

# **Bridge Seismic Restoration Project**

(Alpine Road Undercrossing Bridges, Sand Hill Road Overcrossing Bridges, and Interstate-280/Interstate-380 Separation Bridges)

SAN MATEO COUNTY, CALIFORNIA  
DISTRICT 04 - INTERSTATE 280 –PM R0.05/R20.97  
EA 04- 4J850; Project ID 04-1600-0028

## **Initial Study with Proposed Mitigated Negative Declaration**



Prepared by the  
California Department of Transportation



November 2019

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# General Information about This Document

## What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study (IS) to examine the potential environmental impacts of seismically restoring five (5) bridges along Interstate 280 (I-280) for the proposed I-280 Bridge Seismic Restoration Project in San Mateo 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.
- Additional copies of this document and related technical studies are available for review at:

Caltrans District 4 Office, 111 Grand Avenue, Oakland, CA 94612  
San Bruno Library, 701 Angus Avenue West, San Bruno, CA 94066  
Menlo Park Library, 800 Alma Street, Menlo Park, CA 94025  
Portola Valley Library, 765 Portola Road, Portola Valley, CA 94028

This document can also be accessed at the [Caltrans District 4 Environmental Documents By County Website](#)

- We'd like to hear what you think. If you have any comments about the proposed project, please send your written comments to Caltrans by the deadline.
- Send your comments via post mail to:  
California Department of Transportation, District 4, Attn: John Seal, P. O. Box 23660, MS 8-B, Oakland, CA 94623-0660.
- Send comments via email to: [John.Seal@dot.ca.gov](mailto:John.Seal@dot.ca.gov)
- A public open house is scheduled for this project on November 20<sup>th</sup>, 2019 from 5:00 PM to 8:30 PM at the La Entrada Middle School at 2200 Sharon Rd, Menlo Park, CA 94025.
- Be sure to send comments by the deadline: December 10<sup>th</sup>, 2019.

## What happens next:

After comments are received from the public and reviewing agencies, Caltrans may (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. Caltrans may design and construct all or part of the project if the project is given environmental approval and funding is obtained.

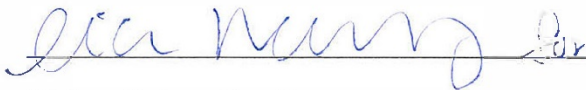
For individuals with sensory disabilities, this document can be made available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to California Department of Transportation, Attn: John Seal, Environmental Planning, 111 Grand Avenue, MS 8-B, Oakland, CA 94612, or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

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# Initial Study With Proposed Mitigated Negative Declaration

Dist.-Co.-Rte.: 04 – SM – 280 P.M/P.M.: R0.05/R20.97	EA 04 4J850; Project ID # 04-1600-0028
Project Title:	Bridge Seismic Restoration Project
Lead agency name and address:	California Department of Transportation 111 Grand Ave., Oakland, CA 94612
Contact person and phone number:	John Seal, Associate Environmental Planner (510) 622-8729
Project Location:	San Mateo County, California
General plan description:	Transportation
Zoning:	Urban
Surrounding land uses and setting:	Urban, Parks and Open Space
Other public agencies whose approval is required (e.g., environmental permits); CEQA Responsible Agencies are denoted with a *:	<ul style="list-style-type: none"> <li>• Biological Opinion from the U.S. Fish and Wildlife Service (USFWS)</li> <li>• Programmatic Biological Opinion from the National Marine Fisheries Service (NMFS)</li> <li>• 1602 Lake and Streambed Alteration Agreement from the California Department of Fish and Wildlife* (CDFW)               <ul style="list-style-type: none"> <li>- One 1602 permit for the Alpine Road UC (L/R) Bridges location</li> </ul> </li> <li>• 404 Standard Individual Permit from the U.S. Army Corps of Engineers (USACE)</li> <li>• Clean Water Act 401 Water Quality Certification from the San Francisco Bay Regional Water Quality Control Board* (RWQCB)</li> <li>• California Transportation Commission* (CTC)</li> </ul>

Additional copies of this document, as well as the technical studies this document relies on, are available for review at the district office, 111 Grand Ave., Oakland, CA 94612.



Stefan Galvez-Abadia

11/8/2019

Date

Chief, Office of Environmental Analysis  
District 4, California Department of Transportation

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# Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

## Project Description

The California Department of Transportation (Caltrans) proposes to seismically retrofit five bridges on I-280 at three separate locations in San Mateo County. The following are the five bridges for the proposed projects: Alpine Road Undercrossing (UC) (Bridge No. 35-0009 Left/Right (L/R)) at PM R0.05 (two bridges), Sand Hill Road Overcrossing (OC) (South) (Bridge No. 35-0007) at PM R1.56, Sand Hill Road OC (North) (Bridge No. 35-0008) at PM R1.62, and I-280/I-380 Separation (Bridge No.35-0217) at PM R20.97.

## Determination

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

Caltrans has prepared an Initial Study for this project, and pending public review, has determined from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on aesthetics, agriculture and forestry, air quality, cultural resources, geology/soils, land use/planning, mineral resources, population/housing, public services, hydrology/water quality, noise, recreation, transportation/traffic, and utilities/service systems.

The proposed project would have a less than significant impact to greenhouse gas emissions.

With the following mitigation measures incorporated, the proposed project would have less than significant effects on hazards and hazardous materials and the following biological resources: Onsite mitigation for Central California Coast Steelhead Distinct Population Segment.

---

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

Date

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### Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project. Please see the checklist beginning on page 45 for additional information.

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forestry	<input type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Energy
<input type="checkbox"/>	Geology/Soils	<input type="checkbox"/>	Greenhouse Gas Emissions	<input checked="" type="checkbox"/>	Hazards and Hazardous Materials
<input type="checkbox"/>	Hydrology/Water Quality	<input type="checkbox"/>	Land Use/Planning	<input type="checkbox"/>	Mineral Resources
<input type="checkbox"/>	Noise	<input type="checkbox"/>	Population/Housing	<input type="checkbox"/>	Public Services
<input type="checkbox"/>	Recreation	<input type="checkbox"/>	Transportation	<input type="checkbox"/>	Tribal Cultural Resources
<input type="checkbox"/>	Utilities/Service Systems	<input type="checkbox"/>	Wildfire	<input type="checkbox"/>	Mandatory Findings of Significance

### Determination

On the basis of this initial evaluation:

<input type="checkbox"/>	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
<input checked="" type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
<input type="checkbox"/>	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
<input type="checkbox"/>	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
<input type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

<b>Signature:</b>	<b>Date:</b>
<b>Printed Name: Melanie Brent</b>	<b>For:</b>



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# Chapter 1

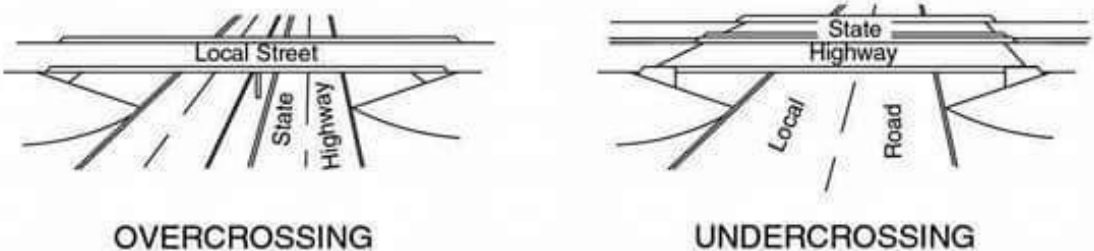
## 1.1 Project Information

### 1.1.1 Location

Caltrans proposes to seismically retrofit five bridges on I-280 at three separate locations in San Mateo County. Seismic retrofit prevents bridges from collapsing during earthquakes, by fixing deficiencies in a bridge's structure. Each project location has its own separate footprint map, shown in Figures 4, 5 and 6. There are two bridges at each location. The project limits, encompassing the project footprints of all three project locations on I-280, are between postmile (PM) R0.05 and R20.97. The following are the five bridges for the proposed projects: Alpine Road Undercrossing (UC) (Bridge No. 35-0009 Left/Right (L/R)) at PM R0.05 (two bridges), Sand Hill Road Overcrossing (OC) (South) (Bridge No. 35-0007) at PM R1.56, Sand Hill Road OC (North) (Bridge No. 35-0008) at PM R1.62, and I-280/I-380 Separation (Bridge No. 35-0217) at PM R20.97. See Figure 1 below for a description of overcrossings and undercrossings.

The Alpine Road UC (L/R) Bridges location is just northeast of Portola Valley and southwest of Stanford University; Sand Hill Road OC (South and North) Bridges location is approximately 1.5 miles north of Alpine Road UC Bridges location on I-280. The I-280/I-380 Separation Bridge location is approximately 18 miles north of Sand Hill Road OC (South and North) Bridges on I-280 in the City of San Bruno.

The Alpine Road UC (L/R) Bridges location has two bridges. The L/R in the bridge numbers identifies the left and right bridges at the Alpine Road UC location. The Alpine Road UC Right bridge is for I-280 northbound traffic while the Alpine Road UC Left bridge is for I-280 southbound traffic. At the I-280/I-380 Separation Bridge location, the northbound and southbound traffic are both on one bridge. The Sand Hill Road OC (South and North) Bridges location has a South bridge and a North bridge. Please see Figure 2 (page 14) Location Map which shows the locations of each bridge including Left (L) and Right (R) bridges.



**Figure 1:** Overcrossing and Undercrossing

In the project there is one overcrossing, one undercrossing, and freeway to freeway separation. Overcrossing and undercrossing are terms used to describe a bridge structure in relation to a local road and a state highway. An overcrossing refers to a bridge structure that allows a local road to pass over a State highway. In this project the bridge structure is Sand Hill Road OC (South and North) Bridges, which allows the local road (Sand Hill Road) to pass over the State highway (I-280). An undercrossing refers to the State highway bridge structure that allows a local road to pass underneath. In this project the State highway (I-280) bridge structure (Alpine Road UC (L/R) Bridges) allows the local road (Alpine Road) to pass underneath. The freeway to freeway separation occurs at the intersection of I-280 and I-380.

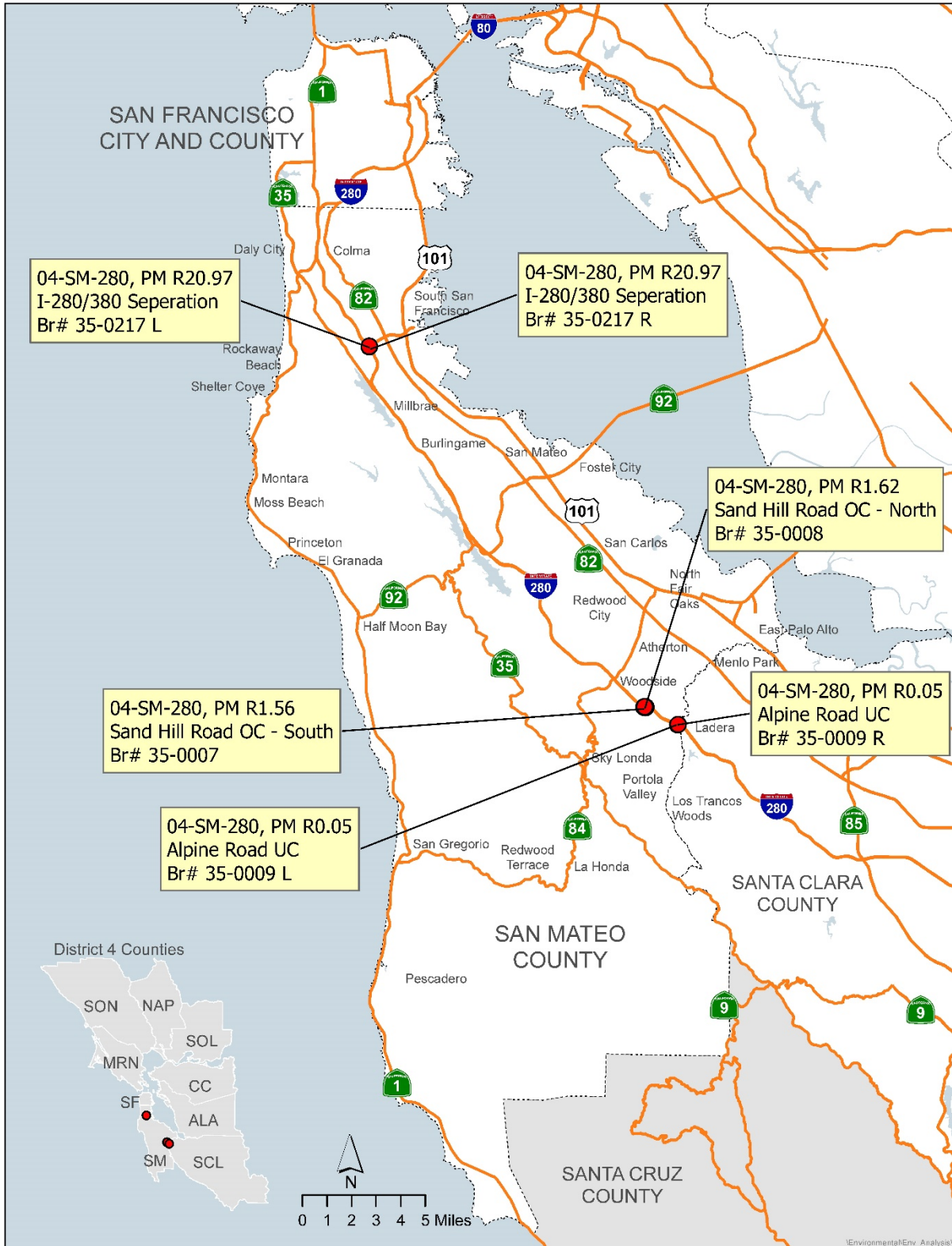
### **1.1.2 Existing Environmental Setting**

In general, immediately east of I-280 the land is classified as Urban and immediately west is Rural. All three project locations are located near a mix of open space and residential area. The Alpine Road UC (L/R) Bridges location is at the southern end of San Mateo County and borders Santa Clara County. This location and Sand Hill Road OC (South and North) Bridges are within Stanford Lands, an unincorporated and urban area of San Mateo County. The zoning is R-E/S-11, or Residential Estates Districts, and the land use is designated as Urban. The I-280/I-380 Separation Bridge location is in the City of San Bruno. The zoning use is unclassified and the land use immediately outside of the project footprint is designated as Parks and Open Space.

The Alpine Road UC (L/R) Bridges location contains ruderal vegetation, Los Trancos Creek, with riparian and forested land adjacent to the creek. The project location is near where Los Trancos Creek meets San Francisquito Creek. There are trees and shrubs along the steep banks of Los Trancos Creek, but there is minimal to no vegetation directly under the Alpine Road UC (L/R) Bridges due to a lack of sunlight and the soil being bare and compacted. Gabion mattresses are located along the banks of Los Trancos Creek for the entirety of the project footprint. Gabion mattresses are large rectangular baskets made from wire mesh that contain rocks and act as slope protection and guide the creek. There are also five weirs within the creek bed in the project footprint that act as a fish passage barriers. Please find an image of gabion mattress under the section Existing Facility.

The roadside landscape at Sand Hill Road OC (South and North) Bridges location consists of sporadic trees and some vegetation immediately off I-280. The I-280/I-380 Separation Bridge location also has vegetation including trees and shrubs within the project footprint. I-280 passes over I-380 at this location and there are sloped areas covered with vegetation along I-380.

All work will be in the existing Caltrans' State Right of Way (ROW).



**Figure 2: Location Map**

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## 1.2 Existing Facility

### 1.2.1 Alpine Road UC (Bridge No. 35-0009 L/R) I-280, PM R0.05

The Alpine Road UC (L/R) Bridges location is a divided bridge section of I-280. There are two Alpine Road UC Bridges – one for northbound traffic (Right Bridge) and the other for southbound traffic (Left Bridge). The bridges were both built in 1969 and are four span bridges. There are four lanes in both the northbound and southbound direction. Each bridge is 365 feet long and skewed at 14 degrees. The width of the Right Bridge is 69.7 feet while the width of the Left Bridge varies between 79.7 feet and 86.3 feet.

The bridges are composed of a continuous reinforced concrete box girder with 9 cells at the right bridge and 11 cells at the left bridge. They are supported by reinforced concrete two-column bents and reinforced concrete diaphragm abutments with monolithic wingwalls. Both bridges are supported by Abutments 1 and 5 and Bents 2, 3, and 4. Each bent has four total columns (two columns per each bridge) for a total of twelve columns at the Alpine Road UC (L/R) Bridges location. Bents 3 and 4 are founded on reinforced concrete spread footings. Abutments 1 and 5 and Bent 2 are founded on steel piles. Please see Appendix E for Alpine Road cross sections and Figure 3 for general bridge features. The columns have a 5-foot circular cross section at their bottom and they flare out to reach 8 feet wide at the top. The columns are pinned at the bottom and fixed at the top.



**Photo 1:** Alpine Road UC (L/R) Bridges; View north of Abutment 5, Bent 4, and Alpine Road

Alpine Road is the local road underneath the Alpine Road UC (L/R) Bridges. Alpine Road has three lanes in both directions that vary between 11-12 feet wide. There is a

left turn lane in the eastbound (EB) direction for vehicles to enter the northbound (NB) I-280 onramp and a right turn lane in the westbound (WB) direction for vehicles to enter southbound (SB) I-280 onramp. In both directions on Alpine Road there are designated and buffered bike lanes. The bicycle lanes are 8 feet wide and painted green, with hashed 2 feet buffers. There are no shoulders.

Bent 2 is next to Los Trancos Creek, which flows parallel to Alpine Road at the project location. The base of the columns at Bent 2 are approximately at the same elevation as the creek bed. The columns at Bent 3 are adjacent to Alpine Trail (pictured below), a 7.6-mile paved trail open to hikers and bicyclists. Alpine Trail is maintained by the County of San Mateo Parks Department and is approximately 30 feet from the edge of Alpine Road EB under the bridges. The trail passes under both the I-280 SB onramp and under the Alpine Road UC (L/R) Bridges within the project footprint. A chain-link fence parallels Alpine Trail and separates the trail from the Los Trancos Creek embankment.



**Photo 2:** Alpine Road UC (L/R) Bridges; View WB of Alpine Trail and chain-link fence, and a column from Bent 3 (left bridge)

Under I-280 the vegetation is barren due to a lack of sun exposure, but there is some riparian and forested land adjacent to the creek. At this location, the Los Trancos Creek flows from west to east. This section of the creek within the project footprint contains gabion mattresses which extends from bank to bank and includes the creek bed. The creek bed at this location contains a series of five concrete weirs. These weirs were originally installed for grade control and are in various states of both disrepair and functionality and essentially act as a fish passage barrier. The creek is a relatively

permanent water source with connectivity to the San Francisco Bay, so it is a jurisdictional water of the U.S. and State.



**Photo 3:** Alpine Road UC (L/R) Bridges; View south of Bent 2 and Los Trancos Creek



**Photo 4:** Alpine Road UC (L/R) Bridges; View south east of the gabion mattress (left side) and a weir (right side)

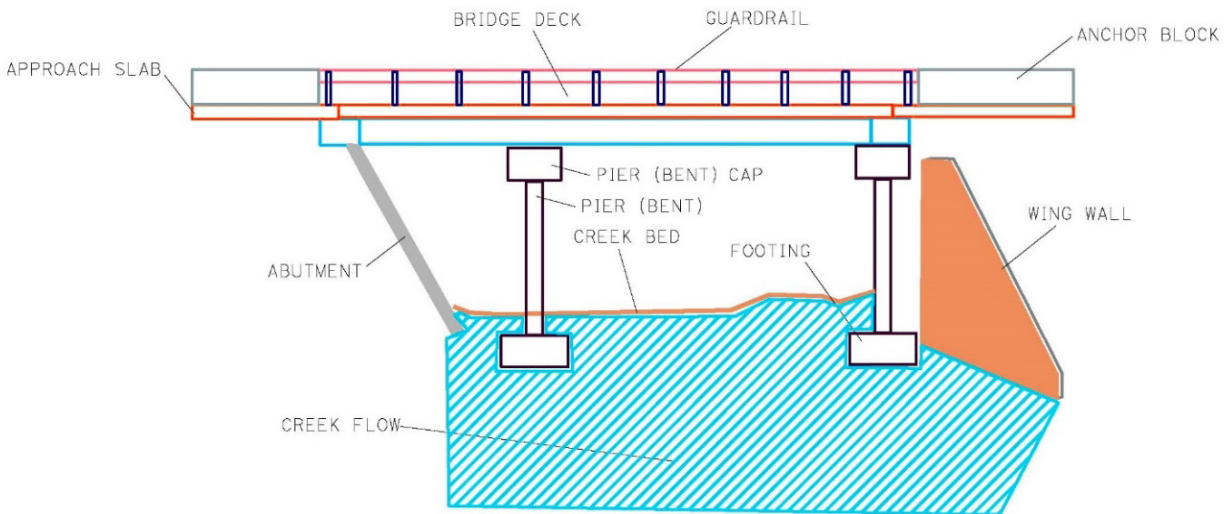


**Photo 5:** Alpine Road UC (L/R) Bridges; View eastbound of designated bike path and Alpine Trail

The bridges are located approximately 200 feet from the ROW line to the south and approximately 400 feet away from the ROW line to the north.

Please see Figure 4 (page 51) for the Alpine Road UC (L/R) Bridges Footprint. A footprint is a map of the entire project area and includes temporary and permanent impacts.

See Figure 3 below for general bridge features. The elevation view of the figure is intended as a reference for general bridge feature terminology used throughout this document and is not an exact representation of any of the five bridges in the project.



**Figure 3:** General Bridge Features - Elevation View

### **1.2.2 Sand Hill Road OC (South) (Bridge No. 35-0007) at PM R1.56 and Sand Hill Road OC (North) (Bridge No. 35-0008) at PM R1.62**

The Sand Hill Road OC (South and North) Bridges are two separate, two-lane bridges over I-280. Sand Hill Road runs east-west; the Sand Hill Road OC North Bridge is for westbound Sand Hill Road traffic and Sand Hill Road OC South Bridge is for eastbound Sand Hill Road traffic. Both bridges are four span bridges and were built in 1969. Underneath the bridges, I-280 is four lanes in each direction and is separated by a median concrete barrier within the project limits at this location. Metal beam guard railing separates the mainline (or I-280) and the NB and SB on and off-ramp merge lanes.

The bridges are both continuous cast-in-place prestressed concrete box girder (6 cells). The bridges are on reinforced concrete two-column bents and reinforced concrete seat-type abutments with non-monolithic wingwalls. Abutments 1 and 5 and Bents 2 and 3 of Sand Hill Road OC North Bridge are supported by steel piles while Bent 4 is supported by reinforced concrete spread footing. At Sand Hill Road OC South Bridge, Abutment 1 and Bent 2 are supported by steel piles while Bents 3 and 4 and Abutment 5 are supported by reinforced concrete spread footing. Please see Appendix E for Sand Hill Road OC (South and North) Bridges cross sections.

Sand Hill Road OC North Bridge is 539 feet long and 38.7 feet wide. Sand Hill Road OC South Bridge is 568 feet long and 35.7 feet wide. Both bridges are skewed at 57 degrees. The bridges are approximately 500 feet away from the ROW line to the south and approximately 400 feet from the ROW line to the north. The columns have a 5-foot circular cross section at their bottom and they flare out to reach 8 feet wide at the top. The columns are pinned at the bottom of Bent 2 and Bent 4, and all are fixed at the top.

Please see Figure 5 (page 53) for the Sand Hill Road OC (South and North) Bridges Footprint.



**Photo 6:** Sand Hill Road OC (South and North) Bridges; view looking southeast



**Photo 7:** Sand Hill Road OC (South and North); View south east of Sand Hill Road OC North Bridge (Bent 2 and Abutment 1)

### **1.2.3 I-280/I-380 Separation (Bridge No.35-0217) at PM R20.97**

The I-280/I-380 Separation Bridge carries southbound and northbound I-280 traffic, with 4 lanes in each direction. The I-280 southbound and northbound traffic is divided by a concrete barrier. The I-280/I-380 separation Bridge was built in 1971 and the bridge has 6 total bents. There are 4 columns at Bents 2 and 4, and 2 columns at Bent 3.

There are two different bridge types at this location; the Left side of the Bridge is a continuous cast-in-place/prestressed concrete box girder (9.5 cells) while the Right side of the Bridge is a continuous cast-in-place reinforced concrete box girder (9.5 cells). The bridge is on multi-column reinforced concrete bents and reinforced concrete

diaphragm abutments with monolithic wingwalls, except for Abutment 5 on the Left side of the bridge, which has a retaining wall. Abutment 1, Bents 2, 3, and 4 of the Right side of the bridge and Abutment 5 of the Left side of the bridge are supported by cast-in-drilled hole concrete piles. Bents 2 and 4 of the Left side of the bridge and Abutment 5 of the Right side of the bridge are supported by reinforced concrete spread footing.



**Photo 8:** I-280/I-380 Separation Bridge; View from EB I-380 of Bent 3 and Bent 2 of the (I-280) Bridge. Slope paving is visible on the right side of the image behind the columns.

The southbound side of the bridge has three spans while the northbound side of the bridge has four spans. The bridge varies in length, from 339 feet long at the southbound side and 354 feet long at the northbound side. The bridge is skewed at 99 degrees and the overall width is 143.8 feet. The columns have a 5-foot circular cross section at their bottom and they flare out to reach 8 feet wide at the top. Please see Appendix E for I-280/I-380 cross sections.

Below the I-280/I-380 Separation Bridge, the SB I-280 to EB I-380 connector is a two-lane facility with shoulders. Along EB I-380 there is a concrete barrier that separates the edge of the right shoulder from Bent 2 and slope paving. A metal beam guardrail separates the left edge of the shoulder from Bent 3 and slope paving.

Please see Figure 6 (Page 55) for the I-280/I-380 Separation Bridge Footprint.



**Photo 9:** I-280/I-380 Separation Bridge; View of EB I-380 from a staging area under the I-280 Bridge

The bridge is located approximately 700 feet from the ROW line.

### **1.3 Purpose and Need**

The purpose of this project is seismic safety by preventing potential bridge collapses.

The need for seismic restoration of the five bridges was identified by Caltrans office of Structure Maintenance and Investigation (SMI) with inspections on October 26, 2015 and reported in the Bridge Inspection Records Information System (BIRIS). All five bridges included in this project have column flares and poor transverse steel confinement in the columns, which could lead to bridge collapse during seismic activity. Seismic restoration through bridge retrofit work is recommended for these bridges by SMI.

### **1.4 Project Funding and Programming**

This project is funded by the State Highway Operation and Protection Program (SHOPP) for fiscal year 2021/2022, under the Bridge Preservation Program, Program Code 201.113. The total approximate cost of the project for support and capital, including construction costs, is approximately \$15,000,000. The Structure cost is \$5,900,000 and the District cost is \$3,258,000.



## 1.5 Project Description

The project proposes to seismically retrofit the following five bridges: Alpine Road UC (Bridge No. 35-0009 L/R) at PM R0.05, Sand Hill OC (North) (Bridge No. 35-0008) at PM R.1.62, Sand Hill Road OC (South) (Bridge No. 35-0007) at PM R1.56, and the I-280/I-380 Separation (Bridge No. 35-0217) at PM R20.97. The project proposes to install steel column casings at all five bridges, construct reinforced concrete catcher blocks at the abutments at the Sand Hill OC (South and North) Bridges, and construct reinforced concrete bolsters on each side of the bent cap at the I-280/I-380 Separation Bridge.

To install steel column casings at all five bridges, two halves of the steel casings will be placed around the columns and welded in place. Concrete grout will be poured to fill any space between the casing and existing column. The casings will be installed in sections along the height of the columns.

For all three project locations, standard temporary construction area signs (ground mounted and/or embedded) will be placed several hundred feet south and north of the project work limits. Construction duration is estimated at 520 total working days.

The number of working days at each bridge location is as follows:

- Alpine Road UC (L/R) Bridges (two bridges): 116 days
- Sand Hill Road OC (South): 63 days
- Sand Hill Road OC (North): 63 days
- I-280/I-380 Separation Bridge: 184 days
- Fish passage work at barrier replacement at Alpine Road: 44 days
- Barrier replacement at Sand Hill: 25 days
- Barrier and slope paving replacement at I-280/I-380: 25 days

Preliminary project plans and cross sections for all locations are in Appendix E. These plans are not the final design of the project.

### **Alpine Road UC (Bridge No. 35-0009 L/R) I-280, PM R0.05**

The following activities will occur at Alpine Road UC (L/R) Bridges:

The Alpine Road UC (L/R) Bridges each have 3 bents with 2 columns per bent. Steel column casings will be installed at each column of Bents 2, 3, and 4 at both bridges. Excavation of approximately 6 feet in depth and 3 feet in width from the face of the column is required to expose the top of each column's footing to install the steel casings at Bents 3 and 4. Approximately 15 to 25 cubic yards of material will be excavated at each column's footing and temporarily stored nearby. The excavated soil will be used as backfill once the steel casings are installed.

### Bent 4 Activities

The existing curb in the median at Bent 4 will be removed in both the EB and WB directions on Alpine Road for the retrofit work. The curbs will be replaced after the steel casings are installed. A continuous concrete barrier, temporary railing Type-K (K-Rail), will be placed along both sides of the median for construction at Bent 4, to protect the travelling public from the construction work. The ends of the K-Rail will be treated with crash cushions.

### Bent 3 Activities

The existing Alpine Trail will be temporarily relocated during the installation of the steel column casings at the four columns of Bent 3. The temporary relocation will allow the continuity of Alpine Trail to be maintained for its users. The temporary detour path for Alpine Trail will be 5 feet wide and will be relocated to the existing marked bike lane on EB Alpine Road. Access from the existing Alpine Trail to the temporary detour path will be fully compliant with the 1990 Americans with Disability Act (ADA) and its revised 2010 regulations for Title II and Title III. In addition, the access from the existing Alpine Trail will include a temporary curb ramp from the south end of Alpine Trail in the project footprint to the temporary detour path. The curb ramp area will be closed off to Alpine Road traffic with K-rail for ADA purposes. The end of the K-rail will be treated with crash cushions. K-Rail will also be placed between the Alpine Road EB edge of traveled way (ETW) and 5-foot temporary detour path, from the south end of the detour path at the curb ramp for the entire length of the detour path to the north end, where an existing crosswalk connects the temporary path to Alpine Trail. K-Rail will be placed on the dirt slope immediately above the temporary detour path, to separate it from the construction work at Bent 3.

Bicyclists may share the temporary detour path with pedestrians if they dismount and walk their bicycles until they reunite with Alpine Trail. Bicyclists that are travelling EB on Alpine Road will have a dedicated 5-foot bike lane adjacent to the detour path and separated from it by the K-rail. A line of temporary white tape will delineate the 5-foot bike lane. The vehicle lane will be temporarily reduced to 11 feet and standard construction signs such as "Share the Road" will be provided to advise vehicles to watch out for bicyclists. Please see the section Pedestrian and Bicycle Facilities for additional information and a simulation.

Nighttime lane closures on Alpine Road will be needed to install and remove K-rail for work at Bents 3 and 4. Construction work at both Bent 3 and Bent 4 will require K-Rail placement on Alpine Road, so Alpine Road lanes will be temporarily restriped to 11 feet minimum to accommodate the placement of the K-Rail. Due to the temporary lane width

reduction to 11 feet minimum, the work for Bents 3 and 4 will occur in two separate stages. Day time flagging activities will be needed occasionally on Alpine Road for the contractor's access. No complete closure of Alpine Road or any on and off-ramps of I-280 is anticipated.

### Bent 2 Activities

To install steel casings at the four columns of Bent 2 near the south abutment (Abutment 1), excavation of up to 15 feet in depth and 5 feet in width from the face of the column is required to expose the top of each column's footing. Approximately 85 to 125 cubic yards of material will be excavated at each column's footing and temporarily stored nearby. This excavated soil will be used as backfill after the steel casings are installed. The south bank of the creek will be excavated, including the gabion mattress (rock and wire slope reinforcement). The length of gabion mattress removal is approximately 100 feet past each bridge but is subject to change per ongoing consultation with resource agencies. Due to the proximity of the bank excavation to the bottom of the creek, reinforced silt fence and a temporary creek diversion system are needed.

The existing work scope at Bent 2 was modified to include fish passage improvements through the removal of five weirs currently in the creek. The weirs act as a fish passage barrier within Los Trancos Creek. Not all fish can traverse the portion of the creek channel due to the weirs. This modification to include fish passage improvements in the work scope was added to the current project to comply with Senate Bill (SB) 857. SB 857 addresses the existing fish passage barriers within the State Highway System (SHS) and promotes collaborative efforts to identify solutions to the barriers and develop fish passage improvements. The removal of the fish passage barrier will improve the biological habitat in the creek. The creek channel will also be restored to appropriate grades and contours for fish migration. Additional details will be further developed during the design phase and after coordination with agencies. Work at Bent 2 will occur only during the dry season work window of June 15<sup>th</sup> to October 15<sup>th</sup> and creek bank restoration will occur after construction at Bent 2 is complete.

A temporary access road will be constructed off the I-280 NB offramp for construction access to Bent 2. The access road will be between 15 and 20 feet wide and will be graded and cleared of vegetation and trees. Up to 6 inches of a base rock material layer will be placed on the temporary access road to help stabilize and control equipment tracking. Material and equipment for construction at Bent 2 will be stored on the south side of the creek's bank, under the bridges. The primary material and storage area for the Alpine Road UC (L/R) Bridges location will be in the northwest quadrant of the

interchange, adjacent to the I-280 NB onramp. This staging area can be accessed from WB Alpine Road or the NB I-280 onramp.

