact – Caltrans District 4 Professionally Qualified Staff (PQS) conducted reviews of the Project activities by incorporating the Caltrans Cultural Resource Database, as-built plans, aerial photographs, and maps. The Caltrans Office of Cultural Resource Studies (OCRS) determined that the Project has no potential to cause substantial adverse change to historic resources, archaeological resources, or disturb any human remains. The Project location is not listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources. In the event that any of these resources or remains are discovered within the Project footprint during construction, all work would be halted so that a qualified archaeologist can assess the significance of the discovery. This Cultural Resource **AMM** is listed in **Appendix C**.

2.1.6 Energy

CEQA Significance Determinations for Energy

Would the Project:

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

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

No Impact – The Project is not a capacity increasing Project and would not result in increased or unnecessary consumption of energy resources during construction or operation. Caltrans Standard Specifications and BMPs would be implemented during construction to reduce any inefficient or unnecessary energy resource usages. BMPs include limiting the idling of vehicles and equipment on-site and maintaining vehicles and equipment. This Project would not conflict with or obstruct state or local plans for renewable energy or energy efficiency.

2.1.7 Geology and Soils

Affected Environment

Caltrans Office of Geological Design – West assessed the Project area for active fault zones, landslide zones, and geological resources on February 2, 2021. They determined that the nearest Alquist-Priolo Earthquake Fault Zone, is associated with the Altamont Fault and is 3.2 miles east of the Project area. The Project is also located on a landslide zone within the Altamont quadrant (Department of Conservation 2016b).

CEQA Significance Determinations for Geology and Soils

Would the Project:

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

    i Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.
    ii Strong seismic ground shaking?
    iii Seismic-related ground failure, including liquefaction?
    iv Landslides?

No Impact – The Project area is not within a delineated Alquist-Priolo Earthquake Fault Zone, with the nearest zone 3.2 miles east of the Project area. The risk of surface rupture from a known fault in the Project area is unlikely to occur. The Project has no potential to expose people or structures to potential substantial adverse effects, produce strong seismic ground shaking, create seismic-related ground failure, or create landslides.

The Project is located on a landslide zone as discussed above. Caltrans Office of Geotechnical Design – West has reviewed the Project area and identified this zone as an inactive landslide zone that is listed as dormant. Landslides are unlikely to occur as a result of the Project. The Project is not located on expansive soil, nor is it located within an identified liquefaction zone (Department of Conservation 2016b). Imported borrow material described in 1.3 Project Description would be used as backfill over the installed RSP for the embankment repair. These materials would meet the required Caltrans standards outlined in the Standard Specifications to adequately support the new drainage system and built-back slope. There would be no impact.

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

Less Than Significant Impact – The Project would repair the eroded slope where the replacement storm drainage system is to be installed to prevent further degradation and

loss of structural integrity of the highway as described in 1.5 Construction Methods. All grading and backfill specifications would be provided to Caltrans Office of Geotechnical Design – West for review and approval prior to initiation of slope repair work. Current slope conditions would be restored and reinforced, thus preventing the potential for landslides and further substantial soil erosion or loss of topsoil. A combination of erosion control BMPs listed in **Appendix C** would be applied to stabilize the site once the restoration work of the embankment and drainage is complete. As a result, this impact 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 – Due to the existing erosion of the embankment, existing soil conditions are prone to instability. Access into the Project footprint by construction vehicles and equipment, as well as excavation activities associated with the proposed drainage system, could potentially cause further instability of the existing soil. Cutting of the embankment slope would help stabilize the existing soil prior to backfilling with RSP and imported borrow material. Compaction of the borrow material as discussed in 1.6 Excavation, Grading, and Backfill would also stabilize soil conditions of the repaired embankment to prevent the potential for unstable soils after construction. Erosion control BMPs and revegetation AMMs listed in **Appendix C** would further reduce this impact to a less-than-significant level.

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

e) Have soils incapable of adequately supporting the use of septic tanks or alternative 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?

No Impact –The Project has no potential to expose people or structures to potential substantial adverse effects, produce strong seismic ground shaking, create seismic-related ground failure, create landslides, be located on expansive soil, or have soils incapable of adequately supporting the use of wastewater disposal systems.

Paleontological resources were identified as having a low potential to occur in or around the Project site. The Project is not located on expansive soil, nor is it located within an identified liquefaction zone (Department of Conservation 2016b). Imported borrow material described in 1.3 Project Description would be used as backfill over the installed RSP for the embankment repair. These materials would meet the required Caltrans standards outlined in the Standard Specifications to adequately support the new drainage system and built-back slope.

2.1.8 Greenhouse Gas Emissions

CEQA Significance Determinations for Greenhouse Gases
Would the Project:

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

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

Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), and various hydrofluorocarbons (HFCs). CO_2 is the most abundant GHG; while it is a naturally occurring component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO_2.

Two terms are typically used when discussing how we address the impacts of climate change: "greenhouse gas mitigation" and "adaptation." Greenhouse gas mitigation covers the activities and policies aimed at reducing GHG emissions to limit or "mitigate" the impacts of climate change. Adaptation, on the other hand, is concerned with planning for and responding to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels). This analysis would include a discussion of both.

Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

State
California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to, the following:

EO S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006: AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that the California Air Resources Board (ARB) create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code [H&SC] Section 38551(b)). The law requires ARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

EO S-01-07 (January 18, 2007): This order sets forth the low carbon fuel standard (LCFS) for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. ARB re-adopted the LCFS regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires ARB to set regional emissions reduction targets for passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan how it would achieve the emissions target for its region.

SB 391, Chapter 585, 2009, California Transportation Plan: This bill requires the State's long-range transportation plan to identify strategies to address California's climate change goals under AB 32.

EO B-16-12 (March 2012) orders State entities under the direction of the Governor, including ARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

EO B-30-15 (April 2015) establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all state agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs ARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons

of carbon dioxide equivalent ($MMTCO_2e$).[1] Finally, it requires the Natural Resources Agency to update the state's climate adaptation strategy, *Safeguarding California*, every 3 years, and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016, codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

SB 1386, Chapter 545, 2016, declared "it to be the policy of the state that the protection and management of natural and working lands … is an important strategy in meeting the state's greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands."

AB 134, Chapter 254, 2017, allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot Projects, clean vehicle rebates and Projects, and other emissions-reduction programs statewide.

SB 743**,** Chapter 386 (September 2013): This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on vehicle miles travelled, to promote the state's goals of reducing greenhouse gas emissions and traffic related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

SB 150**,** Chapter 150, 2017, Regional Transportation Plans: This bill requires ARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional greenhouse gas emission reduction targets.

EO B-55-18 (September 2018) sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets of reducing GHG emissions.

EO N-19-19 (September 2019) advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, managing congestion, and encouraging alternatives to driving. This EO also directs ARB to encourage automakers to produce more clean vehicles, formulate ways to help Californians purchase them, and propose strategies to increase demand for zero-emission vehicles.

[1] GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO_2 is the most important GHG, so amounts of other gases are expressed relative to CO_2, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of CO_2 is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO_2.

Environmental Setting

The Project is located in a rural area designated as unincorporated lands within Alameda County. The Project site lies west of the border of the city of Livermore and is part of the Altamont Pass. I-580 is the main transportation route to and through the area for both passenger and commercial vehicles. The Project area is used primarily for cattle grazing and there are no housing structures or communities present on or near the Project site. The Metropolitan Transportation Commission and Association of Bay Area Governments (MTC/ABAG) guide transportation development in the Project area.

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. The U.S. Environmental Protection Agency (U.S. EPA) is responsible for documenting GHG emissions nationwide, and the ARB does so for the state, as required by H&SC Section 39607.4.

State GHG Inventory

ARB collects GHG emissions data for transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state's progress in meeting its GHG reduction goals. The 2019 edition of the GHG emissions inventory found total California emissions of 424.1 $MMTCO_2e$ for 2017, with the transportation sector responsible for 41% of total GHGs. It also found that overall statewide GHG emissions declined from 2000 to 2017 despite growth in population and state economic output (ARB 2019a).

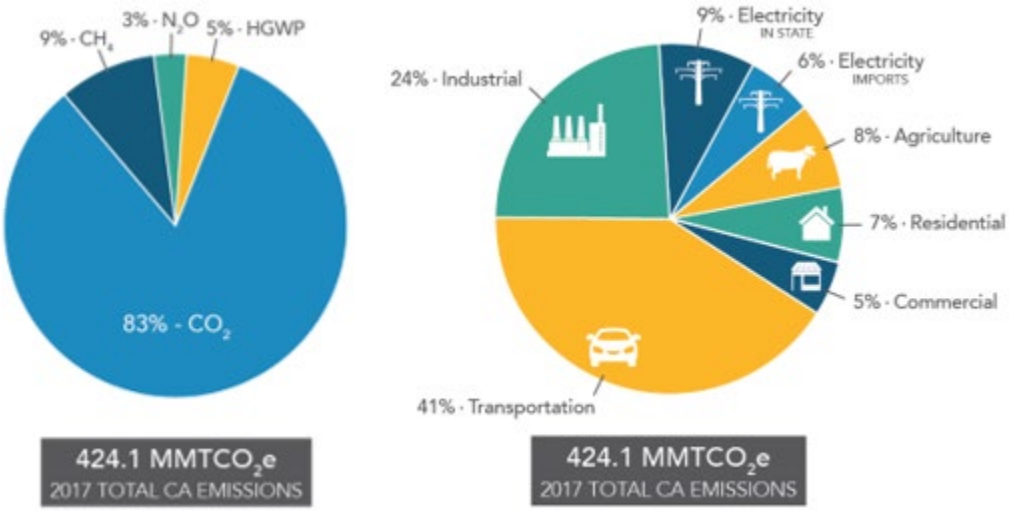

Figure 6: California 2017 Greenhouse Gas Emissions

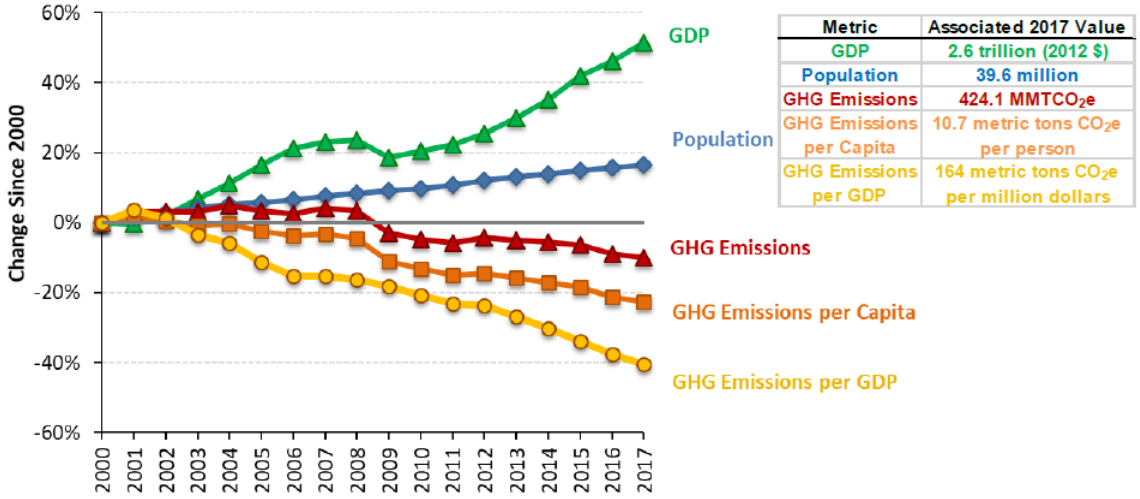

Figure 7: Change in California GDP, Population, and GHG Emissions since 2000 (Source: ARB 2019b)

AB 32 required ARB to develop a Scoping Plan that describes the approach California would take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update it every 5 years. ARB adopted the first scoping plan in 2008. The second updated plan, *California's 2017 Climate Change Scoping Plan*, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California would use to reduce GHG emissions.

Regional Plans

ARB sets regional targets for California's 18 MPOs to use in their Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) to plan future Projects that would cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The Project is within the geography of MTC/ABAG. The regional reduction target for MTC/ABAG is 10 percent by 2020 and 19 percent by 2035 (ARB 2019c).

MTC/ABAG's Metropolitan Transportation Plan/Sustainable Communities Strategy, Plan Bay Area 2040 (MTC/ABAG 2017), identifies strategies that promote sustainable development patterns and help meet the region's greenhouse gas emission reduction targets. One such target is to reduce per-capita CO2 emission from cars and light-duty trucks by 15%; the MTP/SCS was found to reduce those emissions by 16% by 2035. Action plan objectives include enhancing climate protection and adaptation efforts and strengthening open space protections.

