Dover Canyon Road at Jack Creek
Bridge Replacement Project - BA

Biological Assessment

Dover Canyon Road at Jack Creek, Paso Robles, San Luis Obispo County

Bridge Replacement Project

County of San Luis Obispo, California
Caltrans District 5
Federal Project Number BRLO-5949(152)
Existing Bridge No. 49C-0037
Consultation Code: 08EVEN00-2018-SLI-0313

October 2019

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

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October 2019

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Summary of Findings, Conclusions, and Determinations

The purpose of this Biological Assessment (BA) is to provide technical information and to review the proposed Dover Canyon Road at Jack Creek Bridge Replacement Project (project/proposed action) in sufficient detail to determine to what extent the proposed action may affect federal threatened, endangered, or proposed species. The project sponsor is the County of San Luis Obispo Department of Public Works (County). Due to the use of federal funding, the proposed action is also being processed through the California Department of Transportation (Caltrans), as part of its National Environmental Protection Act (NEPA) assignment of federal responsibilities by the Federal Highway Administration (FHWA), effective December 23, 2016, and pursuant to 23 United States Code (USC) 327. Caltrans will act as the lead federal agency for the federal Endangered Species Act (ESA) of 1973 Section 7 consultation. The BA is prepared in accordance with 50 Code of Federal Regulations (CFR) 402, the legal requirements found in Section 7(a)(2) of the ESA (16 USC 1536(c)), and FHWA and Caltrans regulation, policy, and guidance. This BA presents technical information upon which later decisions regarding proposed action effects are developed.

The County is proposing to replace the existing bridge on Dover Canyon Road at Jack Creek (Bridge No. 49C-0037) just south of the confluence of east-west trending Jack Creek and north-south trending Summit Creek. The proposed action will replace the existing bridge with a new concrete, two-lane bridge that will carry emergency vehicles, including fully loaded fire trucks, and improve access to the public and properties served by Dover Canyon Road. The proposed action is a safety improvement project, funded in part by the FHWA through the Caltrans Highway Bridge Program (HBP).

The proposed action area is located where Dover Canyon Road crosses Jack Creek in Paso Robles, San Luis Obispo County, California. The bridge replacement is located along Dover Canyon Road in a rural environment, with the primary land uses being open space and rural residential estates.

Based on the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) online database and National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) species lists, the proposed action area, defined as the Biological Study Area (BSA), is within the geographic range of several federally listed endangered and threatened species.

Vegetative communities present within the proposed action area include annual brome grassland, valley oak woodland, arroyo willow thicket, stream channel, and developed habitat. The proposed action area occurs within the jurisdictions of the U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB). A summary of potential impacts within the proposed action area is provided below. In addition to impacts on habitat and natural communities, the proposed action will potentially remove up to 33 native trees.

Estimated Impacts to Habitat and Natural Communities

Habitat	Total Acres within BSA	Estimated Impacts (Acres)	
		Permanent	Temporary
Annual Brome Grassland	2.12	0.02	2.05
Valley Oak Woodland	0.55	0.01	0.34
Arroyo Willow Thicket	0.30	0.04	0.21
Stream Channel[1] (includes Steelhead Critical Habitat)	0.13	0.00	0.12
Developed (paved)	0.72	0.04	0.02
Total	**3.82**	**0.11**	**2.74**

[1] Delineated by ordinary high water mark (OHWM).

With regard to invasive species, a total of 17 invasive plant species as identified by the California Invasive Plant Council (Cal-IPC) Inventory (Cal-IPC 2018) were observed within the proposed action area. Himalayan blackberry (*Rubus armeniacus*) was the only non-native plant species with a Cal-IPC category rating of High observed in the BSA. Eight plant species were observed with a Cal-IPC category rating of Moderate, and eight species were observed with a category rating of Limited. Non-native vegetation will be removed in accordance with Executive Order 13112 (Invasive Species) and in accordance with the *Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program* (Programmatic BO) (USFWS 2011).A high threat of invasive wildlife was not observed. Implementation of measures in the Programmatic BO would require eradication of invasive non-native semi-aquatic species such as bullfrog (*Lithobates catesbeiana*) or crayfish (*Cambarus* spp.).

Federally Protected Species

Based on a five-mile search radius using the California Natural Diversity Database (CNDDB), and receipt of official species lists issued by the USFWS and NMFS, four

special-status plant species, 12 special-status animal species, and one critical habitat were evaluated for potential to occur within the BSA.

Of the 16 federally listed species and one federally designated critical habitat evaluated, the BSA provides suitable habitat for none of the plant species and the following four wildlife species: South-Central California Coast steelhead DPS (*Oncorhynchus mykiss*), California red-legged frog (*Rana draytonii*), least Bell's vireo (*Vireo bellii pusillus*), and southwestern willow flycatcher (*Empidonax traillii extimus*). The BSA also includes the overlay of federally designated critical habitat for South-Central California Coast Steelhead DPS. The County has proposed avoidance and minimization efforts to reduce the potential effects of the proposed action on these protected species and their critical habitat.

Based on the findings of this BA and implementation of the avoidance and minimization efforts included, the following determinations have been made.