Please see Figure 4 (page 51) for the Alpine Road UC (L/R) Bridges Footprint.

**Sand Hill Road OC (South) (Bridge No. 35-0007) at PM R1.56, Sand Hill Road OC (North) (Bridge No. 35-0008) at PM R1.62**

The following activities will occur at Sand Hill Road OC (South and North) Bridges:

The Sand Hill Road OC (South and North) Bridges each have 2 abutments and 3 bents, with 2 columns per bent. Steel column casings will be installed around each column and reinforced concrete catcher blocks will be constructed at each abutment. The catcher blocks will catch the bridges' superstructure and prevent the girder from collapsing during any seismic movement. The upper portion of the face of each abutment will be reconstructed so that the reinforced concrete catcher blocks can be cast-in-place at the site. K-rail will provide a buffer between traffic and allow the contractor to access the abutments. No excavation is anticipated for concrete catcher block construction work.

Excavation of 4 to 6 feet in depth and 3 feet in width from the face of the column is required to expose the top of each column's footing for the installation of the steel column casings. Excavation at each column's footing will result in approximately 15 to 25 cubic yards of material which will be temporarily stored nearby within the project footprint and used as backfill. The existing median concrete barrier will be removed to accommodate the work at each bent and will be replaced with new concrete barriers and transitions. The existing metal beam guard railing between the mainline and the NB and SB on and off-ramps will be removed and replaced with a continuous concrete barrier on each side of the columns. The continuous concrete barrier will be treated with approved crash cushion systems at each end.

The removal of metal beam guard rail and installation of K-Rail and crash cushions will require nighttime lane closures on the I-280 mainline and the NB and SB on and off-ramp merge lanes. There will be temporary nighttime detours on Sand Hill Road due to the nighttime lane closures. Daytime flagging activities will be intermittently needed on Sand Hill Road to allow for contractor access, but no complete closure of Sand Hill Road is anticipated for the proposed project. No temporary restriping of I-280 is anticipated. K-Rail will be placed along the median and outside shoulders of I-280 bordering each work location.

Please see Figure 5 (page 53) for the Sand Hill Road OC (South and North) Bridges Footprint.

### **I-280/I-380 Separation (Bridge No.35-0217) at PM 20.97**

The following activities will occur at I-280/I-380 Separation Bridge:

The I-280/I-380 Separation Bridge has 6 total bents. The total number of columns of the Bridge is 4 columns at Bents 2 and 4, and 2 columns at Bent 3. Steel column casings will be installed at all columns of Bents 2, 3, and 4. Reinforcing concrete bolsters will be constructed at each side of the 3 bent caps, within the cells of the box girder bridge. The contractor will be able to access the bridge cells through existing soffit access openings, or new openings will be created. Please see Appendix E for I-280/I-380 Separation Bridge Preliminary Plans and Cross Sections. A bolster is a structural member that is added to both sides of an existing bent cap to strengthen it. The bolsters will be inside the concrete box superstructure girder and will not be visible from the outside.

To install the steel casings at all 6 bents, excavation of approximately 10 to 15 feet in depth and 5 feet in width from the face of the columns is needed. Approximately 85 to 125 cubic yards of material will be excavated at the footing of each column and temporarily stored nearby. This excavated material will also be used for backfill. The concrete slope paving, concrete barrier, and metal beam guardrail along the SB I-280 to EB I-380 connector below the bridge will be removed for the steel casing installation work. K-Rail will be placed inside and outside of the shoulders along this two-lane facility. The concrete barrier and the concrete slope paving will both be rebuilt after the steel casings are installed. Due to the limited sight distance and curvature alignment of the connector, work on Bents 2 and 3 will be conducted on in 2 separate stages.

There will be nighttime closure of the SB I-280 to EB I-380 connector for installation and removal of K-Rail and to provide room for the construction activities. SB I-280 traffic will be detoured to the north of the interchange at Sneath Lane. Traffic will continue on WB Sneath Lane, then onto SB El Camino Real, and finally onto the EB I-380 onramp.

Please see Figure 6 (page 55) for the I-280/I-380 Separation Bridge Footprint.

### **1.6 Pedestrian and Bicycle Facilities**

There are dedicated bicycle facilities in both the EB and WB directions along Alpine Road, but there are no dedicated pedestrian, bicycle, or other non-motorized facilities on I-280 at the Alpine Road UC (L/R) Bridges location. The bicycle lanes on Alpine Road are 8 feet wide and painted green, with 2-foot painted hashed buffers on each side of the bicycle path adjacent to vehicle traffic. Alpine Trail, under the Alpine Road UC (L/R) Bridges, is designated for hiking and bicycling use. Alpine Trail is near Bent 3 and is separated from the north bank of the Los Trancos Creek by a chain-link fence. The trail is maintained by the County of San Mateo Parks Department.



**Photo 10:** Alpine Road UC (L/R) Bridges; View eastbound of designated bike path and Alpine Trail

Alpine Trail will be temporarily closed during construction on the columns at Bent 3. However, a temporary detour path for Alpine Trail will be provided during the length of time that Alpine Trail is closed. The temporary detour path will be 5 feet wide and will be located directly on the existing EB dedicated bicycle facility. This detour path will be fully compliant with the 1990 Americans with Disability Act (ADA) and its revised 2010 regulations for Title II and Title III. In addition, the detour path will include a temporary curb ramp from the south end of Alpine Trail to the temporary detour path. There will be K-Rail on Alpine Road to protect the pedestrians from vehicle traffic. The K-Rail will be treated with crash cushions. The south end of the detour path will be closed off from access to the roadway with K-Rail, to prevent any person with visual disabilities from entering the roadway. There will also be K-Rail on the other side of the detour path on the dirt slope, to protect pedestrians from construction work at the columns.

The path will be open to pedestrians in either direction. Bicyclists may choose to walk their bicycles and share this path in either direction. Bicyclists that are travelling EB on Alpine Road will have a dedicated 5-foot bike lane adjacent to the detour path and separated from it by the K-rail. A line of temporary white tape will delineate the 5-foot bike lane. The vehicle lane will be temporarily reduced to 11 feet and standard construction signs such as “Share the Road” will be provided to advise vehicles to watch out for bicyclists. Bicyclists also can dismount and walk their bikes on the temporary detour path. The dedicated WB bicycle facility on Alpine Road will not be affected by this project. Alpine Trail and the roadway will be returned to pre-existing conditions after project construction.



**Photo 11:** Visual Simulation of the temporary detour path as described above for Alpine Trail during construction.

There will be no impact to Pedestrian and Bicycle facilities at the Sand Hill Road OC (South and North) Bridges location or the I-280/I-380 Separation Bridge.

### **1.7 Utilities Relocation**

No utility relocation is proposed for this project.

### **1.8 Site Cleanup and Restoration**

All construction related materials will be removed after construction activities are completed. All temporarily disturbed areas will be restored to pre-construction conditions.

After project construction all three project locations will be restored to pre-work conditions. The biological and hydrological conditions at the Alpine Road UC (L/R) Bridges location will be improved because the fish passage barrier in Los Trancos Creek within the project footprint will be removed. The creek will be restored without any grade control structures.

## **1.9 Order of Work**

The contractor will determine the overall sequence of work between all three locations.

### **Alpine Road UC (Bridge No. 35-0009 L/R) I-280, PM R0.05**

The contractor will determine the order of work at this location. Construction at Bent 3 and Bent 4 must occur separately, due to the road dimensions after the lane width reduction from the placement of K-rail on Alpine Road. Construction at Bent 2 will occur only during the dry season work window.

### **Sand Hill Road OC (South) (Bridge No. 35-0007) at PM R1.56, Sand Hill Road OC (North) (Bridge No. 35-0008) at PM R1.62**

The contractor will determine the order of work at this location.

### **I-280/I-380 Separation (Bridge No.35-0217) at PM R20.97**

The contractor will determine the order of work at this location.

## **1.10 Transportation Management Plan for Use During Construction**

A Traffic Management Plan (TMP) will be required for this project. A TMP is used to minimize work-related traffic delays by the application of general traffic handling practices and strategies. A TMP based on detailed traffic operation analysis will be fully developed in the Project Specifications & Estimate (PS&E) phase of the project to minimize and prevent delays and inconvenience to the travel public during construction.

The TMP will include press releases to notify and inform motorists, business, community groups, impacted cities and emergency services of upcoming closures or detours. Various TMP elements such as portable Changeable Message Signs and a Construction Zone Enhanced Enforcement Program (COZEEP) will be utilized to alleviate and minimize delay to the travel public.



## **1.11 Project Features**

Project features are design elements and/or standard measures which are incorporated into a project and are intended to reduce environmental effects resulting from proposed project activities.

### **Project Features: Project as a Whole**

1. Place unsightly material, storage of equipment and staging so that they are not visible to neighbors and highway users, to the maximum extent feasible – without impacting existing trees and vegetation. If the above is visible, consider screening or covering items to reduce visibility.
2. Limit all construction lighting to within the area of work and avoid light spillage onto motorists and neighbors through directional lighting, shielding, and other measures as needed.
3. Nighttime work will be avoided to the maximum extent practicable. Should nighttime work need to be conducted, all lighting will be directed downwards and towards the active construction area.
4. If active nests of migratory birds are present within the project area, work within 50 feet of the nest of passerine species or 300 feet of raptor species will be avoided and monitored.
5. Exclusion methods will be used to prevent migratory birds from nesting and roosting within the project area (February 1 to September 30).
6. If an endangered plant is found, ESA fencing will be placed, to the extent practicable, around the area to ensure the areas will be avoided.
7. If feasible, schedule construction activities during the day, between 6:00 a.m. to 9:00 p.m.
8. 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.

### **1: Operate construction equipment and vehicles**

- **1.1:** Equipment will be operated during the least sensitive diurnal, seasonal, and meteorological periods relative to the potential effects on listed species and habitat if feasible.
- **1.2:** Equipment will not operate in sensitive areas or habitats, such as wetlands and surface waters (Note: if equipment is necessary in waters or wetlands, see Project Action-14).

- **1.3:** Equipment will be inspected daily for leaks and completely cleaned of any external petroleum products, hydraulic fluid, coolants, and other deleterious materials prior to operating equipment.
- **1.4:** A Spill Prevention, Control, and Countermeasures (SPCC) Plan will be developed for each project that requires the operation of construction equipment and vehicles. The SPCC Plan will be kept on-site during construction and the appropriate materials and equipment will also be on-site during construction to ensure the SPCC Plan can be implemented. Personnel will be knowledgeable in the use and deployment of the materials and equipment so response to an accidental spill will be timely.
- **1.5:** Equip all internal combustion engine driven equipment with manufacturer recommended intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- **1.6:** Improve fuel efficiency from construction equipment by minimizing idling time and maintaining construction equipment in proper working condition.

## **2: Use of temporary lighting for night construction activities**

- **2.1:** Maintenance and construction activities will be avoided at night to the extent practicable.
- **2.2:** When night work cannot be avoided, disturbance of listed species will be avoided and minimized by restricting substantial use of temporary lighting to the least sensitive seasonal and meteorological windows.
- **2.3:** Lights on work areas will be shielded and focused to minimize lighting of listed-species habitat.
- **2.4:** Construction personnel will turn portable tower lights on no more than 30 minutes before the beginning of civil twilight, and off no more than 30 minutes after the end of civil sunrise. Portable tower lights will have directional shields attached to them, and personnel will only direct lights downward and toward active construction and staging areas. Lighting per portable tower light will not exceed 2,000 lumens. To the extent practicable, personnel will only use enough coverage to light the work areas.

## **3: Maintain and fuel construction equipment and vehicles**

- **1.2; 1.3; 1.4; 1.5; 1.6;** and
- **3.1:** Maintenance and fueling of construction equipment and vehicles will occur at least 15 meters from the Ordinary High-Water Line (OHWL) or the edge of sensitive habitats (e.g., wetlands).

#### **4: Clean the roadway of sediment and debris from landslide, flood events, and construction**

- **4.1:** Sediment and debris removed from the roadway will be disposed of off-site, at an approved location, where it cannot enter surface waters.
- **4.2:** Concrete wastes will be collected in washouts, and water from curing operations will be collected and disposed of properly. Neither will be allowed into watercourses.
- **4.3:** Coir rolls or straw wattles that do not contain plastic or synthetic monofilament netting will be installed along or at the base of slopes during construction, to capture sediment.

#### **5: Temporarily or permanently store sediment and debris, and pavement, petroleum products, concrete, and other construction materials**

- **1.4; 4.1.**
- **5.1:** Ensure efficient water use for adequate dust control during construction

#### **6: Treat and discharge water conveyed from the construction area**

- **6.1:** Water pumped from areas isolated from surface water to allow construction to occur in the dry will be discharged to an upland area providing overland flow and infiltration before returning to stream. Upland areas may include sediment basins of sufficient size to allow infiltration rather than overflow or adjacent dry gravel/sand bars if the water is clean and no visible plume of sediment is created downstream of the discharge. Other measures may be used such as a baker tank or methods described in BMP NS-2.
- **6.2:** A NMFS approved fish biologist will be on site to observe de-watering activities and to capture/rescue any fish that are observed in an isolated area during dewatering activities.

#### **7: Paint, wash, seal, and caulk bridges, guardrails, and other infrastructure**

- **1.4**

#### **8: Remove and disturb upland, riparian, and wetland vegetation**

- **1.4;** and
- **8.1:** Trees as identified in any special contract provisions or as directed by the Project Engineer will be preserved.
- **8.2:** Hazard trees greater than 24-inches diameter at breast height (DBH) will be removed only by direction of the Project Engineer.

- **8.3:** Trees will be felled in such a manner as not to injure standing trees and other plants to the extent practicable.
- **8.4:** Environmentally Sensitive Areas will be fenced to prevent encroachment of equipment and personnel into wetlands, riparian areas, stream channels and banks, and other sensitive habitats.
- **8.5:** Vegetation will be mowed to a height greater than 4 inches.
- **8.6:** Soil compaction will be minimized by using equipment that can reach over sensitive areas and that minimizes the pressure exerted on the ground.
- **8.7:** Caltrans will restore temporarily disturbed areas to the preconstruction contours and functions to the maximum extent practicable. Where soil compaction is unintended, compacted soils will be loosened after heavy construction activities are complete. LWD subject to damage or removal will be retained and replaced on-site after project completion as long as such action would not jeopardize infrastructure or private property or create a liability for Caltrans.
- **8.8:** Where vegetation removal is temporary to support construction activities, native species will be replanted at a 3:1 ratio for every native tree removed and 1:1 (native) for every non-native tree removed, based on the local species composition.
- **8.9:** Exposed slopes and bare ground will be reseeded with native grasses and shrubs to stabilize and prevent erosion.
- **8.10:** To reduce the spread of invasive non-native plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans will comply with Executive Order 13112. The purpose of this executive order is to prevent the introduction of invasive species and provide for their control to minimize economic, ecological, and human health impacts. In the event that high- or medium-priority noxious weeds, as defined by the California Department of Food and Agriculture or the California Invasive Plant Council, are disturbed or removed during construction-related activities, the contractor will contain the plant material associated with these noxious weeds and will dispose of it in a manner that will not promote the spread of the species. The contractor will be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. If seeding is not possible, the area will be covered to the extent practicable with heavy black plastic solarization material until completion of construction. All earthmoving equipment, as well as seeding equipment to be used during project construction will be thoroughly cleaned before arriving on the project site.

- **8.11:** To protect migratory birds and their nests, all initial major vegetation clearing, but not grubbing, will be conducted between October 1 and January 31, outside the typical bird nesting season, when possible. Upon completion of vegetation and tree trimming, Caltrans will install storm water and erosion control BMPs as needed. A qualified biologist with appropriate construction and species experience will conduct nest and bird surveys and other wildlife surveys before and during tree cutting. All work will be conducted under a Regional Water Board approved Storm Water Pollution Prevention Plan as necessary.
- **8.12:** If construction activities occur between February 1 and September 30, preconstruction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction activities. If work is to occur within 300 feet of active raptor nests or 50 feet of active passerine nests, a non-disturbance buffer will 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 should be determined in cooperation with CDFW and USFWS. All clearing and grubbing of woody vegetation will be performed by hand or using light construction equipment, such as backhoes and excavators.

**9: Grade and establish temporary and permanent staging/storage areas for sediment, debris, and construction materials and equipment**

- **1.4; 8.4; 8.7; 8.8;** and
- **9.1:** Storage areas will disturb less than 2.5 acres of vegetated or currently undisturbed area.
- **9.2:** Storage areas will not disturb wetlands or other special status plant communities.
- **9.3:** For permanent storage areas that have been filled to capacity with sediment and debris, the final configuration will conform to natural contours (elevations, profile, and gradient) of surrounding terrain and native plant species will be established that are specific to the project location and comprise a diverse community of woody and herbaceous plants.
- **9.4:** Staging and parking areas will be located in designated areas a minimum of 150 feet from the Ordinary High Water Mark (OHWM), as specified by the project biologist in coordination with the Project Engineer.
- **9.5:** Where necessary, native topsoil will be removed and stored in a designated location as specified by the project biologist in coordination with the Project Engineer until project completion.

- **9.6:** Graded areas will be protected from erosion using a combination of silt fences and fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (e.g., jute or coir) will be used as appropriate on sloped areas. Erosion control materials that use plastic or synthetic monofilament netting will not be used within the BSA. This will include products that use photodegradable or biodegradable synthetic netting, which can take several months to decompose. Acceptable materials will include natural fibers, such as jute, coconut, twine or other similar natural fibers.

#### **10: Grade temporary access roads, traffic detours, and staging and work areas**

- **8.4; 8.7; 8.8;** and
- **10.1:** Temporary access and detours will be located a minimum of 50 feet from the OHWL and other sensitive habitats (i.e. wetlands).

#### **11: Operate construction equipment and vehicles in the stream channel**

- **11.1; 11.5; and 11.8:** Except for instances when impacts of dewatering are expected to exceed the impacts of equipment or vehicle operation in the wetted channel, construction equipment and vehicles will not operate in anadromous waters unless the channel is dewatered or otherwise dry. In rare instances when impacts of dewatering are expected to exceed the impacts of equipment or vehicle operation in the wetted channel, relocation and exclusion of listed fish from the area will be implemented prior to operating in the wetted channel.
- **11.2:** Existing roadways and stream crossings will be used for temporary access roads whenever reasonable and safe.
- **11.3:** The number of access and egress points and total area affected by vehicle operation will be minimized; disturbed areas will be located to reduce damage to existing native aquatic vegetation, substantial large woody debris, and spawning gravel.
- **11.4:** Cleaning of culverts and bridge abutments and piers, and placement of RSP and other bank protection will be from the top of the bank or bridge.
- **11.6:** Except for streams identified by NMFS, USFWS, and CDFW as not supporting spawning habitat, all in-water activities will be conducted outside the spawning and incubation season for listed fish species, where such species occur, or to periods identified in cooperation with NMFS, USFWS, and CDFW to accommodate site specific conditions.
- **11.7:** Modified or disturbed portions of streams, banks, and riparian areas will be restored as nearly as possible to natural and stable contours (elevations, profile, and gradient).

- **11.8:** In-water work will be restricted to between June 15 and October 15 during the dry season when flows are at their lowest to avoid impacts to steelhead.

**12: Remove and disturb aquatic vegetation, stream sediment, and large woody debris (LWD)**

- **8.4; 11.1; 11.5; 11.6; 11.7;** and
- **12.1:** Disturbance and removal of aquatic vegetation will be minimized.
- **12.2:** The limits of disturbance will be identified; native vegetation, stream channel substrate, and large woody debris disturbed outside these limits should be replaced if damaged.
- **12.3:** The minimum amount of wood, sediment and gravel, and other natural debris will be removed using hand tools, where feasible, only as necessary to maintain and protect culvert and bridge function, ensure suitable fish passage conditions, and minimize disturbance of the streambed.
- **12.4:** LWD subject to damage or removal will be retained and replaced on site after project completion if such action would not jeopardize infrastructure or private property or create a liability for Caltrans. LWD not replaced on-site will be stored or offered to other entities for use in other mitigation/restoration projects where feasible.
- **12.5:** Disturbed areas will be minimized by locating temporary work areas to avoid patches of native aquatic vegetation, substantial LWD, and spawning gravel.
- **12.6:** Where vegetation removal is temporary to support construction activities, native species will be re-established that are specific to the project location and that comprise a diverse community of aquatic plants.
- **12.7:** Where spawning gravel is removed temporarily to facilitate construction, it will be stored adjacent to the site then placed back in the channel post-construction at approximately pre-project depth and gradient.
- **12.8:** Excavated material will not be stored or stockpiled in the channel. Any excavated material that will not be placed back in the channel or on the bank after construction will be end-hauled to an approved disposal site.
- **12.9:** Gravel and LWD excavated from the channel that is temporarily stockpiled for reuse in the channel will be stored in a manner that prevents mixing with stream flows.

### **13: Install temporary cofferdams and diversion cofferdams**

- **8.4; 11.5; 11.6; 11.7;** and
- **13.1:** Cofferdams and diversion cofferdams will affect no more of the stream channel than is necessary to support completion of the maintenance or construction activity.
- **13.2:** Immediately upon completion of in-channel work, temporary fills, cofferdams, diversion cofferdams, and other in-channel structures that will not remain in the stream, i.e., clean, spawning-sized gravel, will be removed in a manner that minimizes disturbance to downstream flows and water quality.
- **13.3:** All structures and imported materials placed in the stream channel or on the banks during construction that are not designed to withstand high flows will be removed before such flows occur.

### **14: Temporarily redirect stream flow**

- **6.2; 8.4; 11.5; 11.6; 11.7;** and
- **14.1:** The extent of stream channel dewatering will be limited to the minimum necessary to support construction activities. Monitoring of the stream diversion will occur periodically each day such devices are in operation to ensure proper function.
- **14.2:** Construction of a temporary channel will proceed from the downstream to the upstream end of the channel.
- **14.3:** Flow will not be diverted from the stream channel until the temporary channel is complete and all applicable soil stabilization/control measures are in place.
- **14.4:** Flow will be diverted the minimum distance necessary to isolate the construction area.
- **14.5:** Water will be released or pumped downstream at an appropriate rate to maintain downstream flows at all times and the outlet of all diversions shall be positioned such that the discharge of water does not result in bank erosion or channel scour and maintains pre-project hydraulic conditions.
- **14.6:** For diversion from streams, rivers, and other water bodies, any water intake structure will be installed, operated, and maintained in accordance with current NMFS, USFWS, and CDFW criteria or as developed in cooperation with NMFS, USFWS, and CDFW to accommodate site-specific conditions.

### **15: Temporarily draft water from streams and other water bodies**

- **11.5; 14.6**



## **16: Install permanent and temporary rock slope protection (RSP), sheet piles, and retaining walls**

- **16.1:** Extension of existing areas of stream bank RSP or other bank protection (e.g., sheet piles) will be avoided and the extent of bank and channel armoring will be limited to the minimum necessary to protect essential infrastructure.
- **16.2:** Threatened infrastructure will be relocated to maintain or reestablish natural stream sediment processes to the extent feasible.
- **16.3:** Bank stabilization will incorporate bioengineering solutions consistent with site-specific engineering requirements.
- **16.4:** Where RSP is necessary, native riparian vegetation and/or LWD in RSP will be incorporated.
- **16.5:** The embankment toe will not extend farther into the active channel than the existing embankment.
- **16.6:** RSP, sheet piles, and other erosion control materials will be pre-washed to remove sediment and/or contaminants.
- **16.7:** Temporary material storage piles (e.g., RSP) will not be placed in the 100 year floodplain during the rainy season (October 15 through May 31), unless material can be relocated within (i.e., before) 12 hours of the onset of a storm.

## **17: Place concrete and concrete slurry seal coat in cofferdams, footing and bridge forms, culvert bedding, and other applications**

- **1.4;** and
- **17.1:** When concrete is poured to construct bridge footings or other infrastructure in the vicinity of flowing water, work must be conducted to prevent contact of wet concrete with water (e.g., within a cofferdam). Concrete or concrete slurry will not come into direct contact with flowing water.

## **18: Install bridge structures, excluding impact pile-driving**

- **8.4; 11.1; 11.5; 11.6; 11.7; 11.8; 13.2; 13.3; 16.1; 16.3; 16.4; 16.6; 16.7;**

## **19: Capture, handle, exclude, salvage, and relocate listed species**

- **19.1:** 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) will be clearly delineated using temporary high-visibility fencing. Construction work areas will 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 will remain in place throughout the duration of construction activities, will be inspected regularly, and fully maintained at all times. The final project plans will show all locations where the fencing will be installed and will provide installation specifications. The bid solicitation package special provisions will clearly describe acceptable fencing material and prohibited construction-related activities, including vehicle operation, material and equipment storage, access roads and other surface-disturbing activities within ESAs.

- **19.2:** Prior to ground-disturbing activities, an agency-approved biologist will conduct an education program for all construction personnel. At a minimum, the training will include a description of special-status species, migratory birds, and their habitats, how the species might be encountered within the project area, an explanation of the status of these species and protection under the federal and state regulations, the measures to be implemented to conserve listed species and their habitats as they relate to the work site, boundaries within which construction may occur, and how to best avoid the incidental take of listed species. The field meeting will include topics on species identification, life history, descriptions, and habitat requirements during various life stages. Emphasis will be placed on the importance of the habitat and life stage requirements within the context of project maps showing areas where avoidance and minimization measures are to be implemented. The program will include an explanation of applicable federal and state laws protecting endangered species as well as the importance of compliance with Caltrans and various resource agency conditions.
- **19.3:** At least 30 days prior to the onset of activities, the name(s) and credentials of biologists who will conduct preconstruction surveys and relocation activities for the listed species will be submitted to the USFWS and CDFW. No project activities will begin until the proponent has received written approval from the agencies that he/she is approved to conduct the work. An agency-approved biologist will be present onsite during the construction of any erosion control fencing or cofferdams, and prior to and during the dewatering activities to monitor for the frog. Through communication with the RE or his/her designee, the agency-approved biologist may stop work if deemed necessary for any reason to protect listed species and will advise the RE or designee on how to proceed accordingly.
- **19.4:** If individuals of listed species may be present and subject to potential injury or mortality from construction activities, a qualified biologist will conduct a preconstruction visual survey (i.e., bank observations).
- **19.5:** Caltrans shall retain a qualified biologist with expertise in the areas of anadromous salmonid biology, including handling, collecting, and relocating salmonids, salmonid/habitat relationships and biological monitoring of salmonids.

Caltrans shall ensure that all biologists working on a Site-Specific Project will be qualified to conduct fish collections in a manner which minimizes all potential risks to listed salmonids.

- **19.6:** When listed species are present and it is determined that they could be injured or killed by construction activities, a qualified project biologist will identify appropriate methods for capture, handling, exclusion, and relocation of individuals that could be affected.
- **19.7:** Where listed species cannot be captured, handled, excluded, or relocated (e.g., salmonid redd), actions that could injure or kill individual organisms will be avoided or delayed until the species leaves the affected area or the organism reaches a stage that can be captured, handled, excluded, or relocated.
- **19.8:** The project biologist will conduct, monitor, and supervise all capture, handling, exclusion, and relocation activities; ensure that sufficient personnel are available for safe and efficient collection of listed species; and ensure that proper training of personnel has been conducted in identification and safe capture and handling of listed species.
- **19.9:** Caltrans will develop a fish relocation plan to be approved by NMFS, USFWS, and CDFW prior to construction. This document will guide approved biologists with fish handling experience, in the monitoring and in-water activities (including dewatering), capture, and relocation of protected aquatic species, should they be encountered. Within occupied habitat, capture, handling, exclusion, and relocation activities will be completed no earlier than 48 hours before construction begins to minimize the probability that listed species will recolonize the affected areas.
- **19.10:** Individual organisms will be relocated the shortest distance possible to habitat unaffected by construction activities.
- **19.11:** Within occupied habitat, capture, handling, exclusion, and relocation activities will be completed no earlier than 48 hours before construction begins to minimize the probability that listed species will recolonize the affected areas.
- **19.12:** Within temporarily drained stream channel areas, salvage activities will be initiated before or at the same time as stream area draining and completed within a time frame necessary to avoid injury and mortality of listed species.
- **19.13:** For projects that involve in-water activities, the project biologist will continuously monitor in-water activities (e.g., placement of cofferdams, dewatering of isolated areas) for the purpose of removing and relocating any listed species that were not detected or could not be removed and relocated prior to construction.
- **19.14:** The project biologist will be present at the work site until all listed species have been removed and relocated.

- **19.15:** The project biologist will maintain detailed records of the species, numbers, life stages, and size classes of listed species observed, collected, relocated, injured, and killed; as well as recording the date and time of each activity or observation.
- **19.16:** If a Red-legged Frog gains access to a construction zone, work will be halted immediately within 50 feet until the animal leaves the site or is captured and relocated by the Agency-Approved Biological Monitor. The USFWS will be notified within one (1) working day if a Red-legged Frog is discovered within the construction site. The captured Red-legged Frogs will be released within appropriate habitat outside of the construction area but near the capture location. The release habitat will be determined by the Agency-Approved Biological Monitor. The Agency-Approved Biological Monitor will take precautions to prevent introduction of amphibian diseases in accordance with the *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (USFWS 2005). Disinfecting equipment and clothing is especially important when biologists are entering the BSA to handle amphibians after working in other aquatic habitats.
- **19.17:** To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks at an angle no greater than 30 degrees. Before such holes or trenches are filled they must be thoroughly inspected for trapped animals. All replacement pipes, hoses, culverts, or similar structures less than 12 inches in diameter will be closed, capped, or covered upon entry to the project site. All similar structures greater than 12 inches must be inspected before they are subsequently moved, capped and/or buried.
- **19.18:** To avoid entanglement or injury of amphibians, including the Red-legged Frog, erosion control materials that use plastic or synthetic monofilament netting will not be used.
- **19.19:** Construction actions will be scheduled to minimize impacts to the Red-legged Frog and their habitats. To reduce impacts to special status species and habitats, construction activities within potential listed amphibian habitat will be conducted during the dry season, between June 15 and October 15.
- **19.20:** Injured Red-legged Frogs will be cared for by an Agency-Approved Biological Monitor(s) or a licensed veterinarian, if necessary. Any deceased Red-legged Frogs will be preserved according to standard museum techniques and will be held in a secure location. The USFWS will be notified within one (1) working day of the discovery of a death or an injury to any listed species resulting from project-related activities or if a listed species is observed at a construction site. Notification will include the date, time, and location of the incident or the

finding of a deceased or injured animal, clearly indicated on a United States Geological Survey (USGS) 7.5-minute quadrangle and other maps at a finer scale, as requested by the USFWS, and any other pertinent information.

- **19.21:** Caltrans will submit post-construction compliance reports prepared by the Agency-Approved Biological Monitor to the USFWS within 60 calendar days following completion of project activities or within 60 calendar days of any break in construction activity lasting more than 60 calendar days. This report will detail (1) dates that relevant project activities occurred; (2) pertinent information concerning the success of the project in implementing avoidance and minimization measures for listed species; (3) an explanation of failure to meet such measures, if any; (4) known project effects on listed species, if any; (5) occurrences of incidental take of any listed species, if any; (6) documentation of employee environmental education; and (7) other pertinent information.

## **20: Implement BMPs**

- **20.1:** Routes and boundaries of roadwork will be clearly marked before the start of construction or grading.
- **20.2:** All food and food-related trash items will be enclosed in sealed trash containers and will be properly disposed off-site.
- **20.3:** Sediment and debris removed from the roadway will be disposed of off-site, at an approved location, where it cannot enter surface waters.
- **20.4:** No pets belonging to project personnel will be allowed within the BSA at any time during construction.
- **20.5:** No firearms will be allowed in the project footprint except for those carried by authorized security personnel, or local, state or federal law enforcement officials.
- **20.6:** A Spill Response Plan will be prepared. Hazardous materials (e.g., fuels, oils, solvents) will be stored in sealable containers in a designated location that is at least 100 feet from any hydrologic features.
- **20.7:** The proposed guidance document (described in Caltrans [2010] Programmatic BA) will be followed to ensure compliance with Project permits and authorization, including implementation of the BMPs.
- **20.8:** Before construction activities begin, the project environmental coordinator or biologist will discuss the implementation of the required BMPs with the maintenance crew or construction resident engineer and contractor, and identify and document environmentally sensitive areas and potential occurrence of listed species.