The Alameda County Unincorporated Community Climate Action Plan (Alameda County 2014) was adopted in order to help reduce GHG emissions within unincorporated areas like such as where the Project is located. This plan outlines specific actions needed to be taken by 2020 in order to achieve the County's goals for 15% to 30% GHG

emissions reduction. This plan also corresponded corresponds to the State of California's GHG reduction recommendations of 15% by 2020 (Alameda County 2010). The Alameda County Unincorporated Community Climate Action Plan (Alameda County 2014) includes measures such as "G-2: Include carbon sequestration as an objective within County-led natural area restoration Projects."

Project Analysis

GHG emissions from transportation Projects can be divided into those produced during operation of the state highway system (SHS) and those produced during construction. The primary GHGs produced by the transportation sector are CO_2, CH_4, N_2O, and HFCs. CO_2 emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH_4 and N_2O are emitted during fuel combustion. In addition, a small amount of HFC emissions are included in the transportation sector.

The CEQA Guidelines generally address greenhouse gas emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, §21083(b)(2)). As the California Supreme Court explained, "because of the global scale of climate change, any one "Project's contribution is unlikely to be significant by itself." (Cleveland National Forest Foundation *v.* San Diego Assn. of Governments (2017) [3] Cal.5th 497, 512.) In assessing cumulative impacts, it must be determined if a Project's incremental effect is "cumulatively considerable" (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the Project must be compared with the effects of past, current, and probable future Projects. Although climate change is ultimately a cumulative impact, not every individual Project that emits greenhouse gases must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The purpose of this Project is to replace a damaged storm drain system and repair the existing eroding slope along eastbound I-580 in an unincorporated area of Alameda County. The Project is not a capacity increasing Project. Because the Project would not affect the roadway or increase the number of travel lanes, no increase in vehicle miles traveled (VMT) would occur as result of Project implementation. While some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

Construction Emissions

Construction GHG emissions would result from material processing and on-site construction equipment. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

Construction-related GHG emissions for the Project were calculated using the Road Construction Emissions Model (RCEM), version 8.1.0, provided by the Sacramento Metropolitan Air Quality Management District. It was estimated that for the duration of one construction season, the total amount of CO_2 produced during construction of the Project would be 117.42 tons.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the Project and to certify they are aware of and would comply with all ARB emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes. Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

CEQA Conclusion
While the Project would result in GHG emissions during construction, it is anticipated that the Project would not result in any increase in operational GHG emissions. The Project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of construction GHG-reduction measures, the impact would be less than significant.

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Statewide Efforts
Major sectors of the California economy, including transportation, would need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (1) reducing today's petroleum use in cars and trucks by up to 50 percent; (2) increasing from one-third to 50 percent our electricity derived from renewable sources; (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of methane, black carbon, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so they can store carbon; and (6) periodically updating the state's climate adaptation strategy, *Safeguarding California*.

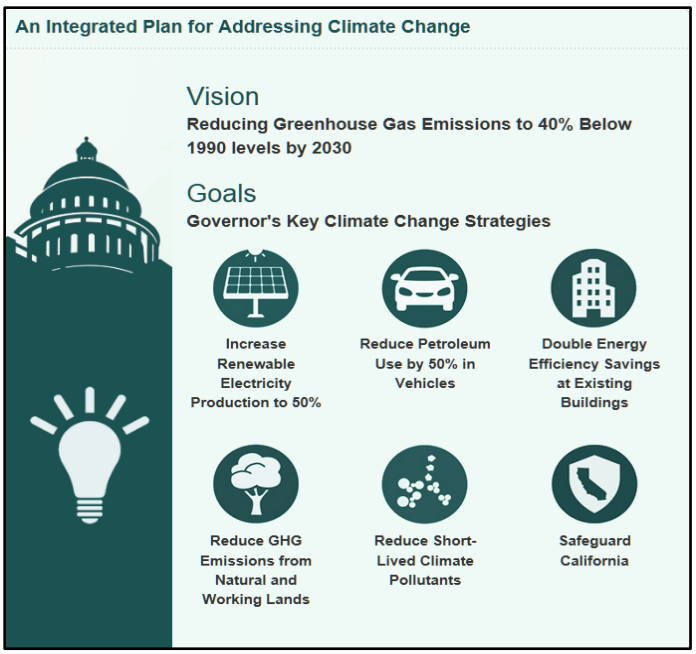

Figure 8: California Climate Strategy

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the state build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions would come from cleaner vehicle technologies, lower-carbon fuels, and reduction of vehicle miles traveled (VMT). A key state goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove carbon dioxide from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement EOs S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016), set an interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

CALIFORNIA TRANSPORTATION PLAN (CTP 2040)

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. In 2016, Caltrans completed the *California Transportation Plan 2040*, which establishes a new model for developing ground transportation systems, consistent with CO_2 reduction goals. It serves as an umbrella document for all the other statewide transportation planning

documents. Over the next 25 years, California would be working to improve transit and reduce long-run repair and maintenance costs of roadways and developing a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While MPOs have primary responsibility for identifying land use patterns to help reduce GHG emissions, CTP 2040 identifies additional strategies in Pricing, Transportation Alternatives, Mode Shift, and Operational Efficiency.

CALTRANS STRATEGIC MANAGEMENT PLAN

The Strategic Management Plan, released in 2015, creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that would help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

FUNDING AND TECHNICAL ASSISTANCE PROGRAMS

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the State's GHG reduction targets and advance transportation-related GHG emission reduction Project types/strategies; and support other climate adaptation goals (e.g., *Safeguarding California*).

CALTRANS POLICY DIRECTIVES AND OTHER INITIATIVES

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that would ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. *Caltrans Activities to Address Climate Change* (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

The following measures would also be implemented in the Project to reduce GHG emissions and potential climate change impacts from the Project. Please see **Appendix C**.

1. Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, require contractors to comply with all laws applicable to the Project

and to certify they are aware of and would comply with all ARB emission reduction regulations.
2. Caltrans Standard Specifications Section 14-9.02, Air Pollution Control, requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes.
3. All construction equipment and vehicles would be properly tuned and maintained to minimize emissions.
4. Construction vehicle and equipment idling would be limited.
5. All nonhazardous waste and excess material would be recycled, if practicable, to reduce the release of pollutant emissions. If not practicable, dispose of material.
6. Use solar-powered signal boards, if feasible.
7. A construction transportation management plan would be implemented during construction to minimize work-related traffic delays by the application of general traffic handling practices and strategies.

Adaptation

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that landslide after a fire. Effects would vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. *California's Fourth Climate Change Assessment* (2018) is the state's effort to "translate the state of climate science into useful information for action" in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

> *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
>
> *Adaptive capacity* is the "combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities."

Exposure is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.

Resilience is the "capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience". Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.

Sensitivity is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.

Vulnerability is the "susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt." Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to: ethnicity, class, sexual orientation and identification, national origin, and income inequality. Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea-level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea-level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea-Level Rise Interim Guidance Document* (SLR Guidance) in 2010, with instructions for how state agencies could incorporate "sea-level rise (SLR) Projections into planning and decision making for Projects in California" in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea-Level Rise Science* was published in 2017 and its updated Projections of sea-level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea-Level Rise Guidance Update* in 2018.

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea-level rise also threaten California's infrastructure. At the direction

of EO B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea-level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

Exposure – Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.

Consequence – Determine what might occur to system assets in terms of loss of use or costs of repair.

Prioritization – Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments would guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

Sea-Level Rise

The Project is outside the coastal zone and not in an area subject to sea-level rise. The nearest coastal zone is located approximately 25 aerial miles west of the Project.

Accordingly, direct impacts to transportation facilities due to Projected sea-level rise are not expected.

FLOODPLAINS

The National Flood Hazard Layer map (FIRM 06001C0360G) for the Project is located in an area of minimal flood hazard. As a result, the Project is not located in a current flood zone. The Caltrans District 4 Climate Change Vulnerability Assessment (Caltrans 2018) projects potential increases in 100-year storm precipitation depth of less than 5% through 2085. The current damage to the embankment was caused by a damaged CMP down drain, resulting in severe runoff and erosion. The proposed Project would avoid future damage from such events by improving the existing 12-inch by 30-foot down drain to a more robust 18-inch by 410-foot down drain. Increasing the capacity of the drain would allow the system to convey higher flows of water runoff while extending the overall length of the drain along the entire edge of the eroded embankment would limit the likelihood of future erosion from undermining the facility. Accordingly, the Project would be more resilient to future storms and rain events.

WILDFIRE

The Project is located within a moderate to high fire hazard severity zone per the Department of Forestry and Fire Protection, as shown in **Figure 9** in the Wildfire Section (CAL FIRE 2007). No electrical systems, powerline work or other maintenance infrastructure work that could exacerbate wildfire risk is anticipated for this Project. During construction, Caltrans 2018 revised Standard Specification 7-1.02M(2) will be implemented. This specification mandates fire prevention procedures during construction, including a fire prevention plan, to avoid accidental fire starts.

2.1.9 Hazards and Hazardous Materials

CEQA Significance Determinations for Hazards and Hazardous Materials

Would the Project:

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

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 two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?

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

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

No Impact – The Project has no potential to create a significant hazard to the public or environment through the routine transport, use, or disposal of hazardous materials. Additionally. the Project has no potential to create a significant hazard to the public or environment, create a significant hazard to the public or the environment through reasonable foreseeable upset and accidental conditions, emit hazardous emissions, be located on a site that is included on a list of hazardous materials sites, be located within an airport land use plan, impair implementation of or physically interfere with an adopted emergency response or evacuation plan, or expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

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 – Imported borrow material would be used to restore the eroded area of the slope back to pre-existing conditions. Prior to backfilling, the contractor would need to remove the debris from the eroded slope. If the replacement of

the existing drainage system would require excavation and consequently generate surplus excavated material that requires off-site disposal, a soil investigation evaluating for contaminants and aerially deposited lead would be conducted during the design phase of the Project. Based on the results, AMMs and BMPs listed in **Appendix C** for proper soil testing (if applicable), disposal, and handling would be developed and incorporated into the construction contract documents.

2.1.10 Hydrology and Water Quality

Information in this section is based on the Stormwater Data Report (Caltrans 2020), Water Quality Study (Caltrans 2020), Location Hydraulics Study (Caltrans 2020), and the Hydraulics Investigation and Recommendation Memorandum (Caltrans 2020) prepared for the Project.

Affected Environment

The Project area is within close proximity to several existing protected waters. Mountain House Creek is a freshwater creek that flows alongside I-580, crossing I-580 via enclosed culverts several times. Mountain House Creek is part of the San Joaquin Delta Watershed, which drains to the San Francisco Bay. The Project site is a tributary to this creek, which is listed as a 303(d) listed water body with total maximum daily loads (TMDLs) for Chloride and Salinity.

There is a freshwater emergent wetland just outside the Project footprint and located downstream of the erosional gully near the toe of slope. The wetland is likely regulated by USACE and Central Valley RWQCB. This emergent wetland is fed by a combination of a culvert that travels beneath I-580 at the edge of the BSA and the daylighted portion of Mountain House Creek. A PJD was processed to identify the extent of the existing wetland in relation to the Project footprint; the wetland lies outside of the footprint. The Project is anticipated to result in 0.2 acre of disturbed soil area. Replaced impervious area of 0.1 acre may be associated with swapping out the old down drain for the new drainage system. The precise acreage of the disturbed soil area and impervious area will be calculated during the design phase of the Project.

The United States Department of Agriculture's (USDA) Web Soil Survey indicates soil within Project limits has a moderate (0.32 K factor) susceptibility to sheet and rill erosion by water. Erosion potential of Project site soils indicates a manageable sediment discharge risk and one that would not require extraordinary slope/surface protection systems.

CEQA Significance Determinations for Hydrology and Water Quality

Would the Project:

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact

Surface Water
Project construction activities, such as slope grading and stockpiling of fill material, would not affect water quality by introducing sediments, turbidity, and pollutants associated with sediments into the adjacent wetland or Mountain House Creek.

Construction-related activities that expose and move soils would be restricted to the Project footprint and not extend out into the wetland or other protected water resources.

Although the Project is expected to disturb 0.2 acre of land, Caltrans would prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) in lieu of a Water Pollution Control Plan (WPCP) to address the earthwork proposed near the wetland and Mountain House Creek. The SWPPP would include BMPs to protect stormwater runoff and monitoring measures. Measures would include fiber rolls and temporary silt fences that would be placed at the toe of slopes as a perimeter control, temporary covers for stockpiled soil, temporary concrete washouts to limit discharge of concrete waste, and erosion control measures that would be refined during the design phase of the Project. Furthermore, AMMs and Caltrans' BMPs mentioned above would also apply under these circumstances to further reduce the potential for direct and indirect effects to waters of the U.S.