Federal Endangered Species Act Effects Determination

Common Name	Scientific Name	Legal Status	Rationale
Habitats			
South-Central California Coast steelhead DPS	*Oncorhynchus mykiss*	Critical Habitat	May affect, likely to adversely affect
California red-legged frog	*Rana draytonii*	Critical Habitat	No effect
Plants			
California jewelflower	*Caulanthus californicus*	Federally Endangered	No effect
Chorro Creek bog thistle	*Cirsium fontinale* var. *obispoense*	Federally Endangered	No effect
marsh sandwort	*Arenaria paludicola*	Federally Endangered	No effect
spreading navarretia	*Navarretia fossalis*	Federally Threatened	No effect
Insects			
Kern primrose Sphinx moth	*Euproserpinus euterpe*	Federally Threatened	No effect
Crustaceans			
Vernal Pool fairy shrimp	*Branchinecta lynchi*	Federally Threatened	No effect

Federal Endangered Species Act Effects Determination

Common Name	Scientific Name	Legal Status	Rationale
Fish			
South-Central California Coast steelhead DPS	*Oncorhynchus mykiss*	Federally Threatened	May affect, likely to adversely affect
Birds			
California clapper rail	*Rallus longirostris obsoletus*	Federally Endangered	No effect
California condor	*Gymnogyps californianus*	Federally Endangered	No effect
least Bell's vireo	*Vireo bellii pusillus*	Federally Endangered	May affect, not likely to adversely affect
southwestern willow flycatcher	*Empidonax traillii extimus*	Federally Endangered	May affect, not likely to adversely affect
Mammals			
giant kangaroo rat	*Dipodomys ingens*	Federally Endangered	No effect
San Joaquin kit fox	*Vulpes macrotis mutica*	Federally Endangered	No effect
Amphibians			
California red-legged frog	*Rana draytonii*	Federally Threatened	May affect, likely to adversely affect
California tiger salamander	*Ambystoma californiense*	Federally Threatened	No effect
Reptiles			
blunt-nosed leopard lizard	*Gambelia sila*	Federally Endangered	No effect

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List of Abbreviated Terms

Abbreviation	Term
°F	degrees Fahrenheit
A	Absent
AASHTO	Association of State Highway and Transportation Officials
APN	Assessor's Parcel Number
BA	Biological Assessment
BMP	best management practice
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CH	Critical Habitat
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Luis Obispo Department of Public Works
CRPR	California Rare Plant Rank
DPS	District Population Segment
EFH	Essential Fish Habitat
ESA	Endangered Species Act of 1973
FE	Federal Endangered
FHWA	Federal Highway Administration
FMP	Fishery Management Plan
FT	Federal Threatened
GIS	Geographic Information System
GPS	Global Positioning System
HBP	Highway Bridge Program
HMMP	Habitat Mitigation and Monitoring Plan
HP	Habitat Present
IPaC	USFWS Information for Planning and Conservation System
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act

Abbreviation	Term
NMFS	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NRCS	United States Department of Agriculture Natural Resources Conservation Service
OHWM	ordinary high water mark
P	Present
PFMC	Pacific Fish Management Council
Project/proposed action	Dover Canyon Road at Jack Creek Bridge Replacement Project
RWQCB	Regional Water Quality Control Board
SSC	California Species of Special Concern
SWCA	SWCA Environmental Consultants
TCE	temporary construction easement
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WIS	Wetland Indicator Status
WRCC	Western Regional Climate Center

Chapter 1. Introduction

The purpose of this Biological Assessment (BA) is to provide technical information and to review the proposed Dover Canyon Road at Jack Creek Bridge Replacement Project (project/proposed action) in sufficient detail to determine to what extent the proposed action may affect federal threatened, endangered, or proposed species. The project sponsor is the County of San Luis Obispo Department of Public Works (County). Due to the use of federal funding, the proposed action is also being processed through the California Department of Transportation (Caltrans), as part of its National Environmental Protection Act (NEPA) assignment of federal responsibilities by the Federal Highway Administration (FHWA), effective December 23, 2016, and pursuant to 23 United States Code (USC) 327. Caltrans will act as the lead federal agency for the federal Endangered Species Act of 1973 (ESA) Section 7 consultation. The BA is prepared in accordance with 50 Code of Federal Regulations (CFR) 402, the legal requirements found in Section 7(a)(2) of the ESA (16 USC 1536(c)), and FHWA and Caltrans regulation, policy, and guidance. The document presents technical information upon which later decisions regarding proposed action effects are developed.

1.1. Purpose and Need

The purpose of this proposed action is to replace a 95-year-old, single-lane bridge (Bridge No. 49C-0037) where Dover Canyon Road crosses Jack Creek near rural Paso Robles, San Luis Obispo County, California (Figure 1). The bridge is located just south of the confluence of east-west trending Jack Creek and north-south trending Summit Creek (Figure 2).

Dover Canyon Road is a low-volume, low-speed, two-way, local road. Constructed in 1920, the bridge is classified as structurally deficient by Caltrans. The bridge will be replaced with a new concrete, two-lane bridge that will carry emergency vehicles, including fully loaded fire trucks, and improve access to the public and properties served by Dover Canyon Road. The existing bridge is “posted” for only a little more than half the state’s “legal” loads. The proposed action is a safety improvement project, funded in part by the FHWA and administered by Caltrans under the federal Highway Bridge Program (HBP).

Figure 1: Project Vicinity Map

Figure 2: Project Location Map

The proposed action area is located where Dover Canyon Road crosses Jack Creek in Paso Robles, San Luis Obispo County, California, in Township 27 South, Range 11 East, Section 18. The study area appears on the U.S. Geological Survey (USGS) York Mountain, California 7.5-minute topographic quadrangle. The bridge replacement is located along Dover Canyon Road in a rural environment, with the primary land uses being open space and rural residential estates.

The immediate proposed action area is sparsely populated. The bridge and approach roadway are located entirely within the boundaries of one parcel (Assessor's Parcel Number [APN] 014-211-001). The single-family residence associated with the parcel is located approximately 1,000 feet from the bridge. Adjacent properties are zoned rural agricultural and are part of the Adelaida Sub Area of the North County Planning Area. The surrounding terrain is generally mountainous oak woodland, typical of the Santa Lucia Mountain Range.