- **20.9:** Before construction activities begin, the project environmental coordinator or biologist will conduct a worker awareness training session for all construction personnel that describes the listed species and their habitat requirements, the specific measures being taken to protect individuals of listed species in the project area, and the boundaries within which project activities will be restricted.
- **20.10:** Preconstruction surveys for special status plant and wildlife species, including the Red-legged Frog, will be conducted by the Agency-Approved Biological Monitor no more than 20 calendar days prior to any initial ground disturbance and immediately prior to ground-disturbing activities (including vegetation removal and Temporary High Visibility Fencing Installation) within the project footprint. These efforts will consist of walking surveys of the project limits and, if possible, accessible adjacent areas within at least 50 feet of the project limits. The Agency-Approved Biological Monitor will investigate potential cover sites when it is feasible and safe to do so. This includes thorough investigation of mammal burrows, rocky outcrops, appropriately sized soil cracks, tree cavities, and debris. Native vertebrates found in the cover sites within the project limits will be documented and relocated to an adequate cover site in the vicinity. Safety permitting, the Agency-Approved Biological Monitor will also investigate areas of disturbed soil for signs of Red-legged Frogs 30 minutes following initial disturbance of the given area. The need for further preconstruction surveys will be determined by the Biologist based on site conditions and realized construction timelines.
- **20.11:** Caltrans will designate a biological monitor to monitor on-site compliance with all Project BMPs and any unanticipated effects on listed species.
- **20.12:** Non-compliance with BMPs and unanticipated effects on listed species will be reported to the resident engineer or maintenance supervisor immediately.
- **20.13:** When non-compliance is reported, the resident engineer or maintenance supervisor will implement corrective actions immediately to meet all BMPs; where unanticipated effects on listed species cannot be immediately resolved, the resident engineer or maintenance supervisor will stop work that is causing the unanticipated effect until the unanticipated effects are resolved.
- **20.14:** If requested, before, during, or upon completion of groundbreaking and any construction activities, Caltrans will allow access by USFWS personnel into the project footprint to inspect the project and its activities. Caltrans requests that all agency representatives contact the RE prior to accessing the work site and review and sign the Safe Work Code of Practices, prior to accessing the work site for the first time.

### **30: Mitigation framework for potential adverse impacts on species listed under California Endangered Species Act (CESA)**

- **30.1:** The intent of this Project Action is to ensure all impacts on state-listed species are fully mitigated. As part of the Program, Caltrans will mitigate adverse impacts (i.e., take) of species listed under the CESA and in some cases the California Environmental Quality Act (CEQA). The mitigation approach could involve terrestrial or aquatic habitats. Typical mitigation actions involve offsetting anticipated adverse impacts of the Program through restoring in-stream habitat (e.g., placement of LWD or gravel/rock/boulders), restoring or enhancing riparian habitat conditions, or improving fish passage. In some cases, maintenance projects could be self-mitigating, or projects intended to restore habitat could be proposed in the Program. A project involving fish passage that is self-mitigating would establish or enhance fish access to usable habitat and the anticipated increase in species numbers would compensate for species losses resulting from construction. If activities are not self-mitigating, Caltrans will provide financial assurances that mitigation measures will be carried out prior to undertaking activities resulting in mortalities to state-listed species. Caltrans will coordinate closely with CDFW to ensure that specific mitigation is appropriate for the impacts and species affected. Implementation of this action will be accomplished within the limits of this Program (described below in Section II.B. Project Categorization, Limits, and Minimization Measures). Actions will typically occur at sites where Caltrans determines one or more mitigation approaches can be implemented and anticipated habitat improvements offset impacts on covered species or their habitat associated with project implementation. At the start of each Caltrans fiscal year, Caltrans will determine the anticipated level of take of CESA-listed species associated with the Program and the watersheds in which this take will occur. Caltrans will then work to identify up to 10 potentially suitable mitigation options per District and present the CDFW with a recommendation of which options are most appropriate to offset the anticipated level of take for the year.

#### **Project Features: Alpine Road UC (L/R) Bridges**

1. Construction below the top of bank will be constrained to occur during the summer season, during creek low flows (starting June 15 and ending October 15). Work in the creek will be limited to when the creek is mostly dry, as much as practicable, or when the creek diversion has been installed.
2. During construction, the Resident Engineer, contractor, and Caltrans biologist will field mark and approve all trees to be removed prior to removal.
3. Attempts to minimize tree removal will include trimming wherever possible.

4. A temporary access road will be constructed to access the columns at the creek.
5. Creek material such as gabion mattress will be removed over a total distance of 200 feet for construction and will be replaced once stabilization is completed.
6. Green tape will be placed adjacent to the temporary detour path to delineate 5 feet for bicyclists sharing the 16-foot lane with vehicles.
7. Appropriate signage will be provided to advise motorists to watch for bicyclists and share the road.

## **Staging and Temporary Access Road**

### **Alpine Road UC (Bridge No. 35-0009 L/R) I-280, PM R0.05**

The primary material and equipment storage area will be in the northwest area of the project footprint, in the area next to the I-280 NB onramp. This storage area is accessible from WB Alpine Road and NB I-280 onramp. The contractors will occasionally conduct daytime flagging activities to move equipment and materials across Alpine Road. No complete closure of Alpine Road or any of the I-280 on and off-ramps is anticipated.

A temporary construction access road will be constructed from the I-280 NB off-ramp for construction at Bent 2. The temporary access road will be approximately 15 to 20 feet wide and will be cleared and graded of vegetation and trees. This temporary access road will allow the contractor to access Bent 2, where the columns are immediately south of the creek. A layer of base rock material between 4 to 6 inches deep will be placed on the temporary access road to help stabilize and control equipment tracking. Material and equipment can be stored in the areas next to the four columns at Bent 2. Please see Figure 4 (page 51) for the staging area and location of the temporary access road.

### **Sand Hill Road OC (South) (Bridge No. 35-0007) at PM R1.56, Sand Hill Road OC (North) (Bridge No. 35-0008) at PM 1.62**

Temporary material and small equipment storage areas will be located behind the K-rail at each bent, in the median of I-280, and in the areas between the mainline and on-ramps. There will be additional storage areas within the two looped I-280 on and off-ramps. Please see Figure 5 (page 53) for the staging areas.

### **I-280/I-380 Separation (Bridge No.35-0217) at PM 20.97**

The material and equipment storage area is a paved area directly adjacent to and above the bents. The area is bordered by the WB I-380 to SB I-280 and the SB I-280 to EB I-380 connectors. This area is an unfinished section of I-380 and is regularly used by



Caltrans Field Maintenance for projects. No grading or clearing of vegetation is necessary. Please see Figure 6 (page 55) for the staging areas.



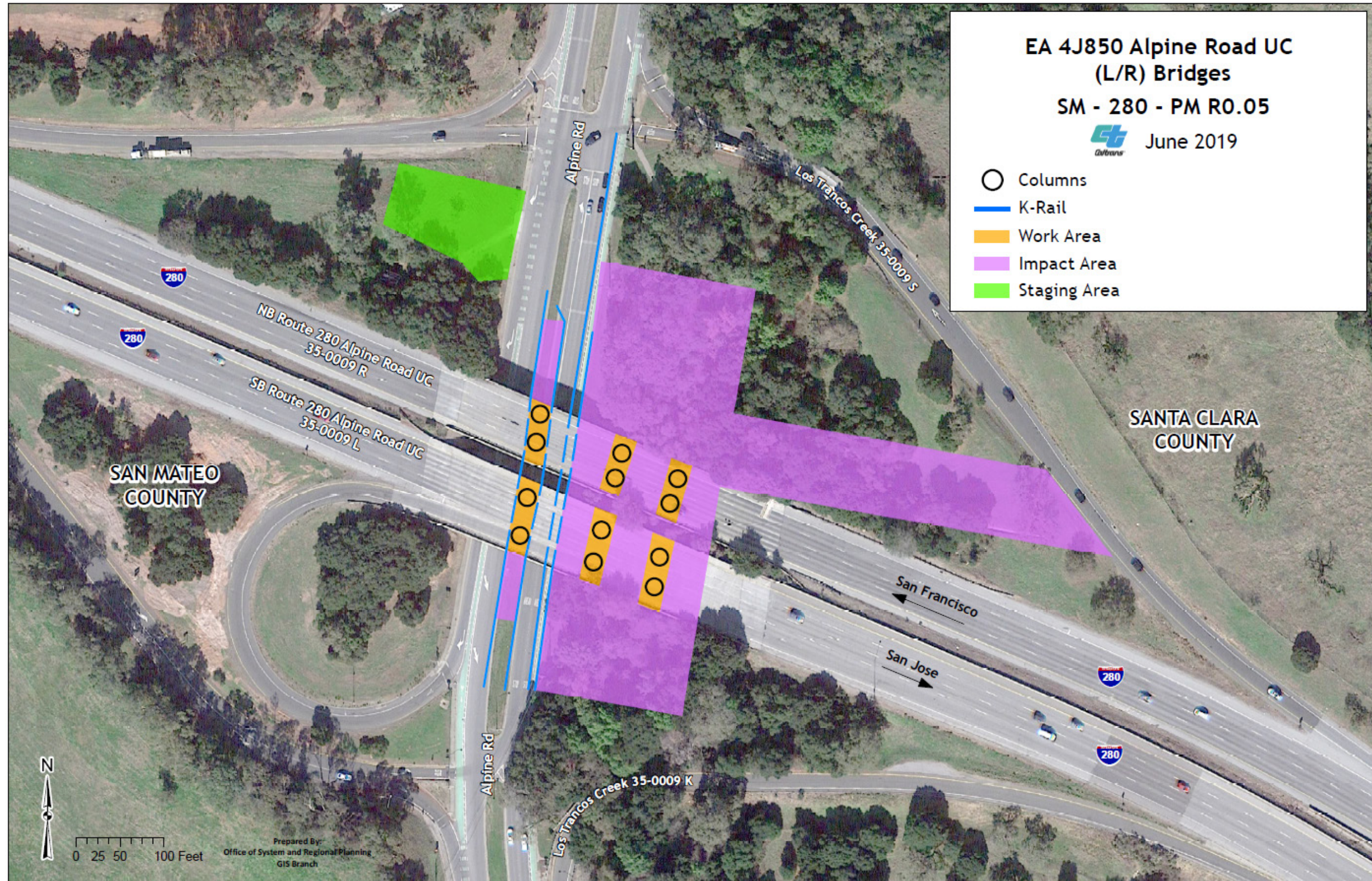


Figure 4: Alpine Road UC (L/R) Bridges Footprint

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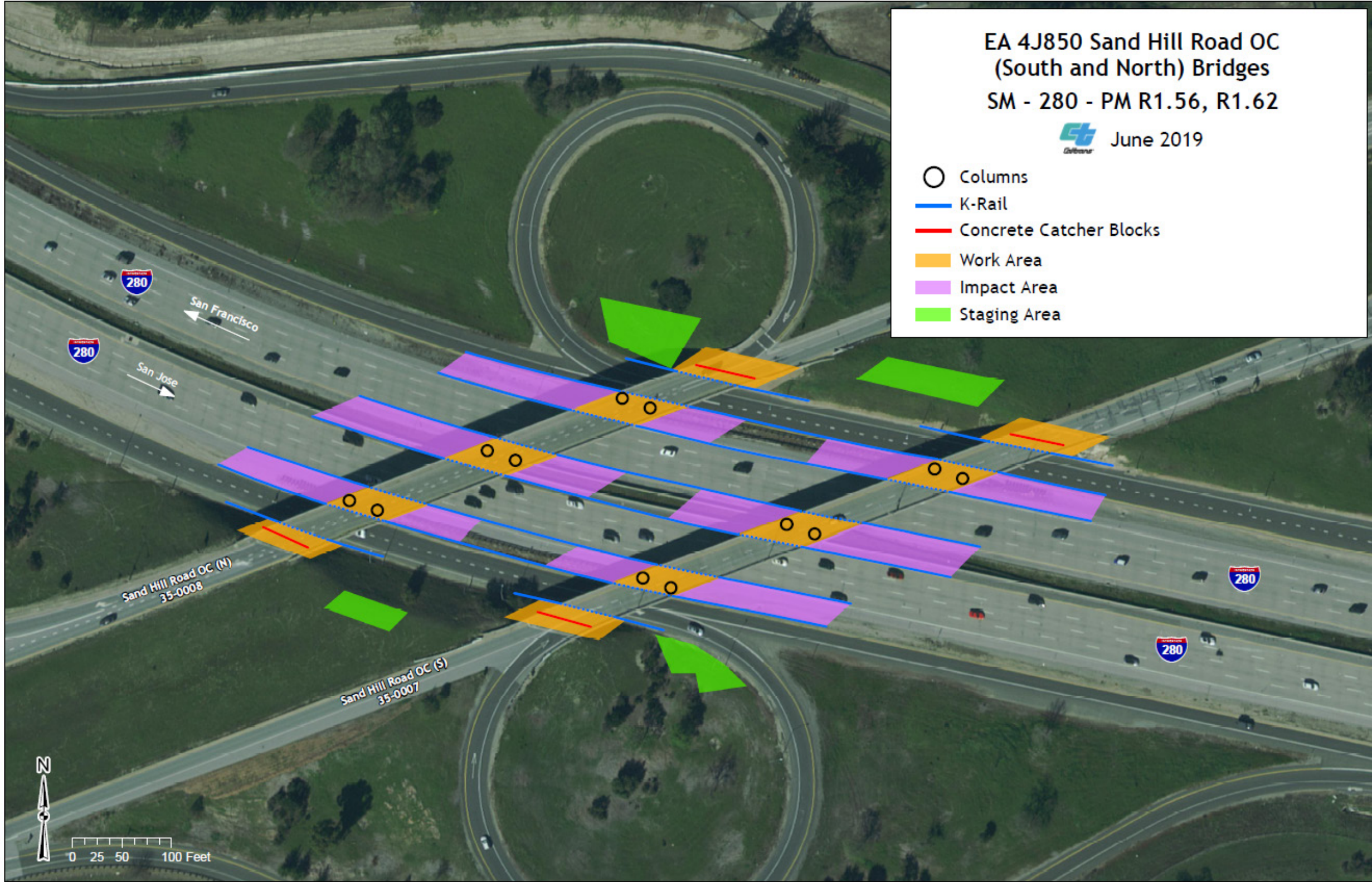


Figure 5: Sand Hill Road Overcrossing (South and North) Bridges Footprint

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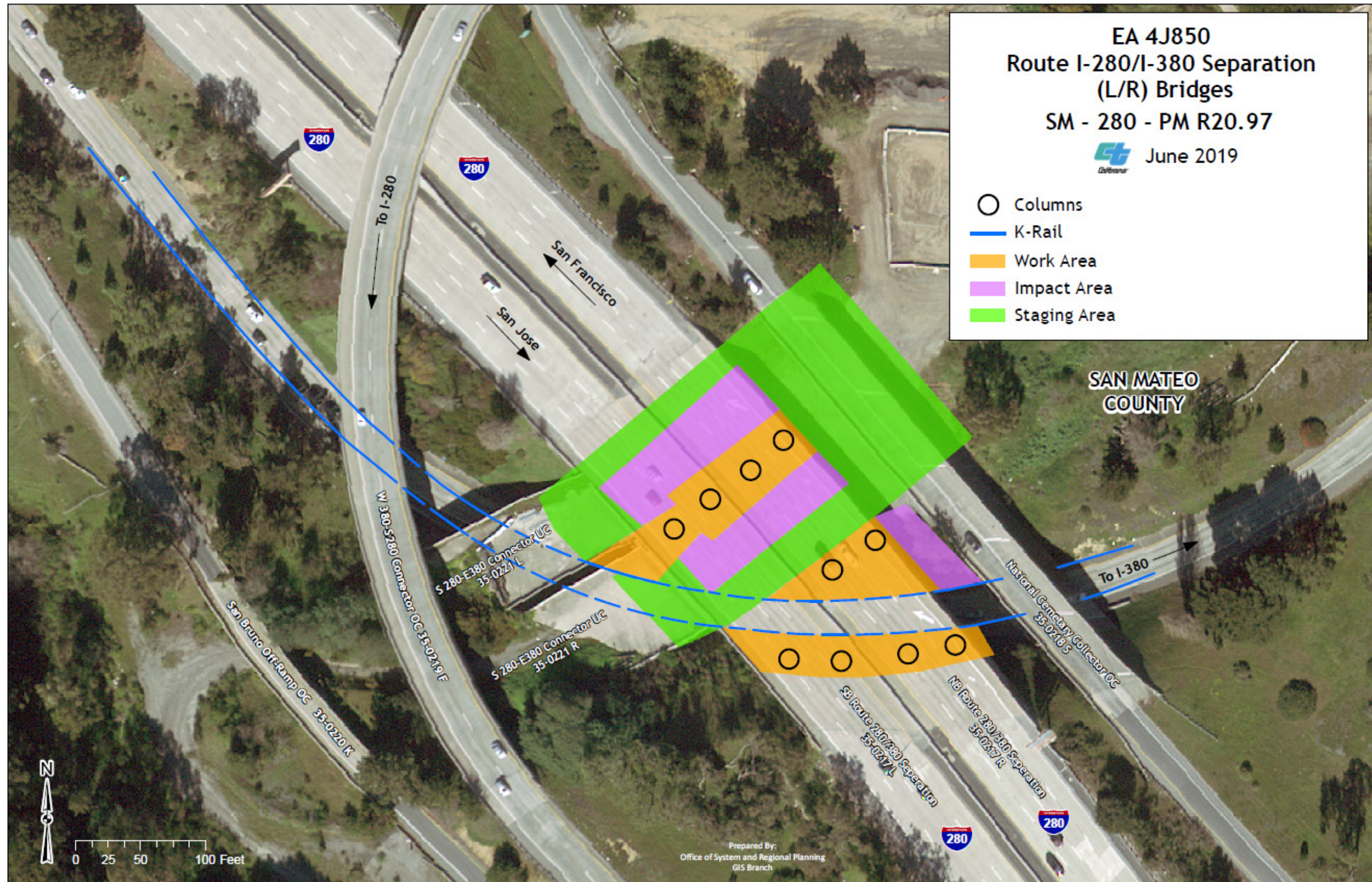


Figure 6: I-280/I380 Separation (L/R) Bridges Footprint

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## **1.12 Temporary Creek Diversion System**

A temporary creek diversion system will be installed at the Alpine Road UC (L/R) Bridges location to divert the Los Trancos Creek flow and create a dry work area during construction at Bent 2. The temporary creek diversion system may consist of a diversion pipe with temporary cofferdams. Dewatering will also be required at the Alpine Road UC (L/R) Bridges location. Water would be routed to a settling tank prior to discharging the water downstream beyond the project footprint. When the diversion system is installed and the water is fed through an active treatment system, the water quality of the creek will be monitored for turbidity, pH, temperature, and dissolved oxygen. Thus, water diverted through the diversion pipe after the installation of the diversion system is considered clean.

Further details of the temporary creek diversion system will be developed during the design phase and will also be sent to the Regional Water Quality Control Board for approval.

## **1.13 Stage Construction**

Construction activities for Alpine Road UC (L/R) Bridges, Sand Hill Road OC (South and North) Bridges, and I-280/I-380 Separation Bridge will take place during daytime and nighttime hours. Construction activities in Los Trancos Creek at the Alpine Road UC (L/R) Bridges location will be limited to the dry season window of June 15 to October 15. The total project construction duration is anticipated at 520 total working days.

During the construction window, vegetation clearing will be confined to a minimum for construction activities. Tree and vegetation removal will only be necessary at the Alpine Road UC (L/R) Bridges location. Since none of the other locations have listed species present, the Alpine Road UC (L/R) Bridges is the only location that would require wildlife exclusion fencing. No other location would require ESA fencing. After construction is completed at the Alpine Road UC (L/R) Bridges location, creek bank restoration may be necessary to fulfill the requirements of the NMFS Programmatic Biological Opinion (PBO), the USFWS BO, the CDFW 1600 permit, and the USACE 404 Standard Individual Permit.

The scheduled begin construction date is tentatively late 2022 and work is to be completed in two construction seasons.

### **1.14 Erosion Control**

Erosion control measures will be implemented to stabilize and revegetate disturbed areas, including slope and grading repairs of exposed slopes or soils. Erosion control measures on creek banks and other disturbed areas would include hydroseeding, which would also assist with vegetative and visual cover. Areas subject to weed removal or other vegetative disturbance will be replanted with fast-growing native grasses or a native erosion control seed mixture. If seeding is not possible then the area will be covered to the extent practicable with heavy black plastic solarization material until completion of construction.

Any existing irrigation systems that may be impacted will be modified or repaired and any existing trees that are damaged or removed will be evaluated for replacement. Construction staging and activities will minimize damage to existing trees and shrubs; existing trees that will remain will be protected by Temporary High-Visibility Fence during construction.

### **1.15 Right-of-Way Requirements**

No permanent ROW acquisition is required for this project. All work will occur within Caltrans' State ROW.

## Chapter 2

### 2.1 CEQA Environmental Checklist PROJECT DESCRIPTION AND BACKGROUND

Project Title:	Seismic Retrofit at Five Bridges Project
Lead agency name and address:	California Department of Transportation (Caltrans) Caltrans District 4 Office, 111 Grand Avenue, Oakland, CA 94612
Contact person and phone number:	John Seal (510) 286-5230
Project Location:	I-280 in San Mateo County: Alpine Road UC (L/R) (Bridge No. 35-0009 Left/Right) at PM R0.05, Sand Hill Road Overcrossing (OC) (South) (Bridge No. 35-0007) at PM R1.56, Sand Hill Road OC (North) (Bridge No. 35-0008) at PM R1.62, and I-280/I-380 Separation (Bridge No.35-0217) at PM R20.97
Project sponsor's name and address:	Caltrans Caltrans District 4 Office, 111 Grand Avenue, Oakland, CA 94612
General plan description:	Transportation
Zoning:	Urban
Description of project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation.)	The project proposes to install steel column casings at all five bridges, construct reinforced concrete catcher blocks at the abutments at Sand Hill OC (South and North) Bridges and construct reinforced concrete bolsters on each side of the bent cap at the I-280/I-380 Separation Bridge.
Surrounding land uses and setting; briefly describe the project's surroundings:	Land use for Alpine Road UC (L/R) and Sand Hill Road OC (South and North) Bridges is Urban; for I-280/I-380 Separation Bridge is Parks and Open Space. The project's surroundings include a mix of residential and farmland.

<p>Other public agencies whose approval is required (e.g. permits, financial approval, or participation agreements):</p>	<p>USFWS, NMFS, CDFW, USACE, San Francisco Bay RWQCB, and CTC</p>
<p>Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?</p> <p>Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.</p>	<p>California Native American tribes traditionally and culturally affiliated with the project area were contacted but none requested consultation.</p>

## CEQA Environmental Checklist

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance. Note that content-based changes to the text from the draft environmental document to this final environmental document will be noted with a line in the right hand margin.

### 2.1.1 Aesthetics

would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**a), b), c), and d) No Impact – all project locations**

This project will be compatible with the existing visual character of I-280. The new steel column casings and other project components will not substantially alter the visual quality of I-280. Some existing trees and shrubs will be removed at the Alpine Road UC (L/R) Bridges location and they will be evaluated for replacement. Hydro seed grasses will be used on bare slopes and soils for erosion control and for vegetative and visual cover.

This project will not have a substantial adverse effect on a scenic vista and will be visually consistent with the character of the surrounding area. This project will not substantially damage scenic resources including trees, rock outcroppings, or historic buildings within the State Scenic Highway and will not substantially degrade the existing visual character or quality of public views of the site and surroundings. The project will not create a new source of substantial light or glare.

### 2.1.2 Agriculture and Forest Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a), b), c), d), and e) No Impact – all project locations**

All three project locations are in Urban and Built-Up Land areas as seen in the San Mateo County Important Farmland 2016 map. The Alpine Road UC (L/R) Bridges location also has 'other' land within the project vicinity. Adjacent to this location, but outside of the project footprint there is land classified as prime farmland and farmland of local importance. At the Sand Hill Road OC (South and North) Bridges location, land adjacent to but outside of the project footprint is designated as grazing land. These designated farmland areas are outside of the project footprint and will not be affected by the project.

The project at all locations would not convert farmland to non-agricultural use. The project footprint does not contain land under the Williamson Act and none of the project locations are zoned as forest land, timber land, or timberland production. There will be no loss or conversion of forest land to non-forest land, or any other changes to the existing environment that would convert farmland to non-agricultural use or forest land to non-forest use.



### 2.1.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### a), b), c), and d) No Impact – all project locations

The project is exempt from conformity determination per 40 CRF 93.126 – widening narrow pavements or reconstructing bridges (no additional travel lanes). The project will not conflict with or obstruct implementation of the 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.

### 2.1.4 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The biological study area (BSA) was established at each location and consists of all areas of direct, indirect, temporary, and permanent impacts related to the project and therefore includes the project footprints. The BSA contains a buffer zone of 200 feet outside the project footprint at each location to include indirect effects of project construction and human presence. The buffer zone accounts for potential impacts to sensitive habitats and plant and animal species that could occur from noise, vibration, dust, and other construction activities. The project biologist conducted field surveys and analysis including aerial mapping and environmental databases. The BSAs were surveyed in the field and evaluated for potential effects to natural resources from the proposed project. The total BSA for this project is 56.67 acres. The individual BSA acreages are listed below:

- 8. Alpine Road UC (L/R) Bridges: 21.47 acres
- 9. Sand Hill Road OC (South and North) Bridges: 23.04 acres
- 10. I-280/I-380 Separation Bridge: 12.16 acres

See Appendix D, Biology Figures 7-9 for the BSAs for each project location. Biology Figures 10-12 show the California Natural Diversity Database (CNDDDB) occurrences at each project location.

The proposed project will require the following permits, for the Alpine Road UC (L/R) Bridges location, listed in Table 1 below:

**Table 1: Permits Required**

Regulatory Agency	Permit Required	Impacted Resource
California Department of Fish and Wildlife	1602 Lake and Streambed Alteration Agreement	Los Trancos Creek and associated riparian habitat
U.S. Army Corps of Engineers	Section 404 Clean Water Act Permit	Waters of the U.S.
San Francisco Bay Regional Water Quality Control Board	Section 401 Clean Water Act Permit	Waters of the U.S.
U.S. Fish and Wildlife Service	Biological Opinion	California red-legged frog,

National Marine Fisheries Service	Programmatic Biological Opinion	CCC DPS steelhead
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Impacts within the project footprint are divided into temporary and permanent impacts. Permanent impacts are impacts to areas covered with new hardscape or the permanent loss of natural bed or bank of a hydrologic feature. Temporary impacts are impacts that occur during construction can be returned to pre-existing conditions within one year after construction work is completed. Special status species are defined as species that are: federally and state listed, candidate, or proposed species; state fully protected species; state species of special concern; bird species protected under the MBTA, California Fish and Game Code (FGC), and/or federal Bald and Golden Eagle Protection Act; and plant species that are designated California Rare Plant Ranks 1 and 2. Please see Table 2: Permanent and Temporary Impacts to Land Cover for a summary of the acreages of permanent and temporary land cover impacts.

**Table 2:** Permanent and Temporary Impacts to Land Cover

Land Cover Type	Permanent Impacts (acres)	Temporary Impacts (acres)
Riparian Woodland and Forest	-	0.73
Waters of the U.S.	0.16	0.16
Annual Grassland	-	0.37
Ruderal / Bare Ground	-	0.91
Paved / Compacted Soil	-	5.61
<i>Total</i>	<i>0.16</i>	<i>7.78</i>

### **a) Less Than Significant Impact**

#### Alpine Road UC (L/R) Bridges

The proposed project at this location has the potential to affect two listed species, the California Red-legged Frog (CRLF) and the Central California Coast Steelhead Distinct Population Segment (Steelhead). Due to tree and vegetation removal will occur when the access road is constructed from the I-280 NB offramp, and the proposed work in Los Trancos Creek, the project could cause a temporary adverse effect on CRLF. There may also be temporary impacts from noise, vibration, and potential lighting if night work occurs. However, the Alpine Road UC (L/R) Bridges location also has considerable traffic volume, baseline noise, and vibrational disturbances. Roadway lighting presumably illuminates parts of the riparian habitat, and bicyclists and pedestrians frequent Alpine Trail. There is also what appears to be a small homeless encampment

adjacent to the creek. All of this points to an environmental baseline with a high level of human-induced disturbance.

No ponds or wetlands were observed within the BSA and CRLF do not breed in fast moving creeks, so there is a low potential for the CRLF to breed in Los Trancos Creek within the BSA. However, creek conditions both upstream and downstream of the construction location and within the project footprint have the potential to provide suitable aquatic breeding habitat. Adverse effects could occur to CRLF from equipment usage, existing vegetation removal, soil removal and distribution, gabion mattress removal, noise, vibration, and dust. Work would occur outside of CRLF breeding season but could still affect juvenile or adult CRLF that are feeding, sheltering, or dispersing. A total of 0.16 acres of permanent impacts to CRLF aquatic non-breeding habitat are expected as a result from the reconstruction of Los Trancos Creek.

A total of 0.73 acres of temporary impacts to CRLF habitat are anticipated from the temporary construction access road. These impacts are considered temporary because the area will be restored with native trees at the appropriate ratios. This will occur within one year of construction completion. The quality of the aquatic CRLF habitat will be enhanced by the removal of the existing gabion mattress and weirs. Minimal adverse direct impacts and no indirect impacts to the CRLF are expected with the implementation of AMMs discussed in Appendix C. Even with these measures, take, which is defined as harassment, harm, injury, or death of the CRLF may occur. Caltrans will obtain a BO from the USFWS for the CRLF.

Construction work in Los Trancos Creek will be scheduled during the dry season of June 15<sup>th</sup>-October 15<sup>th</sup>, to minimize the potential presence of fish, although Steelhead may still be present. A temporary creek diversion system will be installed at the Alpine Road UC (L/R) Bridges location to divert the Los Trancos Creek flow and create a dry work area during construction at Bent 2. Los Trancos Creek within the project BSA is designated critical habitat for the Steelhead. Steelhead could be affected by being isolated from upstream and downstream reaches of the creek while the temporary creek diversion system is in place during construction. Permanent impacts to Los Trancos Creek will result from the removal the fish passage barrier (the five weirs in the creek bed), the gabion mattress in the creek bed and along the banks, and the reconstruction of the creek channel. This project will result in approximately 0.16 acres of permanent fill to jurisdictional waters. There will also be approximately 0.16 acres of temporary direct impacts from staging, temporary creek diversion, and creek reconstruction.

Construction work will be restricted during inclement weather and during sensitive periods for special status species. However, there will be long term impacts from the grading and vegetation removal that will occur when the access road is built. The area

will be appropriately revegetated after construction. The project will include fish passage improvements through the removal of the fish passage barrier in Los Trancos Creek, to comply with SB 857. The fish passage barrier is the five weirs in Lost Trancos Creek. This project work scope will improve fish passage and result in a net benefit to the Steelhead. The Steelhead critical habitat will be enhanced, because the fish passage barrier will be removed, and the creek channel will be restored to appropriate grades and contours for fish migration. An agency approved design will be used for the grading and contouring of the creek. Due to the habitat improvements described above no mitigation is proposed.

Please see Appendix C for the Avoidance, Minimization, and Mitigation Measures.

#### Sand Hill Road OC (South and North) Bridges and I-280/I-380 Separation Bridge

The proposed project will have no adverse effect on any candidate, sensitive, or special status species at the Sand Hill Road OC (South and North) Bridges or the I-280/I-380 Separation Bridge locations.

#### **b) Less Than Significant with Mitigation**

##### Alpine Road UC (L/R) Bridges

The proposed project will have temporary adverse impacts to riparian habitat within the project footprint at the Alpine Road UC (L/R) Bridges location. The riparian habitat is along Los Trancos Creek and will be affected by the retrofit work at bent 2, including work in the creek and the grading for the temporary access road. Due to the removal of gabion mattress at the creek banks, another type of slope protection will be installed after construction work. The slope protection will be further developed during the design phase and will improve the overall condition of riparian habitat at project completion.

No large-scale tree removal is anticipated, and Caltrans will determine during the design phase if the removal of any trees can be avoided. Any native trees removed would be replaced within the project footprint at a 3:1 ratio and any non-native trees would be replaced at a 1:1 ratio with native species. Minimal impacts to riparian vegetation are expected due to work at the columns near Los Trancos Creek, but up to 0.14 acres may be temporarily impacted when the temporary construction access road is graded. No special status plant species have been observed within the BSA and no impacts to special status plants are anticipated. With the implementation of storm water and erosion control Best Management Practices (BMPs) listed in Appendix C: Avoidance, Minimization, and Mitigation Measures, no indirect impacts to riparian habitat are expected. No permanent adverse riparian habitat impacts are anticipated so compensatory mitigation is not proposed, and all temporarily impacted areas will be

improved to a more favorable creek and riparian within one year of construction completion.

#### Sand Hill Road OC (South and North) Bridges and I-280/I-380 Separation Bridge

The proposed project will have no adverse effect on any riparian habitat or other sensitive natural community at the Sand Hill Road OC (South and North) Bridges or the I-280/I-380 Separation Bridge locations.

#### **c) No Impact – all project locations**

This project will not have a substantial adverse effect on state or federally protected wetlands because there are no wetlands in the project footprints of all three locations.

#### **d) Less Than Significant Impact**

##### Alpine Road UC (L/R) Bridges

At the Alpine Road UC (L/R) Bridges location, project construction at bent 2 may temporarily interfere with the movement of both the CRLF and Steelhead, as well as any other native fish or wildlife that may occur within the project footprint. Please see Appendix D: Biology Figures, Figure 13 Wildlife Species List for all wildlife species that were evaluated for their potential to occur in the BSA. During dry season surveys Los Trancos Creek has been observed with low amounts of water, which is when construction will occur. There would be no long-term changes to the water chemistry or physical characteristics, such as flow of the creek, after project construction. No adverse long-term impacts on fish or other aquatic organisms are expected.

The interference to the movements of most wildlife and the Steelhead will be temporary. While in use the temporary creek diversion system and dewatering measures that will occur in Los Trancos Creek will temporarily interfere with the movement of Steelhead and other fish. However, after the columns at bent 2 are retrofitted, the fish passage barrier will be removed and the creek bed will be regraded. Los Trancos Creek will be left in an improved condition after construction and the movement of Steelhead and other native fish will be enhanced.