Once construction of the drainage system and restoration of the eroded embankment is complete, stormwater runoff would discharge through the replacement down drain into existing drainage conditions prior to system failure, as discussed in r 1.7Proposed Drainage System. An energy dissipator would be placed at the end of the down drain at the toe of the embankment to prevent new drainage components from affecting any jurisdictional bodies of water. Furthermore, Caltrans would obtain a National Pollution Discharge Elimination System (NPDES) Stormwater Permit through the Environmental Protection Agency to regulate discharges from Caltrans facilities.

Groundwater
As described in 1.6 Excavation, Grading, and Backfill, the Project would require the excavation of 50 cubic yards of loose material of the embankment to replace the drainage system and the placement of 1,000 cubic yards of fill material. Depending on weather conditions during construction, dewatering of the gully may be required. Water extracted during dewatering (i.e., removal of groundwater by pumping), if required, could contain chemical contaminants (either from pre-existing sources or from construction equipment), or could become sediment-laden from construction activities. If dewatering to surface waters is required, the contractor would either properly treat the water prior to discharge or dispose of the water at a hazardous waste facility to prevent any discharge of contaminated dewatered groundwater into jurisdictional bodies that could ultimately contaminate surface waters. These activities would follow applicable groundwater discharge requirements, such as the Central Valley RWQCB dewatering requirements and the NPDES Stormwater Permit.

Implementation of NPDES Stormwater permitting, dewatering requirements, and the AMMs/BMPs listed in **Appendix C** would prevent potential impacts of the Project on surface water and groundwater quality. As a result, this impact 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 may involve dewatering of the gully during wet and rainy conditions as mentioned above. Caltrans would implement temporary construction site BMPs for sediment control and water treatment strategies if this is to occur.

Following construction, the new drainage system would improve groundwater discharge conditions by regulating the amount of runoff from the highway. Slope stabilization and revegetation practices would help reinforce the embankment to prevent erosion in the future that could adversely affect groundwater supplies. As a result, this impact 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 – Slope stabilization activities associated with the Project would involve the removal of 50 cubic yards of existing debris, as discussed in 1.6 Excavation, Grading, and Backfill. In addition, backfill operations for the embankment would require the transport of large amounts of backfill material into the area. Although the Project would improve the existing drainage pattern of the area by installing a new down drain and repairing the embankment slope, it is possible that loose and excess debris from the operations described may result in siltation on-site. Erosion control BMPs would reduce the potential for siltation by regulating the storage of fill materials; installing sediment capture devices at the base of the slope; and requiring proper storage or disposal of non-hazardous dredge/fill material. A complete list of water quality/erosion control BMPs are listed in **Appendix C**. The implementation of these measures would prevent potential impacts caused by erosion or siltation on or off-site. As a result, this impact 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;
    iii create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    iv impede or redirect flood flows?

No Impact – The Project would regulate the current rate or amount of surface runoff by restoring the drainage system to optimal working conditions. After the new system is complete, runoff from the highway would enter the new down drain and terminate into the same basin to maintain existing drainage conditions. The construction of the Type 1

entrance taper would also help capture excess runoff before it enters the down drain, as discussed in 1.7 Proposed Drainage System. This taper would help prevent flooding or overtopping of the system as well as regulating flow through the down drain, thus preventing runoff water from exceeding the capacity of the system. As a result, substantial increases to surface runoff, increased runoff that exceeds the capacity of the drainage system, and redirection of flood flows are not expected to occur.

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?

No Impact – The Project is not located in a flood hazard, tsunami, or seiche zone. As a result, inundation of the gully is not expected to occur. The Project would adhere to all requirements and procedures established in the SWPPP and NPDES permit. As a result, the Project is not expected to conflict with or obstruct the implementation of a water plan or sustainable groundwater management plan.

2.1.11 Land Use and Planning

CEQA Significance Determinations for Land Use and Planning

Would the Project:

a) Physically divide an established community?

No Impact – The Project footprint lies in an unincorporated area in eastern Alameda County (Alameda County 2010). The Project scope involves the replacement of an existing damaged drainage system with slope repair and is compatible with existing use of the unincorporated area. Existing use of these lands is permitted according to Section 17.54.180 – Prior Uses of the Alameda County Code of Ordinances (Alameda County 2020). The Project would extend 0.15 acre onto privately owned land. The property is used primarily for cattle grazing and there are no known housing structures or communities present on or near the Project site. As a result, the Project would not divide an established community and there would be no impact.

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?

No Impact – The Project complies with the stated goals of the 2020 Countywide Transportation Plan (Alameda County 2020) with regard to its goal for High Quality and Modern Infrastructure – deliver a transportation system that is of a high quality, well-maintained, resilient, and maximizes the benefits of new technologies for the public. The Project would repair and restore a damaged drainage system and eroding slope that is degrading the structural integrity of the highway. Improvements resulting from the Project would comply with the County's goals for robust transportation infrastructure and allowable land use of its unincorporated areas. As a result, there would be no impact to land use and planning.

2.1.12 Mineral Resources

CEQA Significance Determinations for Mineral Resources

Would the Project:

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

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

No Impact – There are no mineral resources mapped within the vicinity of the Project. As a result, the Project would not result in a loss of availability of a known mineral resource or of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

2.1.13 Noise

CEQA Significance Determinations for Noise

Would the Project result in:

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

b) Generation of excessive groundborne vibration or groundborne noise levels?

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

No Impact – The Project would not add a new traffic lane or increase ambient noise levels in excess of established standards. Construction noise would be temporary and within acceptable levels for construction activity. Furthermore, drainage pipe installation and backfill for slope stabilization would not generate excessive ground borne vibration or ground borne noise levels. This Project is also not located near any residential development areas, schools, or other sensitive receptors, a private airstrip, or an airport land use plan. As a result, no impacts due to noise are anticipated.

2.1.14 Population and Housing

CEQA Significance Determinations for Population and Housing

Would the Project:

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

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

No Impact – The purpose of the Project is to restore the function of the storm drain system and preserve the structural integrity of the embankment and highway. The Project would not cause population growth and would not displace existing people or housing. Caltrans would obtain a TCE for 0.15 acre of privately owned land adjacent to the Project, as discussed in the Land Use section. This land is primarily for cattle grazing and no housing or business structures are present on the property. As a result, no impacts to population and housing are anticipated.

2.1.15 Public Services

CEQA Significance Determinations for Public Services

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

No Impact – The Project would have no effect on the provision or need for public services. Caltrans would prepare a TMP to maintain the flow of traffic during construction and ensure accessibility through I-580 for essential services such as fire and police protection. Schools, parks, and public facilities are not anticipated to be affected by the Project.

2.1.16 Recreation

CEQA Significance Determinations for Recreation

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

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

No Impact – There are no existing neighborhood or regional parks, trails, or other recreational facilities in the Project area. The Project would repair existing drainage infrastructure in an unincorporated area off the highway. Furthermore, the Project does not include recreational facilities or require construction or expansion of recreational facilities. As a result, no impacts to recreation and recreational facilities are anticipated.

2.1.17 Transportation

CEQA Significance Determinations for Transportation

Would the Project:

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

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

No Impact – The Project would not conflict with any transportation plans or congestion management programs. It would not result in a change in air traffic patterns or increased hazards due to design. There are no dedicated pedestrian, bicycle, or other non-motorized facilities within the Project footprint. The Project is consistent with CEQA Guidelines Section 15064.3, subdivision (b) because neither construction nor operational activities as a result of the Project would induce greater demand or impact VMT.

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 – All Project work would occur from the outside shoulder down towards the embankment and would not involve changes to the existing geometric design of the roadway. Temporary K-rail, as discussed in 1.5 Construction Methods, would be placed along the shoulder to act as a barrier between the Project and roadway to protect workers and vehicles during construction. A TMP would be implemented during construction to minimize work-related traffic risks by the application of general traffic handling practices and strategies. Appropriate Transportation AMMs (see **Appendix C**) would also be implemented to further ensure that the Project would not result in substantially increased hazards due to a geometric design feature. As a result, there would be no impact.

d) Result in inadequate emergency access?

Less Than Significant Impact – Staging Area 2 currently operates as a runaway truck ramp and may be utilized to store construction vehicles and equipment for the Project, as discussed in Chapter 1 – Project Description. Staging in this area would be established along the outer edge of the paved area, allowing for runaway trucks to utilize this area during emergencies. Furthermore, staging access would be temporary and last only during the construction of the Project. Caltrans Design would re-evaluate the feasibility of using this area for staging during the design phase to ensure adverse effects to emergency access are avoided and minimized. Caltrans would coordinate with the Contractor in selecting a suitable staging area for the Project. A temporary lane closure may be required if Caltrans District 4's Office of Traffic Safety determines there

is a need to do so. However, this won't be determined until the Project's design phase. A TMP would be implemented during construction to ensure that any potential road closures do not impede emergency access along the highway and that priority is given to emergency vehicles. The impact would be less than significant.

2.1.18 Tribal Cultural Resources

CEQA Significance Determinations for Tribal Cultural Resources

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

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

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

No Impact – Caltrans OCRS contacted the Native American Heritage Commission (NAHC) on June 11, 2020 requesting a Sacred Lands File search for any cultural resources within or near the Project area. The search came back negative for any of these types of resources. OCRS sent nine letters via email to provide Project information and a request for input. These letters were sent on June 24, 2020 to a list of interested groups identified by the NAHC. Email correspondence was used instead of hard copy letters due to COVID-19 concerns. Responses were received from the following two interest groups, as shown in **Table 2**.

Table 2: List of Comments Received from NAHC Interested Groups/Individuals

Group/Individual	Date	Response
Guidiville Indian Rancheria (Attn: Merlene Sanchez, Chairperson)	6/24/2020	Michael Derry responded on behalf of Merlene Sanchez by email and stated they do not have any comments for the proposed work.
North Valley Yokuts Tribe (Attn: Timothy Perez, MLD, Contact)	6/24/2020	Timothy Perez responded by email requesting more information about the proposed work.

Caltrans Cultural Resources Archaeologist responded to Mr. Timothy Perez on June 25, 2020 addressing his comment by providing more information. No additional comments or responses were received.

The Project would not cause a substantial adverse change in the significance of a tribal cultural resource, feature, place cultural landscape, sacred place, or object with cultural value to a California Native American tribe.

2.1.19 Utilities and Service Systems

CEQA Significance Determinations for Utilities and Service Systems

Would the Project:

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

Less Than Significant Impact – The Project would repair and replace the existing 12-inch by 30-foot down drain with an expanded down drain system of 18 inches by 410 feet. The expansion of this drainage system would correct the existing failed system by allowing greater conveyance of runoff during rain and storm events, as well as transporting runoff securely down the entire length of the embankment. Additionally, the construction of the tee dissipator would help disperse runoff slowly to prevent discharge into protected water bodies nearby. As a result, the expansion of the drainage system would effectively eliminate the risk of future unregulated runoff and slope erosion and help prevent future roadway failures that would result in a greater environmental impact. The Chevron petroleum pipeline would be protected and avoided during construction and would not require any relocation or expansion activities under the Project. As a result of these protection strategies, the Utilities AMMs listed in **Appendix C** and the restorative purpose of the Project, this impact 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?

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?

No Impact – The scope of the Project is to replace an existing damaged storm drainage system. Replacement activities include new down drains, slope stabilization, backfill and other work detailed in Chapter 1 – Project Description. The Project is not expected to affect water supplies, wastewater treatment, or produce solid waste other than temporary debris during construction activities, which the appropriate AMMs listed in **Appendix C** would address. The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

2.1.20 Wildfire

Regulatory Setting

Senate Bill 1241 required the Office of Planning and Research, the Natural Resources Agency, and the California Department of Forestry and Fire Protection to develop amendments to the "CEQA Checklist" for the inclusion of questions related to fire hazard impacts for Projects located on lands classified as very high fire hazard severity zones. The 2018 updates to the CEQA Guidelines expanded this to include Projects "near" these very high fire hazard severity zones.

CEQA Significance Determinations for Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

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?

No Impact – The Project is not located within a moderate, high, or very high fire hazard severity zone designated by the Department of Forestry and Fire Protection, as shown in **Figure 9** (CAL FIRE 2007). As a result, no wildfire impacts are expected for this Project. Project staging, construction, and access would occur along the 500 feet of the right shoulder on I-580 for one construction season. No road closures are expected. The Project would not impair emergency response vehicles travelling along the highway, nor would it impair any adopted emergency response plans or emergency evacuation plans. The Project is located along a damaged slope that would be repaired back to its original condition. No electrical systems, powerline work or other maintenance infrastructure work that could exacerbate wildfire risk is anticipated for this Project. The Project would restore a damaged drainage system and slope back to its original condition or better to prevent exposure to downstream flooding, landslides, and other significant risks.