1.2. Project Description

The roadway geometric design is based on *A Policy on Geometric Design of Highways and Streets* (The Green Book) (American Association of State Highway and Transportation Officials [AASHTO] 2018), supplemented by the Caltrans *Highway Design Manual* (Caltrans 2018) and County standards, as determined applicable. The bridge design is based on AASHTO Load and Resistance Factor Design Specifications with the Caltrans Amendments. The bridge seismic design is based on Caltrans' Seismic Design Criteria. The bridge design also utilizes Caltrans' Memo to Designers and Bridge Design Aids. The project plans are included in Appendix A.

The existing bridge is a single-span, simply supported, steel Warren pony truss with steel floor beams and a timber deck. The existing structure is founded on concrete spread footing abutments and is 63 feet long by 16 feet wide, with a clear width of 15.75 feet between the bridge rails. The new bridge is proposed to be a single-span, precast prestressed concrete slab unit bridge slightly longer than the existing bridge. The replacement structure will be approximately 79 feet long, allowing it to clear Jack Creek and align the abutments with the approximate existing top of bank. The structure will be approximately 26 feet wide to accommodate two nine-foot lanes, two-foot shoulders, and barriers. The abutments will sit on spread footing foundations with cast-in-drilled-hole piles anchoring them to the bedrock. Rock slope protection (RSP) will be keyed into the scour resistant rock at a depth to be determined by the Geotechnical Engineer during construction due to varying geologic conditions (see

Appendix A). The removal of up to 33 native trees and vegetation clearing will be required.

The proposed action will require temporary construction easements (TCEs), and the County will resurrect and enforce the existing right-of-way (ROW) and acquire any additional ROW needed for the proposed action. A TCE will be needed to construct a detour bridge over the creek while construction takes place. The detour bridge will be located approximately 12 feet north of the existing bridge. The detour road will veer off the existing roadway, free span the creek using a standard temporary railcar bridge (approximately 62 feet long and nine feet wide), and then rejoin the roadway. The TCE will also be used for construction staging and will occupy approximately 0.71 acre. This area is currently an unused, uncultivated, undeveloped field. South of the roadway a TCE with an area of approximately 0.25 acre will be used in construction. Access to local residences will be kept clear while construction takes place.

AT&T communication lines are within the proposed action limits and will likely be relocated to the proposed structure. No other private or public utilities are expected to be encountered within the proposed action limits. Utility relocation notifications and procedures will follow standard County procedures and Caltrans *Local Assistance Procedures Manual* (LAPM), Chapter 14: Utility Relocation (Caltrans 2019), procedures.

The proposed action will result in temporary impacts to the creek channel during construction. If surface flows are present within the work area, water would be temporarily diverted away from the streambanks. Although exact materials, lengths, and locations used to construct the diversion system will depend on field conditions, the County will most likely use a system of concrete k-rail, washed gravel-filled bags, longitudinal culverts, and impermeable sheet plastic allowing flows to remain within the primary low-flow channel of the creek through the proposed action area. The approximately 160-foot-long diversion structures will act as cofferdams to divert flow from the work areas (abutments). The diversion will remain in place until construction activities are complete. Upon completion of diversion activities, the County will remove equipment and infrastructure associated with the diversion in a manner that will not adversely impact water quality and its beneficial uses. Diversion locations will be restored to preexisting conditions.

The diversion will be designed to completely isolate the work area from the wetted channel. If surface flow is present within the work area after the diversion is installed

or if groundwater is encountered during construction, the County will conduct dewatering activities. This will be accomplished by pumping the water from inside the diversion confines, which will likely be groundwater not surface water. Pumps will be fitted with appropriately sized protective screens at intake ends to prevent fish and other aquatic species from entering the pumps. Water will be pumped to a temporary sediment basin or to adjacent uplands to capture waterborne sediment before being discharged at a location downstream of the dewatered area. Sediment trapped in the basin will be removed and either incorporated in the backfill material behind the abutment or removed from the proposed action area (see the Diversion and Dewatering Plan in Appendix B).

Construction will likely require the following equipment: air compressor, bobcat, bulldozer/loader, compactor, concrete truck and pump, crane, debris bin, drill rig, dump truck, flatbed truck, haul truck, holding tanks, mixing tanks, recirculating pumps, and water truck.

1.3. Summary of Consultation to Date

Caltrans, as part of its NEPA assignment of federal responsibilities by the FHWA, effective December 23, 2016, and pursuant to 23 USC 327, will act as the lead federal agency for Section 7 of the federal ESA. The following is a chronological summary of regulatory agency coordination and correspondence:

- **October 10, 2019:** SWCA Environmental Consultants (SWCA) requested an official species list from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) online database, Consultation Code: 08EVEN00-2018-SLI-0313 (USFWS 2019).
- **October 10, 2019:** SWCA submitted a request through the National Marine Fisheries Service (NMFS)/West Coast Region website for an official NMFS species list for the proposed action area (NMFS 2019), and a copy of the output was emailed to the NMFS West Coast Region email address.

The USFWS and NMFS official species lists are included in Appendix C.

The Magnuson-Stevens Fishery Conservation and Management Act requires federal agencies to consult with the NMFS about activities that might harm Essential Fish Habitat (EFH). The Pacific Fishery Management Council (PFMC), one of eight regional fishery management councils created by the 1976 Magnuson Fisheries

Conservation and Management Act, is responsible for the creation of a Fishery Management Plan (FMP) in federal waters off the coast of California and regulation for federally protected EFH (PFMC 2017). The NMFS partners with PFMC to identify, describe, and map EFH for all federally managed fish species. An official species list from NMFS was received on February 4, 2019. No EFH areas were identified within the proposed action area; therefore, EFH consultation and preparation of an Essential Fish Habitat Plan is not necessary.

1.4. Document Preparation History

This BA was prepared for the County by SWCA in coordination with the County and Caltrans District 5. Based on observations from the reconnaissance surveys conducted in 2016 and 2017, the project team concluded that the proposed action has the potential to affect species protected by the ESA, and preparation of this BA was necessary for Section 7 consultation with the USFWS and NMFS (USFWS and NMFS 1998).