Construction activities including vegetation removal, fencing installation, soil removal and distribution, gabion mattress removal, rock slope protection distribution, and vibration are anticipated to interfere with the movement of any CRLF present. Project components such as fencing installation could create temporary barriers to CRLF movement. However, this project will not create new permanent barriers to CRLF movement. Vegetation removed will be appropriately restored. Habitat improvements

will result from this project and no offsite mitigation is proposed. The AMMs listed in Appendix C will be followed and will serve to avoid and minimize impacts to the CRLF.

Sand Hill Road OC (South and North) Bridges and I-280/I-380 Separation Bridge

The proposed project will not interfere with the movement of native resident, migratory fish, or wildlife species at the Sand Hill Road OC (South and North) Bridges or the I-280/I-380 Separation Bridge locations.

**e) No Impact – all project locations**

There are no local ordinances that apply to this project at any of the project locations. This project will therefore not conflict with any local policies or ordinances that protect biological resources.

**f) No Impact – all project locations**

At all project locations, the proposed project will 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.

Please see Appendix C: Avoidance, Minimization, and Mitigation Measures for the AMMs that will be implemented for Biological Resources for this project.



### 2.1.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### a), b), and c) No Impact – all project locations

The Area of Potential Effects (APE) for the project was established by Caltrans PQS Lindsay Hartman (Principal Investigator-Prehistoric Archaeology) and Frances Schierenbeck (Principal Architectural Historian), in consultation with Caltrans Project Manager Nandini Shridhar established the APE August 22, 2019. The archaeological and architectural history APEs were established to include all locations where construction activities could take place. It includes the excavation and paving, the creek diversion and grading, and staging areas. The APE also encompasses the entire boundary of any cultural resources within the project area. The vertical APE includes all areas where excavation will impact the project area below the surface. Clearing, grubbing, grading, or staging may impact the top two feet of most of the APE. At the bridge columns at the Alpine Road UC (L/R) Bridges location, the maximum depth of impact is 15 feet.

Caltrans contacted the Native American Heritage Commission (NAHC) on August 7, 2018 requesting a review of their sacred lands file for any historically significant resources within or near the project area. The search yielded negative results. Also requested was a list of Native American individuals and organizations with a potential interest in the project area. Letters providing project information and requesting input were sent to each individual and organization on August 15, 2018. Follow up emails were sent on October 30, 2018. Individuals contacted include Tony Cerda, Chairperson for the Costanoan Rumsen Carmel Tribe, Irenne Zwierlein, Chairperson for the Amah Mutsun Band of Mission San Juan Bautista, Andrew Galvan, Chairperson for the Ohlone Indian Tribe, and Ann Marie Sayers Chairperson for the Indian Canyon Mutsun

Band Costanoan. On November 6, 2018, Caltrans Archaeologist Lindsay Hartman spoke with Mr. Galvan by email discussing which studies had been completed. Mr. Galvan will receive a copy of the final studies. Voice mail messages were left for other interested parties on December 12, 2018. No other responses have been received.

A record search of the Northwest Information Center records and Caltrans Cultural Resources Database was completed on August 1, 2018. No previously recorded sites were noted within the project footprint. No cultural resources were noted during a pedestrian survey. However, due to the number cultural resources previously recorded within a half-mile study area and the high sensitivity for buried and surface sites according to the Caltrans District 4 Geoarchaeological Sensitivity Model, it was decided that the project area around the Alpine Road UC (L/R) Bridges location would require an Extended Phase 1 Study. Between May 22 and 24, 2019, 17 backhoe trenches and seven cores were excavated within the proposed project area at the Alpine Road UC (L/R) Bridges location. The negative results of this study sufficiently demonstrate an absence of archaeological materials or intact cultural deposits and based on these findings, there is a very low potential for encountering archaeological sites in the project footprint.

A Historic Properties Survey Report (HPSR), Archaeological Survey Report (ASR), and Extended Phase I Survey Report (XPI) have been completed for this project.

Caltrans, pursuant to Section 106 PA Stipulation IX.A and PRC 5024 MOU Stipulation IX.A.2, has determined a Finding of No Historic Properties Affected is appropriate for this undertaking.

**2.1.6 Energy**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) and b) No Impact – all project locations**

This project is not a capacity inducing project and will not result in increased or unnecessary consumption of energy resources during construction or operation. Caltrans Standard Specifications and best management practices (BMPs) will be implemented during construction to reduce any inefficient or unnecessary energy resource usages. BMPs include limiting the idling of vehicles and equipment onsite and maintaining vehicles and equipment. This project will not conflict with or obstruct state or local plans for renewable energy or energy efficiency.

### 2.1.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) (i-iv), b), c), d), e), and f) No Impact – all project locations**

The project has no potential to expose people or structures to potential substantial adverse effects, rupture of a known earthquake fault, produce strong seismic ground shaking, create seismic-related ground failure, create landslides, result in substantial soil erosion or the loss of topsoil, be located on expansive soil, or have soils incapable of adequately supporting the use of septic tanks.

All construction will be completed in previously disturbed material and will not impact native soil or rock. Therefore, no paleontological resources will be unearthed.

Construction work at the Alpine Road UC (L/R) Bridges location requires excavation into the creek bed, where the sediments are very young or previously disturbed. Therefore, this project will not impact paleontologically sensitive resources.

### 2.1.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

#### a) and b) Less Than Significant Impact – all project locations

##### 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<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF<sub>6</sub>), and various hydrofluorocarbons (HFCs). CO<sub>2</sub> 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<sub>2</sub>.

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 will include a discussion of both.

#### Regulatory Setting

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

## **Federal**

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea-level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (FHWA 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values—“the triple bottom line of sustainability” (FHWA n.d.). Program and project elements that foster sustainability and resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) and Corporate Average Fuel Economy (CAFE) Standards. This act establishes fuel economy standards for on-road motor vehicles sold in the United States. Compliance with federal fuel economy standards is determined through the CAFE program on the basis of each manufacturer’s average fuel economy for the portion of its vehicles produced for sale in the United States.

Energy Policy Act of 2005, 109th Congress H.R.6 (2005–2006): This act sets forth an energy research and development program covering: (1) energy efficiency; (2) renewable energy; (3) oil and gas; (4) coal; (5) the establishment of the Office of Indian Energy Policy and Programs within the Department of Energy; (6) nuclear matters and security; (7) vehicles and motor fuels, including ethanol; (8) hydrogen; (9) electricity; (10) energy tax incentives; (11) hydropower and geothermal energy; and (12) climate change technology.

The U.S. EPA<sup>1</sup> in conjunction with the National Highway Traffic Safety Administration (NHTSA) is responsible for setting GHG emission standards for new cars and light-duty vehicles to significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. The current standards require vehicles to meet an average fuel economy of 34.1 miles per gallon by 2016. EPA and NHTSA are currently considering appropriate mileage and GHG emissions standards for 2022–2025 light-duty vehicles for future rulemaking.

NHTSA and EPA issued a Final Rule for “Phase 2” for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution in October 2016. The agencies estimate that the standards will save up to 2 billion barrels of oil and reduce CO<sub>2</sub> emissions by up to 1.1 billion metric tons over the lifetimes of model year 2018–2027 vehicles.

## **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)).

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<sup>1</sup> U.S. EPA’s authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court’s ruling, U.S. EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs constitute a threat to public health and welfare. Thus, it is the Supreme Court’s interpretation of the existing Act and EPA’s assessment of the scientific evidence that form the basis for EPA’s regulatory actions (U.S. EPA 2009).



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 will 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<sub>2e</sub>).<sup>2</sup> 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.

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<sup>2</sup> GHGs differ in how much heat each trap in the atmosphere (global warming potential, or GWP). CO<sub>2</sub> is the most important GHG, so amounts of other gases are expressed relative to CO<sub>2</sub>, using a metric called "carbon dioxide equivalent" (CO<sub>2e</sub>). The global warming potential of CO<sub>2</sub> is assigned a value of 1, and the GWP of other gases is assessed as multiples of CO<sub>2</sub>.

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.

Senate Bill 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.

Senate Bill 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.

Executive Order 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.

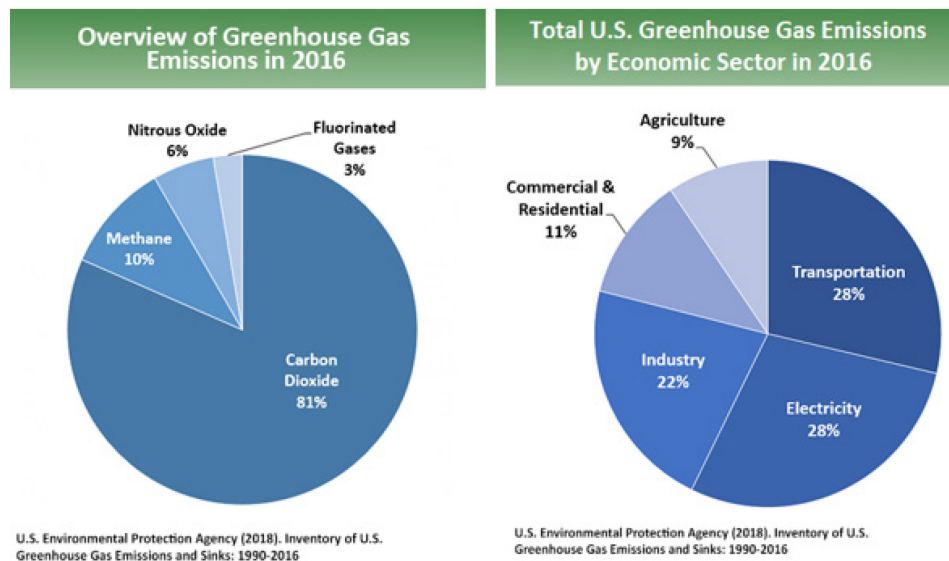
### **Environmental Setting**

All five bridges in this project are situated near a mix of open and residential areas. The Alpine Road UC (L/R) Bridges are located at the southern end of San Mateo County near the Santa Clara County border. This location and Sand Hill Road OC (South and North) Bridges are in Stanford Lands, an unincorporated and urban area of San Mateo County. The zoning is R-E/S-11, or Residential Estates Districts, and the land use is designated as Urban. The I-280/I-380 Separation Bridge is located in the city of San Bruno. The zoning use is unclassified and the land use immediately outside of the project footprint is designated as Parks and Open Space. *Plan Bay Area*, the RTP/SCS of the Bay Area Metropolitan Transportation Commission and Association of Bay Area Governments (MTC/ABAG), guides 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. 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.

### National GHG Inventory

The U.S. EPA prepares a national GHG inventory every year and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, perfluorocarbons, SF<sub>6</sub>, and nitrogen trifluoride. It also accounts for emissions of CO<sub>2</sub> that are removed from the atmosphere by “sinks” such as forests, vegetation, and soils that uptake and store CO<sub>2</sub> (carbon sequestration). The 1990–2016 inventory found that of 6,511 MMTCO<sub>2</sub>e GHG emissions in 2016, 81% consist of CO<sub>2</sub>, 10% are CH<sub>4</sub>, and 6% are N<sub>2</sub>O; the balance consists of fluorinated gases (EPA 2018a). In 2016, GHG emissions from the transportation sector accounted for nearly 28.5% of U.S. GHG emissions.

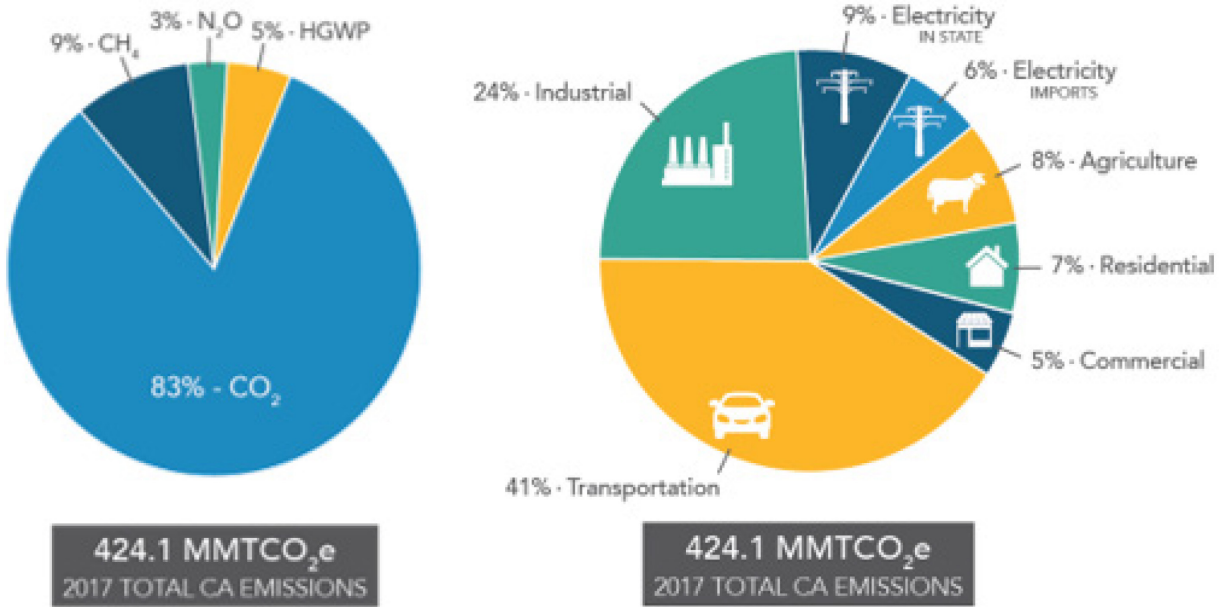


**Figure 7: U.S. 2016 Greenhouse Gas Emissions**

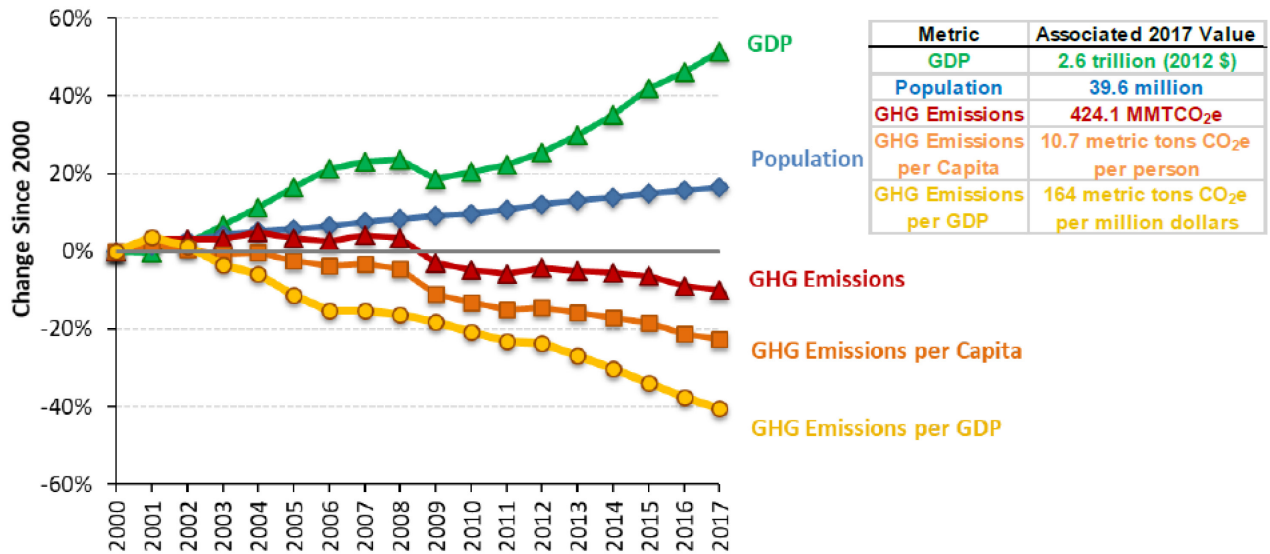
### State GHG Inventory

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<sub>2</sub>e 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 8: California 2017 Greenhouse Gas Emissions**



**Figure 9: 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 will 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 will use to reduce GHG emissions.

## **Regional Plans**

ARB sets regional targets for California's 18 MPOs to use in their RTP/SCSs to plan future projects that will cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. The proposed 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). The RTP/SCS aims to reduce per-capita delay and CO<sub>2</sub> emissions. While the RTP/SCS, *Plan Bay Area*, does not specifically identify any projects along I-280, it does include "bridge preservation" as an investment strategy under Operate and Maintain.

San Mateo County General Plan's Energy and Climate Change Element demonstrates San Mateo County's commitment to "working to sustain the long-term health of the natural and built environments, achieve effective and meaningful reductions in GHGs, and increase resiliency to the impacts of climate change in the unincorporated county (San Mateo County 2013: 1). In 2012, San Mateo County adopted its Government Operations Climate Action Plan, and in 2013, completed its Energy Efficiency Climate Action Plan for the unincorporated area of the county. Both plans are intended to help the County meet its GHG reduction commitments (County of San Mateo 2019).

## **Project Analysis**

GHG emissions from transportation projects can be divided into those produced during operation of the SHS and those produced during construction. The primary GHGs produced by the transportation sector are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, and HFCs. CO<sub>2</sub> emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH<sub>4</sub> and N<sub>2</sub>O 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 seismically retrofit five bridges along I-280 in San Mateo County, at three separate locations. The proposed 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, on-site construction equipment, and traffic delays due to construction. These emissions will 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.

The analysis was focused on vehicle-emitted GHGs, and CO<sub>2</sub> emissions in particular because it is the single most important GHG pollutant due to its abundance when compared with other vehicle-emitted GHGs.

Construction-related GHG emissions were calculated using the Road Construction Emissions Model, version 8.1.0, provided by the Sacramento Metropolitan Air Quality Management District. It was estimated that for a construction duration of 14 months, the total amount of CO<sub>2</sub> produced for the construction of all three bridges would be 493.52 tons. Total CO<sub>2</sub>e emissions (CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O)<sup>3</sup> would be 451.32 metric tons.

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<sup>3</sup> Gases are converted to CO<sub>2</sub>e, or carbon dioxide equivalent, by multiplying their global warming potential (GWP) compared to CO<sub>2</sub>. GWP is a measure of how much energy

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 will 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 proposed project will result in GHG emissions during construction, it is anticipated that the project will not result in any increase in operational GHG emissions. The proposed 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.

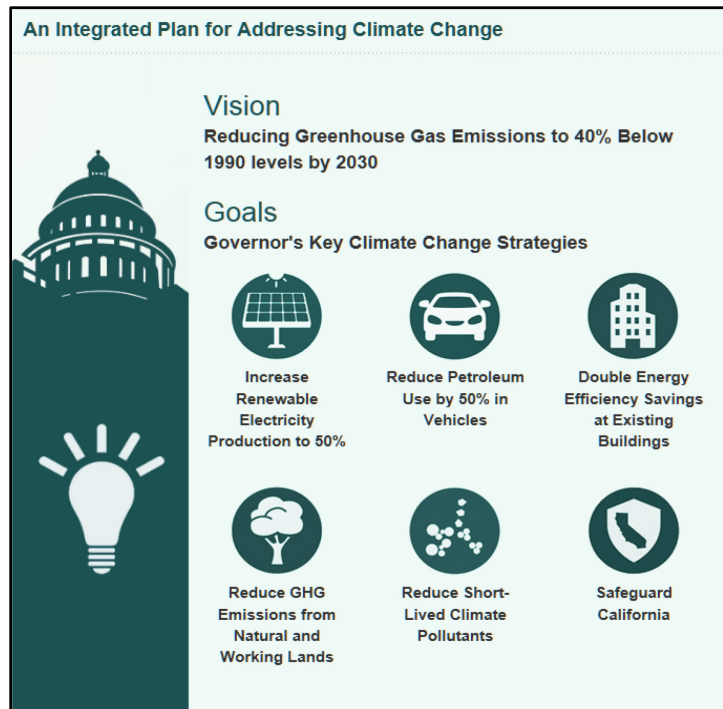
### **Greenhouse Gas Reduction Strategies**

#### **Statewide Efforts**

Major sectors of the California economy, including transportation, will 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*.

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the emissions of 1 ton of a gas will absorb over a given period of time relative to 1 ton of CO<sub>2</sub>.



**Figure 10: 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 will 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<sub>2</sub> reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California will 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 will 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 will 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 will also be implemented in the project to reduce GHG emissions and potential climate change impacts from the project.

- 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 will comply with all ARB emission reduction regulations
- Caltrans Standard Specifications Section 14-9.02, Air Pollution Control, requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes.
- A construction transportation management plan will be implemented during construction to minimize work-related traffic delays by the application of general traffic handling practices and strategies.
- During temporary closures of the Alpine Trail under the Alpine Road bridges, an ADA-accessible alternate route will be provided for pedestrians and bicyclists. In addition, a temporary line of green tape on the road pavement will delineate a 5-foot wide bike lane on eastbound Alpine Road for bicyclists who choose to ride alongside traffic. Alpine Trail and the roadway will be returned to existing conditions after project construction.

## **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 will 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.

### **Federal Efforts**

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program (USGCRP) delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 U.S.C. ch. 56A § 2921 et seq). The *Fourth National Climate Assessment*, published in 2018, presents the foundational science and the “human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways.” Chapter 12, “Transportation,” presents a key discussion of vulnerability assessments. It notes that “asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime” (USGCRP 2018).

U.S. DOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to “integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions” (U.S. DOT 2011).

FHWA order 5520 (*Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events*, December 15, 2014) established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2019).

### **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 will 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 Analysis

All locations of the proposed project are outside the coastal zone and not in an area subject to sea-level rise. Accordingly, direct impacts to transportation facilities due to projected sea-level rise are not expected.

NOAA Sea-Level Rise Viewer - Seismic Retrofit of Six Bridges Project (Alpine Road Undercrossing Bridges, Sand Hill Road Overcrossing Bridges, and Interstate-280/Interstate-380 Separation Bridges) – SM PM 0.01/20.9 – EA 04-41850

<https://coast.noaa.gov/slr/#/layer/slr/6/-13620542.590750271/4511509.086154263/12/streets/none/0.8/2050/interHigh/midAccretion>

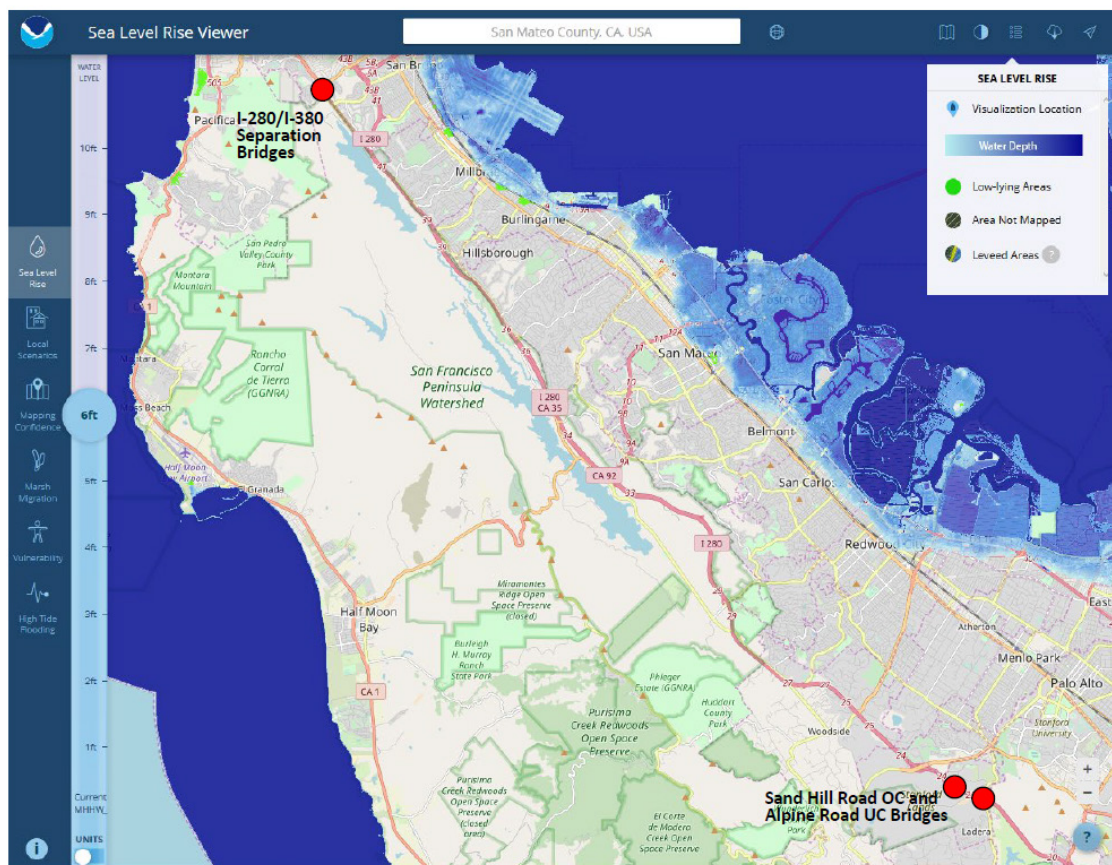


Figure 11: Graphic of sea level rise predictions to this project and its locations

## **Floodplains**

The Flood Insurance Rate Map (FIRM) 06081C0312E at the Alpine Road UC location shows a Zone D floodplain, which indicates an area of undetermined flood hazard. The FIRM 06081C0311E at Sand Hill Road OC Bridges location shows a Zone X floodplain, which indicates an area of minimal flood hazard. The FIRM 06081C0043E at the I-280/I-380 Separation Bridge location shows a Zone D, an area of undetermined flood hazard.

None of the project locations are in a current flood hazard zone. The Caltrans Climate Change Vulnerability Assessment for District 4 indicates an increase in 100-year storm precipitation depth of up to 9.9 percent in the vicinity of the Alpine Road and Sand Hill Road locations by 2025 and through 2085. In the area of the I-280/380 Separation location, precipitation intensity is likely to increase by less than 5 percent by 2025, and up to 9.9 percent by 2085 (Caltrans 2018). The project would not result in obstruction or redirection of flood flows or alter drainage patterns. Erosion control measures and slope stabilization and protection are part of the project and would help protect the bridge foundations during potential future higher storm flows.

### 2.1.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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**a), c), d), e), f), and g) No Impact – all project locations**

This 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.

The average lead levels in the soils to be excavated to a depth of 4 or more feet for the installation of the steel column casings is expected to be below the hazardous waste levels that would otherwise require special handling and management requirements. Testing the materials for lead contamination will not be necessary as any excavated materials will be backfilled in the excavations after construction retrofit work is completed.

**b) Less Than Significant Impact – Sand Hill Road OC (South and North) Bridges Location**

If the replacement of guardrail with concrete barrier at the Sand Hill Road OC (South and North) Bridges would generate surplus excavated material that requires off-site disposal, a soil investigation that ascertains the levels of contaminants, primarily for aerially deposited lead, would be conducted. If required, the soil investigation would be planned and conducted during the design phase of the project. Based upon the soil testing results, specifications for proper soil handling and management will be developed and incorporated into the construction contract documents.

### 2.1.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
(iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed project will require the following water quality permits:

1. Section 404 permit issued by the U.S. Army Corps of Engineers (USACE)
2. Clean Water Act (CWA) 401 Water Quality Certification from the San Francisco Bay Regional Water Quality Control Board (RWQCB)

**a) No Impact – all project locations**

To ensure compliance with CWA Section 402, the State Water Resources Control Board (SWRCB) issued Caltrans a Statewide National Pollutant Discharge Elimination System (NPDES) Stormwater Permit to regulate stormwater discharges from Caltrans facilities (Order No. 2012-0011-DWQ). The SWRCB issued a statewide Construction General Permit (CGP) for construction activities (2009-0009-DWQ, CAS000002, as amended by 2010-0014-DWQ and 2012-0006-DWQ), that applies to stormwater discharges from land where clearing, grading, and excavation result in a disturbed soil area (DSA) of one acre or greater. Construction activity resulting in a DSA of less than 1.0 acre is subject to the CGP if the construction activity is part of a larger Common Plan of Development totaling 1.0 acre or more of DSA, or if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Projects subject to the CGP require a Stormwater Pollution Prevention Plan (SWPPP). Projects not subject to the CGP require a Water Pollution Control Program (WPCP), per Caltrans Standard Specifications. Since the DSA for this project is over an acre, a SWPPP will be required. This project will not substantially degrade surface or ground water quality and there would be no violations to any water quality standards or waste discharge requirements.

The Caltrans NPDES Stormwater Permit prohibits the discharge of trash in the San Francisco Bay region. The I-280/I-380 Separation Bridge location is the only location in the 2018 Caltrans District 4 Significant Trash Generating Area (STGA). Full capture devices will be reviewed during the design phase of this project and all discharging activities would follow Caltrans requirements.

## **b) No Impact – all project locations**

Potential construction impacts to receiving bodies include sediment, turbidity, and pH. Caltrans will implement temporary Construction Site Best Management Practices (BMPs) for sediment control and material management. These include temporary cover, check dam, drainage inlet protection, fiber roll, silt fence, hydraulic mulch, concrete washout, and street sweeping. Only the Alpine Road UC (L/R) Bridges location will require dewatering and a creek diversion system for construction at the columns immediately adjacent to Los Trancos Creek. Details of the diversion system will be further developed during the design phase.

Since a 401 certification is required, water quality Post-construction Treatment BMPs will be required and the project will comply with requirements consistent with the San Francisco Bay Municipal Regional Stormwater Permit (MRP).

These activities will not substantially deplete groundwater supplies or interfere substantially with groundwater recharge and the project will not impede sustainable groundwater management of the basin.

## **c) (i), (ii), (iv) – No Impact**

### Alpine Road UC (L/R) Bridges

In the 1970s Caltrans investigated an erosion problem at Los Trancos Creek at this same project location. It was determined that slope protection was needed at the bridge footings and Caltrans initiated a channel stabilization facilities project on Los Trancos Creek at this proposed project location. The Department of Fish and Game requested that a fish ladder be included in that project. The project included unlined channel realignment to clear the bridge footings, gabion mattress slope protection to stabilize the creek embankments, and concrete weirs with resting pools to support anadromous fish. The project installed a series of weirs with jump boxes to allow fish to travel upstream. Currently the condition of the weirs is degraded, with erosion causing water flows to bypass some weirs, rendering them nonfunctional. Sedimentation has also reduced the functional height of the weirs and partially filled jump boxes, further reducing the utility of both. The series of weirs at the project location has been identified as a partial fish passage barrier, limiting upstream travel of fish during low water flow conditions. Senate Bill 857 requires fish passage remediation for any project using state or federal transportation funds programmed after January 1, 2006.

The Flood Insurance Rate Map (FIRM) 06081C0312E at this location shows a Zone D floodplain. Zone D indicates an area of undetermined flood hazard and minimal floodplain impacts would be expected.

Construction at this location requires temporary shoring to access the bents at the Los Trancos Creek embankment and the temporary removal of the gabion mattresses used for slope protection. The total DSA at this location is 3.0 acres. Creek bank restoration will be performed after project construction is complete. None of the proposed work will cause significant impacts to Los Trancos Creek or result in substantial erosion on- or offsite. Construction work at the Los Trancos Creek columns will not substantially alter the existing drainage pattern and will not increase the rate or amount of surface runoff which could result in flooding on- or offsite. Any work done in the creek will be constructed in a manner that does not impede the flow of the existing channel. Re-establishing the gabion mattresses, or another type of slope protection after construction, will also not cause significant impacts to Los Trancos Creek. If any temporary construction platforms are built to provide access, they will be built in a way that does not impede the flow of the existing creek channel. The proposed work will not impede or redirect flood flows.

#### Sand Hill Road OC (South and North) Bridges and I-280/I-380 Separation Bridge

The FIRM 06081C0311E at Sand Hill Road OC (South and North) Bridges location shows a Zone X floodplain, which indicates an area of minimal flood hazard. No floodplain impact would be expected. The total DSA at this location is 1.2 acres.

The FIRM 06081C0043E at the I-280/I-380 Separation Bridge location shows a Zone D, which indicates an area of undetermined flood hazard, so floodplain impacts would be expected. The total DSA at this location is 0.4 acres.

The proposed work at these two locations is not anticipated to have a significant impact on the floodplains within the project locations, including no substantial erosion or siltation, or obstruction or redirection of flood flows.

#### All Projects Locations

The Net New Impervious (NNI) acreage from construction is 0.02 acres at the Alpine Road UC (L/R) Bridges location and 0.07 acres at the Sand Hill Road OC (South and North) Bridges location. There is no NNI acreage at the I-280/I-380 Separation Bridge location. The project will not substantially alter the existing drainage patterns at all project locations.

#### **C) (iii) Less Than Significant Impact – All project locations**

The project is located within the San Francisco Bay RWQCB, which is responsible for the implementation of State and Federal laws and regulations for water quality protection. The Alpine Road UC (L/R) Bridges location and the Sand Hill Road OC

(South and North) Bridges location are both contained in the Palo Alto Hydrological area, HSA #205.50. The watershed boundary dataset is Saratoga Creek, with San Francisquito as the subwatershed. Runoff from the project site will drain into the Los Trancos and San Francisquito Creeks. These water bodies are on the 2014-2016 303(d) and Total Maximum Daily Load (TMDLs) List for sedimentation/siltation, diazinon, and trash.