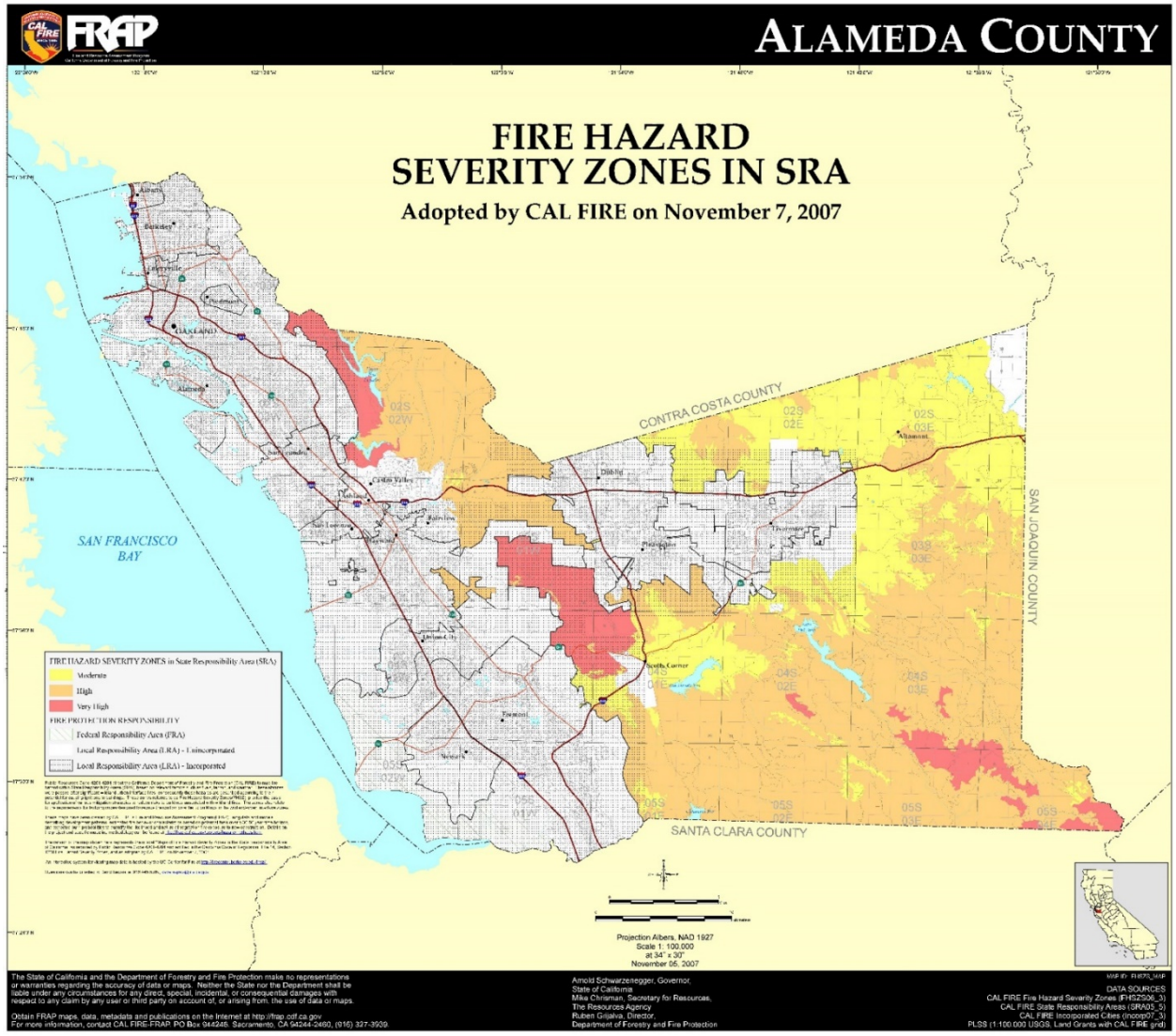

Figure 9: Fire Hazard Severity Zone Map

2.1.21 Mandatory Findings of Significance

CEQA Significance Determinations for Mandatory Findings of Significance

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

Less Than Significant Impact – Project activities that are anticipated to occur in California tiger salamander and California red-legged frog habitat within the Project footprint has the potential to result in take of these listed species as discussed in 2.1.4 Biological Resources. These impacts would be caused by excavation of the existing damaged drainage system, installation of the new system, slope repair using borrowed fill, and removal of vegetation for access to and from the Project. These species may be exposed to direct harassment, harm, injury, or mortality as a result the Project. Although there is a potential for take, Caltrans does not anticipate this Project would substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, or cause a fish or wildlife population to drop below self-sustaining levels.

Caltrans proposes to implement on-site restoration and purchase mitigation credits at a local mitigation bank to offset the minor loss of habitat anticipated to occur as a result of this Project and the take of listed species should take occur. Given the availability of habitat within the Altamont Pass region surrounding the Project site and number of extant occurrences of red-legged frogs and salamanders locally, any take that may occur as a result of this Project is unlikely to cause numbers to drop below self-sustaining levels. Following the completion of Project activities, site conditions would be restored back to standard prior to the structural failure. The impact would be less than significant.

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

Less Than Significant Impact– Seven other projects were identified within the vicinity of the Project:

- I-580 Concrete Barrier and Midwest Guardrail System Upgrade: installation of concrete barrier and upgrade of guardrail along I-580 in Alameda County. Project proposed for construction in April 2024.
- I-580 Rehabilitation Project: rehabilitation of westbound I-580 structure in Alameda County. Project proposed for construction in May 2022.

- I-580 Lane Widening: eastbound and westbound express lanes from Greenville Road to San Joaquin County within I-580 are to be widened. Project proposed for completion in 2034.
- I-580 Truck Climbing Lane: creation of a truck climbing lane on westbound I-580 by Altamont Pass. Project proposed completion in May 2021.
- I-580 Highway Worker Safety Improvements. Project proposed for construction in 2021/2022.
- I-580 Install Safety Lighting and Establish Electrical Service Connection. Project proposed for construction 2020/2021.
- I-205 High Occupancy Vehicle Lanes: Creation of High Occupancy Vehicle lanes on I-205. Project proposed for completion in 2030.

Future projects scheduled to occur in the vicinity and identified above would undergo environmental reviews to identify, account for, and mitigate potential significant impacts. All projects would follow AMMs including standard Caltrans BMPs, which would protect any surrounding habitat and water resources. Lane-widening work associated with the I-580 Lane Widening Project may have the potential to contribute to the cumulative loss of grasslands and wildlife movement areas for listed and protected species habitat when combined with the proposed Project. However, these potential impacts would be mitigated using similar or more extensive measures included as part of this Project, such as on-site and off-site restoration. As a result, this impact would be less than significant.

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

No Impact – The land that is proposed for Staging Area 2 is an emergency runoff area and may be utilized to store construction vehicles and equipment for the Project, as discussed in 1.8 Access and Staging. Staging in this area would be temporary and would provide ample space for runaway trucks to utilize during emergencies. In addition, Caltrans Design would re-evaluate the feasibility of using this area during the design phase for the Project. Caltrans would coordinate with the Contractor and remove it as a possible staging area if it is deemed unsafe for emergency access. As a result, there would be no impact.

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Appendix A. References

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Appendix B. List of Preparers

The following Department staff and consultants contributed to the preparation of this IS/Proposed MND.

CALIFORNIA DEPARTMENT OF TRANSPORTATION, DISTRICT 4

Office of Environmental Analysis
Lindsay Vivian, Office Chief
Wahida Rashid, Branch Chief
Michael Lee, Associate Environmental Planner

Office of Biological Sciences and Permits
Carli Baker, Associate Biologist, East Counties

Office of Cultural Resource Studies
Helen Blackmore, Senior Environmental Planner (Architectural History)
Kathryn Rose, Senior Environmental Planner (Archaeology)
Lindsay Busse, Associate Environmental Planner (Archaeology)
Charles Palmer, Associate Environmental Planner (Architectural History)

Office of Environmental Engineering
Kevin Krewson, Supervising Transportation Engineer (Air Quality/Noise)
Hardeep Takhar, Supervising Transportation Engineer (Water Quality)
Jonathan Wellen, Transportation Engineer (Water Quality)
Chris Wilson, Senior Transportation Engineer (Hazardous Waste)

Office of Geotechnical Design – West
Chris Risden, Senior Transportation Engineer (Geotech)

Office of Hydraulic Engineering
Eric Kawakita, Senior Transportation Engineer (Hydraulics)

Office of Landscape Architecture
Lydia Mac, Senior Landscape Architect
Jennifer Howard, Associate Landscape Architect

Office of Design – SHOPP
George Acquaye, Senior Transportation Engineer
Revisha Brar, Transportation Engineer

Office of Program/Project Management
Danny Kao, Project Manager

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Appendix C. Avoidance, Minimization, and/or Mitigation Summary

In order to be sure that all of the environmental measures identified in this document are executed at the appropriate times, the following mitigation program (as articulated on the proposed Environmental Commitments Record [ECR] which follows) would be implemented. During Project design, avoidance, minimization, and /or mitigation measures would be incorporated into the Project's final plans, specifications, and cost estimates, as appropriate. All permits would be obtained prior to Project implementation. During construction, environmental and construction/engineering staff would ensure that the commitments contained in this ECR are fulfilled. Following construction and appropriate phases of Project delivery, long-term mitigation maintenance and monitoring would take place, as applicable. Note: Some measures may apply to more than one resource area. Duplicative or redundant measures have not been included in this ECR.

Protected or Regulated Resource	Proposed Avoidance, Minimization and Mitigation Measure(s)
Biological Resources	**Mitigation Measure Bio – 1: On-site and Off-site restoration of temporary and permanent impacts** Compensatory mitigation for impacts to species habitat in the form of habitat restoration and preservation would be provided at a 3:1 ratio for permanent impacts, and a 1:1 ratio for temporary impacts. Mitigation for permanent impacts would occur off-site through the purchase of mitigation credits from the Ohlone West Conservation Bank, while restoration for temporary impacts would occur on-site. Mitigation plans would be further developed and refined during the design phase. 1. **Permits.** Caltrans would include a copy of the Biological Opinion and Incidental Take Permit within the construction bid package of the Project. Caltrans would be responsible for implementing the Conservation Measures and Terms and Conditions of the U.S. Fish and Wildlife Service (USFWS) BO and California Fish and Wildlife (CDFW) ITP. 2. **Re-Initiation of Consultation.** Caltrans would reinitiate consultation if the Project results in effects to listed species not considered in the USFWS BO. 3. **Preconstruction Surveys for listed species.** Prior to initiation of construction activities, preconstruction

	surveys would be conducted by an Agency-approved Biologist for listed species. These surveys would be completed within 72 hours of the start of any ground-disturbing activities, and would consist of walking surveys of the Project limits and, if possible, accessible adjacent areas within at least 50 feet of the Project footprint. The biologist(s) would investigate all potential cover sites. This includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, and debris. Native vertebrates found in the cover sites within the Project limits would be documented and relocated to an adequate cover site in the vicinity. The entrances and other refuge features within the Project limits would be collapsed or removed following investigation. San Joaquin kit fox surveys should identify kit fox habitat features on the Project site, evaluate use by kit fox, and, if possible, assess the potential effects to the kit fox by the proposed activity. If an occupied den is discovered within the Project, or within 100 feet of the Project boundary, an exclusion zone of a minimum of 100 feet around the den would be established. If the minimum exclusion zone cannot be met, then USFWS must be contacted. If a natal/pupping den is discovered within the Project or within 200 feet of the Project boundary, the agencies would be notified immediately. 4. **Biologist Approval.** Caltrans would submit the names and qualifications of the Biological Monitor(s) for USFWS and CDFW approval prior to initiating construction activities for the Project. Only Agency-approved Biologist would implement the monitoring duties outlined in the BO. 5. **Biological Monitoring.** The Agency-approved Biologist(s) would be on site during initial ground-disturbing activities at the Project location and thereafter as needed to fulfill the role of the approved biologist as specified in Project permits. The biologist(s) would keep copies of applicable permits in their possession when on site. Through the resident engineer or their designee, the Agency-approved Biologist(s) shall be given the authority to communicate either verbally or in writing with all Project personnel to ensure that take of listed species is minimized and permit requirements are fully implemented. Through the resident engineer or their designee, the Agency-approved Biologist(s) shall have