Caltrans, as assigned by the FHWA, has prepared this BA under its assumption of responsibility and in accordance with 23 USC 327(a)(2)(A). The following list of preparers includes the key staff that contributed to the development of this BA and are the primary authors:

Project Manager: SWCA Natural Resources Team Lead Jon Claxton, (805) 543-7095 x6813, jclaxton@swca.com, reviewed the BA.

BA Preparation: SWCA Senior Biologist Lauren Brown (805) 543-7095 x6811, lbrown@swca.com, authored the BA. Fieldwork was conducted by County Biologists Kate Ballantyne, Katie Drexhage, and Kristie Scarazzo, and SWCA Biologist Barrett Holland.

BA Graphics: SWCA Geographic Information Systems (GIS) Specialist Kevin Howen, (805) 543-7095 x6830, khowen@swca.com, prepared project maps and graphics using global positioning system (GPS) field data and GIS software.

Chapter 2. Study Methods

2.1. Listed and Proposed Species Potentially in the Project Area

SWCA biologists initiated a review of potentially occurring ESA listed and proposed species for the proposed action by querying the USFWS IPaC system, NMFS, and the California Natural Diversity Database (CNDDB). Copies of the official species lists are included in Appendix C.

A list of the results from the USFWS IPaC, NMFS, and CNDDB queries for regional federally protected species is provided in Table 1. Because these lists are regional in nature, an analysis of the geographic range and habitat requirements of each listed species was conducted to determine which species have the potential to occur in or near (i.e., within five miles of) the Biological Study Area (BSA). Because the various query results cover such a large geographic area, further evaluation was conducted to determine which species have the potential to occur within the proposed action area and immediate vicinity. The evaluation considered the general habitat requirements of each species, the type and quality of habitat observed on-site, and which species have been documented within a five-mile radius of the proposed action area. Species were eliminated from further consideration if the proposed action area does not include the general habitat requirements (e.g., habitat type, elevation, soils), or if the proposed action area is outside the known geographic distribution or documented range of that species. For those instances where general habitat requirements are present to some degree, focused studies were conducted to determine presence/absence of the species, or professional judgement and regional expertise of the biologists who prepared this study was utilized to determine the likelihood that the species may occur.

2.2. Studies Required

This BA was completed in a manner consistent with Caltrans guidelines as described in Volume 3 of the *Caltrans Environmental Handbook*, updated October 2014 (Caltrans 2016). In order to satisfy the requirements of federal regulatory laws, seasonally timed botanical surveys and a formal wetland assessment of the BSA were conducted.

Table 1: Listed or Proposed Species and Critical Habitat Known or Potentially Occurring in the Project Area

Common Name	Scientific Name	Federal Status	General Habitat Description	Habitat Present/ Absent	Rationale
Plants					
California jewelflower	*Caulanthus californicus*	FE	Annual herb found in sandy soils in chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland habitats; elevation range is 61–1,000 meters. Blooms February to May.	A	**No Potential to Occur:** The BSA does not support sandy soils or chenopod scrub, pinyon and juniper woodland, or valley and foothill grassland habitats suitable for California jewelflower. The proposed action is expected to have ***no effect*** on this species.
Chorro Creek bog thistle	*Cirsium fontinale* var. *obispoense*	FE	Perennial herb found in serpentine seeps and drainages in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats; elevation range is 35–385 meters. Blooms February to September.	A	**Habitat Absent/Species Absent:** The BSA is not located within the known range of this species and does not support serpentine soils or seeps suitable for Chorro Creek bog thistle. The proposed action is expected to have ***no effect*** on this species.
marsh sandwort	*Arenaria paludicola*	FE	Annual herb that occurs in freshwater marshes and wetlands. Grows up through dense mats of cattails, rushes, and tule rushes in freshwater marsh; elevation range is 10–170 meters. Blooms March to April.	A	**Habitat Absent/Species Absent:** The BSA is not located within the appropriate elevation range for this species and does not support suitable marsh habitat for marsh sandwort. The proposed action is expected to have ***no effect*** on this species.
spreading navarretia	*Navarretia fossalis*	FT	Annual herb that occurs in chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, and vernal pool habitats; elevation range is 30–655 meters. Blooms April to June.	A	**No Potential to Occur:** The BSA is located outside of the species' known range of occurrence and shallow marsh or vernal pool habitat suitable for spreading navarretia is not present. The proposed action is expected to have ***no effect*** on this species.

Common Name	Scientific Name	Federal Status	General Habitat Description	Habitat Present/ Absent	Rationale
Invertebrates					
Kern primrose sphinx moth	*Euproserpinus euterpe*	FT	Occur in desert scrub habitats, particularly in and around washes; has a very restricted distribution and is currently known from only two sites at the southern end of the Central Valley.	A	**No Potential to Occur:** The BSA does not support desert scrub habitat suitable for Kern primrose sphinx moth. The proposed action is expected to have ***no effect*** on this species.
vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Occur in vernal pool habitats, including depressions in sandstone, to small swale, earth slump, or basalt-flow depressions with a grassy or, occasionally, muddy bottom in grassland.	A	**No Potential to Occur:** The BSA does not support vernal pool habitat suitable for vernal pool fairy shrimp. The proposed action is expected to have ***no effect*** on this species.
Fish					
South-Central California Coast steelhead Distinct Population Segment (DPS)	*Oncorhynchus mykiss*	FT	Occur in clear, cool water with abundant in-stream cover, well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio.	P/CH	**Habitat Present/Potential to Occur:** The proposed action area supports potentially suitable habitat for this species within Jack Creek, Summit Creek, and Paso Robles Creek. The proposed action is expected to result in a ***may affect, likely to adversely affect*** determination for this species.