The I-280/I-380 Separation Bridge location is contained in the San Mateo Bayside Hydrological Area, HSA #204.40. The watershed boundary dataset is San Mateo Creek- Frontal San Francisco Bay Estuaries, with Colma Creek- Frontal San Francisco Bay Estuaries as its subwatershed.

This project has the potential for construction impacts to receiving water bodies, including sediment, turbidity, and pH. Temporary Construction Site BMPs will prevent or reduce these impacts.

**d) No Impact – All project locations**

The project is not located in a flood hazard, tsunami, or seiche zones and there is no risk of pollutants being released due to project inundation.

**e) No Impact – All project locations**

This project will not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan.

### 2.1.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### a) No Impact – all project locations

The project footprint locations are in predominantly Urban and Built-Up land areas. The work scope is to seismically retrofit the five bridges, so the project will not physically divide an established community or cause displacement.

#### b) No Impact – all project locations

This project is consistent with state, regional, and local plans and programs.

#### *State Planning*

The 2013 *Interstate 280 Transportation Concept Report* states that the lane configuration of I-280 will remain unchanged from the existing condition. Operational strategies on I-280 in San Mateo County could include Traffic Operation Systems (TOS) and ramp metering. The work scope for this project is contained to seismic retrofit work at five bridges and the project will not conflict with the *Interstate 280 Transportation Concept Report*.

#### *Regional Planning*

The long-range regional transportation plan (RTP), called *Plan Bay Area 2040*, was adopted by the Metropolitan Transportation Commission (MTC) in July 2017. *Plan Bay Area 2040* does not specifically identify any projects along I-280, but it does include “bridge preservation” as an investment strategy under Operate and Maintain. This seismic retrofit project fits under “bridge preservation” identified in the *Plan Bay Area 2040* report and does not conflict with any plans.

#### *Local Planning*

At the Alpine Road UC (L/R) location there is a dedicated bicycle facility on Alpine Road and a recreational hiking and bicycling trail, Alpine Trail. Alpine Trail will be temporarily detoured during construction and continuity of the trail will be maintained. Bicyclists will have the opportunity to share a lane with motorists on EB Alpine Road or walk their bicycles on the temporary detour trail. Please find additional information about the temporary detour path under section XVI. Recreation of this check list. The EB dedicated bicycle facility on Alpine Road and Alpine Trail will both be returned to their existing condition after project construction. This project will maintain continuity of all pedestrian and bicycle paths and does not conflict with land use or any plans.

Aside from Alpine Road UC (L/R), there are no existing dedicated pedestrian, bicycle, or other non-motorized facilities within the project footprints for Sand Hill Road OC (South and North) or I-280/I-380 Separation. The project scope is to seismically retrofit all five bridges and no improvements to pedestrian, bicycle, or other non-motorized facilities within the project footprints are proposed. The project would not change any existing land uses and is consistent with the San Mateo County General Plan.

**2.1.12 Mineral Resources**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) and b) No Impact – all project locations**

The project will 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**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a), b), and c) No Impact – all project locations**

The project will not add a new traffic lane or substantially alter the alignments or increase ambient noise levels in excess of established standards. Construction noise will be temporary and will be within acceptable levels for construction activity. There will be no generation of excessive ground borne vibration or ground borne noise levels. This project is not located within the vicinity of a private airstrip or an airport land use plan.

**2.1.14 Population and Housing**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) and b) No Impact – all project locations**

The purpose of this project is to seismically retrofit bridge structures. The project is not growth-inducing and will not displace existing people or housing.

**2.1.15 Public Services**

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:

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) No Impact – all project locations**

The proposed project will have no effect on the provision or need for public services. Caltrans will prepare a TMP to maintain the flow of traffic during construction and ensure accessibility through the project locations for vehicles with essential services such as Fire and Police protection. Schools, parks, and public facilities will not be affected by this project.

**2.1.16 Recreation**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) and b) No Impact**

Alpine Road UC (L/R) Bridges

There are no existing neighborhood or regional parks in the project area. Alpine Trail is a recreational trail with designated use for bikers and hikers and is within the project area at this location. This project will not increase the use of Alpine Trail.

The existing Alpine Trail is managed by the County of San Mateo Parks Department and is designated for biking and hiking use. It will be temporarily closed within the project footprint during construction at Bent 3. The continuity of Alpine Trail will be maintained during construction with a temporary detour path. The temporary detour path for Alpine Trail will be 5 feet wide and will be relocated to the existing designated bike lane on EB Alpine Road. This path will be open to pedestrians in either direction from Alpine Trail and bicyclists that walk their bicycles. Access from the existing Alpine Trail to the temporary detour path will be fully compliant with the 1990 Americans with Disability Act (ADA) and its revised 2010 regulations for Title II and Title III. In addition, the detour path will include a temporary curb ramp from the south end of Alpine Trail in the project footprint to the temporary detour path. The temporary curb ramp area will be closed off to Alpine Road traffic with K-rail for ADA purposes, to protect anyone with visual disabilities and prevent them from entering the roadway. The end of the K-rail will be treated with crash cushions. K-Rail will also be placed between the Alpine Road EB edge of traveled way (ETW) and 5-foot temporary detour path, from the south end of the detour path at the temporary curb ramp for the entire length of the detour path to the

north end, where an existing crosswalk connects the temporary path to Alpine Trail. K-Rail will be placed on the dirt slope immediately above the temporary detour path, to separate it from the construction work at Bent 3.

Bicyclists may share the temporary detour path with pedestrians if they dismount and walk their bicycles until they reunite with Alpine Trail. Bicyclists will have a temporary 5-foot bike line on Alpine Road, adjacent to the K-rail of the temporary detour path, in the EB direction of travel only. A temporary line of white tape will delineate the temporary 5-foot bike lane. Travel lanes will be temporarily reduced to 11 feet. Appropriate signage will be placed within the project limits, advising vehicles to give bicyclists space.

Caltrans staff began coordination with the Silicon Valley Bicycle Coalition (SVBC) and the San Mateo County Bicycle and Pedestrian Advisory Committee (SMCBPAC) as early as November 28, 2018. The intent of the coordination was to receive feedback on the Alpine Trail temporary detour path. The temporary detour path design was a result of input from the SVBC and a Caltrans presentation to SMCBPAC on December 12, 2018. Please see a visual simulation of the temporary detour path on Alpine Road on the following page. Alpine Trail and the roadway will be returned to existing conditions after project construction.

The dedicated WB bicycle facility on Alpine Road will not be affected by this project.



**Photo 12:** Simulation of the temporary detour path as described above for Alpine Trail during construction.

### Sand Hill Road OC (South and North) Bridges and I-280/I-380 Separation Bridge

There are no existing neighborhood parks, regional parks, or other recreational areas near the project area. No recreational facilities are proposed as a part of this project, and the project will not require the construction of new recreational facilities or expansion of existing recreational facilities.

#### Conclusion

There are no existing neighborhood or regional parks at any of the three project locations. Proposed activities to retrofit the bridge columns at the Alpine Road UC (L/R) Bridges location are not anticipated to increase use of the recreational trail, Alpine Trail. The temporary detour path that will be provided during construction at Bent 3 of the Alpine Road UC (L/R) will not have an adverse physical effect on the environment. Alpine Trail and the designated EB Alpine Road bike path will both be restored to their original conditions after construction.

### 2.1.17 Transportation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<p>b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?</p> <p>NOTE: While public agencies may immediately apply Section 15064.3 of the updated Guidelines, statewide application is not required until July 1, 2020. In addition, uniform statewide guidance for Caltrans projects is still under development. The PDT may determine the appropriate metric to use to analyze traffic impacts pursuant to section 15064.3(b). Projects for which an NOP will be issued any time after December 28<sup>th</sup>, 2018 should consider including an analysis of VMT/induced demand if the project has the potential to increase VMT (see page 20 of OPR's updated SB 743 Technical Advisory), particularly if the project will be approved after July 2020.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## **a) No Impact**

### Alpine Road UC (L/R)

At the Alpine Road UC (L/R) Bridges location there is a dedicated bicycle facility in both the EB and WB directions on Alpine Road, as well as Alpine Trail, which is designated for hikers and bicyclists. As discussed under section XVI. Recreation, a temporary detour path will be provided for Alpine Trail, and the continuity of the trail will be maintained throughout project construction. Bicyclists will be able to use EB Alpine Road by sharing the far-right lane with vehicles or walking their bicycles on the temporary detour path. Continuity for Alpine Trail and the bicycle facility on Alpine Road will be maintained during project construction and there will not be any conflict with circulation system plans.

### Sand Hill Road OC (South and North) Bridges and I-280/I-380 Separation Bridge

There are no dedicated pedestrian, bicycle, or other non-motorized facilities within the footprints of these two project locations, so there is no conflict with any circulation system plans.

### Conclusion

For all three project locations, this project will not conflict with any plans, programs, or policies addressing the circulation system.

## **b), c), and d) No Impact – all project locations**

This project is not inconsistent with CEQA Guidelines section 15064.3, subdivision (b) which relates to induced demand and vehicle miles traveled (VMT). This is not a capacity increasing project and the project will not impact traffic patterns or result in inadequate emergency access. The project will not substantially increase hazards due to a geometric design feature or incompatible uses.



**2.1.18 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:

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) and b) No Impact – all project locations**

Caltrans contacted the Native American Heritage Commission (NAHC) on August 7, 2018 requesting a review of their sacred lands file for any historically significant resources within or near the project area. The search yielded negative results. Also requested was a list of Native American individuals and organizations with a potential interest in the project area. Letters providing project information and requesting input were sent to each individual and organization on August 15, 2018. Follow up emails were sent on October 30, 2018. On November 6, 2018, Caltrans Archaeologist Lindsay Hartman spoke with Mr. Galvan, Chairperson for the Ohlone Indian Tribe, by email discussing which studies had been completed. Mr. Galvan will receive a copy of the

final studies. Voice mail messages were left for other interested parties on December 12, 2018. No other responses have been received.

None of the project locations are listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources.

### 2.1.19 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### a), b), c), d), and e) No Impact – all project locations

The scope of this project is to seismically retrofit five bridges. Seismic retrofit methods include steel column casings and other work detailed under Project Description. This project will not require or result in the relocation or construction of any utilities or service systems. The project is not expected to produce solid waste other than temporary

debris related to construction, which will have no effect on the environment. This project at all locations will comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

**2.1.20 Wildfire**

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

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a), b), c), and d) No Impact – all project locations**

The proposed project is not located in very high fire hazard severity zones and no wildfire impacts are expected for this project.

**2.1.21 Mandatory Findings of Significance**

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**a) Less Than Significant with Mitigation**

The proposed project will result in temporary impacts to Steelhead and the CRLF at the Alpine Road UC (L/R) Bridges location. The temporary impacts would be caused by the temporary creek diversion system, removal of gabion mattress, removal of weirs, and dewatering in the creek, as well as the removal of trees and vegetation to pave the temporary access road. Once project construction is complete, there would no longer be

an adverse impact to either species. There would be a net improvement to the Steelhead habitat because the fish passage barrier will be removed and Los Trancos Creek will be rebuilt. With the proposed mitigation measures (please see Appendix C: Avoidance, Minimization, and Mitigation Measures) the impacts to steelhead and CRLF will be reduced to a level of insignificance.

There are no anticipated environmental impacts at the Sand Hill Road OC (South and North) Bridges location or the I-280/I-380 Separation Bridge location.

**b) No Impact**

A cumulative impact analysis focuses only on those resources that are significantly impacted by the project. Within the project vicinity, the completed I-280 Upgrade Existing Metal Beam Guard Rails to Current Standards (EA 1G830) and the proposed I-280 Gore Paving (EA 0J670) and I-280 Pavement Rehabilitation (EA 3J320) projects were identified. These projects, along with all other past, present, and future projects went through or are required to go through environmental review to identify and mitigate for any potential significant impacts. All projects have followed or will follow AMMs including standard Caltrans BMPs, which will protect any surrounding habitat and water quality. Caltrans does not anticipate any cumulative effects from this proposed project.

**c) No Impact**

This project does not have environmental effects that would cause substantial adverse effects on human beings.

## Appendix A: References

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## **Appendix B: List of Preparers**

### Caltrans District 4

Stefan Galvez-Abadia	Caltrans District 4 Office of Environmental Analysis
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Lindsay Hartman	Caltrans District 4 Office of Cultural Resource Studies
Helen Blackmore	Caltrans District 4 Office of Cultural Resource Studies
Charles Palmer	Caltrans District 4 Office of Cultural Resource Studies
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Scott Bottari	Caltrans District 4 Office of Landscape Architecture
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Sam Aguilar	Caltrans District 4 Office of Biological Sciences and Permits
Sergio Ruiz	Caltrans District 4 Office of Transit and Community Planning
Elliot Goodrich	Caltrans District 4 Office of Transit and Community Planning
Kevin Krewson	Caltrans District 4 Office of Environmental Engineering (Air/Noise)
Bahram Sazegar	Caltrans District 4 Office of Environmental Engineering (Air/Noise)
Norman Gonsalves	Caltrans District 4 Office of Environmental Engineering (Water Quality)
Trang Hoang	Caltrans District 4 Office of Environmental Engineering (Water Quality)
Keith Fang (Hazardous Waste)	Caltrans District 4 Office of Environmental Engineering
Khai Leong	Caltrans District 4 Office of Hydraulic Engineering
Eric Wong	Caltrans District 4 Office of Hydraulic Engineering

Chris Riden	Caltrans District 4 Office of Geotechnical Design – West
Stewart Lee	Caltrans District 4 Office of Design – SHOPP
Humayoun Kabir	Caltrans District 4 Office of Design – SHOPP
Nandini Shridhar	Caltrans District 4 Office of Project Management

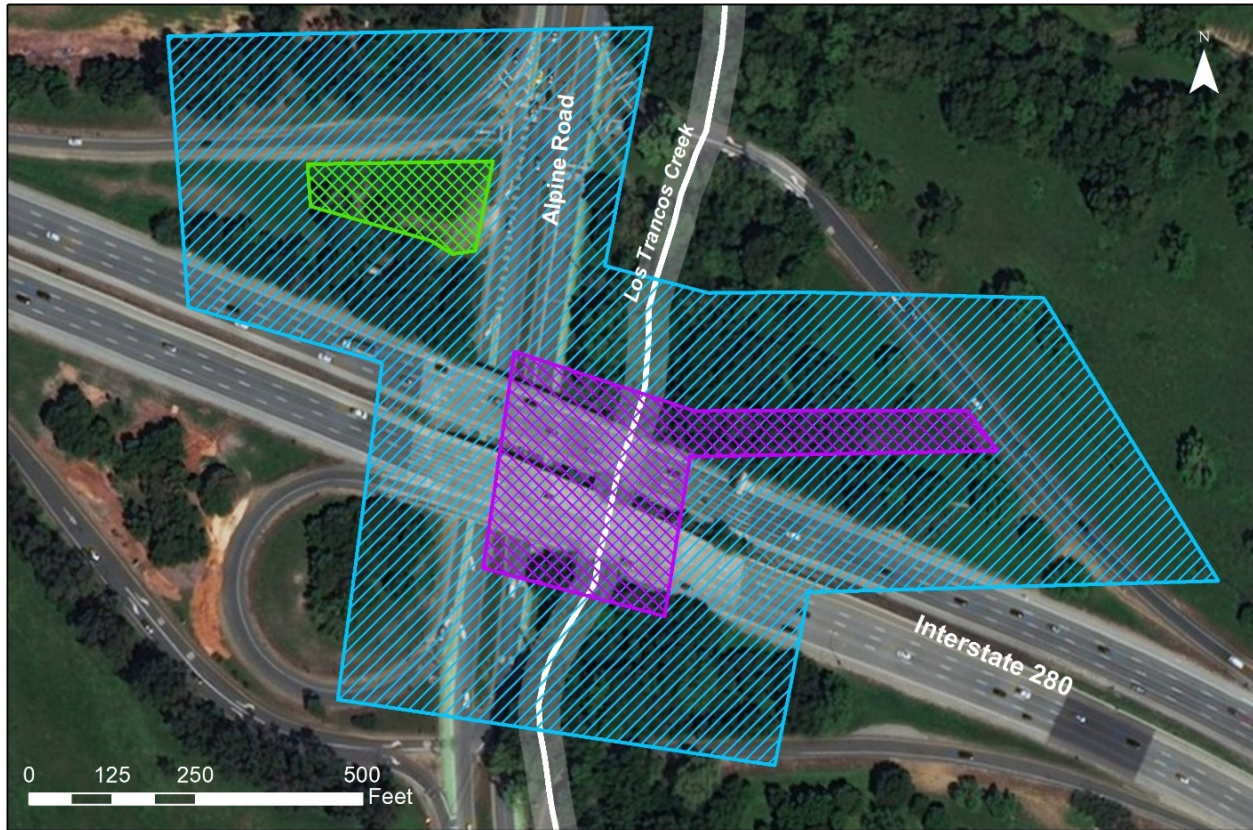
## Appendix C: Avoidance, Minimization and Mitigation Measures

Caltrans has incorporated several avoidance, minimization and mitigation measures into the proposed project to avoid and minimize the impacts of this project on environmental resources. The proposed avoidance, minimization and mitigation measures are as follows:


Protected or Regulated Resource	Proposed Avoidance, Minimization and Mitigation Measures
<p style="text-align: center;"><b>General Avoidance and Minimization Measures</b></p>	<ol style="list-style-type: none"> <li>1. A temporary access road will be constructed to access the columns at the creek.</li> <li>2. Creek material such as gabion mattress will be removed over a total distance of 200 feet for construction and will be replaced once stabilization is completed.</li> <li>3. Green tape will be placed adjacent to the temporary detour path to delineate 5 feet for bicyclists sharing the 16-foot lane with vehicles.</li> <li>4. Appropriate signage will be provided to advise motorists to watch for bicyclists and share the road.</li> <li>5. <b>Inclement Weather Restriction:</b> No work will occur during or within 24 hours following a rain event exceeding 0.2-inch as forecasted by: <ul style="list-style-type: none"> <li>• For the Alpine Road location: the National Oceanic and Atmospheric Administration National Weather Service for Palo Alto, CA (C7418) base station available at <a href="https://www.wrh.noaa.gov/mesowest/timeseries.php?sid=C7418&amp;table=1&amp;banner=off">https://www.wrh.noaa.gov/mesowest/timeseries.php?sid=C7418&amp;table=1&amp;banner=off</a>. USFWS/CDFW approval to continue work during or within 24 hours of a rain event will be considered on a case-by-case basis.</li> </ul> </li> </ol>
<p style="text-align: center;"><b>Fish</b></p>	<p>11. Electrofishing may be utilized when other standard fish capture methods are likely to be ineffective or other methods fail to remove all fish from the site; the project biologist must have appropriate training and experience in electrofishing techniques and all electrofishing must be conducted according to the NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act. [Available at: <a href="http://swr.nmfs.noaa.gov/sr/Electrofishing_Guidelines.pdf">http://swr.nmfs.noaa.gov/sr/Electrofishing_Guidelines.pdf</a>].</p>

<b>Protected or Regulated Resource</b>	<b>Proposed Avoidance, Minimization and Mitigation Measures</b>
<b>Water Quality/ Erosion Control BMP's</b>	<ul style="list-style-type: none"> <li>• Caltrans will apply the requirements from the existing National Pollutant Discharge Elimination System permit and the Construction General Permit, along with standard BMPs for construction site management, to address hazardous waste from construction activities.</li> <li>• A Stormwater Pollution Prevention Plan (SWPPP) will be required before project construction because the DSA is over 1 acre.</li> <li>• Full capture devices for the I-280/I-380 Separation Bridge location will be reviewed during the design phase.</li> </ul>
<b>Aesthetics</b>	<ul style="list-style-type: none"> <li>• Finish colors for the steel column casings will be evaluated for aesthetics and performance.</li> </ul>

## Appendix D: Biology Figures



**Legend**

-  Potential Staging
-  Alpine Road Footprint
-  Alpine Road BSA

**Alpine Road Project Footprint  
and Biological Study Area**

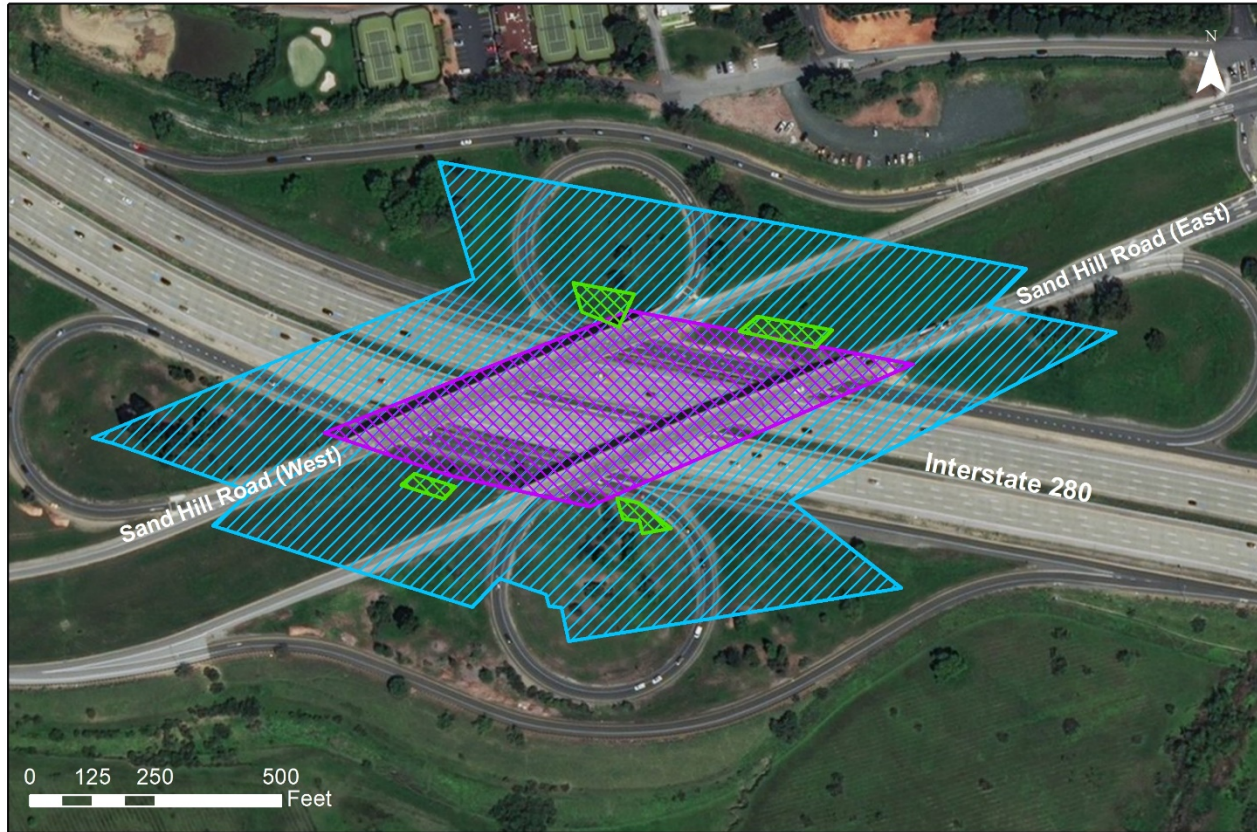
Seismic Restoration at Six Bridges  
 SM-280-PM-0.01-20.97  
 EFIS: 04-1600-0028



**Figure 12: Alpine Road UC (L/R) Bridges BSA**

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**Legend**

-  Potential Staging
-  Sand Hill Footprint
-  Sand Hill BSA

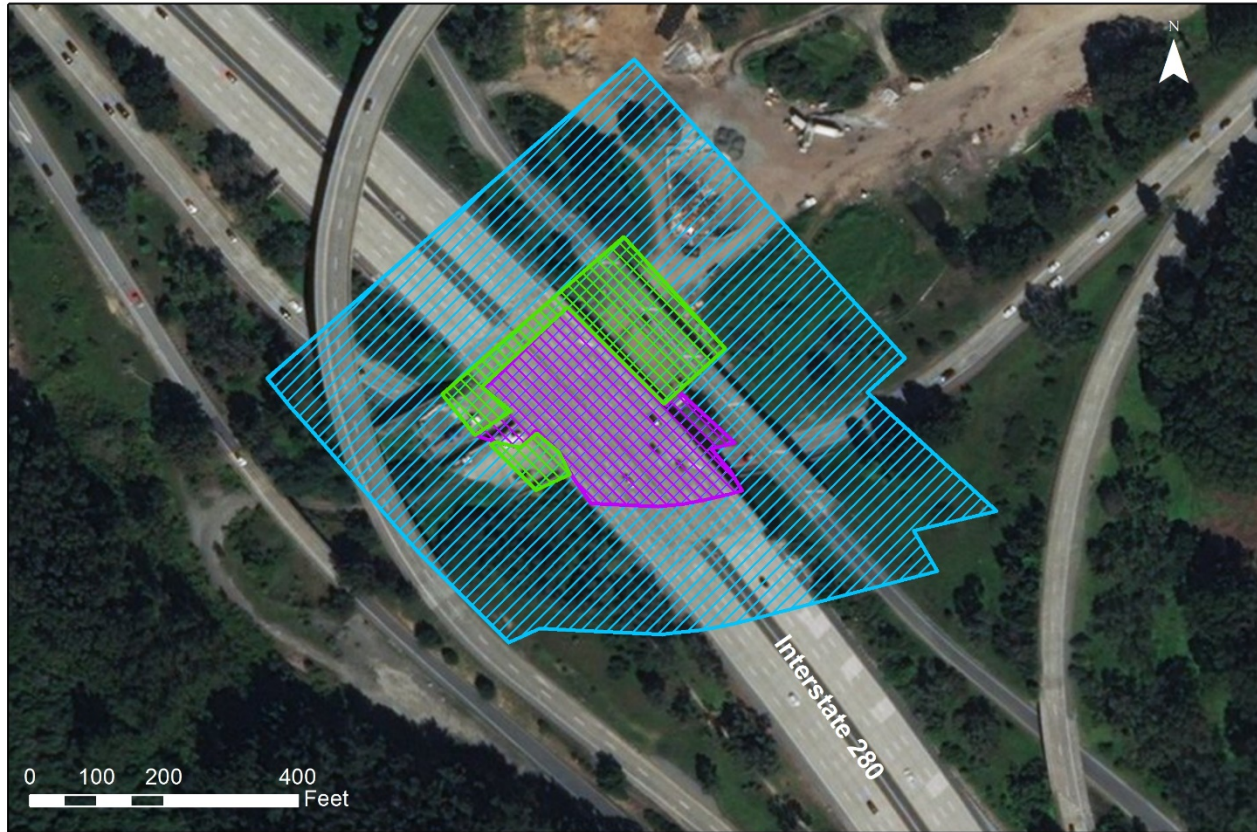
**Sand Hill Road Project Footprint  
and Biological Study Area**

Seismic Restoration at Six Bridges  
SM-280-PM-0.01-20.97  
EFIS: 04-1600-0028



**Figure 13: Sand Hill Road OC (South and North) Bridges BSA**

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**Legend**

-  Potential Staging
-  280/380 Separation Footprint
-  280/380 Separation BSA

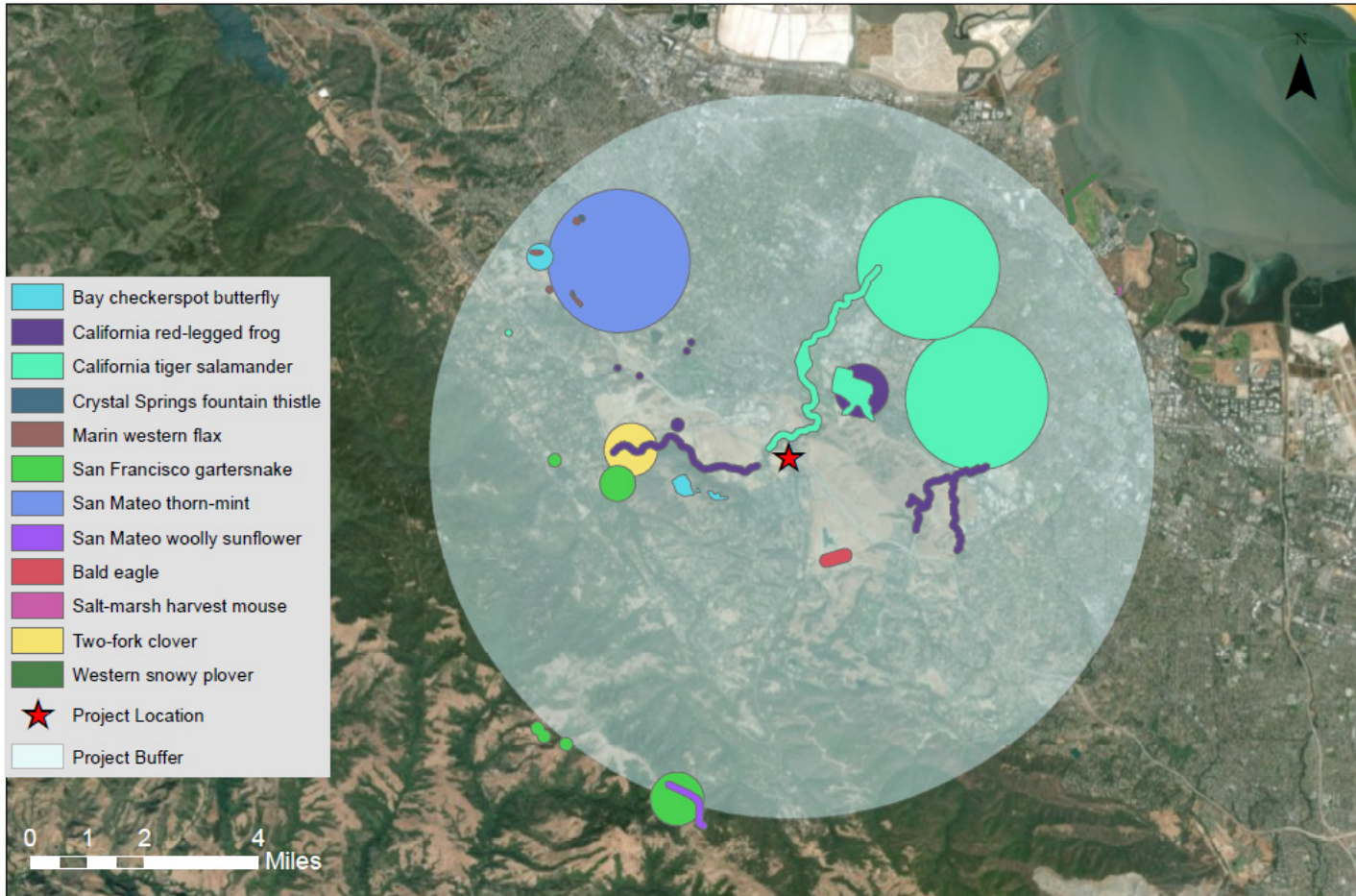
**280/380 Separation Project Footprint  
and Biological Study Area**

Seismic Restoration at Six Bridges  
SM-280-PM-0.01-20.97  
EFIS: 04-1600-0028



**Figure 14: I-280/I-380 Separation Bridge BSA**

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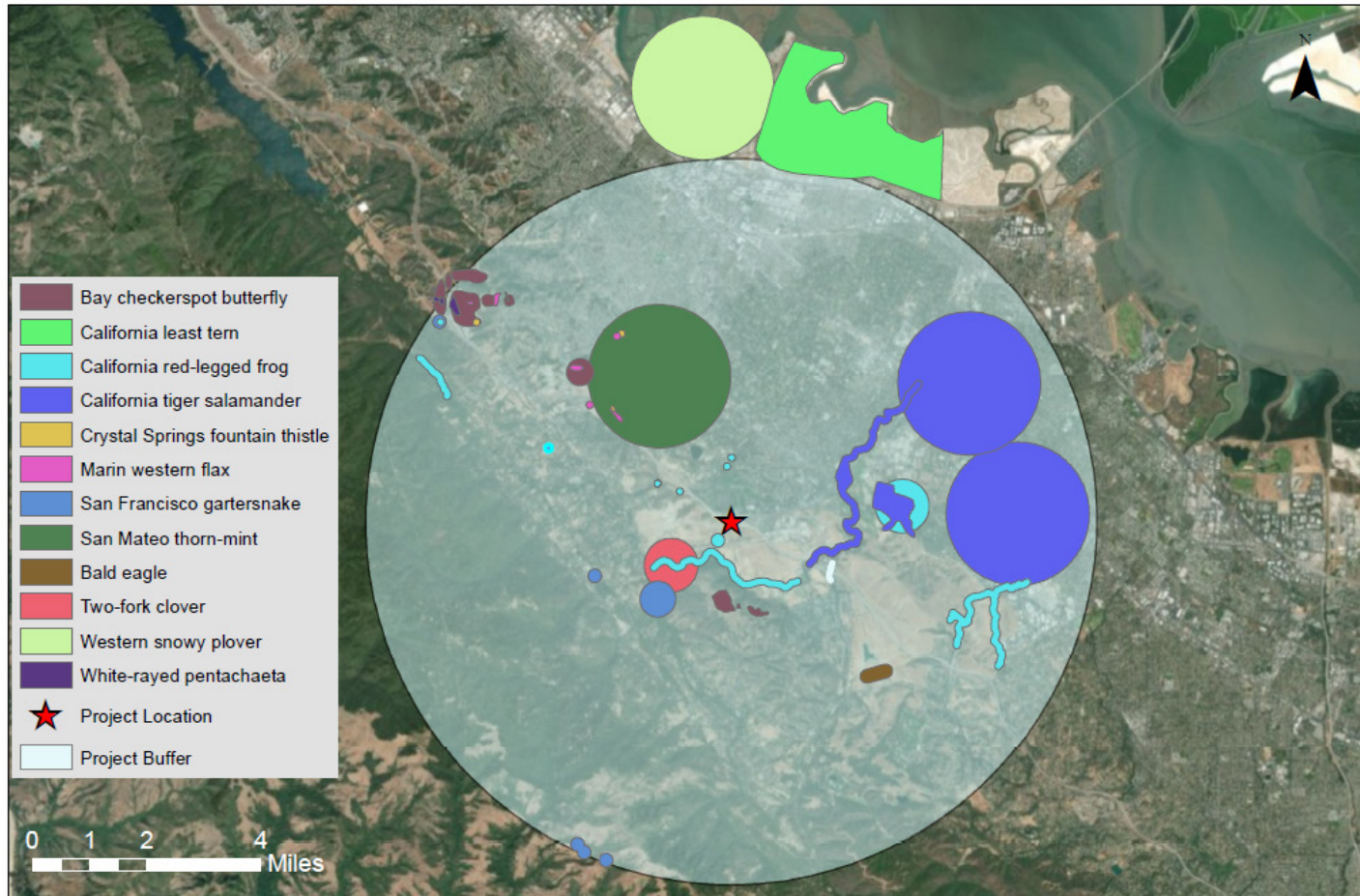
**Listed CNDDDB Occurences at Alpine Road Location (5mi Buffer)**