	the authority to stop Project activities to minimize take of listed species or if he/she determines that any permit requirements are not fully implemented. If the Agency-approved Biologist(s) exercises this authority, the agencies shall be notified by telephone and email within 48 hours. 6. **Listed Species On-Site.** The Resident Engineer would immediately contact the Agency-approved Biologist(s) if a California red-legged frog or California tiger salamander is observed within a construction zone. The Resident Engineer would suspend construction activities within a 50-foot radius of the animal until the animal leaves the site voluntarily. If a California red-legged frog or California tiger salamander or is observed, an Agency-approved Biologist may relocate the animal if an agency-approved protocol for removal has been established. The Agency-approved Biologist would follow established USFWS protocols for relocation. 7. **Work Window for California tiger salamander and California red-legged frog:** All work would occur between April 15 and October 15, when listed species occurring in the general vicinity are less active and there is less potential for an individual to enter the work area. 8. **Worker Environmental Awareness Training (WEAT).** All construction personnel would attend a mandatory environmental education program delivered by an Agency-approved Biologist prior to working on the Project. The program would focus on the conservation measures that are relevant to employee's personal responsibility and would include an explanation as how to best avoid take of sensitive species. Distributed materials would include a pamphlet with distinguishing photographs of sensitive species, species' habitat requirements, compliance reminders, and relevant contact information. Documentation of the training, including sign-in sheets, would be kept on file and would be available on request. 9. **Prevention of Wildlife Entrapment.** To prevent inadvertent entrapment of listed species during construction, excavated holes or trenches more than 1 foot deep with walls steeper than 30 degrees would be

	covered by plywood or similar materials at the close of each working day. Alternatively, an additional 4-foot-high vertical barrier, independent of exclusionary fences, would be used to further prevent the inadvertent entrapment of listed species. If it is not feasible to cover an excavation or provide an additional 4-foot-high vertical barrier, independent of exclusionary fences, one or more escape ramps constructed of earthen fill or wooden planks would be installed. Before such holes or trenches are filled, they would be thoroughly inspected for trapped animals. If at any time a trapped listed animal is discovered, the on-site biologist would immediately place escape ramps or other appropriate structures to allow the animal to escape or the USFWS would be contacted by telephone for guidance. The USFWS would be notified of the incident by telephone and electronic mail within 48 hours. 10. **Environmentally Sensitive Area Fencing:** Before the start of construction, ESAs (defined as areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed) would be clearly delineated using temporary high-visibility fencing. Construction work areas would include the active construction site and all areas providing support for the Project, including areas used for vehicle parking, equipment and material storage and staging, and access roads. The high-visibility fencing would remain in place throughout the duration of construction activities, would be inspected regularly, and fully maintained at all times. 11. **Materials Storage.** California tiger salamanders and California red-legged frogs are attracted to cavity-like structures such as pipes and may seek refuge under construction equipment or debris. They may become trapped or injured if such materials are moved. All construction pipes, culverts, or similar structures, construction equipment or construction debris left overnight within the BSA would be inspected by the Agency-approved Biologist prior to being moved. 12. **Work Window for Nesting Birds.** To the extent practicable, clearing and grubbing activities should occur outside of the bird nesting season (February 1 to

	September 30). When it is necessary to conduct clearing during the nesting season, preconstruction surveys would be conducted within the BSA by a qualified biologist no more than 72 hours prior to clearing and grubbing of vegetation. If preconstruction surveys indicate the presence of nests of any special-status species, CDFW and USFWS would be consulted to determine the appropriate buffer area to be established around the nesting site for the duration of the breeding season. 13. **Preconstruction Surveys for Nesting Birds.** Preconstruction surveys for nesting birds would be conducted by a qualified biologist no more than 72 hours prior to the start of construction for activities, including staging and vegetation removal, occurring during the breeding season (February 1 to September 30). 14. **Non-disturbance Buffer for Nesting Birds.** If work is to occur within 300 feet of active raptor nests or 100 feet of active passerine nests, a non-disturbance buffer would be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance. Buffer size would be determined in cooperation with an experienced biologist. 15. **Staging:** Staging and parking areas would be located in designated areas, as specified by the Project biologist in coordination with the Project engineer. 16. **Revegetation Following Construction.** All areas that are temporarily affected during construction would be revegetated with an assemblage of native grass, shrub, and trees. Invasive, exotic plants would be controlled within the BSA to the maximum extent practicable, pursuant to Executive Order 13112. 17. **Mono-filament Erosion Control.** Plastic mono-filament netting (erosion control matting) or similar material to avoid entrapping listed species. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

	18. **Vehicle Use.** Project employees would be required to comply with guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards. 19. **Night Work.** There would be no night work as part of this Project. All work would be conducted during daytime hours and artificial lighting would not be used to illuminate any areas within the Project. 20. **Trash Control.** All food-related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and removed at least once a day from the work area. 21. **Firearms.** No firearms would be allowed in the Project except for those carried by authorized security personnel, or local, state, or federal law enforcement officials. 22. **Pets.** To prevent harassment, injury or mortality of sensitive species, no pets would be permitted on the Project site. 23. **Invasive Plants.** To reduce the spread of invasive, nonnative plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans would comply with Executive Order 13112. This order is provided to prevent the introduction of invasive species and provide for their control in order to minimize the economic, ecological, and human health effects. In the event that noxious weeds are disturbed or removed during construction-related activities, the contractor would be required to contain the plant material associated with these noxious weeds and dispose of them in a manner that would not promote the spread of the species. The contractor would be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance would be replanted with fast-growing native grasses or a native erosion control seed mixture. Where seeding is not practical, the target areas within the Project area would

	be covered to the extent practicable with heavy black plastic solarization material until the end of the Project.
Aesthetics	• Vegetation removal should be avoided to the maximum extent feasible. Impacts to existing vegetation should be reassessed during PS&E. • Environmentally sensitive areas, including vegetation to remain, would be evaluated during PSE to see if protection such as temporary fencing is needed during construction. • All disturbed ground surfaces shall be restored to pre-Project (or better) conditions. This includes any previously unidentified staging areas or access areas used by the Contractor. The finished slope will be treated with erosion control which will include a shrub and grass seed mix to help screen the new down drain.
Air Quality/GHG	• Maintain regular vehicle and equipment maintenance. • Limit idling of vehicles and equipment on-site. • If practicable, recycle nonhazardous waste and excess materials. • If recycling is not practicable, dispose of material. • Use solar-powered signal boards, if feasible.
Cultural Resources	• If previously unidentified cultural resources are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the discovery.
Hazards and Hazardous Waste	• A site investigation for hazardous waste, such as aerially deposited lead, would be conducted during the design phase of the Project, if found necessary by Caltrans Office of Environmental Engineering – Hazardous Waste.
Transportation	• A construction transportation management plan would be implemented during construction to minimize work-related traffic delays by the application of general traffic handling practices and strategies.

Utilities	• An on-site inspector shall be provided by Chevron to observe work activities surrounding the Chevron petroleum pipeline during construction. • All contractor submittals shall be reviewed and approved by an on-site inspector.
Water Quality/Erosion Control BMPs	• Disallowing any discharging of pollutants from vehicle and equipment cleaning into any storm drains or watercourses. • Keeping vehicle and equipment fueling and maintenance operations at least 50 feet away from watercourses, except at established commercial gas stations or an established vehicle maintenance facility. • All grindings, asphaltic-concrete waste, servicing vehicles and construction equipment would be stored within previously disturbed areas absent of habitat and at a minimum of 50 feet from any downstream riparian habitat, aquatic habitat, culvert, or drainage feature unless separated by topographic or drainage barrier. • Dedicated fueling and refueling practices would be designated as part of the approved Storm Water Pollution Prevention Program. Dedicated fueling areas would be protected from storm water run-off and would be located at least 50 feet from downslope drainage facilities and water courses. • Fueling must be performed on level-grade areas. On-site fueling would only be used when and where it is impractical to send vehicles and equipment off-site for fueling. When fueling must occur on-site, the contractor would designate an area to be used subject to the approval of the Resident Engineer representing Caltrans. Drip pans or absorbent pads would be used during on-site vehicle and equipment fueling. • Maintaining spill containment kits on-site at all times during construction operations and/or staging or fueling of equipment. • Any and all non-hazardous dredge/fill material produced as a result of removing sediment from the southern culvert would either be reused and fully contained within

	the Project limits or would be properly disposed of off-site. • Flared end sections with rock slope protection dissipators would be used to interrupt and slow concentrated flows from leaving roadway drainage outfalls. • Dust control measures would be implemented consisting of regular truck watering of construction access areas and disturbed soil areas, including the use of soil stabilizers, if required, to minimize airborne dust and soil particles generated from graded areas. For disturbed soil areas, the use of an organic tackifier to control dust emissions blowing off the ROW or out of the construction area during construction would be included in the construction contract. Watering guidelines would be established to avoid any excessive run- Any material stockpiles would be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion. All of these efforts would be consistent with the RWQCB or approved Storm Water Pollution Prevention Plan. Dust control would be addressed during the environmental education session. • Installing coir rolls or straw wattles along or at the base of slopes during construction to capture sediment. • Protecting graded areas from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas. • Install temporary high-visibility fencing to preserve the existing vegetation and limit contractor access. • Establishing permanent erosion control measures such as bio-filtration strips and swales to receive stormwater discharges from the highway or other impervious surfaces based on changes to impervious surfaces and RWQCB regulations.

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Appendix D. Species Evaluation Table

Table 3: Federally or state listed and candidate plants species, critical habitat, or special status plant species occurring or known to occur in the Project Area vicinity. Data for listed species are from the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants database, and California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) for the Altamont and Midway U.S. Geological Survey (USGS) quadrangle.

Species Name	Species Status			Habitat Requirements (CNDDB[2] and CNPS[3])	Potential to Occur, Impact to Species, and Rationale
	Fed[1]	State[2]	CNPS[3]		
alkali milk-vetch *Astragalus tener var. tener*			1B.2	Found in alkali playa, valley and foothill grassland, and vernal pools. Grows on low ground, alkali flats, and floodedlands. An annual herb that flowers from March to June and is found between 1-558 feet	Not expected to occur. Possibly locally extirpated. Most recent CNDDB occurrence is from 1958.
bent-flowered fiddleneck *Amsinkia lunaris*			1B.2	Found in cismontane woodland, coastal bluff scrub, and valley and foothill grassland. Grows on shaded or sheltered slopes in openings or edges of woodland. An annual herb that flowers from March to June and can be found between 164-1,640 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
big tarplant *Blepharizonia plumosa*			1B.1	Found in valley and foothill grassland and grows on clay soil. An annual herb that flowers from July to October and is found between 90-1,515 feet.	**Low potential to occur.** Marginal habitat present. No CNDDB occurrences within 2 miles.
big-scale balsamroot *Blepharizonia macrolepis*			1B.2	Found in valley and foothill grassland, cismontane woodland, and sometimes on serpentine soils. A perennial herb that flowers from March to June and is found between 114-3,028 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
Brewer's western flax *Hesperolinon breweri*			1B.2	Found in chaparral, cismontane woodland, valley and foothill grassland, growing usually on serpentine soils. An annual herb that flowers from May to July and is found between 90-2,835 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
brittlescale *Atriplex depressa*			1B.2	Found in chenopod scrub, meadows, seeps, playas, valley and foothill grasslands, and vernal pools. Grows on alkaline and clay soils. An annual herb that flowers from April to October and is found between 3-960 feet.	**Low potential to occur**. Marginal habitat present. No CNDDB occurrences within 2 miles.
California alkali grass *Puccinellia simplex*			1B.2	Found in chenopod scrub, meadows, seeps, valley and foothill grasslands, and vernal pools. Grows on alkaline and vernally mesic soils near water margins. An annual herb that grows from March to May and is found between 6-2,790 feet.	**Low potential to occur**. Marginal habitat present. Closest CNDDB occurrence is 0.95 miles away.
caper-fruited tropidocarpum *Tropidocarpum capparideum*			1B.1	Found in valley and foothill grasslands, growing on alkaline hills. An annual herb that flowers from March to April and is found between 3-1,365 feet.	Not expected to occur. Possibly locally extirpated; last CNDDB occurrence is 1933.
chaparral harebell *Campanula exigua*			1B.2	Found in chaparral, growing on rocky, usually serpentine soils. An annual herb that flowers from May to June and is found between 825-3,750 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
chaparral ragwort *Senecio aphanactis*			2B.2	Found in chaparral, woodland, and coastal scrub, sometimes in alkaline soils. An annual herb that flowers from January to May and is found between 45-2,400 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
Congdon's tarplant *Centromadia parryi ssp. congdonii*			1B.1	Found in valley and foothill grassland, growing on alkaline soils. An annual herb that flowers from May to November and is found between 0-690 feet.	**Low potential to occur**. Marginal habitat present. No CNDDB occurrences within 2 miles.
Contra Costa goldfields *Lasthenia conjugens*	E X		1B.1	Found in cismontane woodland, alkaline playas, valley and foothill grassland, and vernal pools, growing on mesic soils. An annual herb that flowers from March to June and is found between 0-1,410 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. Critical habitat for this species is 6.5 miles away.
Contra Costa manzanita *Arctostaphylos manzanita ssp. laevigata*			1B.2	Found in chaparral on rocky soils. A perennial evergreen shrub that flowers from January to April and is found between 1,290-3,300 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
Delta mudwort *Limosella australis*			2B.1	Found usually on mud banks in freshwater or brackish marshes, swamps, and riparian scrub. A perennial stoloniferous herb that flowers from May to August and is found between 0-9 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.