Common Name	Scientific Name	Federal Status	General Habitat Description	Habitat Present/ Absent	Rationale
Amphibians					
California red-legged frog	*Rana draytonii*	FT	Occur in aquatic habitats with little or no flow and surface water depths to at least 2.3 feet. Presence of fairly sturdy underwater supports such as cattails.	P	**Habitat Present/Potential to Occur:** The BSA supports suitable habitat for this species within Jack Creek and there are reported occurrences about three miles south and southwest of the BSA. The BSA does not occur within a critical habitat unit. Protocol surveys were not conducted but presence of California red-legged frog within the BSA is inferred. The proposed action is expected to result in a ***may affect, likely to adversely affect*** determination for this species.
California tiger salamander	*Ambystoma californiense*	FT	Require underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	A	**No Potential to Occur:** The BSA does not support vernal pool habitat and is outside the current documented range of California tiger salamander. The proposed action is expected to have ***no effect*** on this species.
Reptiles					
blunt-nosed leopard lizard	*Gambelia sila*	FE	Resident of sparsely vegetated alkali and desert scrub habitats in areas of low topography; seeks cover in mammal burrows, under shrubs, or fence posts; does not excavate its own burrows.	A	**No Potential to Occur:** The BSA does not support sparsely vegetated alkali or desert scrub habitat suitable for blunt-nosed leopard lizard and is outside the documented range of this species. The proposed action is expected to have ***no effect*** on this species.

Common Name	Scientific Name	Federal Status	General Habitat Description	Habitat Present/ Absent	Rationale
Birds					
California clapper rail	*Rallus longirostris obsoletus*	FE, MBTA	Occur in saltwater and brackish marshes traversed by tidal estuaries near San Francisco Bay; associated with abundant growths of pickleweed, but feed away from cover on invertebrates from mud-bottomed estuaries.	A	**No Potential to Occur:** The BSA does not support saltwater or brackish marsh habitat suitable for California clapper rail. The proposed action is expected to have ***no effect*** on this species.
California condor	*Gymnogyps californianus*	FE	Occur in open savannahs, grasslands, and foothill chaparral in mountain ranges with moderate altitudes; nest in deep canyons on rock walls with clefts.	A	**No Potential to Occur:** The BSA does support open savannahs, grasslands, or foothill chaparral in mountain ranges suitable for California condor. The BSA is outside the documented range of this species. The proposed action is expected to have ***no effect*** on this species.
least Bell's vireo	*Vireo bellii pusillus*	FE, MBTA	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2,000 feet; nests are placed along margins of bushes or on twigs projecting into pathways, usually willow, coyote brush, and mesquite.	HP	**Habitat Present/Potential to Occur:** Arroyo willow thicket habitat in the BSA could provide suitable habitat for range-expanding individuals. Least Bell's vireo was not observed during surveys of the BSA but is considered to have the potential to occur. The proposed action is expected to result in a ***may affect, not likely to adversely affect*** determination for this species.

Common Name	Scientific Name	Federal Status	General Habitat Description	Habitat Present/ Absent	Rationale
southwestern willow flycatcher	*Empidonax traillii extimus*	FE, MBTA	Occur in riparian woodlands in southern California.	HP	**Habitat Present/Potential to Occur:** Although BSA is not located within the current documented range of this species, arroyo willow thicket may provide habitat for this species. Southwestern willow flycatcher has been documented migrating through San Luis Obispo County; therefore, there is potential for occurrence of infrequent foraging individuals. The proposed action is expected to result in a ***may affect, not likely to adversely affect*** determination for this species.
Mammals					
giant kangaroo rat	*Dipodomys ingens*	FE	Occur in annual grasslands on the western side of the San Joaquin Valley; marginal habitat in alkali scrub; need level terrain and sandy loam soils for burrowing.	A	**No Potential to Occur:** The BSA is not located within the current documented range of giant kangaroo rat and does not support annual grasslands or alkali scrub habitat suitable for this species. The proposed action is expected to have ***no effect*** on this species.
San Joaquin kit fox		FE	Historic range included most of the San Joaquin Valley from San Joaquin County southward to southern Kern County; currently occur in the remaining native valley and foothill grasslands and saltbush scrub communities of the valley floor and surrounding foothills from southern Kern County north to Merced County.	A	**No Potential to Occur:** The BSA is not located within the current documented range of San Joaquin kit fox and does not support habitat suitable for this species. The proposed action is expected to have ***no effect*** on this species.

Common Name	Scientific Name	Federal Status	General Habitat Description	Habitat Present/ Absent	Rationale
Critical Habitat					
South-Central California Coast steelhead DPS Critical Habitat	*Oncorhynchus mykiss*	CH	South-Central California Coast steelhead streams are streams that are known to support spawning populations of South-Central California Coast steelhead and are within the South-Central California Coast steelhead DPS, from Monterey to San Luis Obispo Counties.	P	**Habitat Present:** Jack Creek is within the South-Central California Coast steelhead DPS Salinas River Hydrologic Unit 3309, Paso Robles Hydrologic Sub-Area 330981. The proposed action is expected to result in a ***may affect, not likely to adversely affect*** determination for federally designated critical habitat for this species.
California red-legged frog Critical Habitat	*Rana draytonii*	CH	California red-legged frog prefers aquatic habitats with little or no flow and surface water present through at least June, with adjacent riparian and upland habitats for foraging and dispersal.	A	**No Potential to Occur:** Critical habitat Unit SLO 2 is four miles southwest and SLO 3 is four miles south of the BSA; however, Jack Creek is not within the designated critical habitat area. The proposed action is expected to have ***no effect*** on federally designated critical habitat for this species.

Sources:

CNDDB RareFind 5 five-mile radius search from BSA (Accessed October 2019, Appendix C).
USFWS IPaC online. Available at: http://ecos.fws.gov/ipac/ (Accessed October 2019, Appendix C).
NMFS Official Species List (October 2019, Appendix C).