Seismic Restoration at Six Bridges  
 SM-280-PM-0.01-20.97  
 EFIS: 04-1600-0028



**Figure 15: CNDDDB Occurrences at Alpine Road UC (L/R) Bridges**

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**Listed CNDDDB Occurrences at Sand Hill Road Location (5mi Buffer)**

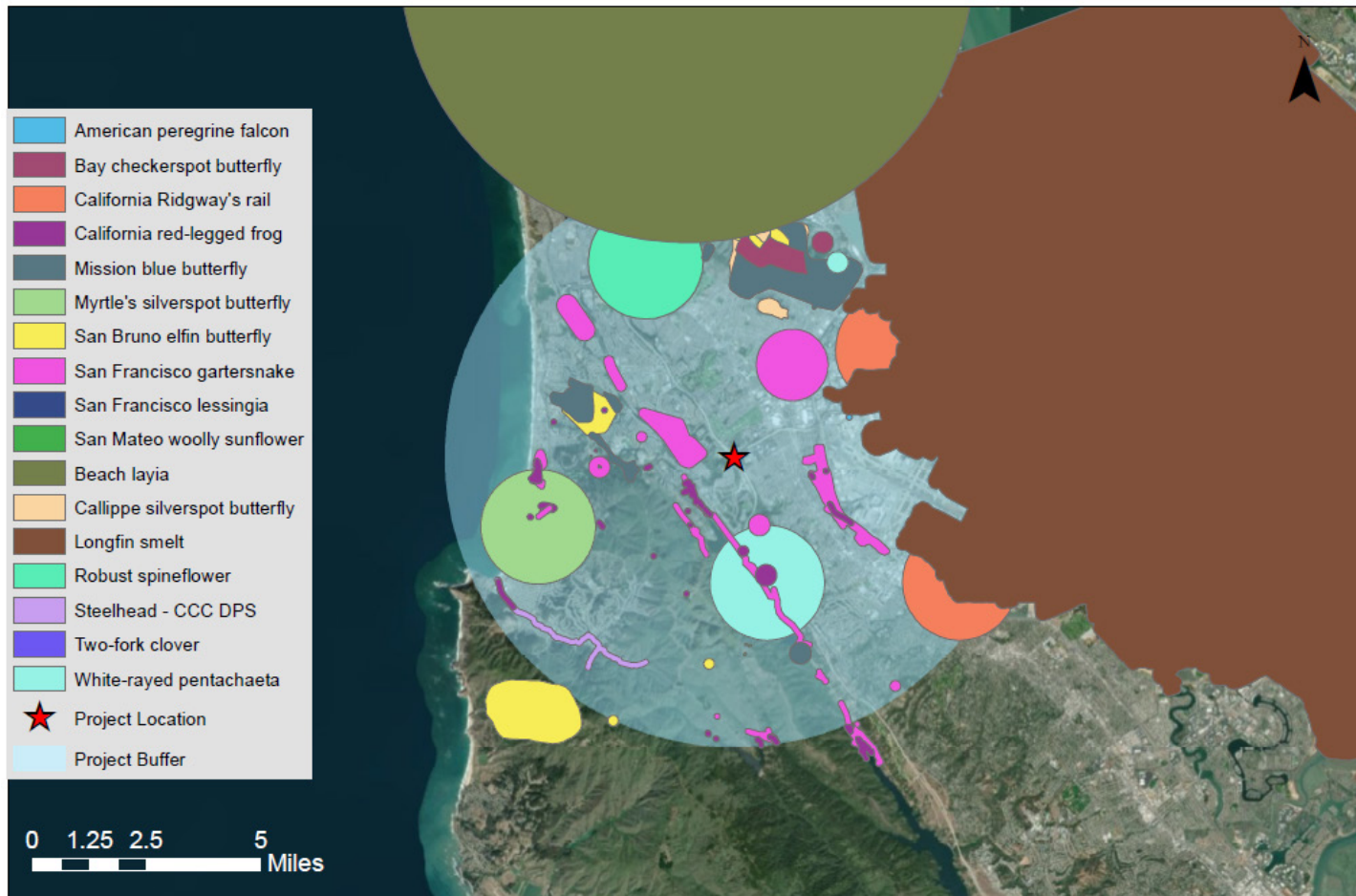
Seismic Restoration at Six Bridges  
 SM-280-PM-0.01-20.97  
 EFIS: 04-1600-0028



**Figure 16:** CNDDDB Occurrences at Sand Hill Road OC (South and North) Bridges

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**Listed CNDDDB Occurrences at 280/380  
Separation Location (5mi Buffer)**

Seismic Restoration at Six Bridges  
SM-280-PM-0.01-20.97  
EFIS: 04-1600-0028



**Figure 17: CNDDDB Occurrences at I-280/I-380 Separation Bridge**

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**Table 3: Wildlife Species List**

<b>Common Name (Scientific name)</b>	<b>Federal Status</b>	<b>Habitat</b>	<b>Habitat Presence</b>	<b>Potential to Occur</b>	<b>Effect Determination</b>
<b>Birds</b>					
California clapper rail ( <i>Rallus longirostris obsoletus</i> )	Endangered	Nests and forages in tidal marshes and will occur in upland transitional habitats during high tides or flooding events when marshes are inundated.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
California least tern ( <i>Sterna antillarum browni</i> )	Endangered	Nests in old growth forests and forages in coastal waters.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
Marbled Murrelet ( <i>Brachyramphus marmoratus</i> )	Threatened	Marine subtidal and pelagic habits from Oregon to Point Sal, Santa Barbara. Uses stands of mature Douglas fir and redwoods up to 40 miles inland for nesting.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
Short-tailed Albatross ( <i>Phoebastria (=Diomedea) albatrus</i> )	Threatened	Nest on sloping grassy terraces on two rugged, isolated, windswept islands in Japan. After breeding, short-tailed albatrosses move to feeding areas in the North Pacific.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect.

Western Snowy Plover ( <i>Charadrius nivosus nivosus</i> )	Threatened	Found on sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
Yellow-billed Cuckoo ( <i>Coccyzus americanus</i> )	Threatened	Nesting habitat is cottonwood/willow riparian forest. Occurs only along the upper Sacramento Valley portion of the Sacramento River, the Feather River in Sutter Co., the south fork of the Kern River in Kern Co., and along the Santa Ana, Amargos, and lower Colorado Rivers.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
<b>Mammals</b>					
Salt Marsh Harvest Mouse ( <i>Reithrodontomys raviventris</i> )	Endangered	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Salicornia is the primary habitat. Does not burrow, but builds loosely organized nests. Requires higher areas for flood escape.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect

Southern Sea Otter ( <i>Enhydra lutris nereis</i> )	Threatened	Nearshore marine environments from about Ano Nuevo, San Mateo County. to Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.
Blue Whale ( <i>Balaenoptera musculus</i> )	Endangered	Blue whales are found worldwide, from sub-polar to sub-tropical latitudes. Poleward movements in spring allow the whales to take advantage of high zooplankton production in summer. Although blue whales are found in coastal waters, they are thought to occur generally more offshore than other whales.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.
Fin Whale ( <i>Balaenoptera physalus</i> )	Endangered	Fin whales are found in deep, offshore waters of all major oceans, primarily in temperate to polar latitudes, and less commonly in the tropics. They occur year-round in a wide range of latitudes and longitudes, but the density of individuals in any one area changes seasonally.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.

<p>Humpback Whale (<i>Megaptera novaeangliae</i>)</p>	<p>Endangered</p>	<p>During migration, humpbacks stay near the surface of the ocean. While feeding and calving, humpbacks prefer shallow waters. During calving, humpbacks are usually found in the warmest waters available at that latitude. Calving grounds are commonly near offshore reef systems, islands, or continental shores. Humpback feeding grounds are in cold, productive coastal waters</p>	<p>Absent</p>	<p><b>No:</b> The Action will not occur in marine habitat.</p>	<p>No effect.</p>
<p>North Pacific Right Whale (<i>Eubalaena japonica</i>)</p>	<p>Endangered</p>	<p>Most known right whale nursery areas are in shallow, coastal waters. Right whales have occurred historically in all the world's oceans from temperate to subpolar latitudes. They primarily occur in coastal or shelf waters, although movements over deep waters are known. For much of the year, their distribution is strongly correlated to the distribution of their prey. During winter, right whales occur in lower latitudes and coastal waters where calving takes place. . Right whales migrate to higher latitudes during spring and summer.</p>	<p>Absent</p>	<p><b>No:</b> The Action will not occur in marine habitat.</p>	<p>No effect.</p>

Sei Whale ( <i>Balaenoptera borealis</i> )	Endangered	Sei whales prefer subtropical to subpolar waters on the continental shelf edge and slope worldwide. They are usually observed in deeper waters of oceanic areas far from the coastline.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.
Southern Resident Killer Whale ( <i>Orcinus orca</i> )	Endangered	Killer whales are most abundant in colder waters, including Antarctica, Norway, and Alaska. However, killer whales can also be abundant in temperate waters. Killer whales also occur, though at lower densities, in tropical, subtropical, and offshore waters.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.
Sperm Whale ( <i>Physeter macrocephalus</i> )	Endangered	Sperm whales are uncommon in waters less than 984 feet deep. Immature males will stay with females in tropical and subtropical waters until they begin to migrate towards the poles, between ages 4 and 21 years old. Older, larger males are generally found near the edge of pack ice in both hemispheres. On occasion, these males will return to the warm water breeding area.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.

Guadalupe Fur Seal ( <i>Arctocephalus townsendi</i> )	Threatened	Guadalupe fur seals reside in the tropical waters of the Southern California/ Mexico region. During breeding season, they are found in coastal rocky habitats and caves. Little is known about their whereabouts during the non-breeding season.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.
<b>Amphibians</b>					
California Red-legged Frog ( <i>Rana draytonii</i> )	Threatened	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 estivation habitat.	Present	<b>Yes:</b> The Alpine Road location contains suitable habitat that may be utilized by CRLF.	May affect, likely to adversely affect.
California Tiger Salamander ( <i>Ambystoma californiense</i> )	Threatened	Cismontane woodland, meadow and seep, riparian woodland, valley and foothill grassland, vernal pool, wetland. Needs underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect.



<b>Fish</b>					
Coho Central California Coast ESU ( <i>Oncorhynchus kisutch</i> )	Endangered	Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen. Federal listing refers to populations between Punta Gorda and San Lorenzo River.	Absent	<b>No:</b> The Action will not occur in known Coho aquatic habitat.	No effect.
Delta Smelt ( <i>Hypomesus transpacificus</i> )	Candidate	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	Absent	<b>No:</b> The Action will not occur in suitable aquatic habitat.	No effect.
Green Sturgeon Southern DPS ( <i>Acipenser medirostris</i> )	Threatened	Spawns at temps between 46 to 57 degrees Fahrenheit. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity Rivers.	Absent	<b>No:</b> The Action will not occur in suitable aquatic habitat.	No effect.

Steelhead Central California Coast DPS ( <i>Oncorhynchus mykiss</i> )	Threatened	Sufficient cool streamflow over good, clean pea- to apple-sized gravels, good streambed hydraulic configuration (usually at head of riffles) of sufficient depth, and with escape cover (usually a deep pool with cover) nearby. From Russian River, south to Soquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	Present	<b>Yes:</b> Los Trancos Creek is known to be utilized by steelhead.	May affect, likely to adversely affect.
Tidewater Goby ( <i>Eucyclogobius newberryi</i> )	Endangered	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River, Humboldt County. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Absent	<b>No:</b> The Action will not occur in suitable aquatic habitat.	No effect.
<b>Reptiles</b>					
East Pacific Green Sea Turtle ( <i>Chelonia mydas</i> )	Threatened	Marine species that needs adequate supply of seagrasses and algae. The species primarily uses three types of habitat: beaches for nesting open ocean convergence zones, and coastal areas for "benthic" feeding.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.

Leatherback Sea Turtle ( <i>Dermochelys coriacea</i> )	Endangered	Mostly pelagic , but also forage in coastal waters. Mate in the waters adjacent to nesting beaches and along migratory corridors. After nesting, female leatherbacks migrate from tropical waters to more temperate latitudes.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.
North Pacific Loggerhead Sea Turtle ( <i>Caretta caretta</i> )	Endangered	Loggerheads nest on ocean beaches, generally preferring high energy, relatively narrow, steeply sloped, coarse-grained beaches. Hatchling loggerheads take up residence in areas where surface waters converge to form local downwellings, characterized by accumulations of floating material, such as seaweed. Juveniles migrate to nearshore coastal areas (neritic zone) and continue maturing until adulthood. Predominate foraging areas are found throughout the relatively shallow continental shelf waters of North America.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.
Olive Ridley Sea Turtle ( <i>Lepidochelys olivacea</i> )	Threatened	Mostly pelagic, but has been known to inhabit coastal areas, including bays and estuaries.	Absent	<b>No:</b> The Action will not occur in marine habitat.	No effect.

San Francisco Gartersnake ( <i>Thamnophis sirtalis tetrataenia</i> )	Endangered	Freshwater marshes, ponds, and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect.
<b>Invertebrates</b>					
Black Abalone ( <i>Haliotis cracherodii</i> )	Endangered	Marine intertidal and splash zone communities	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
<b>Crustaceans</b>					
Vernal Pool Tadpole Shrimp ( <i>Lepidurus packardi</i> )	Endangered	Vernal pools and swales in valley grassland in the Central Valley from Shasta County to Merced County. It also known to occur in the San Francisco bay area at the Don Edwards San Francisco Bay National Wildlife Refuge.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
<b>Insects</b>					
Bay Checkerspot Butterfly ( <i>Euphydryas editha bayensis</i> )	Threatened	Coastal dunes, and valley and foothill grassland. Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. <i>Plantago erecta</i> is the primary host plant, and <i>Orthocarpus densiflorus</i> and <i>O. purpurscens</i> are the secondary host plants.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect

Callippe Silverspot Butterfly ( <i>Speyeria callippe callippe</i> )	Endangered	Open hillsides where wild pansy ( <i>Viola pendunculata</i> ) grows. Larvae feed on Johnny jump-up plants, whereas adults feed on native mints and non-native thistles.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
Mission Blue Butterfly ( <i>Plebejus icarioides missionensis</i> )	Endangered	Hills and ridgetops, as well as slopes with southern exposure with caterpillar food plants, <i>Lupinus spp.</i>	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
Myrtle's Silverspot Butterfly ( <i>Speyeria zerene myrtleae</i> )	Endangered	Coastal terrace prairie, coastal bluff scrub, and associated non-native grassland habitats where the larval foodplant, <i>Viola sp.</i> , occurs.	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect
San Bruno Elfin Butterfly ( <i>Callophrys mossii bayensis</i> )	Endangered	Coastal, mountainous areas with grassy ground cover, mainly near San Bruno Mountain, San Mateo County. Colonies are located on steep, north-facing slopes within the fog belt. Larval host plant is <i>Sedum spathulifolium</i> .	Absent	<b>No:</b> The footprint does not contain suitable habitat.	No effect

**Table 4: Plant Species List**

<b>Common Name (Scientific Name)</b>	<b>Rank Fed/State</b>	<b>CA Rare Plant Rank</b>	<b>Habitat Description</b>	<b>Habitat Presence</b>	<b>Potential to Occur</b>	<b>Effect Determination</b>
Alkali milk-vetch ( <i>Astragalus tener</i> <i>var. tener</i> )	-	1B.2	Occupies alkali playa, valley and foothill grassland, vernal pools. Prefers low ground, alkali flats, and flooded lands.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Arcuate bush- mallow ( <i>Malacothamnus</i> <i>arcuatus</i> )	-	1B.2	Occurs on gravelly alluvium in chaparral, and cismontane woodland.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Bent-flowered fiddleneck ( <i>Amsinckia</i> <i>lunaris</i> )	-	1B.2	Occupies cismontane woodland, valley and foothill grassland, coastal bluff scrub.	Present	Low potential to occur. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and invasive species. Therefore, it is unlikely to support rare plants.	-
Blue coast gilia ( <i>Gilia capitata</i> <i>ssp.</i> <i>chamissonis</i> )	-	1B.1	Coastal dunes, Coastal scrub	Absent	No potential to occur. No suitable habitat is present within the BSA.	-

California seablite ( <i>Suaeda californica</i> )	FE/-	1B.1	Margins of coastal salt marshes and swamps.	Absent	No potential to occur. No suitable habitat is present within the BSA.	No Effect
Caper-fruited tropidocarpum ( <i>Tropidocarpum capparideum</i> )	-	1B.1	Occupies valley and foothill grassland (alkaline clay).	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Chaparral ragwort ( <i>Senecio aphanactis</i> )	-	2B.2	Chaparral, Cismontane woodland, Coastal scrub	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Choris' popcornflower ( <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> )	-	1B.2	Occupies mesic areas in chaparral, coastal prairie, and coastal scrub.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Coastal triquetrella ( <i>Triquetrella californica</i> )	-	1B.2	Coastal bluff scrub, Coastal scrub	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Compact cobwebby thistle ( <i>Cirsium occidentale</i> var. <i>compactum</i> )	-	1B.2	Chaparral, Coastal dunes, Coastal prairie, Coastal scrub	Absent	No potential to occur. No suitable habitat is present within the BSA.	-

Congdon's tarplant ( <i>Centromadia parryi</i> ssp. <i>congdonii</i> )	-	1B.1	Valley and foothill grassland (alkaline)		No potential to occur. No suitable habitat is present within the BSA.	-
Congested-headed hayfield tarplant ( <i>Hemizonia congesta</i> ssp. <i>congesta</i> )	-	1B.2	Valley and foothill grassland	Present	Low potential to occur. Project is outside of known range. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and invasive species. Therefore, it is unlikely to support rare plants.	-
Crystal Springs fountain thistle ( <i>Cirsium fontinale</i> var. <i>fontinale</i> )	FE/SE	1B.1	Occurs in serpentinite seeps in chaparral (openings), cismontane woodland, meadows, and valley/foothill grassland.	Absent	No potential to occur. No suitable habitat is present within the BSA.	No Effect
Dark-eyed gilia ( <i>Gilia millefoliata</i> )	-	1B.2	Coastal dunes	Absent	No potential to occur. No suitable habitat is present within the BSA.	-



Davidson's bush-mallow ( <i>Malacothamnus davidsonii</i> )	-	1B.2	Occurs on sandy washes in chaparral, cismontane woodland, coastal scrub, and riparian woodland.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Diablo helianthella ( <i>Helianthella castanea</i> )	-	1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland	Present	Low potential to occur. Project is outside of known range. Riparian woodland is present at the Alpine Road location. However, there are no CNDDDB occurrences within five miles.	-
Fragrant fritillary ( <i>Fritillaria liliacea</i> )	-	1B.2	Occurs in cismontane woodland, coastal prairie, coastal scrub, and valley/foothill grassland. Often on serpentine. Various soils reported, though usually on clay in grassland.	Present	Low potential to occur. No serpentinite occurs within the BSA. Extremely marginal grassland habitat is present at the Sand Hill Road location, but is characterized by disturbance and invasive species, and is unlikely to support rare plant species.	-

Franciscan manzanita ( <i>Arctostaphylos franciscana</i> )	FE/-	1B.1	Coastal scrub (serpentinite) and serpentine outcrops in chaparral.	Absent	No potential to occur. No suitable habitat is present within the BSA.	No Effect
Franciscan onion ( <i>Allium peninsulare</i> var. <i>franciscanum</i> )	-	1B.2	Occurs on cismontane woodland, valley and foothill grassland. Prefers clay soils and dry hillsides. Weak affinity to serpentine and sometimes on volcanics.	Present	Low potential to occur. Extremely marginal grassland habitat is present at the Sand Hill Road location, but lacks clay or serpentine and is characterized by disturbance and invasive species, and is unlikely to support rare plant species.	-
Franciscan thistle ( <i>Cirsium andrewsii</i> )	-	1B.2	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Hickman's Potentilla ( <i>Potentilla hickmanii</i> )	FE	1B.1	Occurs in coastal meadows and freshwater marsh.	Absent	No potential to occur. No suitable habitat is present within the BSA.	No Effect

Hoover's button-celery ( <i>Eryngium aristulatum</i> var. <i>hooveri</i> )	-	1B.1	Occupies vernal pools. Alkaline depressions, vernal pools, roadside ditches and other wet places near the coast.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Jepson's coyote thistle ( <i>Eryngium jepsonii</i> )	-	1B.2	Occupies clay soils in valley/foothill grassland and vernal pools.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Kellogg's horkelia ( <i>Horkelia cuneata</i> var. <i>sericea</i> )	-	1B.1	Closed-cone coniferous forest, Chaparral (maritime), Coastal dunes, Coastal scrub	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Kings Mountain manzanita ( <i>Arctostaphylos regismontana</i> )	-	1B.2	Occupies granitic or sandstone outcrops in broadleafed upland forest, chaparral, and North Coast coniferous forest.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Lost thistle ( <i>Cirsium praeteriens</i> )	-	1A	Habitat unknown, known only from two collections from Palo Alto (last in 1901). Perhaps represents a casual introduction from the Old World.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Marin western flax ( <i>Hesperolinon congestum</i> )	FE/ST	1B.1	Occupies serpentinite in chaparral and valley/foothill grassland.	Absent	No potential to occur. No suitable habitat is present within the BSA.	No Effect

Montara manzanita ( <i>Arctostaphylos montaraensis</i> )	-	1B.2	Chaparral (maritime), Coastal scrub	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Northern curly-leaved monardella ( <i>Monardella sinuata</i> ssp. <i>nigrescens</i> )	-	1B.2	Chaparral (SCR Co.), Coastal dunes, Coastal scrub, Lower montane coniferous forest (SCR Co., ponderosa pine sandhills)	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Pacific manzanita ( <i>Arctostaphylos pacifica</i> )	-/SE	1B.1	Occurs in chaparral and coastal scrub.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Pappose tarplant ( <i>Centromadia parryi</i> ssp. <i>parryi</i> )	-	1B.2	Occurs in chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), and valley and foothill grassland (vernally mesic).	Present	Low potential to occur. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and invasive species. Therefore, it is unlikely to support rare plants.	-
Point Reyes horkelia ( <i>Horkelia marinensis</i> )	-	1B.2	Occurs in coastal dunes, coastal prairie, and coastal scrub.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-

Presidio manzanita ( <i>Arctostaphylos montana ssp. ravenii</i> )	FE/SE	1B.1	Occurs in chaparral, coastal prairie, and coastal scrub.	Absent	No potential to occur. No suitable habitat is present within the BSA.	No Effect
Robust Spineflower ( <i>Chorizanthe robusta var. robusta</i> )	FE/-	1B.1	Occupies sandy or gravelly areas in chaparral (maritime), cismontane woodland (openings), coastal dunes, and coastal scrub. Prefers sandy terraces and bluffs or in loose sand.	Absent	No potential to occur. No suitable habitat is present within the BSA.	No Effect
Round-headed Chinese-houses ( <i>Collinsia corymbosa</i> )	-	1B.2	Occurs in coastal dunes.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
San Bruno Mountain manzanita ( <i>Arctostaphylos imbricata</i> )	-/SE	1B.1	Occurs in chaparral and coastal scrub.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
San Francisco Bay spineflower ( <i>Chorizanthe cuspidata var. cuspidata</i> )	-	1B.2	Occurs in coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-

San Francisco campion ( <i>Silene verecunda</i> ssp. <i>verecunda</i> )	-	1B.2	Occurs in coastal bluff scrub, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland.	Present	Low potential to occur. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and invasive species. Therefore it is unlikely to support rare plants.	-
San Francisco collinsia ( <i>Collinsia multicolor</i> )	-	1B.2	Occurs on decomposed shale (mudstone) mixed with humus; sometimes on serpentine in closed-cone coniferous forest and coastal scrub.	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
San Francisco lessingia ( <i>Lessingia germanorum</i> )	FE/SE	1B.1	Occurs in coastal scrub. On remnant dunes in open sandy soils relatively free of competing plants.	Absent	No potential to occur. No suitable habitat is present within the BSA.	No Effect

San Francisco owl's-clover ( <i>Triphysaria floribunda</i> )	-	1B.2	Occurs in coastal prairie, coastal scrub, valley and foothill grassland	Present	Low potential to occur. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and invasive species. Therefore it is unlikely to support rare plants.	-
San Mateo thorn-mint ( <i>Acanthomintha duttonii</i> )	FE/SE	1B.1	Occupies uncommon serpentinite vertisol clays in chaparral and valley/foothill grassland. Strict endemic to serpentine. Found in relatively open areas.	Absent	No potential to occur. No suitable habitat is present within the BSA.	No Effect
San Mateo woolly sunflower ( <i>Eriophyllum latilobum</i> )	FE	1B.1	Occurs in cismontane woodland, found on and off serpentine.		No potential to occur. No suitable habitat is present within the BSA.	No Effect

Scouler's catchfly ( <i>Silene scouleri</i> <i>ssp. scouleri</i> )	-	2B.2	Occurs in coastal bluff scrub, coastal prairie, valley and foothill grassland	Present	Low potential to occur. Project is outside of known range. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and invasive species. Therefore it is unlikely to support rare plants.	-
Short-leaved evax ( <i>Hesperevax sparsiflora</i> var. <i>brevifolia</i> )	-	1B.2	Occurs in coastal bluff scrub (sandy), Coastal dunes, Coastal prairie	Absent	No potential to occur. No suitable habitat is present within the BSA.	-
Slender-leaved pondweed ( <i>Stuckenia filiformis</i> ssp. <i>alpina</i> )	-	2B.2	Occurs in marshes and swamps (assorted shallow freshwater)	Absent	No potential to occur. No suitable habitat is present within the BSA.	-



Sonoma Sunshine ( <i>Blennosperma bakeri</i> )	FE	1B.1	Found in mesic valley, foothill grassland, and vernal pools.	Present	Low potential to occur. Project is outside of known range. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and invasive species. Therefore it is unlikely to support rare plants.	No Effect
Two-fork clover ( <i>Trifolium amoenum</i> )	FE/-	1B.1	Occurs in coastal bluff scrub, Valley and foothill grassland (sometimes serpentinite)	Present	Low potential to occur. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and invasive species. Therefore it is unlikely to support rare plants.	No Effect
Water star-grass ( <i>Heteranthera dubia</i> )	-	2B.2	Occurs in marshes and swamps (alkaline, still or slow-moving water)	Absent	No potential to occur. No suitable habitat is present within the BSA.	-

Western leatherwood ( <i>Dirca occidentalis</i> )	-	1B.2	Occurs in mesic areas in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, and riparian woodland. On brushy slopes and mesic sites. Mostly in mixed evergreen and foothill woodland communities.	Present	Low potential to occur. Riparian woodland is present at the Alpine Road location. However, there are no CNDDDB occurrences within five miles.	-
White-rayed Pentachaeta ( <i>Pentachaeta bellidiflora</i> )	FE/SE	1B.1	Valley and foothill grassland, cismontane woodland. Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock.	Present	Low potential to occur. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and invasive species. Therefore it is unlikely to support rare plants.	No Effect
Woodland woollythreads ( <i>Monolopia gracilens</i> )	-	1B.2	Occupies chaparral (maritime), cismontane woodland, north coast coniferous forest, and valley /foothill grassland. Prefers grassy sites, in openings with sandy to rocky soils. Often seen on	Present	Low potential to occur. Extremely marginal grassland habitat is present at the Sand Hill road location, characterized by disturbance and	-

			serpentine after burns, but may have only weak affinity to serpentine		invasive species. Therefore it is unlikely to support rare plants.	
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## Appendix E: NMFS Species List

**Table 5: NMFS Species List**

**Aguilar, Samuel@DOT**

**From:** Aguilar, Samuel@DOT  
**Sent:** Monday, November 4, 2019 10:46 AM  
**To:** nmfswcrca.specieslist@noaa.gov  
**Subject:** Caltrans 4J850 Santa Clara 152 Median Barrier Project

Quad Name	San Francisco South	Quad Name	Montara Mountain	Quad Name	San Mateo	Quad Name	Hunters Point	Quad Name	Woodside
Quad Number	37122-F4	Quad Number	37122-E4	Quad Number	37122-E3	Quad Number	37122-F3	Quad Number	37122-D3
<u>ESA Anadromous Fish</u>		<u>ESA Anadromous Fish</u>		<u>ESA Anadromous Fish</u>		<u>ESA Anadromous Fish</u>		<u>ESA Anadromous Fish</u>	
SONCC Coho ESU (T) -		SONCC Coho ESU (T) -		SONCC Coho ESU (T) -		SONCC Coho ESU (T) -		SONCC Coho ESU (T) -	
CCC Coho ESU (E) -	X	CCC Coho ESU (E) -	X	CCC Coho ESU (E) -	X	CCC Coho ESU (E) -		CCC Coho ESU (E) -	X
CC Chinook Salmon ESU (T) -		CC Chinook Salmon ESU (T) -		CC Chinook Salmon ESU (T) -		CC Chinook Salmon ESU (T) -		CC Chinook Salmon ESU (T) -	
CVSR Chinook Salmon ESU (T) -		CVSR Chinook Salmon ESU (T) -		CVSR Chinook Salmon ESU (T) -		CVSR Chinook Salmon ESU (T) -		CVSR Chinook Salmon ESU (T) -	
SRWR Chinook Salmon ESU (E) -		SRWR Chinook Salmon ESU (E) -		SRWR Chinook Salmon ESU (E) -		SRWR Chinook Salmon ESU (E) -		SRWR Chinook Salmon ESU (E) -	
NC Steelhead DPS (T) -		NC Steelhead DPS (T) -		NC Steelhead DPS (T) -		NC Steelhead DPS (T) -		NC Steelhead DPS (T) -	

CCC Steelhead DPS (T) -	X	CCC Steelhead DPS (T) -	X	CCC Steelhead DPS (T) -	X	CCC Steelhead DPS (T) -	X	CCC Steelhead DPS (T) -	X
SCCC Steelhead DPS (T) -		SCCC Steelhead DPS (T) -		SCCC Steelhead DPS (T) -		SCCC Steelhead DPS (T) -		SCCC Steelhead DPS (T) -	
SC Steelhead DPS (E) -		SC Steelhead DPS (E) -		SC Steelhead DPS (E) -		SC Steelhead DPS (E) -		SC Steelhead DPS (E) -	
CCV Steelhead DPS (T) -		CCV Steelhead DPS (T) -		CCV Steelhead DPS (T) -		CCV Steelhead DPS (T) -		CCV Steelhead DPS (T) -	
Eulachon (T) -		Eulachon (T) -		Eulachon (T) -		Eulachon (T) -		Eulachon (T) -	
sDPS Green Sturgeon (T) -	X	sDPS Green Sturgeon (T) -	X	sDPS Green Sturgeon (T) -	X	sDPS Green Sturgeon (T) -	X	sDPS Green Sturgeon (T) -	
<b><u>ESA Anadromous Fish Critical Habitat</u></b>		<b><u>ESA Anadromous Fish Critical Habitat</u></b>		<b><u>ESA Anadromous Fish Critical Habitat</u></b>		<b><u>ESA Anadromous Fish Critical Habitat</u></b>		<b><u>ESA Anadromous Fish Critical Habitat</u></b>	
SONCC Coho Critical Habitat -		SONCC Coho Critical Habitat -		SONCC Coho Critical Habitat -		SONCC Coho Critical Habitat -		SONCC Coho Critical Habitat -	
CCC Coho Critical Habitat -	X	CCC Coho Critical Habitat -	X	CCC Coho Critical Habitat -	X	CCC Coho Critical Habitat -		CCC Coho Critical Habitat -	X
CC Chinook Salmon Critical Habitat -		CC Chinook Salmon Critical Habitat -		CC Chinook Salmon Critical Habitat -		CC Chinook Salmon Critical Habitat -		CC Chinook Salmon Critical Habitat -	