Species Name	Species Status			Habitat Requirements (CNDDB[2] and CNPS[3])	Potential to Occur, Impact to Species, and Rationale
	Fed[1]	State[2]	CNPS[3]		
Diablo helianthella *Helianthella castanea*			1B.2	Found in upland forest, chaparral, cismontane woodland, and coastal scrub. Grows in chaparral/woodland interface on rocky soils, often in shade. A perennial herb that flowers from March to June and can be found between 82-3,772 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
diamond-petaled California poppy *Eschscholzia rhombipetala*			1B.1	Found in valley and foothill grasslands, growing on alkaline and clay soils. An annual herb that flowers from March to April and is found between 0-2,925 feet.	**Low potential to occur**. Marginal habitat present. No recent CNDDB occurrences within 2 miles.
hairless popcornflower *Plagiobothrys glaber*			1A	Found in meadows and seeps, marshes and swamps in coastal salt marshes and alkaline meadows. Found between 16-591 feet.	Not expected to occur. Possibly locally extirpated; last CNDDB occurrence from 1942.
heartscale *Atriplex cordulata*			1B.2	Found in saline or alkaline soils in chenopod scrub, meadows, seeps, and valley and foothill grassland. An annual herb that flowers from April to October and is found between 0-1,680 feet.	**Low potential to occur**. Marginal habitat present. No recent CNDDB occurrences within 2 miles.
hispid salty bird's-beak *Chloropyron mole ssp. hispidum*			1B.1	Found in meadows and seeps, playas, valley and foothill grassland. An annual herb that blooms from June to September and is found between 15-465 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
Hospital Canyon larkspur *Delphinium californicum sso. interius*			1B.2	Found in chaparral openings, mesic cismontane woodlands, and coastal scrub. A perennial herb that flowers from April to June and is found between 585-3,285 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
large-flowered fiddleneck *Amsinckia grandiflora*	E X	E	1B.1	Found in valley and foothill grassland and cismontane woodlands. An annual herb, it flowers from March to May and is found from 810-1,650 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 5 miles. Critical habitat for this species is 8 miles away.
Lemmon's jewelflower *Caulanthus lemmonii*			1B.2	Found in pinyon and juniper woodland, valley and foothill grassland. An annual herb, it flowers from March to May and is found between 225-4,755 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
lesser saltscale *Atriplex minuscula*			1B.1	Found in chenopod scrub, playas, valley and foothill grassland in alkali sink and grassland in sandy, alkaline soils. An annual herb, it flowers from May to October and is found between 65-328 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
Livermore tarplant *Deinandra cacigalupii*		E	1B.1	Found in alkaline meadows and seeps. An annual herb, it flowers from June to October and is found between 465-600 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
long-styled sand-spurrey *Spergularia macrotheca var. longistyla*			1B.2	Found in meadows, seeps, marshes and swamps in alkaline soils. A perennial herb that flowers from February to May and is found between 0-765 feet.	Not expected to occur. Possibly locally extirpated; last CNDDB occurrence is 1937.
Mason's lilaeopsis *Lilaeopsis masonii*		R	1B.1	Found in brackish or freshwater marshes, swamps, and riparian scrub. A perennial rhizomatous herb, it flowers from April to November and is found between 0-30 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
Mt. Diablo fairy-lantern *Calochortus pulchellus*			1B.2	Found in chaparral, cismontane and riparian woodlands, and valley and foothill grasslands. This perennial herb flowers from April to June and is found between 90-2,520 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
palmate-bracted bird's beak *Chloropyron palmatum*	E	E	1B.1	Found in chenopod scrub, valley and foothill grassland, usually on Pescadero silty clay. An annual herb, it flowers from May to October and is found between 15-465 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
recurved larkspur *Delphinum recurvatum*			1B.2	Found in chenopod scrub, cismontane woodland and valley and foothill grassland habitats, this perennial herb flowers between March and June and is found between 9-2,370 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.

Species Name	Species Status			Habitat Requirements (CNDDB[2] and CNPS[3])	Potential to Occur, Impact to Species, and Rationale
	Fed[1]	State[2]	CNPS[3]		
saline clover *Trifolium hydrophilum*			1B.2	Found in marshes, swamps, valley and foothill grassland, and vernal pools. Grows on mesic, alkaline sites. An annual herb that flowers from April to June and is found between 0-984 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
San Joaquin spearscale *Extriplex joaquinana*			1B.2	Found in chenopod scrub, meadows, seeps, playas, and valley and foothill grassland habitats. This annual herb flowers between April to October and is found between 30-2,595 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
shining navarretia *Navarretia nigelliformis ssp. radians*			1B.2	Found in cismontane woodland, valley and foothill grassland, and vernal pool habitats. An annual herb flowers from March to July and is found between 195-3,000 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
showy golden madia *Madia radiata*			1B.1	Found in cismontane woodland, and valley and foothill grassland habitats, this annual herb flowers from March to May and is found between 75-3,645 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
spiny-sepaled button-celery *Eryngium spinosepalum*			1B.2	Found in vernal pools and valley and foothill grassland habitats, this annual/perennial herb flowers from April to June and is found between 240-2,925 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
wooly rose-mallow *Hibiscus lasiocarpos var. occidentalis*			1B.2	Found in freshwater marshes and swamps, this emergent perennial rhizomatous herb flowers from June to September and is found between 0-360 feet.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
sycamore alluvial woodland	G1	S 1.1		Riparian woodland. Linear band of *Platanus racemosa* woodland along Arroyo Mocho with evidence of sedimentary derived alluvium from Franciscan rocks.	Not expected to occur. Habitat found over 5 miles away.
valley sink scrub	G1	S 1.1		Chenopod scrub. *Allenrolfea occidentalis* scrub with alkaline barrens, scattered claypan vernal pools, and intermittent drainages.	Not expected to occur. Habitat found 0.9 miles away from project with no connectivity. No habitat markers found during botanical studies

Federal Designations[1]:
E- Endangered **X- Critical Habitat**
T- Threatened **C- Candidate**
D- Delisted

CDFW Designations[2]:
E- Endangered **R- Rare**
T- Threatened **C- Candidate**

CNPS California Rare Plant Rank[3]:
1A- Presumed extinct in California
1B- Rare, threatened, or endangered in California and elsewhere
2- Rare, threatened, or endangered in California, but more common elsewhere

Threat Rank:
0.1- Seriously threatened in California (more than 80% of occurrences threatened / high degree of immediacy of threat)
0.2- Fairly threatened in California (20% to 80% occurrences threatened / moderate degree of immediacy of threat)

Global(G) and State(S) Conservation Status Definitions
X- Presumed extinct(species) / eliminated (ecological communities)
H- Possibly extinct(species) / presumed eliminated (ecological communities)
1- Critically Imperiled
2- Imperiled
3- Vulnerable
4- Apparently Secure
5- Secure

Sources:

[1] USFWS. 2019. The Information, Planning, and Consultation System (IPAC System). https://ecos.fws.gov/ipac/

[2] CDFW. 2019. California Natural Diversity Database (CNDDB) RareFind 5: Habitat Conservation Division. Sacramento, California.

[3] CNPS. 2019. The California Native Plant Society's Inventory of Rare and Endangered Plants of California (Online edition, version 7.7). http://www.rareplants.cnps.org

[4] Nature Serve. 2019. Nature Serve Explorer. http://explorer.natureserve.org/granks.htm

Table 4: Federally or state listed, and candidate animal species, critical habitat, or special status animal species occurring or known to occur in the Project Area vicinity. Data for listed species are from the U.S. Fish and Wildlife Service (USFWS) species database, and California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) for the Oakland East U.S. Geological Survey (USGS) quadrangle.

Species Name	Species Status		Habitat Requirements (USFWS[1], CNDDB[2], NMFS[3])	Potential to Occur, Impact to Species, and Rationale
	Fed[1]	State[2]		
conservancy fairy shrimp *Branchinecta conservatio*	E X		Endemic to the grasslands of the northern two-thirds of the Central Valley. Inhabit astatic pools located in swales formed by old, braised alluvium filled by winter/spring rains that last until June.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. Critical habitat for this species is 25 miles away.
longhorn fairy shrimp *Branchinecta longiantenna*	E X		Endemic to the eastern margin of the Central Coast mountains in seasonally astatic grassland vernal pools. Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay or grass-bottomed pools in shallow swales.	Not expected to occur. Habitat not present. Aquatic breeding habitat not present. Closest CNDDB occurrence is 1.4 miles away. Critical habitat for this species is 3 miles away.
San Bruno elfin butterfly *Callophrys mossii bayensis*	E		Found in rocky outcrops and cliffs on the San Francisco Peninsula, mainly near the San Bruno mountain and San Mateo county. *Sedum spathulifolium* is the larval host plant.	Not expected to occur. Habitat and host plant not present. No CNDDB occurrences within 2 miles.
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T X		Endemic to the Central Valley of California, in association with blue elderberry. Prefers to lay eggs in elderberries, with some preference shown to stressed elderberries.	Not expected to occur. Habitat and host plant not present. No CNDDB occurrences within 2 miles. Critical habitat for this species is 75 miles away.
vernal pool fairy shrimp *Branchinecta lynchi*	T X		Endemic vernal pools, primarily in grasslands from Shasta County to Tulare County, with most occurrences in the Central Valley and coastal mountains. Adults produce cysts or "resting eggs" that become embedded in dried bottom mud. Different pools within or between complexes may provide habitat for the fairy shrimp in alternative years, as climatic conditions vary.	Not expected to occur. Habitat not present. Aquatic breeding habitat not present. Closest CNDDB occurrence is 0.4 miles away from Location 12 from 2010. Critical habitat for this species is 3.9 miles away.
vernal pool tadpole shrimp *Lepidurus packardi*	E X		Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	Not expected to occur. Habitat not present. Aquatic breeding habitat not present. No CNDDB occurrences within 2 miles. Critical habitat for this species is 5 miles away.
western bumble bee *Bombus occidentalis*		E	Found in open grassy areas, chaparral and shrub areas, and mountain meadows. Historically found from western Canada through the Western US however, due to habitat fragmentation, populations are declining precipitously from central California through southern British Columbia.	Not expected to occur. Habitat not present. There are no CNDDB occurrences within 2 miles.

Natural Environmental Study

Species Name	Species Status		Habitat Requirements (USFWS[1], CNDDB[2], NMFS[3])	Potential to Occur, Impact to Species, and Rationale
	Fed[1]	State[2]		
Delta smelt *Hypomesus transpacificus*	T X	E	Endemic to the San Francisco Estuary. Seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay. Seldom found at salinities > 10 parts per thousand. Most often at salinities < 2 parts per thousand.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. Critical habitat for this species is 4 miles away. No work in or near aquatic habitat is anticipated.
longfin smelt *Spirinchus thaleichthys*		T	Species is euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 parts per thousand but can be found in completely freshwater to almost pure seawater.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. No work in or near aquatic habitat or water courses.
steelhead CVS DPS *Oncorhynchus mykiss irideus*	T		From Russian River, south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. No work in or near aquatic habitat or water courses.
California red-legged frog *Rana draytonii*	T X	SC	Found in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to aestivation habitat.	**Potential to occur**. The wetland adjacent to the project may be suitable aquatic habitat. Closest CNDDB occurrence is 0.5 miles away. Critical habitat for this species is located 0.03 miles away from the project.
California tiger salamander, Central Population *Ambystoma californiense*	T X	T	Found in grasslands and low foothills with access to underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding. Requires underground burrows for estivation.	**Potential to occur**. The wetland adjacent to the project may be suitable aquatic habitat. Closest CNDDB occurrence is 0.56 miles away. Critical habitat for this species is located 8 miles away from the project.
foothill yellow-legged frog *Rana boylii*		T, SC	Found in partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Not expected to occur. Habitat not present. No suitable breeding ponds observed. No CNDDB occurrences within 2 miles. No habitat connectivity.
western spadefoot *Spea hammondii*		SC	Occurs primarily in grassland habitats but can be found in valley foothill hardwood woodlands. Vernal pools are essential breeding habitats.	Not expected to occur. Habitat not present. No suitable breeding ponds. No CNDDB occurrences within 2 miles. No habitat connectivity.
Alameda whipsnake *Masticophis lateralis euryxanthus*	T X		Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna, and woodland habitats. Found on mostly south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. No habitat connectivity. Critical habitat for this species is 4.5 miles away.
California glossy snake *Arizona elegans occidentalis*		SC	Patchily distributed from the eastern portion of the San Francisco Bay south to Baja California. Found in a range of scrub and grassland habitats, often with loose or sandy soils.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles.
coast horned lizard *Phrynosoma blainvillii*		SC	Frequents a wide variety of habitats, most common in lowlands along sandy washes and scattered low bushes. Requires open areas for sunning, bushes for cover, and patches of loose soil for burial.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. No habitat connectivity.
giant gartersnake *Thamnophis gigas*	T	T	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. No habitat connectivity.