Status Codes:

Federal Endangered (FE); Federal Threatened (FT); Migratory Bird Treaty Act (MBTA); Critical Habitat [CH] – project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

Absent [A] – no habitat present and no further work needed.
Habitat Present [HP] –habitat is or may be present. The species may be present.
Present [P] – the species is present.

Botanical surveys were conducted in accordance with California Department of Fish and Wildlife (CDFW) *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant populations and Natural Communities* (CDFW 2009) and the USFWS *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 2000). Reconnaissance surveys for wildlife were also conducted in conjunction with seasonally timed botanical and jurisdictional waters assessment surveys. Plant species nomenclature followed the second edition of *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). A comprehensive list of all plant and wildlife species observed within the proposed action area during the surveys was compiled (Appendix D).

2.3. Personnel and Survey Dates

2.3.1. Field Surveys

Table 2 summarizes survey efforts conducted for the proposed action.

Table 2: Survey Tasks, Dates, and Personnel

Study or Survey	Dates	Personnel
General Site Visit	June 1, 2016	Jon Claxton (SWCA)
Biological Survey	March 24, 2017	Kate Ballantyne, Katie Drexhage, Kristie Scarazzo (County of San Luis Obispo)
Botanical Surveys and Wetland Delineation	May 13, 2017	Barrett Holland (SWCA)

2.4. Agency Coordination and Professional Contacts

The following is a chronological summary of regulatory agency coordination and correspondence conducted in support of this BA:

- **October 10, 2019:** SWCA submitted a request through the USFWS online IPaC species list system for an official USFWS species list for the BSA, Consultation Code: 08EVEN00-2018-SLI-0313 (USFWS 2019; Appendix C).

- **October 10, 2019:** SWCA submitted a request through the NMFS West Coast Region website for an official NMFS species list for the BSA (NMFS 2019; Appendix C).

2.5. Limitations That May Influence Results

Sensitive plant species with the potential to occur in the proposed action area may be annual species that may be difficult to detect following seasons of abnormal rainfall, or during those times of the year when particular species do not typically flower. The botanical surveys conducted in support of this BA were timed to accommodate the flowering periods of the species considered in this document. The botanical surveys were comprehensive, and all plant species encountered during the surveys were identified to the lowest possible taxonomic level, which is required for accurate identification and reporting.

Sensitive wildlife species with the potential to occur in the proposed action area may be cryptic (difficult to detect) or transient, migratory species. The population size and locations of sensitive species may fluctuate through time. Because of this, the data collected for this BA represents a "snap shot" in time and may not reflect actual future conditions.

The existing bridge and trees within the proposed action area were inspected for nesting birds. However, even though no nesting birds were observed, birds may establish nests within the project limits prior to the onset of construction. Nesting bird surveys are time sensitive and are often repeated several times before the onset of construction activities, especially if construction will occur during the typical nesting bird season (February 1 to September 1).

No formal protocol surveys were conducted for those sensitive wildlife species that have established survey protocols and are considered to have the potential to occur within the BSA. The presence of California red-legged frog (*Rana draytonii*) is inferred due to the suitable habitat conditions within the Jack Creek channel and records of this species in the vicinity of the proposed action area (CNDDB 2019). No protocol-level surveys were conducted for least Bell's vireo (*Vireo bellii pusillus*) or southwestern willow flycatcher (*Empidonax traillii extimus*) as these species are not expected to utilize the proposed action area for nesting purposes.

Chapter 3. Results: Environmental Setting

3.1. Description of Existing Biological and Physical Conditions

3.1.1. Biological Study Area and Proposed Action Area

The BSA comprises 3.82 acres and encompasses all areas of potential ground disturbance (including staging areas) for the proposed action. The BSA is west of the city of Paso Robles in a rural area of San Luis Obispo County surrounded by agricultural and low-density residential land uses. Dover Canyon Road is a winding, paved rural road through rolling oak woodland terrain typical of the Santa Lucia Mountain Range. There is an equestrian facility located immediately southwest of the proposed action area and the bridge over Jack Creek serves 10 to 12 residential properties.

The proposed action area is defined as all areas that may be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR 402.02). The proposed action area for this project is considered to be the entire BSA, as described above.

3.1.2. Physical Conditions

Elevation in this area is approximately 1,075 to 1,125 feet (325 to 340 meters) above mean sea level. Paso Robles is subject to a Mediterranean climate with hot and dry summer seasons and cooler temperatures with light to moderate precipitation during the winter seasons. The average temperatures in this area range between 33 degrees Fahrenheit (°F) during the months of January and December and 92°F in July and August, based on data collected at the Paso Robles, California Station (046730) (Western Regional Climate Center [WRCC] 2018). The average annual precipitation in this area is 15.21 inches, with the majority of rain falling between December and March (WRCC 2018).

3.1.2.1. SOILS PRESENT

A review of the Natural Resources Conservation Service (NRCS) web soil survey map indicated the proposed action area is underlain by three soil types (NRCS 2018):

Pico Fine Sandy Loam, 2 to 9 percent slopes, are found on alluvial fans along footslopes and typically consist of alluvium derived from calcareous sedimentary

sources. They are well-drained soils with a low runoff class, more than 80 inches to a restrictive layer and water table.

Still Clay Loam, 0 to 2 percent slopes, are found on alluvial flats on toe slopes and consist of alluvium-derived sedimentary rock. They are well-drained soils with a runoff class, more than 80 inches to a restrictive layer and water table. This soil type is considered prime farmland, if irrigated.

Xerofluevents-Riverwash Association, 0 to 5 percent slopes, are found on alluvial fans, floodplains, and stream terraces and consist of mixed alluvium derived from igneous and sedimentary rock. These are somewhat excessively drained soils with a very low runoff class and more than 80 inches to a restrictive layer and water table.