CVSR Chinook Salmon Critical Habitat -	CVSR Chinook Salmon Critical Habitat -	CVSR Chinook Salmon Critical Habitat -	CVSR Chinook Salmon Critical Habitat -	CVSR Chinook Salmon Critical Habitat -			
SRWR Chinook Salmon Critical Habitat -	SRWR Chinook Salmon Critical Habitat -	SRWR Chinook Salmon Critical Habitat -	SRWR Chinook Salmon Critical Habitat -	SRWR Chinook Salmon Critical Habitat -			
NC Steelhead Critical Habitat -	NC Steelhead Critical Habitat -	NC Steelhead Critical Habitat -	NC Steelhead Critical Habitat -	NC Steelhead Critical Habitat -			
CCC Steelhead Critical Habitat -	CCC Steelhead Critical Habitat -	X	CCC Steelhead Critical Habitat -	CCC Steelhead Critical Habitat -	X	CCC Steelhead Critical Habitat -	X
SCCC Steelhead Critical Habitat -	SCCC Steelhead Critical Habitat -		SCCC Steelhead Critical Habitat -	SCCC Steelhead Critical Habitat -		SCCC Steelhead Critical Habitat -	
SC Steelhead Critical Habitat -	SC Steelhead Critical Habitat -		SC Steelhead Critical Habitat -	SC Steelhead Critical Habitat -		SC Steelhead Critical Habitat -	
CCV Steelhead Critical Habitat -	CCV Steelhead Critical Habitat -		CCV Steelhead Critical Habitat -	CCV Steelhead Critical Habitat -		CCV Steelhead Critical Habitat -	
Eulachon Critical Habitat -	Eulachon Critical Habitat -		Eulachon Critical Habitat -	Eulachon Critical Habitat -		Eulachon Critical Habitat -	
sDPS Green Sturgeon Critical Habitat -	X	sDPS Green Sturgeon Critical Habitat -	X	sDPS Green Sturgeon Critical Habitat -	X	sDPS Green Sturgeon Critical Habitat -	X
<b><u>ESA Marine Invertebrates</u></b>	<b><u>ESA Marine Invertebrates</u></b>		<b><u>ESA Marine Invertebrates</u></b>	<b><u>ESA Marine Invertebrates</u></b>		<b><u>ESA Marine Invertebrates</u></b>	<b><u>ESA Marine Invertebrates</u></b>



Range Black Abalone (E) -	X	Range Black Abalone (E) -	X	Range Black Abalone (E) -		Range Black Abalone (E) -		Range Black Abalone (E) -	
Range White Abalone (E) -		Range White Abalone (E) -		Range White Abalone (E) -		Range White Abalone (E) -		Range White Abalone (E) -	
<b><u>ESA Marine Invertebrates Critical Habitat</u></b>		<b><u>ESA Marine Invertebrates Critical Habitat</u></b>		<b><u>ESA Marine Invertebrates Critical Habitat</u></b>		<b><u>ESA Marine Invertebrates Critical Habitat</u></b>		<b><u>ESA Marine Invertebrates Critical Habitat</u></b>	
Black Abalone Critical Habitat - X	X	Black Abalone Critical Habitat - X	X	Black Abalone Critical Habitat -		Black Abalone Critical Habitat -		Black Abalone Critical Habitat -	
<b><u>ESA Sea Turtles</u></b>		<b><u>ESA Sea Turtles</u></b>		<b><u>ESA Sea Turtles</u></b>		<b><u>ESA Sea Turtles</u></b>		<b><u>ESA Sea Turtles</u></b>	
East Pacific Green Sea Turtle (T) -	X	East Pacific Green Sea Turtle (T) -	X	East Pacific Green Sea Turtle (T) -		East Pacific Green Sea Turtle (T) -		East Pacific Green Sea Turtle (T) -	
Olive Ridley Sea Turtle (T/E) -	X	Olive Ridley Sea Turtle (T/E) -	X	Olive Ridley Sea Turtle (T/E) -		Olive Ridley Sea Turtle (T/E) -		Olive Ridley Sea Turtle (T/E) -	
Leatherback Sea Turtle (E) -	X	Leatherback Sea Turtle (E) -	X	Leatherback Sea Turtle (E) -		Leatherback Sea Turtle (E) -		Leatherback Sea Turtle (E) -	
North Pacific Loggerhead Sea Turtle (E) -	X	North Pacific Loggerhead Sea Turtle (E) -	X	North Pacific Loggerhead Sea Turtle (E) -		North Pacific Loggerhead Sea Turtle (E) -		North Pacific Loggerhead Sea Turtle (E) -	
<b><u>ESA Whales</u></b>		<b><u>ESA Whales</u></b>		<b><u>ESA Whales</u></b>		<b><u>ESA Whales</u></b>		<b><u>ESA Whales</u></b>	

Blue Whale (E) -	X	Blue Whale (E) -	X	Blue Whale (E) -	Blue Whale (E) -	Blue Whale (E) -
Fin Whale (E) -	X	Fin Whale (E) -	X	Fin Whale (E) -	Fin Whale (E) -	Fin Whale (E) -
Humpback Whale (E) -	X	Humpback Whale (E) -	X	Humpback Whale (E) -	Humpback Whale (E) -	Humpback Whale (E) -
Southern Resident Killer Whale (E) -	X	Southern Resident Killer Whale (E) -	X	Southern Resident Killer Whale (E) -	Southern Resident Killer Whale (E) -	Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -	X	North Pacific Right Whale (E) -	X	North Pacific Right Whale (E) -	North Pacific Right Whale (E) -	North Pacific Right Whale (E) -
Sei Whale (E) -	X	Sei Whale (E) -	X	Sei Whale (E) -	Sei Whale (E) -	Sei Whale (E) -
Sperm Whale (E) -	X	Sperm Whale (E) -	X	Sperm Whale (E) -	Sperm Whale (E) -	Sperm Whale (E) -
<b><u>ESA Pinnipeds</u></b>		<b><u>ESA Pinnipeds</u></b>		<b><u>ESA Pinnipeds</u></b>	<b><u>ESA Pinnipeds</u></b>	<b><u>ESA Pinnipeds</u></b>
Guadalupe Fur Seal (T) -	X	Guadalupe Fur Seal (T) -	X	Guadalupe Fur Seal (T) -	Guadalupe Fur Seal (T) -	Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -		Steller Sea Lion Critical Habitat -		Steller Sea Lion Critical Habitat -	Steller Sea Lion Critical Habitat -	Steller Sea Lion Critical Habitat -
<b><u>Essential Fish Habitat</u></b>		<b><u>Essential Fish Habitat</u></b>		<b><u>Essential Fish Habitat</u></b>	<b><u>Essential Fish Habitat</u></b>	<b><u>Essential Fish Habitat</u></b>

Coho EFH -	X	Coho EFH -	X	Coho EFH -	X	Coho EFH -	X	Coho EFH -	X
Chinook Salmon EFH -	X	Chinook Salmon EFH -	X	Chinook Salmon EFH -	X	Chinook Salmon EFH -	X	Chinook Salmon EFH -	X
Groundfish EFH -	X	Groundfish EFH -	X	Groundfish EFH -	X	Groundfish EFH -	X	Groundfish EFH -	
Coastal Pelagics EFH -	X	Coastal Pelagics EFH -	X	Coastal Pelagics EFH -	X	Coastal Pelagics EFH -	X	Coastal Pelagics EFH -	
Highly Migratory Species EFH -		Highly Migratory Species EFH -		Highly Migratory Species EFH -		Highly Migratory Species EFH -		Highly Migratory Species EFH -	
<u>MMPA Species (See list at left)</u>		<u>MMPA Species (See list at left)</u>		<u>MMPA Species (See list at left)</u>		<u>MMPA Species (See list at left)</u>		<u>MMPA Species (See list at left)</u>	
<u>ESA and MMPA Cetaceans/Pinnipeds</u>		<u>ESA and MMPA Cetaceans/Pinnipeds</u>		<u>ESA and MMPA Cetaceans/Pinnipeds</u>		<u>ESA and MMPA Cetaceans/Pinnipeds</u>		<u>ESA and MMPA Cetaceans/Pinnipeds</u>	
See list at left and consult the NMFS Long Beach office		See list at left and consult the NMFS Long Beach office		See list at left and consult the NMFS Long Beach office		See list at left and consult the NMFS Long Beach office		See list at left and consult the NMFS Long Beach office	
562-980-4000		562-980-4000		562-980-4000		562-980-4000		562-980-4000	
MMPA Cetaceans -	X	MMPA Cetaceans -	X	MMPA Cetaceans -		MMPA Cetaceans -		MMPA Cetaceans -	
MMPA Pinnipeds -	X	MMPA Pinnipeds -	X	MMPA Pinnipeds -	X	MMPA Pinnipeds -	X	MMPA Pinnipeds -	

Quad Name	<b>Palo Alto</b>	Quad Name	<b>Mountain View</b>	Quad Name	<b>La Honda</b>	Quad Name	<b>Mindego Hill</b>
Quad Number	<b>37122-D2</b>	Quad Number	<b>37122-D1</b>	Quad Number	<b>37122-C3</b>	Quad Number	<b>37122-C2</b>
<u><b>ESA Anadromous Fish</b></u>		<u><b>ESA Anadromous Fish</b></u>		<u><b>ESA Anadromous Fish</b></u>		<u><b>ESA Anadromous Fish</b></u>	
SONCC Coho ESU (T) -		SONCC Coho ESU (T) -		SONCC Coho ESU (T) -		SONCC Coho ESU (T) -	
CCC Coho ESU (E) -		CCC Coho ESU (E) -		CCC Coho ESU (E) -	<b>X</b>	CCC Coho ESU (E) -	<b>X</b>
CC Chinook Salmon ESU (T) -		CC Chinook Salmon ESU (T) -		CC Chinook Salmon ESU (T) -		CC Chinook Salmon ESU (T) -	
CVSR Chinook Salmon ESU (T) -		CVSR Chinook Salmon ESU (T) -		CVSR Chinook Salmon ESU (T) -		CVSR Chinook Salmon ESU (T) -	
SRWR Chinook Salmon ESU (E) -		SRWR Chinook Salmon ESU (E) -		SRWR Chinook Salmon ESU (E) -		SRWR Chinook Salmon ESU (E) -	
NC Steelhead DPS (T) -		NC Steelhead DPS (T) -		NC Steelhead DPS (T) -		NC Steelhead DPS (T) -	
CCC Steelhead DPS (T) -	<b>X</b>	CCC Steelhead DPS (T) -	<b>X</b>	CCC Steelhead DPS (T) -	<b>X</b>	CCC Steelhead DPS (T) -	<b>X</b>
SCCC Steelhead DPS (T) -		SCCC Steelhead DPS (T) -		SCCC Steelhead DPS (T) -		SCCC Steelhead DPS (T) -	

SC Steelhead DPS (E) -	SC Steelhead DPS (E) -	SC Steelhead DPS (E) -	SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -	CCV Steelhead DPS (T) -	CCV Steelhead DPS (T) -	CCV Steelhead DPS (T) -
Eulachon (T) -	Eulachon (T) -	Eulachon (T) -	Eulachon (T) -
sDPS Green Sturgeon (T) - <b>X</b>	sDPS Green Sturgeon (T) - <b>X</b>	sDPS Green Sturgeon (T) -	sDPS Green Sturgeon (T) -
<b><u>ESA Anadromous Fish Critical Habitat</u></b>	<b><u>ESA Anadromous Fish Critical Habitat</u></b>	<b><u>ESA Anadromous Fish Critical Habitat</u></b>	<b><u>ESA Anadromous Fish Critical Habitat</u></b>
SONCC Coho Critical Habitat -	SONCC Coho Critical Habitat -	SONCC Coho Critical Habitat -	SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -	CCC Coho Critical Habitat -	CCC Coho Critical Habitat - <b>X</b>	CCC Coho Critical Habitat - <b>X</b>
CC Chinook Salmon Critical Habitat -	CC Chinook Salmon Critical Habitat -	CC Chinook Salmon Critical Habitat -	CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -	CVSR Chinook Salmon Critical Habitat -	CVSR Chinook Salmon Critical Habitat -	CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -	SRWR Chinook Salmon Critical Habitat -	SRWR Chinook Salmon Critical Habitat -	SRWR Chinook Salmon Critical Habitat -

NC Steelhead Critical Habitat -		NC Steelhead Critical Habitat -		NC Steelhead Critical Habitat -		NC Steelhead Critical Habitat -	
CCC Steelhead Critical Habitat -	X	CCC Steelhead Critical Habitat -	X	CCC Steelhead Critical Habitat -	X	CCC Steelhead Critical Habitat -	X
SCCC Steelhead Critical Habitat -		SCCC Steelhead Critical Habitat -		SCCC Steelhead Critical Habitat -		SCCC Steelhead Critical Habitat -	
SC Steelhead Critical Habitat -		SC Steelhead Critical Habitat -		SC Steelhead Critical Habitat -		SC Steelhead Critical Habitat -	
CCV Steelhead Critical Habitat -		CCV Steelhead Critical Habitat -		CCV Steelhead Critical Habitat -		CCV Steelhead Critical Habitat -	
Eulachon Critical Habitat -		Eulachon Critical Habitat -		Eulachon Critical Habitat -		Eulachon Critical Habitat -	
sDPS Green Sturgeon Critical Habitat -	X	sDPS Green Sturgeon Critical Habitat -	X	sDPS Green Sturgeon Critical Habitat -		sDPS Green Sturgeon Critical Habitat -	
<b><u>ESA Marine Invertebrates</u></b>		<b><u>ESA Marine Invertebrates</u></b>		<b><u>ESA Marine Invertebrates</u></b>		<b><u>ESA Marine Invertebrates</u></b>	
Range Black Abalone (E) -		Range Black Abalone (E) -		Range Black Abalone (E) -		Range Black Abalone (E) -	
Range White Abalone (E) -		Range White Abalone (E) -		Range White Abalone (E) -		Range White Abalone (E) -	

**ESA Marine  
Invertebrates Critical  
Habitat**

Black Abalone Critical  
Habitat -

**ESA Marine  
Invertebrates Critical  
Habitat**

Black Abalone Critical  
Habitat -

**ESA Marine  
Invertebrates Critical  
Habitat**

Black Abalone Critical  
Habitat -

**ESA Marine  
Invertebrates Critical  
Habitat**

Black Abalone Critical  
Habitat -

**ESA Sea Turtles**

East Pacific Green  
Sea Turtle (T) -

**ESA Sea Turtles**

East Pacific Green  
Sea Turtle (T) -

**ESA Sea Turtles**

East Pacific Green  
Sea Turtle (T) -

**ESA Sea Turtles**

East Pacific Green  
Sea Turtle (T) -

Olive Ridley Sea  
Turtle (T/E) -

Olive Ridley Sea  
Turtle (T/E) -

Olive Ridley Sea  
Turtle (T/E) -

Olive Ridley Sea  
Turtle (T/E) -

Leatherback Sea  
Turtle (E) -

Leatherback Sea  
Turtle (E) -

Leatherback Sea  
Turtle (E) -

Leatherback Sea  
Turtle (E) -

North Pacific  
Loggerhead Sea  
Turtle (E) -

North Pacific  
Loggerhead Sea  
Turtle (E) -

North Pacific  
Loggerhead Sea  
Turtle (E) -

North Pacific  
Loggerhead Sea  
Turtle (E) -

**ESA Whales**

Blue Whale (E) -

**ESA Whales**

Blue Whale (E) -

**ESA Whales**

Blue Whale (E) -

**ESA Whales**

Blue Whale (E) -

Fin Whale (E) -

Fin Whale (E) -

Fin Whale (E) -

Fin Whale (E) -

Humpback Whale (E) -	Humpback Whale (E) -	Humpback Whale (E) -	Humpback Whale (E) -
Southern Resident Killer Whale (E) -	Southern Resident Killer Whale (E) -	Southern Resident Killer Whale (E) -	Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -	North Pacific Right Whale (E) -	North Pacific Right Whale (E) -	North Pacific Right Whale (E) -
Sei Whale (E) -	Sei Whale (E) -	Sei Whale (E) -	Sei Whale (E) -
Sperm Whale (E) -	Sperm Whale (E) -	Sperm Whale (E) -	Sperm Whale (E) -

**ESA Pinnipeds**

**ESA Pinnipeds**

**ESA Pinnipeds**

**ESA Pinnipeds**

Guadalupe Fur Seal (T) -	Guadalupe Fur Seal (T) -	Guadalupe Fur Seal (T) -	Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -	Steller Sea Lion Critical Habitat -	Steller Sea Lion Critical Habitat -	Steller Sea Lion Critical Habitat -

**Essential Fish  
Habitat**

**Essential Fish  
Habitat**

**Essential Fish  
Habitat**

**Essential Fish  
Habitat**

Coho EFH -	X	Coho EFH -	X	Coho EFH -	X	Coho EFH -	X
Chinook Salmon EFH -	X	Chinook Salmon EFH -	X	Chinook Salmon EFH -	X	Chinook Salmon EFH -	X
Groundfish EFH -	X	Groundfish EFH -	X	Groundfish EFH -		Groundfish EFH -	



Coastal Pelagics EFH -	X	Coastal Pelagics EFH -	X	Coastal Pelagics EFH -	Coastal Pelagics EFH -
Highly Migratory Species EFH -		Highly Migratory Species EFH -		Highly Migratory Species EFH -	Highly Migratory Species EFH -
<u>MMPA Species (See list at left)</u>		<u>MMPA Species (See list at left)</u>		<u>MMPA Species (See list at left)</u>	<u>MMPA Species (See list at left)</u>
<u>ESA and MMPA Cetaceans/Pinnipeds</u>		<u>ESA and MMPA Cetaceans/Pinnipeds</u>		<u>ESA and MMPA Cetaceans/Pinnipeds</u>	<u>ESA and MMPA Cetaceans/Pinnipeds</u>
See list at left and consult the NMFS Long Beach office		See list at left and consult the NMFS Long Beach office		See list at left and consult the NMFS Long Beach office	See list at left and consult the NMFS Long Beach office
562-980-4000		562-980-4000		562-980-4000	562-980-4000
MMPA Cetaceans -		MMPA Cetaceans -		MMPA Cetaceans -	MMPA Cetaceans -
MMPA Pinnipeds -	X	MMPA Pinnipeds -	X	MMPA Pinnipeds -	MMPA Pinnipeds -

## **Appendix F: USFS Species Lists**

United States Department of the Interior  
FISH AND WILDLIFE SERVICE  
San Francisco Bay-Delta Fish And Wildlife  
650 Capitol Mall  
Suite 8-300  
Sacramento, CA 95814  
Phone: (916) 930-5603 Fax: (916) 930-5654  
[http://kim\\_squires@fws.gov](http://kim_squires@fws.gov)

In Reply Refer To:

August 19, 2019

Consultation Code: 08FBDT00-2019-SLI-0282

Event Code: 08FBDT00-2019-E-00640

Project Name: Seismic restoration at 6 bridges

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out

programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

San Francisco Bay-Delta Fish And Wildlife

650 Capitol Mall  
Suite 8-300  
Sacramento, CA 95814  
(916) 930-5603

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Sacramento Fish And Wildlife Office

Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
(916) 414-6600

Project Summary

Consultation Code:08FBBDT00-2019-SLI-0282

Event Code: 08FBBDT00-2019-E-00640

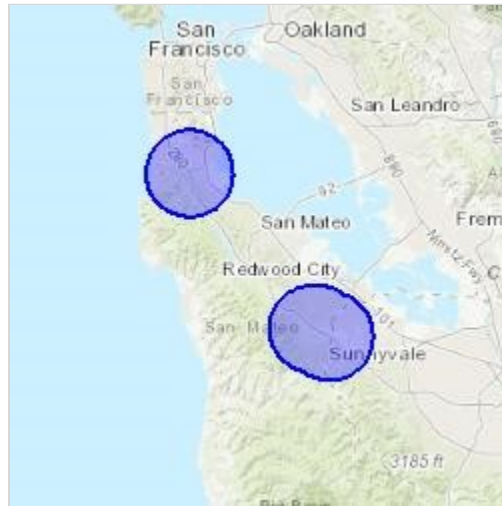
Project Name: Seismic restoration at 6 bridges

Project Type: TRANSPORTATION

Project Description: Seismic restoration by reinforcing bridge columns with steel jackets. Timing TBA.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.414002428082526N122.20801900048909W>



Counties: San Mateo, CA | Santa Clara, CA

### Endangered Species Act Species

There is a total of 21 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](https://www.noaa.gov/), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a>	Endangered
Southern Sea Otter <i>Enhydra lutris nereis</i> No critical habitat has been designated for this species. This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements. Species profile: <a href="https://ecos.fws.gov/ecp/species/8560">https://ecos.fws.gov/ecp/species/8560</a>	Threatened

## Birds

NAME	STATUS
California Clapper Rail <i>Rallus longirostris obsoletus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4240">https://ecos.fws.gov/ecp/species/4240</a>	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>	Endangered
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast)	Threatened

There is final critical habitat for this species. Your location is outside the critical habitat.

Species profile: <https://ecos.fws.gov/ecp/species/8035>

## Reptiles

NAME	STATUS
San Francisco Garter Snake <i>Thamnophis sirtalis tetrataenia</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/5956">https://ecos.fws.gov/ecp/species/5956</a>	Endangered

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened

## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened

## Insects

NAME	STATUS
Bay Checkerspot Butterfly <i>Euphydryas editha bayensis</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2320">https://ecos.fws.gov/ecp/species/2320</a>	Threatened



Callippe Silverspot Butterfly <i>Speyeria callippe callippe</i>	Endangered
There is proposed critical habitat for this species. The location of the critical habitat is not available.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/3779">https://ecos.fws.gov/ecp/species/3779</a>	
Mission Blue Butterfly <i>Icaricia icarioides missionensis</i>	Endangered
There is proposed critical habitat for this species. The location of the critical habitat is not available.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/6928">https://ecos.fws.gov/ecp/species/6928</a>	
Myrtle's Silverspot Butterfly <i>Speyeria zerene myrtleae</i>	Endangered
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/6929">https://ecos.fws.gov/ecp/species/6929</a>	
San Bruno Elfin Butterfly <i>Callophrys mossii bayensis</i>	Endangered
There is proposed critical habitat for this species. The location of the critical habitat is not available.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/3394">https://ecos.fws.gov/ecp/species/3394</a>	

## Flowering Plants

NAME	STATUS
California Seablite <i>Suaeda californica</i>	Endangered
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/6310">https://ecos.fws.gov/ecp/species/6310</a>	
Fountain Thistle <i>Cirsium fontinale var. fontinale</i>	Endangered
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/7939">https://ecos.fws.gov/ecp/species/7939</a>	
Franciscan Manzanita <i>Arctostaphylos franciscana</i>	Endangered
There is final critical habitat for this species. Your location is outside the critical habitat.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/5350">https://ecos.fws.gov/ecp/species/5350</a>	
Hickman's Potentilla <i>Potentilla hickmanii</i>	Endangered
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/6343">https://ecos.fws.gov/ecp/species/6343</a>	
Presidio Manzanita <i>Arctostaphylos hookeri var. ravenii</i>	Endangered
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/7216">https://ecos.fws.gov/ecp/species/7216</a>	

Robust Spineflower *Chorizanthe robusta* var. *robusta* Endangered

There is final critical habitat for this species. Your location is outside the critical habitat.

Species profile: <https://ecos.fws.gov/ecp/species/9287>

San Francisco Lessingia *Lessingia germanorum* (=L.g. var. *germanorum*) Endangered

No critical habitat has been designated for this species.

Species profile: <https://ecos.fws.gov/ecp/species/8174>

Sonoma Sunshine *Blennosperma bakeri* Endangered

No critical habitat has been designated for this species.

Species profile: <https://ecos.fws.gov/ecp/species/1260>

### Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior  
FISH AND WILDLIFE SERVICE  
Sacramento Fish And Wildlife Office  
Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To:  
Consultation Code: 08ESMF00-2019-SLI-2793  
Event Code: 08ESMF00-2019-E-08919  
Project Name: Seismic restoration at 6 bridges

August 19, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service: [http://www.nwr.noaa.gov/protected\\_species/species\\_list/species\\_lists.html](http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html)

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include

the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office  
Federal Building  
2800 Cottage Way, Room W-2605  
Sacramento, CA 95825-1846  
(916) 414-6600

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

San Francisco Bay-Delta Fish And Wildlife  
650 Capitol Mall  
Suite 8-300  
Sacramento, CA 95814  
(916) 930-5603  
Project Summary  
Consultation Code:08ESMF00-2019-SLI-2793

Event Code: 08ESMF00-2019-E-08919

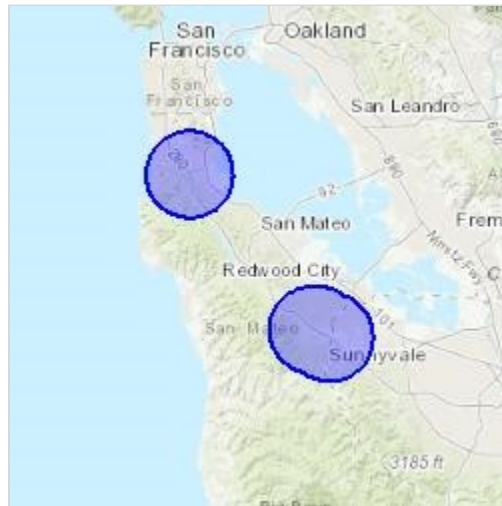
Project Name: Seismic restoration at 6 bridges

Project Type: TRANSPORTATION

Project Description: Seismic restoration by reinforcing bridge columns with steel jackets. Timing TBA.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.414002428082526N122.20801900048909W>



Counties: San Mateo, CA | Santa Clara, CA

Endangered Species Act Species

There is a total of 32 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a>	Endangered
Southern Sea Otter <i>Enhydra lutris nereis</i> No critical habitat has been designated for this species. This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements. Species profile: <a href="https://ecos.fws.gov/ecp/species/8560">https://ecos.fws.gov/ecp/species/8560</a>	Threatened

## Birds

NAME	STATUS
California Clapper Rail <i>Rallus longirostris obsoletus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4240">https://ecos.fws.gov/ecp/species/4240</a>	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>	Endangered
Marbled Murrelet <i>Brachyramphus marmoratus</i> Population: U.S.A. (CA, OR, WA)	Threatened



There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: <https://ecos.fws.gov/ecp/species/4467>

Short-tailed Albatross *Phoebastria (=Diomedea) albatrus* Endangered  
 No critical habitat has been designated for this species.  
 Species profile: <https://ecos.fws.gov/ecp/species/433>

Western Snowy Plover *Charadrius nivosus nivosus* Threatened  
 Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast)  
 There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: <https://ecos.fws.gov/ecp/species/8035>

Yellow-billed Cuckoo *Coccyzus americanus* Threatened  
 Population: Western U.S. DPS  
 There is proposed critical habitat for this species. Your location is outside the critical habitat.  
 Species profile: <https://ecos.fws.gov/ecp/species/3911>

## Reptiles

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>	Threatened
San Francisco Garter Snake <i>Thamnophis sirtalis tetrataenia</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/5956">https://ecos.fws.gov/ecp/species/5956</a>	Endangered

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened

<p>California Tiger Salamander <i>Ambystoma californiense</i>          Population: U.S.A. (Central CA DPS)          There is final critical habitat for this species. Your location is outside the critical habitat.          Species profile: <a href="https://ecos.fws.gov/ecp/species/2076">https://ecos.fws.gov/ecp/species/2076</a></p>	<p>Threatened</p>
--	-------------------

## Fishes

NAME	STATUS
<p>Delta Smelt <i>Hypomesus transpacificus</i>          There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a></p>	<p>Threatened</p>
<p>Tidewater Goby <i>Eucyclogobius newberryi</i>          There is final critical habitat for this species. Your location is outside the critical habitat.          Species profile: <a href="https://ecos.fws.gov/ecp/species/57">https://ecos.fws.gov/ecp/species/57</a></p>	<p>Endangered</p>

## Insects

NAME	STATUS
<p>Bay Checkerspot Butterfly <i>Euphydryas editha bayensis</i>          There is final critical habitat for this species. Your location overlaps the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2320">https://ecos.fws.gov/ecp/species/2320</a></p>	<p>Threatened</p>
<p>Callippe Silverspot Butterfly <i>Speyeria callippe callippe</i>          There is proposed critical habitat for this species. The location of the critical habitat is not available.          Species profile: <a href="https://ecos.fws.gov/ecp/species/3779">https://ecos.fws.gov/ecp/species/3779</a></p>	<p>Endangered</p>
<p>Mission Blue Butterfly <i>Icaricia icarioides missionensis</i>          There is proposed critical habitat for this species. The location of the critical habitat is not available.          Species profile: <a href="https://ecos.fws.gov/ecp/species/6928">https://ecos.fws.gov/ecp/species/6928</a></p>	<p>Endangered</p>
<p>Myrtle's Silverspot Butterfly <i>Speyeria zerene myrtleae</i>          No critical habitat has been designated for this species.          Species profile: <a href="https://ecos.fws.gov/ecp/species/6929">https://ecos.fws.gov/ecp/species/6929</a></p>	<p>Endangered</p>

San Bruno Elfin Butterfly *Callophrys mossii bayensis* Endangered  
 There is proposed critical habitat for this species. The location of the critical habitat is not available.  
 Species profile: <https://ecos.fws.gov/ecp/species/3394>

## Crustaceans

NAME	STATUS
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/2246">https://ecos.fws.gov/ecp/species/2246</a>	Endangered

## Flowering Plants

NAME	STATUS
California Seablite <i>Suaeda californica</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6310">https://ecos.fws.gov/ecp/species/6310</a>	Endangered
Fountain Thistle <i>Cirsium fontinale</i> var. <i>fontinale</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7939">https://ecos.fws.gov/ecp/species/7939</a>	Endangered
Franciscan Manzanita <i>Arctostaphylos franciscana</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5350">https://ecos.fws.gov/ecp/species/5350</a>	Endangered
Hickman's Potentilla <i>Potentilla hickmanii</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6343">https://ecos.fws.gov/ecp/species/6343</a>	Endangered
Marin Dwarf-flax <i>Hesperolinon congestum</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/5363">https://ecos.fws.gov/ecp/species/5363</a>	Threatened
Presidio Manzanita <i>Arctostaphylos hookeri</i> var. <i>ravenii</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7216">https://ecos.fws.gov/ecp/species/7216</a>	Endangered
Robust Spineflower <i>Chorizanthe robusta</i> var. <i>robusta</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/9287">https://ecos.fws.gov/ecp/species/9287</a>	Endangered

San Francisco Lessingia <i>Lessingia germanorum</i> (=L.g. var. <i>germanorum</i> )	Endanger ed
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/8174">https://ecos.fws.gov/ecp/species/8174</a>	
San Mateo Thornmint <i>Acanthomintha obovata</i> ssp. <i>duttonii</i>	Endanger ed
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/2038">https://ecos.fws.gov/ecp/species/2038</a>	
San Mateo Woolly Sunflower <i>Eriophyllum latilobum</i>	Endanger ed
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/7791">https://ecos.fws.gov/ecp/species/7791</a>	
Showy Indian Clover <i>Trifolium amoenum</i>	Endanger ed
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/6459">https://ecos.fws.gov/ecp/species/6459</a>	
White-rayed Pentachaeta <i>Pentachaeta bellidiflora</i>	Endanger ed
No critical habitat has been designated for this species.	
Species profile: <a href="https://ecos.fws.gov/ecp/species/7782">https://ecos.fws.gov/ecp/species/7782</a>	

## Critical habitats

There are 3 critical habitats wholly or partially within your project area under this office's jurisdiction. Each status is Final.