Species Name	Species Status		Habitat Requirements (USFWS[1], CNDDB[2], NMFS[3])	Potential to Occur, Impact to Species, and Rationale
	Fed[1]	State[2]		
northern California legless lizard *Anniella pulchra*		SC	Found in sandy or loose loamy soils under sparse vegetation. Prefers soil with a high moisture content.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. No habitat connectivity.
San Joaquin coachwhip *Masticophis flagellum ruddocki*		SC	Found in open, dry habitats with little or no tree cover. Requires mammal burrows for refuge and oviposition sites.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. No habitat connectivity.
western pond turtle *Emys marmorata*		SC	Found near ponds, marshes, rivers, streams, and irrigation ditches, usually with aquatic vegetation. Requires basking sites and suitable sandy banks or grassy fields for egg-laying.	Not expected to occur. Habitat not present. No CNDDB occurrences within 2 miles. No habitat connectivity.
burrowing owl *Athene cunicularia*		SC	Found in open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. The owl is a subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Low potential to occur**. Habitat present, including mammal burrows. Closest CNDDB occurrence 1.2 miles away. Could nest or forage within and adjacent to BSA.
Cooper's hawk *Accipiter cooperii*		WL	Woodland, chiefly of open, interrupted or marginal. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains. Cismontane woodland, riparian forest, riparian woodland, upper montane coniferous forest.	Not expected to occur. Habitat not present. Nesting habitat not present. No individuals observed. Closest CNDDB location is 5 miles away. May forage over project.
Ferruginous hawk *Buteo regalis*		WL	Found in open grasslands, sagebrush flats, desert svrub, low foothills, and fringes of pinyon and juniper forests. Eats mostly lagomorphs, ground squirrels, and mice.	Not expected to occur. Nesting habitat not present. Closest CNDDB occurrence is 1.3 miles away. May forage over project.
golden eagle *Aquila chrysaetos*		FPS	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Not expected to occur. Habitat not present. Nesting habitat not present. No individuals observed. No CNDDB occurrences within 2 miles. May forage over project.
grasshopper sparrow *Ammodramus savannarum*		SC	Found in dense grasslands on rolling hills, lowland plains, in valleys and on hillsides. Favors native grasslands with a mix of grasses, forbs, and scattered shrubs.	Not expected to occur. Nesting habitat not present. No individuals observed. No CNDDB occurrences within 2 miles. May forage over project.
loggerhead shrike *Lanius ludocicanus*		SC	Found in broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands. Prefers open country for hunting with perches for scanning and fairly dense shrubs and brush for nesting.	No expected to occur. Nesting habitat not present. Closest CNDDB occurrence is 0.8 miles away. May forage over project.
northern harrier *Circus hudsonius*		SC	Found in coastal salt and freshwater marsh. Nests and forages in grasslands, from salt grass in desert sink to mountain Cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest build of a large mound of sticks in wet areas.	**Low potential to occur.** Nesting habitat not present. No individuals observed. No CNDDB occurrences within 2 miles. May forage over project.
short-eared owl *Asio flammeus*		SC	Found in swamps, lowland meadows, and irrigated alfalfa fields. Requires tall grass or tule patches for nesting and daytime seclusion.	Not expected to occur. Habitat not present. Nesting habitat not present. No CNDDB occurrences within 2 miles.
song sparrow (Modesto population) *Melospiza melodia*		SC	Endemic to California, specifically the north-central portion of the Central Valley. Found in riparian, shrub-scrub and emergent freshwater marsh habitats.	Not expected to occur. Habitat not present. Nesting habitat not present. No CNDDB occurrences within 2 miles.
Swainson's hawk *Buteo swainsoni*		T	Found in grasslands with scattered trees, juniper swage flats, riparian areas, savannah, and agricultural or ranch lands with trees. Requires adjacent foraging areas such as grasslands.	Not expected to occur. Nesting habitat not present. No CNDDB occurrences within 2 miles. May forage over project.

Species Name	Species Status		Habitat Requirements (USFWS[1], CNDDB[2], NMFS[3])	Potential to Occur, Impact to Species, and Rationale
	Fed[1]	State[2]		
tricolored blackbird *Agelaius tricolor*		T,SC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	Not expected to occur. Habitat not present. Nesting habitat not present. Closest CNDDB occurrence is 0.9 miles away. May forage over project.
white-tailed kite *Elanus leucurus*		FPS	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Low potential to occur.** Habitat not present. Nesting habitat not present. Closest CNDDB occurrence is 4 miles away. May forage over project.
American badger *Taxidea taxus*		SC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Low potential to occur**. Burrowing habitat not present. Closest CNDDB occurrence is 1.75 miles away from Location 4 in 2015.
hoary bat *Lasiurus cinereus*		WBWG	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	Not expected to occur. Nesting habitat not present. No CNDDB occurrences within 2 miles. May forage over Project locations.
pallid bat *Antrozous pallidus*		SC, WBWG	Found in deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Not expected to occur. Nesting habitat not present. No CNDDB occurrences within 2 miles. May forage over Project locations.
San Joaquin kit fox *Vulpes macrotis mutica*	E	T	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing and suitable prey base.	**Low potential to occur**. Breeding habitat not present. Closest CNDDB occurrence is 0.8 miles away from Location 2 and is from 1986. No habitat connectivity. May forage through the project.
Townsend's big-eared bat *Corynorhinus townsendii*		T	Found throughout California in 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.	Not expected to occur.. Nesting habitat not present. No CNDDB occurrences within 2 miles. May forage over Project locations.
coho salmon EFH				Present. Coho EFH is found within the San Francisco Bay Watershed (HUC 18050004)
chinook EFH				Present. Chinook EFH is found within the San Francisco Bay (HUC 18050004) and San Joaquin Delta (HUC 18040003) watersheds

Federal Designations[1]:
E- Endangered
T- Threatened
D- Delisted
X- Critical Habitat
C- Candidate

CDFW Designations[2]:
E- Endangered
T- Threatened
WL- Watch List
C- Candidate
SC- Species of Special Concern
WBWG- Western Bat Working Group

Sources:

[1] USFWS. 2019. The Information, Planning, and Consultation System (IPAC System). https://ecos.fws.gov/ipac/

[2] CDFW. 2019. California Natural Diversity Database (CNDDB) RareFind 5: Habitat Conservation Division. Sacramento, California.

[3] National Marine Fisheries Service (NMFS). 2019. Office of Protected Resources website.

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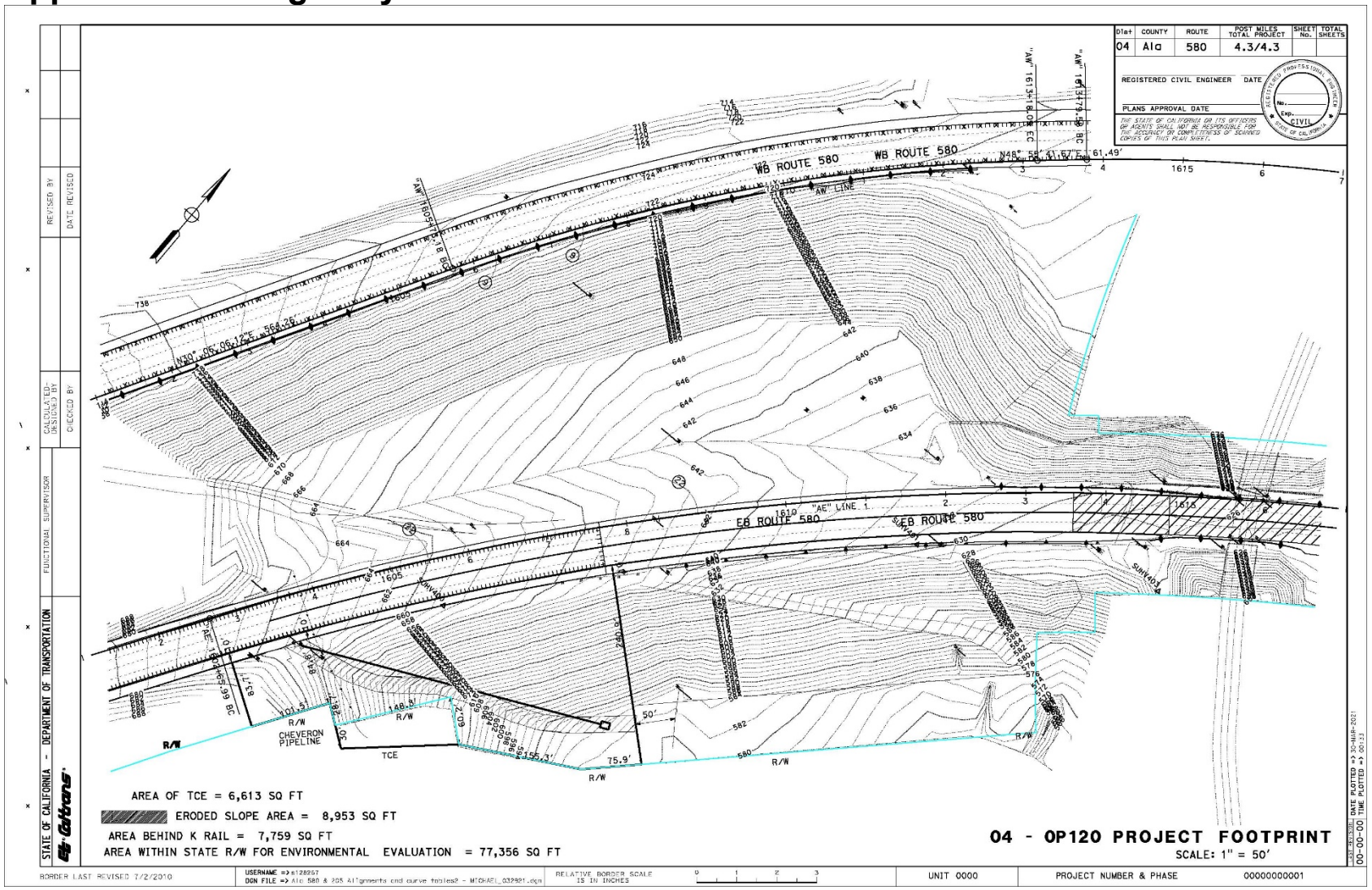
Appendix E. Design Layouts



INDEX OF PLANS

SHEET No. DESCRIPTION

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

IN ALAMEDA COUNTY
NEAR LIVERMORE
1.8 MILES EAST OF NORTH FLYNN ROAD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2015

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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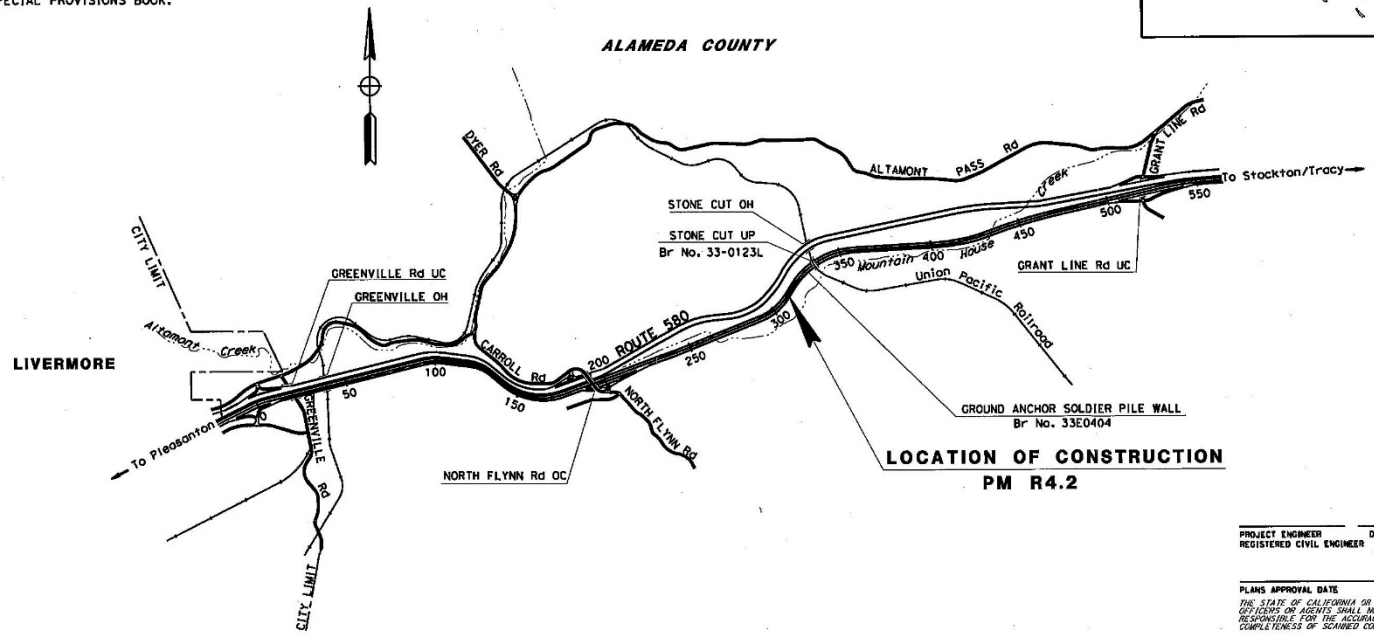