There was a distinct difference in soil/sediment texture in areas below and above the ordinary high water mark (OHWM). The soils within the stream channel, below the OHWM observed during the surveys, consisted of gravel and cobble, with a few boulders, and areas above the OHWM were clayey.

3.1.2.2. HYDROLOGIC RESOURCES

The BSA is located within the Paso Robles Creek Subwatershed (Hydrologic Unit Code [HUC]: 180600050402), which is within the larger Paso Robles Creek-Salinas River Watershed (HUC: 1806000504). The Paso Robles Creek-Salinas River Watershed encompasses approximately 143,654 acres in northern-central San Luis Obispo County and includes a portion of the Salinas River and adjacent tributaries. Upper Paso Robles Creek and its tributaries are steep pre-Quaternary non-infiltrative headwaters with steep, moderately infiltrative early to mid-tertiary valleys (SLO Watershed Project 2019). The Dover Canyon Road Bridge is over Jack Creek, just south of the confluence of Summit Creek with Jack Creek. Both Jack Creek and Summit Creek are intermittent streams that convey water seasonally. Jack Creek flows into Paso Robles Creek about three miles southeast of the BSA, and Paso Robles Creek flows into the Salinas River, which eventually drains to the Pacific Ocean.

3.1.3. Biological Conditions in the Project Area

The proposed action area is in a rural area surrounded by open space and low-density residential land uses. The BSA is 3.82 acres and the vegetation is affected by the presence of the bridge as well as roads and residences adjacent to the BSA. The dominant natural communities within the BSA were characterized using the naming conventions of *A Manual of California Vegetation* (Sawyer et al. 2009) and include

the *Preliminary Description of Terrestrial Natural Communities of California* (Holland 1986) for comparison. Plant names follow the *Jepson Manual, Vascular Plants of California* (Baldwin et al 2012). The natural community classifications were cross-referenced with the CNDDB to determine what natural communities are recognized as "sensitive" by CDFW. Figure 3 depicts the vegetation communities observed within the BSA, which are also listed in Table 3 below. Photographs of the BSA are included in Appendix E.

Table 3: Plant Community/Habitat Present within the BSA

Plant Community/Habitat	Total Acres within BSA
Annual Brome Grassland	2.12
Valley Oak Woodland	0.55
Arroyo Willow Thicket	0.30
Stream Channel[1]	0.12
Developed/Paved	0.72
Total	**3.82**

[1] Delineated by OHWM.

3.1.3.1. ANNUAL BROME GRASSLAND

Upland areas where non-native grasses and other native and non-native herbaceous plant species dominate are classified as annual brome grasslands (Sawyer et al. 2009) or non-native grassland (Holland 1986). Plant species within this habitat type are primarily non-native and naturalized grasses, including bromes (*Bromus diandrus, B. hordeaceus, B. catharticus*), wall barley (*Festuca bromioides*), wild oats (*Avena* spp.), and foxtail (*Hordeum marinum*). This habitat type provides limited resources for wildlife and is utilized primarily by species tolerant of human activities.

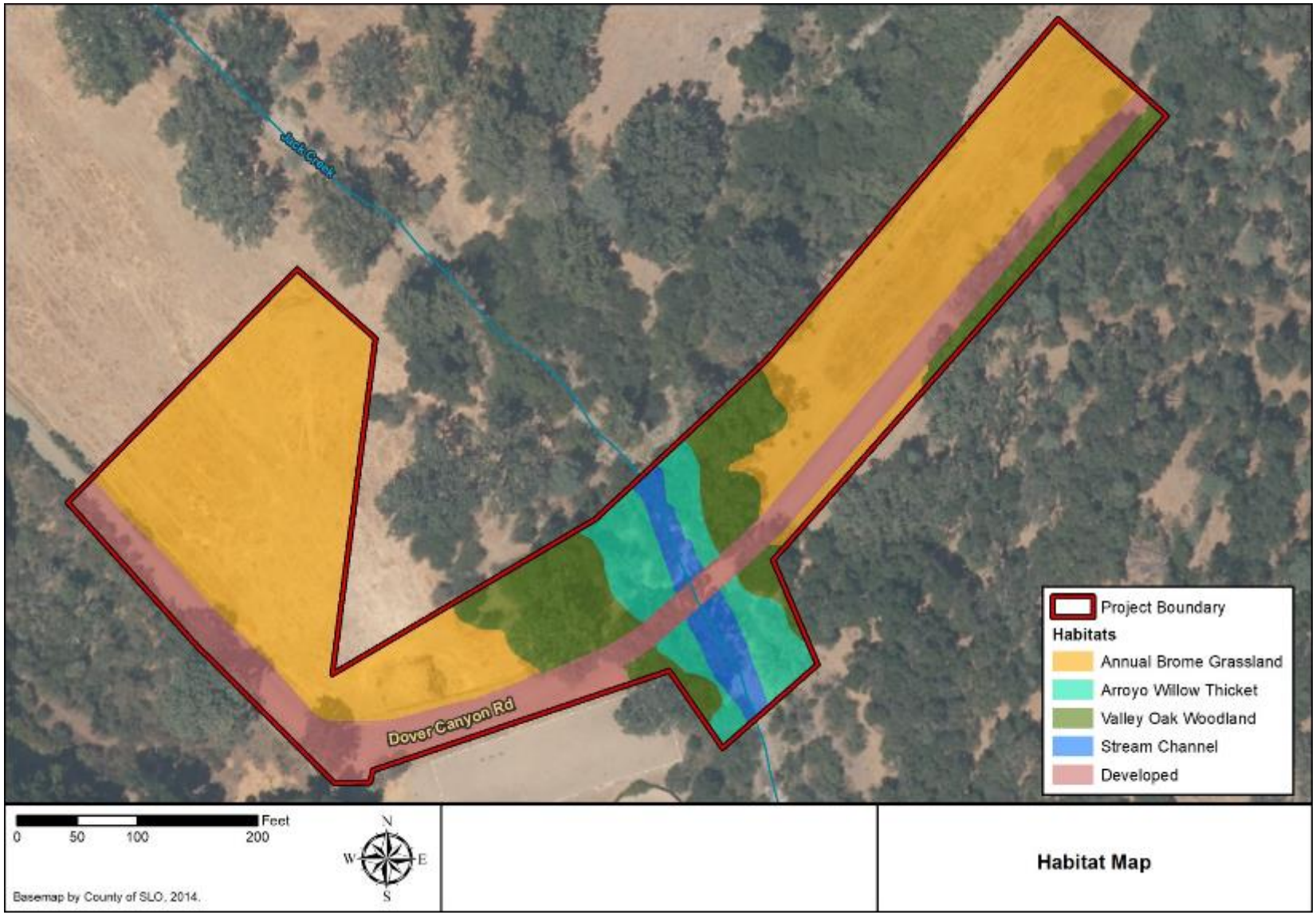
The disturbed condition of these lands within the BSA reduces their habitat value and ability to sustain sensitive plants or diverse wildlife assemblages, although they may provide shelter for reptiles and small mammals. A total of 2.12 acres of annual brome grassland is present within the BSA.