### NAME

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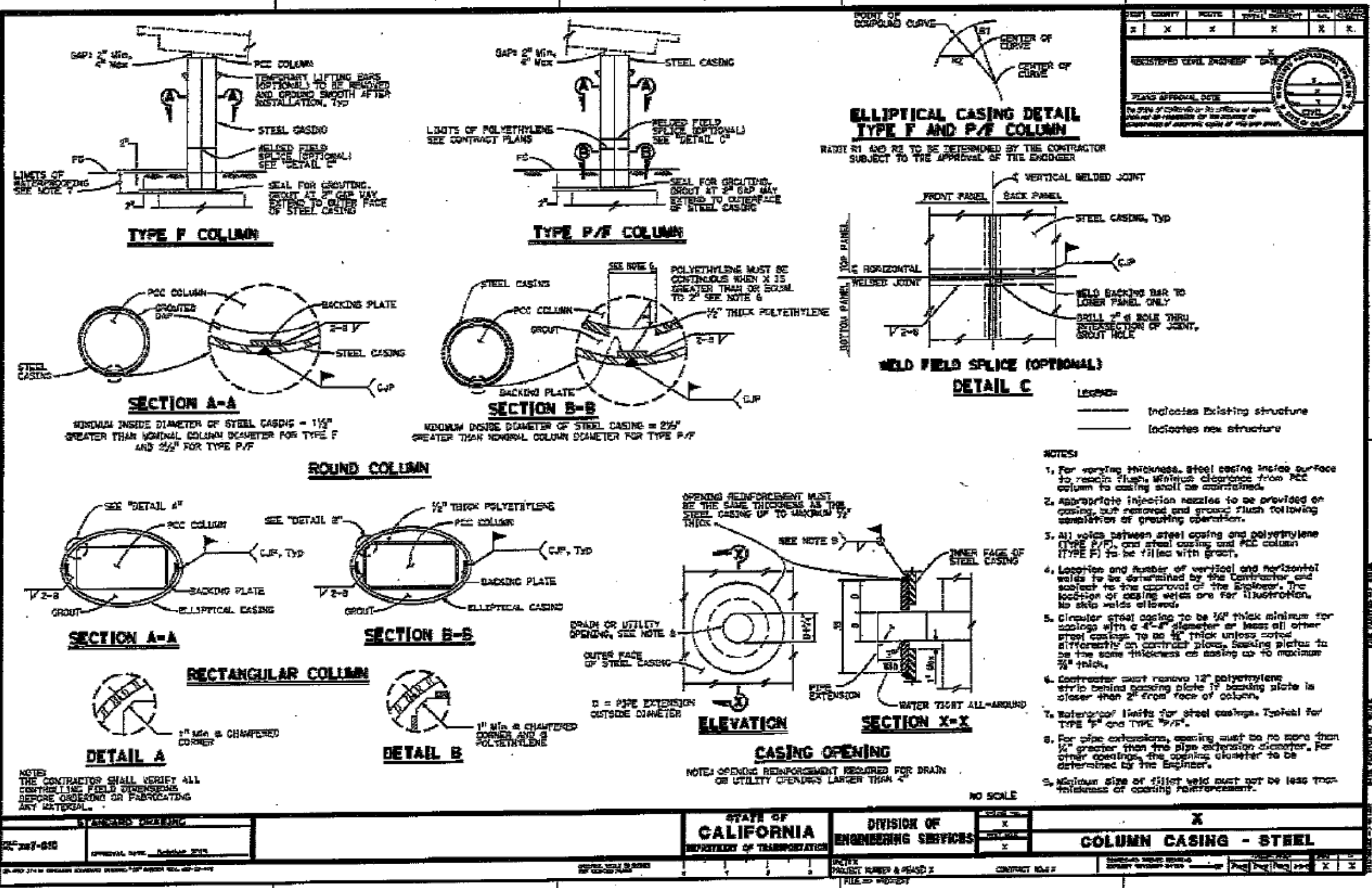
Bay Checkerspot Butterfly *Euphydryas editha bayensis*  
<https://ecos.fws.gov/ecp/species/2320#crithab>

California Red-legged Frog *Rana draytonii*  
<https://ecos.fws.gov/ecp/species/2891#crithab>

Marbled Murrelet *Brachyramphus marmoratus*  
<https://ecos.fws.gov/ecp/species/4467#crithab>



## Appendix E: Preliminary Plans and Cross Sections



NO.	REVISION	DATE	BY	CHKD.
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				



**ELLIPTICAL CASING DETAIL  
TYPE F AND P/F COLUMN**

RADIUS R1 AND R2 TO BE DETERMINED BY THE CONTRACTOR  
SUBJECT TO THE APPROVAL OF THE ENGINEER

- NOTES:**
- For varying thickness, steel casing inside surface to remain flush, whitest clearance from PCC column to casing shall be maintained.
  - Appropriate injection nozzles to be provided on casing, but removed and grout flush following completion of grouting operation.
  - All voids between steel casing and polyethylene (TYPE P/F) and steel casing and PCC column (TYPE F) to be filled with grout.
  - Location and number of vertical and horizontal welds to be determined by the Contractor and subject to the approval of the Engineer. The location of casing welds are for illustration. No skip welds allowed.
  - Circular steel casing to be 3/4" thick minimum for casings with a 4'-0" diameter or less; all other steel casings to be 1/2" thick unless noted otherwise on contract plans. Backing plates to be the same thickness as casing up to maximum 3/4" thick.
  - Contractor must remove 12" polyethylene strip behind backing plate if backing plate is closer than 2" from face of column.
  - Waterproof limits for steel casings. Typical for TYPE F and TYPE P/F.
  - For pipe extensions, opening must be no more than 1/2" greater than the pipe extension diameter. For other openings, the opening diameter to be determined by the Engineer.
  - Minimum size of fillet weld must not be less than thickness of casing reinforcement.

**NOTES:**  
THE CONTRACTOR SHALL VERIFY ALL  
CONSTRUCTION FIELD DIMENSIONS  
BEFORE ORDERING OR FABRICATING  
ANY MATERIAL.

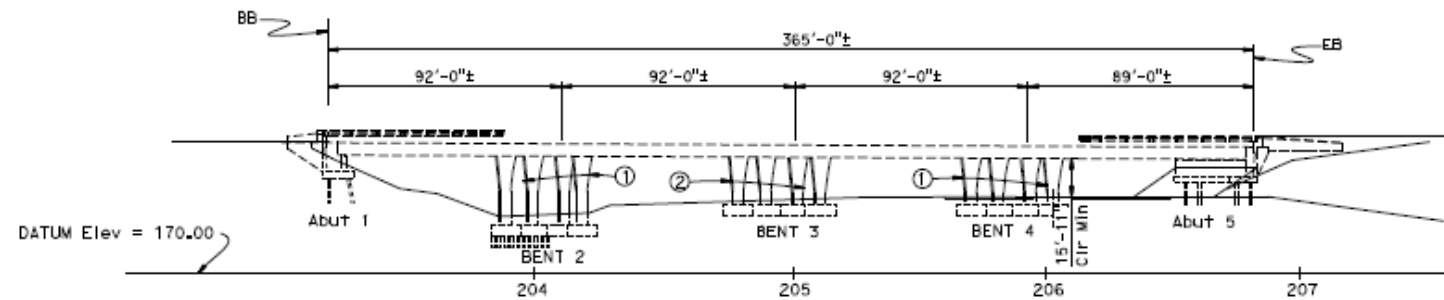
STATE OF CALIFORNIA  
DIVISION OF ENGINEERING SERVICES  
DEPARTMENT OF TRANSPORTATION

**COLUMN CASING - STEEL**

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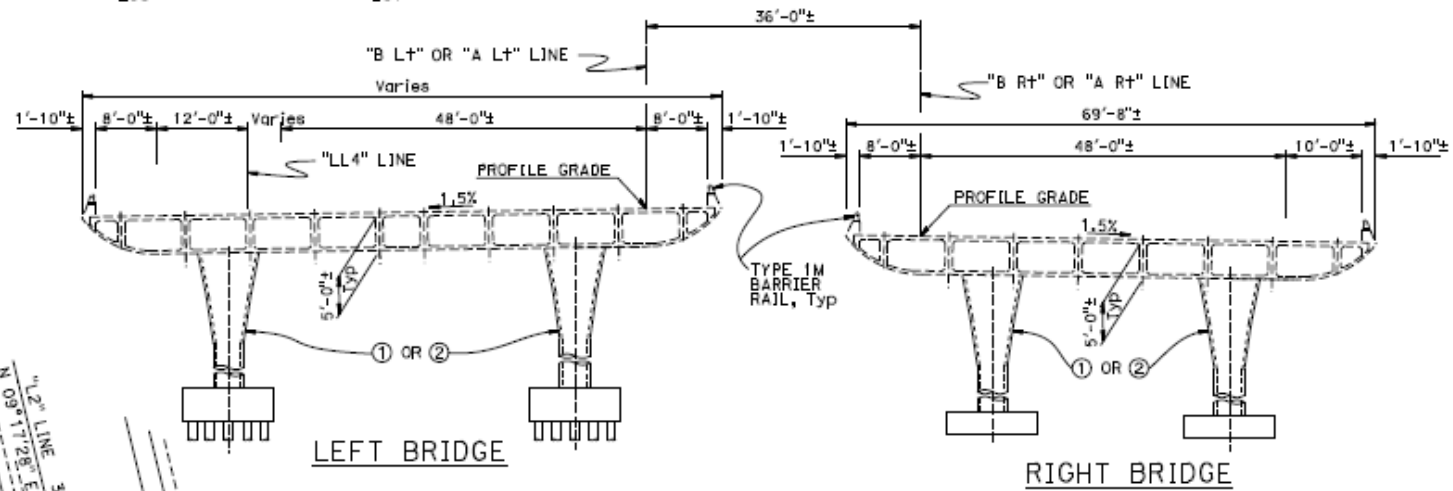
DIST	COUNTY	ROUTE	POST MILE
04	SM	280	0.1



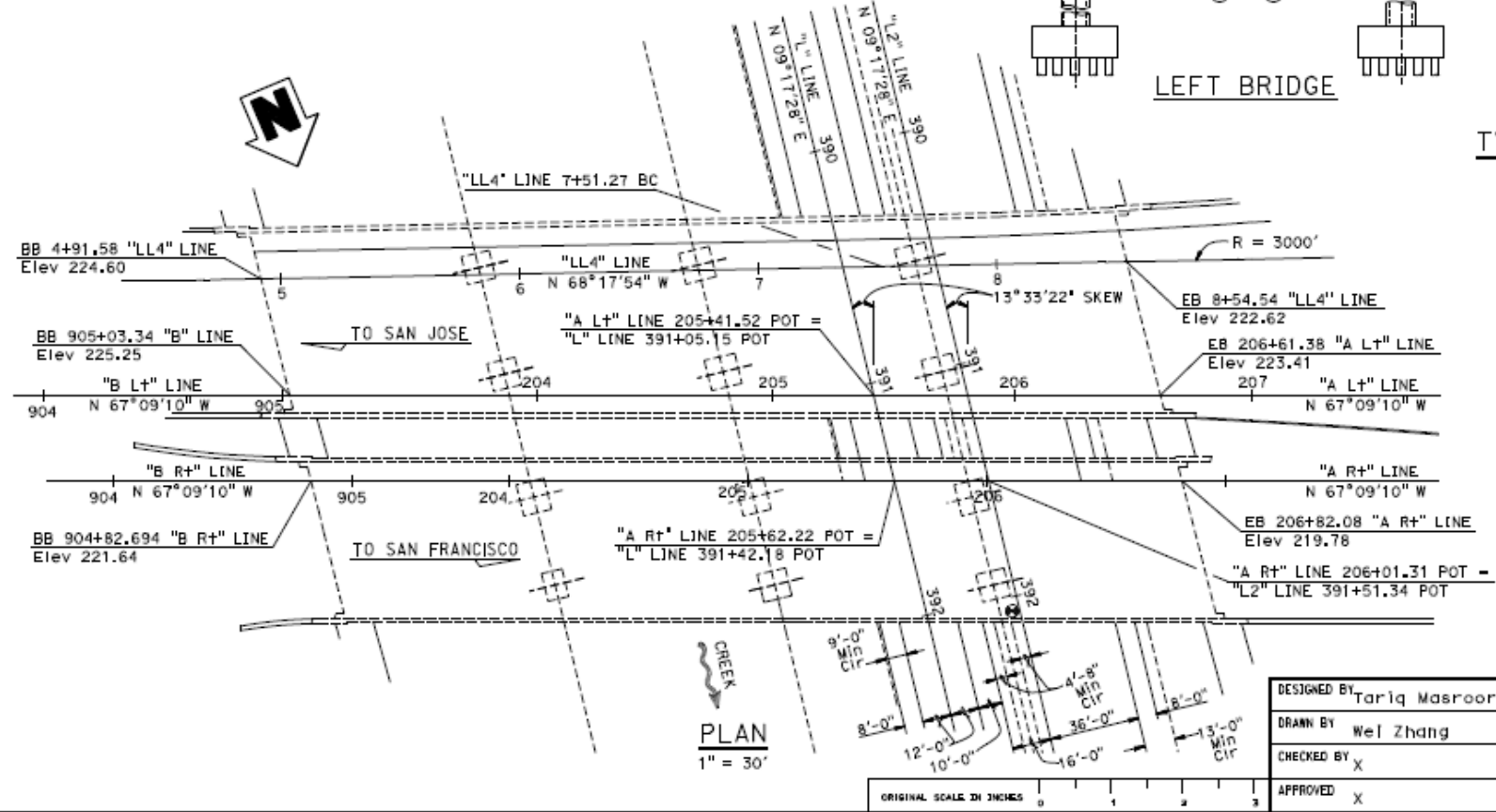
NOTE: Spans and total length measured along "B Lt" "A Lt" line left bridge and along "B Rt" "A Rt" line right bridge.

- LEGEND:
- ① CLASS P-F COLUMN RETROFIT
  - ② CLASS F-F COLUMN RETROFIT
  - ⊗ DENOTES POINT AT MIN VERTICAL CLEARANCE
  - DENOTES EXISTING STRUCTURE

**ELEVATION**  
1" = 30'



**TYPICAL SECTION**  
1" = 10'



**PLAN**  
1" = 30'

DATE OF ESTIMATE	06/06/19
BRIDGE REMOVAL	
STRUCTURE DEPTH	
LENGTH	365'-0"
WIDTH	69'-0"/79'-8" (var)
AREA	4,204
COST/SQFT INCLUDING TRO, MOBILIZATION & 25% CONTINGENCY	\$332
TOTAL COST	\$1,394,000

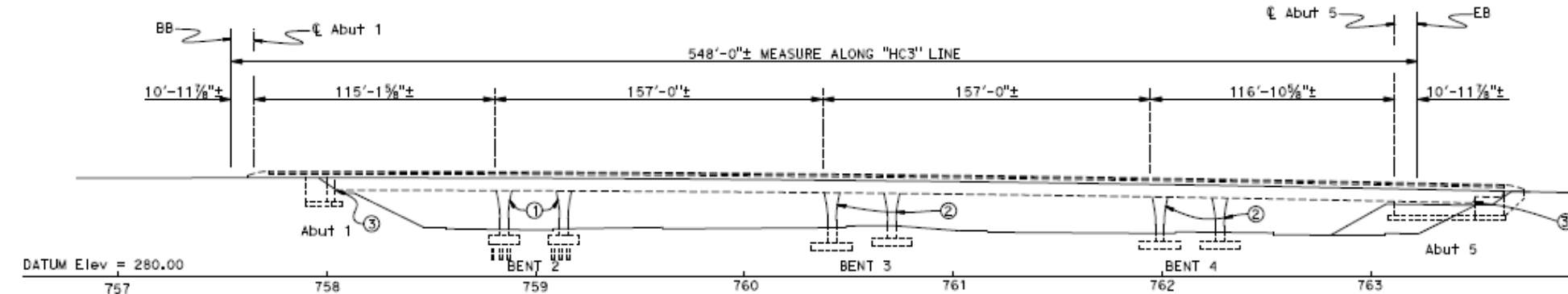
DESIGNED BY	Tariq Masroor	DATE	12-15
DRAWN BY	Wei Zhang	DATE	12-15
CHECKED BY	X	DATE	X
APPROVED	X	DATE	X

**STRUCTURE DESIGN BRANCH**  
**4**

EARTHQUAKE RETROFIT	
<b>PLANNING STUDY ALTERNATIVE</b>	
<b>ALPINE ROAD UNDERCROSSING</b>	
UNIT: 59-3579	BRIDGE No. 35-09 R/L
SCALE: AS SHOWN	PROJECT No. & PHASE: 0416000028K

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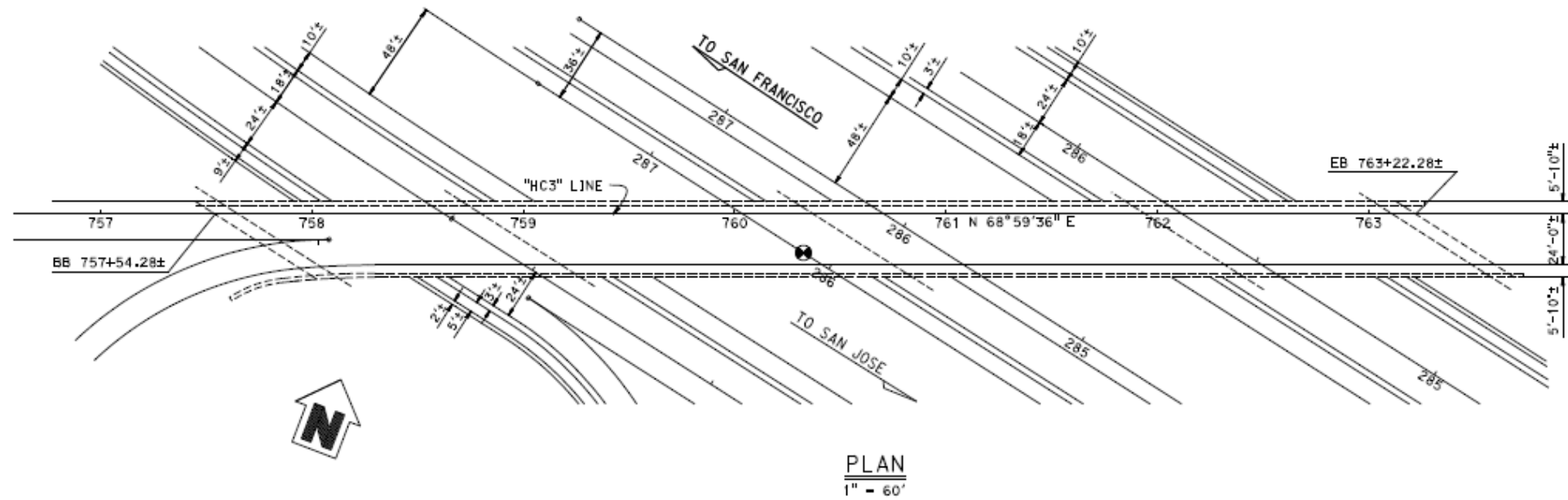
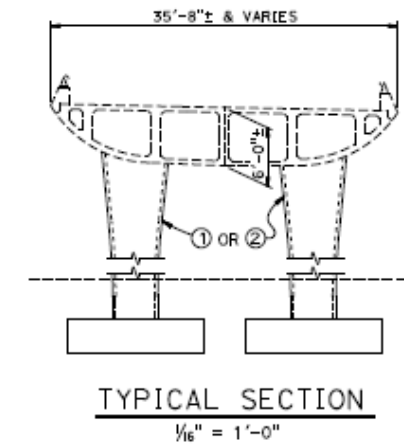
DIST	COUNTY	ROUTE	POST MILE
04	SM	280	1.6



DATE OF ESTIMATE	06/06/19
BRIDGE REMOVAL	
STRUCTURE DEPTH	
LENGTH	568
WIDTH	35.67' & Varies
AREA	1,898
COST/SQFT INCLUDING TRO, MOBILIZATION & 25% CONTINGENCY	\$324
TOTAL COST	\$616,000

**ELEVATION**  
1" = 60'

- LEGEND:**
- ① CLASS P-F COLUMN RETROFIT
  - ② CLASS F-F COLUMN RETROFIT
  - ③ CONCRETE CATCHER BLOCK
  - DENOTES POINT AT MIN VERTICAL CLEARANCE
  - DENOTES EXISTING STRUCTURE



STRUCTURES DESIGN ADVANCE PLANNING STUDY SHEET  
(SHEET NUMBER 4/19/2018)

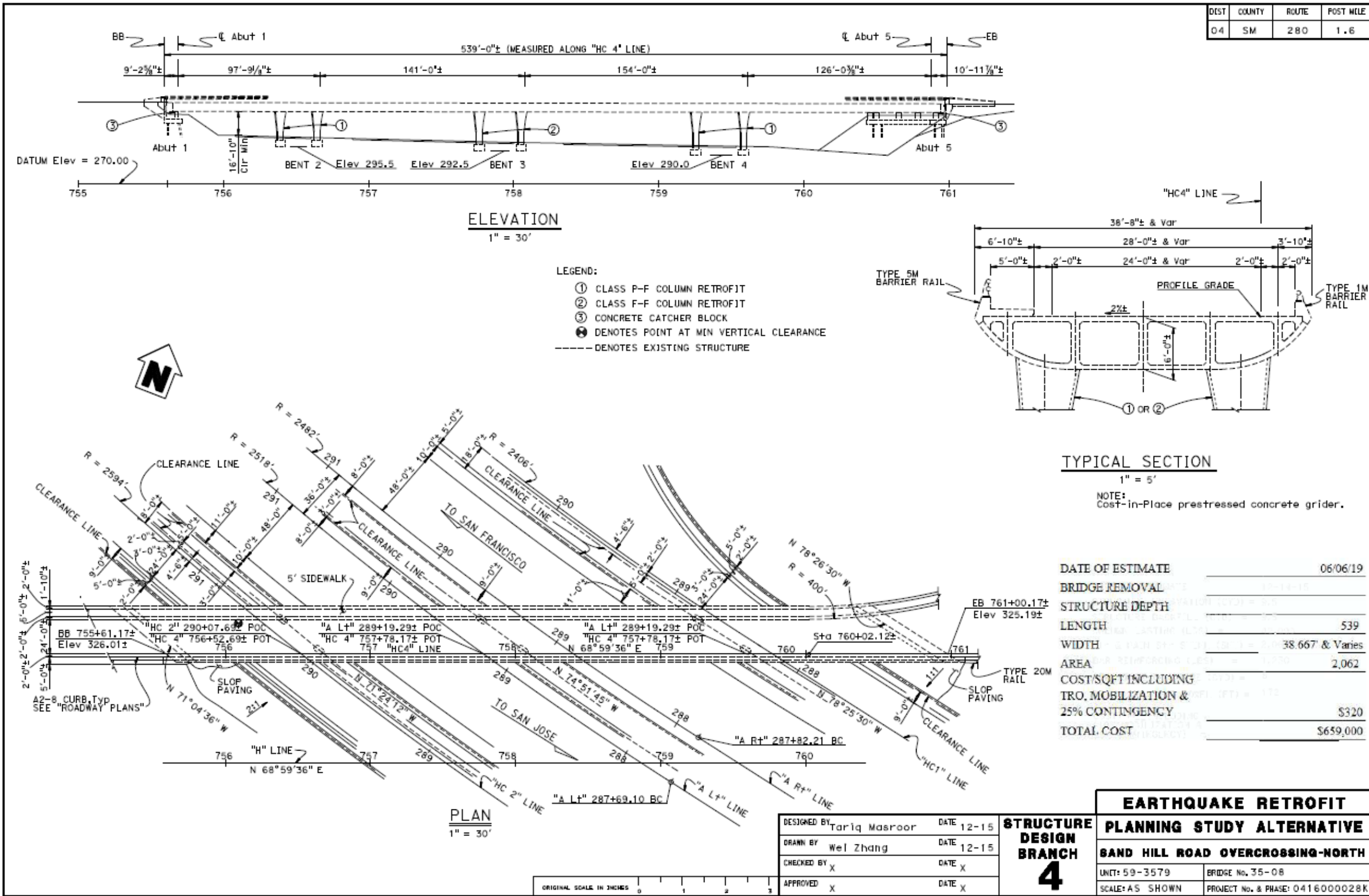
DATE PLOTTED => 16-NOV-2018 TIME PLOTTED => 09:01  
FILE => 25-0007-south-alternative-0108@NAME => s127121

DESIGNED BY	DATE
Tariq Masroor	11-18
DRAWN BY	DATE
A. Chodera/M. Lane	11-18
CHECKED BY	DATE
Rafael Salazar	11-18
APPROVED	DATE
Minh Ha	11-18

**STRUCTURE DESIGN**  
**DESIGN BRANCH**  
**4**

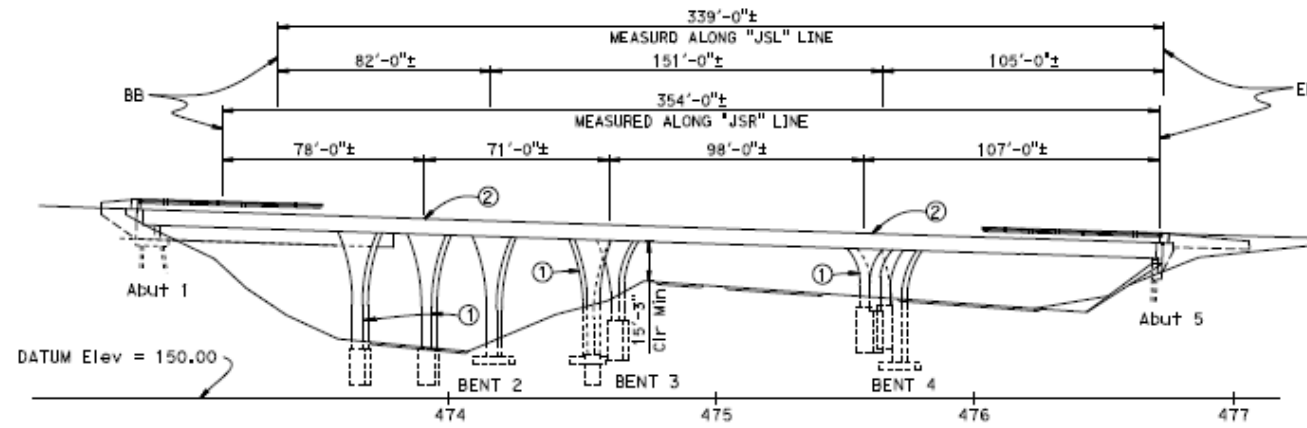
<b>EARTHQUAKE RETROFIT</b>	
<b>PLANNING STUDY</b>	
<b>SAND HILL OVERCROSSING-SOUTH</b>	
UNIT: 3579	BRIDGE No.: 35-0007
CONTRACT No.: 04-0J530K	PROJECT No. & PHASE: 0416000026K

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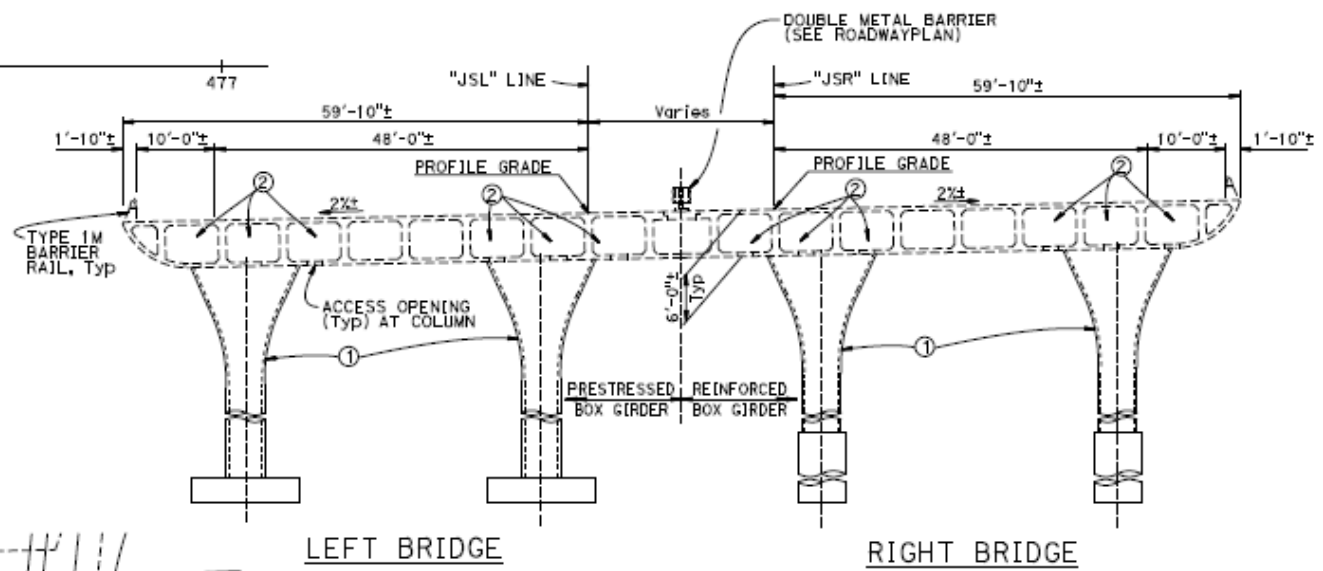
DIST	COUNTY	ROUTE	POST MILE
04	SM	280	20.9



**ELEVATION**  
1" = 30'

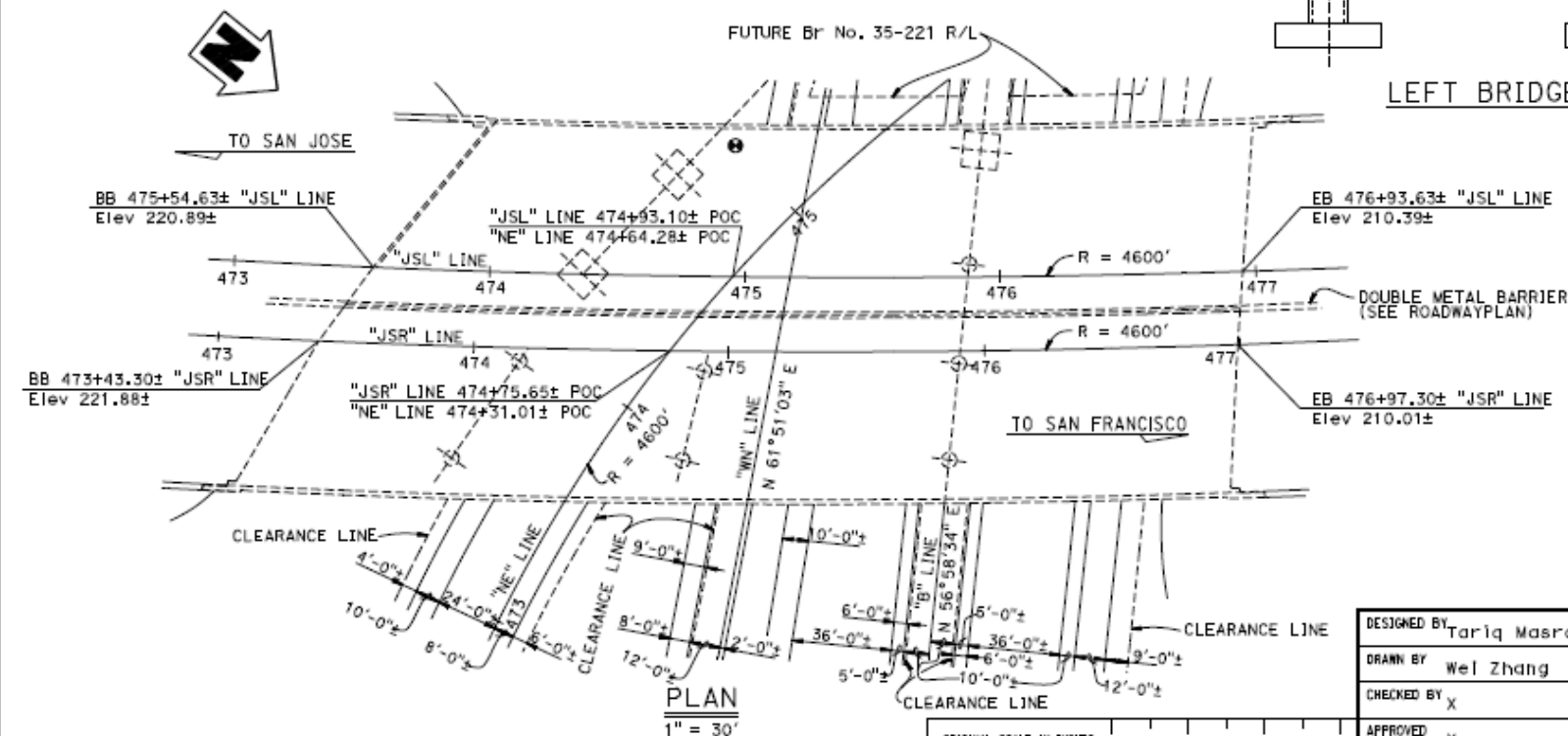
NOTE:  
Spans and total length measured along "JSL" line left bridge and along "JSR" line right bridge.

- LEGEND:
- ① CLASS P-F COLUMN STEEL CASIONS RETROFIT
  - ② REINFORCING CONCRETE BOLSTER
  - ⊙ DENOTES POINT AT MIN VERTICAL CLEARANCE
  - DENOTES EXISTING STRUCTURE



**TYPICAL SECTION**  
1" = 10'

DATE OF ESTIMATE	06/06/19
BRIDGE REMOVAL	
STRUCTURE DEPTH	
LENGTH	539
WIDTH	38.667' & Varies
AREA	6,783
COST/SQFT INCLUDING TRO, MOBILIZATION & 25% CONTINGENCY	\$475
<b>TOTAL COST</b>	<b>\$3,219,000</b>



**PLAN**  
1" = 30'

DESIGNED BY	Tariq Masroor	DATE	12-15
DRAWN BY	Wei Zhang	DATE	12-15
CHECKED BY	X	DATE	X
APPROVED	X	DATE	X

**STRUCTURE DESIGN BRANCH**  
**4**

<b>EARTHQUAKE RETROFIT</b>	
<b>PLANNING STUDY ALTERNATIVE</b>	
<b>ROUTE 280/186 SEPARATION</b>	
UNIT: 59-3579	BRIDGE No. 35-217
SCALE: AS SHOWN	PROJECT No. & PHASE: 0416000028K

STRUCTURES DESIGN ADVANCE PLANNING STUDY SHEET (SPLS) (REV. 06-09-10)

FILE => 35-217-rout.280.186-retrofit- ap01.dgn

CONTRACT No.: 04-GJ530K

USERNAME => 6127131 DATE PLOTTED => 16-NOV-2018 TIME PLOTTED => 08:21

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# Appendix G: Title VI Non-Discrimination Policy

## 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.*

April 2018

### 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."*

Related federal statutes 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, please visit the following web page:  
[http://www.dot.ca.gov/hq/bep/title\\_vi/t6\\_violated.htm](http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm).

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 Business and Economic Opportunity, 1823 14<sup>th</sup> Street, MS-79, Sacramento, CA 95811. Telephone (916) 324-8379, TTY 711, email [Title.VI@dot.ca.gov](mailto:Title.VI@dot.ca.gov), or visit the website [www.dot.ca.gov](http://www.dot.ca.gov).

A handwritten signature in blue ink that reads "Laurie Berman".

LAURIE BERMAN  
Director