PROJECT ENGINEER
REGISTERED CIVIL ENGINEER
DATE

PLANS APPROVAL DATE

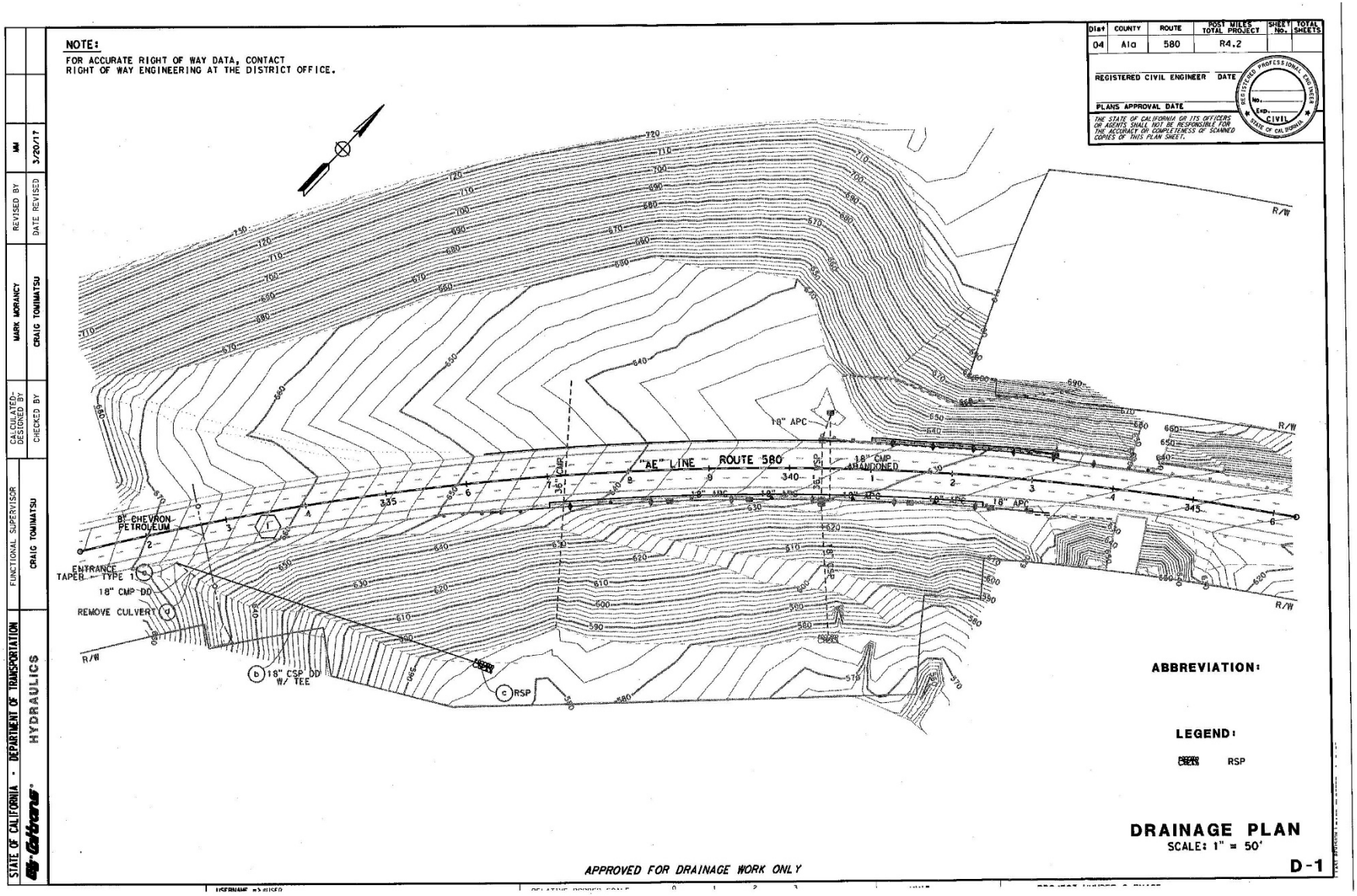
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

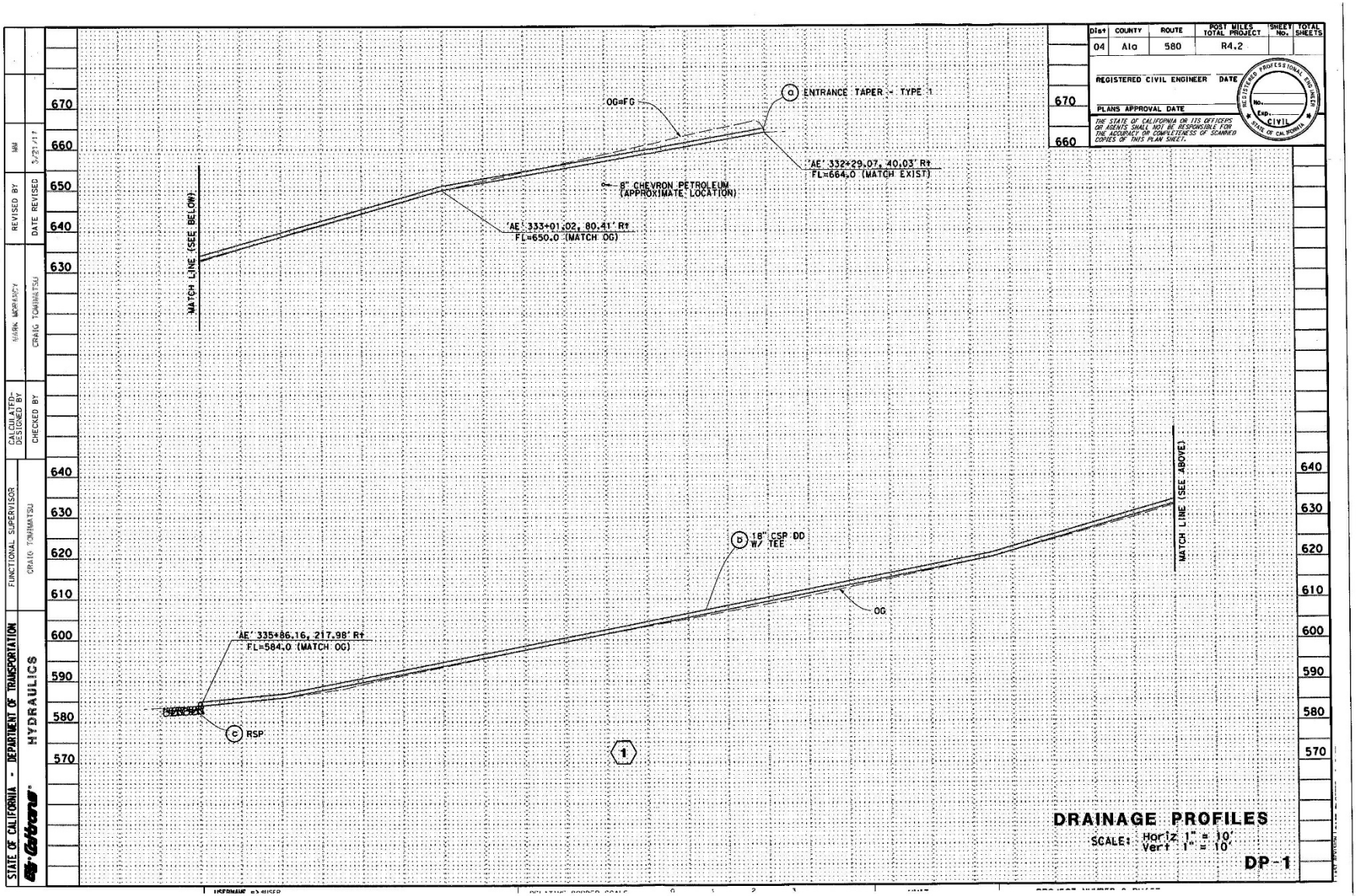
CONTRACT No.	
PROJECT ID	

PROJECT MANAGER

DESIGN MANAGER

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."


NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS
04 | Ala | 580 | R4.2
REGISTERED CIVIL ENGINEER DATE
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CALIFORNIA
CALCULATED-DESIGNED BY MARK MORANCY
CHECKED BY CRAIG TOMIMATSU
REVISED BY MM
DATE REVISED 3/20/17
FUNCTIONAL SUPERVISOR CRAIG TOMIMATSU
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
HYDRAULICS
"AE" LINE ROUTE 580
18" APC
18" CMP ABANDONED
36" CMP
BY CHEVRON PETROLEUM
ENTRANCE TAPER - TYPE 1
18" CMP DD
REMOVE CULVERT
18" CSP DD W/ TEE
RSP
R/W
ABBREVIATION:
LEGEND:
RSP
DRAINAGE PLAN
SCALE: 1" = 50'
APPROVED FOR DRAINAGE WORK ONLY
D-1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HYDRAULICS
FUNCTIONAL SUPERVISOR
CRAIG TOMIMATSU
CALCULATED-DESIGNED BY
MARK MORASSEY
CHECKED BY
CRAIG TOMIMATSU
REVISED BY
DATE REVISED
Dist
04
COUNTY
Ala
ROUTE
580
POST MILES TOTAL PROJECT
R4.2
SHEET No.
TOTAL SHEETS
REGISTERED CIVIL ENGINEER
DATE
PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
REGISTERED PROFESSIONAL ENGINEER
No.
Exp.
CIVIL
STATE OF CAL FORNIA
ENTRANCE TAPER - TYPE 1
OG=FG
'AE' 332+29.07, 40.03' Rt
FL=664.0 (MATCH EXIST)
8" CHEVRON PETROLEUM (APPROXIMATE LOCATION)
'AE' 333+01.02, 80.41' Rt
FL=650.0 (MATCH OG)
MATCH LINE (SEE BELOW)
18" CSP DD W/ TEE
OG
MATCH LINE (SEE ABOVE)
'AE' 335+86.16, 217.98' Rt
FL=584.0 (MATCH OG)
RSP
1
DRAINAGE PROFILES
SCALE: Horiz 1" = 10'
Vert 1" = 10'
DP-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

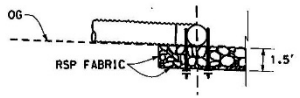
REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

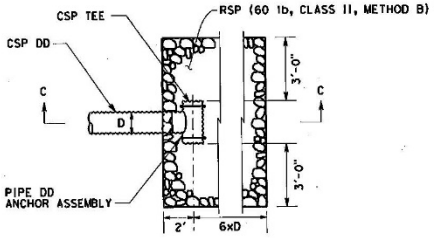
FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans



SECTION C-C



PLAN

NOTE:
FOR DETAILS NOT SHOWN, SEE STANDARD PLAN D87A AND D87C.

RSP AT CSP TEE

1 C

DRAINAGE DETAILS

NO SCALE

DD-1

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Appendix F. Title VI Non-Discrimination Policy

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-6130
FAX (916) 653-5776
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

August 2020

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures "*No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.*"

Caltrans will make every effort to ensure nondiscrimination in all of its services, programs and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a nondiscriminatory manner.

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page: https://dot.ca.gov/programs/civil-rights/title-vi.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Civil Rights, at 1823 14th Street, MS-79, Sacramento, CA 95811; (916) 324-8379 (TTY 711); or at <Title.VI@dot.ca.gov>.

Original signed by
Toks Omishakin
Director

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

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