3.1.3.2. VALLEY OAK WOODLAND

Valley oak woodland alliance (Sawyer et al. 2009) or valley oak woodland (Holland 1986) is present within the BSA, with valley oak (*Quercus lobata*), dominant or co-dominant, and coast live oak (*Quercus agrifolia*) forming an open to continuous canopy within and adjacent to the BSA. This plant community typically occurs on alluvial or residual soils in valley bottoms or lower slopes that may be intermittently

flooded. Within the BSA, valley oaks are more prevalent adjacent to the riparian corridor and the coast live oak is more common on the upland slopes.

Figure 3: Habitat Map



The understory is a mix of native shrubs, such as coyote brush (*Baccharis pilularis* ssp. *consanguinea*), common snow berry (*Symphoricarpos albus*), and poison oak (*Toxicodendron diversilobum*), and native and non-native grasses and herbaceous species including bromes, wild oats, deer grass (*Muhlenbergia rigens*), and California figwort (*Scrophularia californica*). Valley oak woodland is considered a natural community of concern by the CDFW (CDFW CA Code 71.040.00). A total of 0.55 acre of valley oak woodland was identified within the BSA, which includes portions of the oak tree canopy that overlaps Dover Canyon Road.

3.1.3.3. ARROYO WILLOW THICKET

Jack Creek supports arroyo willow thicket (Sawyer et al. 2009) or Central Coast riparian scrub (Holland 1986). Both shrub and tree forms of arroyo willow (*Salix lasiolepis*) are dominant on the banks of the creek, with California sycamore (*Platanus racemosa*) and California bay (*Umbellularia californica*) present. Valley oak trees are also mixed in with the willows, although most of the oak canopy is from larger trees rooted outside the streambanks.

The understory includes black elderberry (*Sambucus nigra* ssp. *caerulea*), mulefat (*Baccharis salicifolia*), mugwort (*Artemisia douglasiana*), and stinging nettle (*Urtica dioica* ssp. *holosericea*). The arroyo willow thicket (Central Coast riparian scrub) is considered a riparian plant community for jurisdictional purposes. A total of 0.30 acre of arroyo willow thicket is present in the BSA.

3.1.3.4. STREAM CHANNEL

The stream channel is classified as Riverine habitat (Cowardin et al. 1979). Within the stream channel, plant species include mulefat and mugwort, and patches of sedges (*Carex* spp., *Scirpus pungens*), rushes (*Juncus effusus*, *J. xiphioides*), hedge nettle (*Stachys ajugoides*), and other herbaceous plants. There were no areas dominated by emergent wetland vegetation outside the OHWM in the BSA.

Riverine habitats located within the OHWMs are within USACE jurisdiction. A total of 0.13 acre of stream channel is present in the BSA. The stream channel is considered a sensitive habitat type because it is designated as steelhead critical habitat by the NMFS, whether or not individual steelhead are present.

3.1.3.5. DEVELOPED

Developed areas within the BSA consist of paved roads, road shoulders, driveways, and the Dover Canyon Road Bridge. A total of 0.73 acre of developed surfaces are present within the BSA.

3.1.4. Habitats of Concern

The BSA falls within designated critical habitat for the South-Central California Coast steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS). Designated critical habitat for California red-legged frog occurs about 4.5 miles west and south of the BSA (Figure 4). The following section describes critical habitat for the South-Central California Coast steelhead.

3.1.4.1. SOUTH-CENTRAL CALIFORNIA COAST STEELHEAD CRITICAL HABITAT

South-Central California Coast steelhead streams are streams known to support spawning populations of South-Central California Coast steelhead and are within the South-Central California Coast steelhead DPS, from Monterey to San Luis Obispo Counties. Jack Creek is within the South-Central California Coast steelhead DPS Estero Bay Hydrologic Unit 3310 and Oceano Hydrologic Sub-area 331031.

Following a status review in 2005, a final listing determination was issued on January 5, 2006, for the South-Central California Coast steelhead DPS, and critical habitat was designated within 32 DPS watersheds, including the Jack Creek Watershed (NMFS 2011). Jack Creek (within the BSA), Summit Creek (upstream of the BSA), and Paso Robles Creek (downstream of the BSA), are identified as critical habitat for South-Central California Coast steelhead.

3.1.5. Invasive Species

A total of 17 invasive plant species as identified by the California Invasive Plant Council (Cal-IPC) Inventory were observed within the BSA (Table 4). Himalayan blackberry (*Rubus armeniacus*) was the only non-native plant species with a Cal-IPC category rating of High observed in the BSA. Eight plant species were observed with a Cal-IPC category rating of Moderate, and eight species were observed with a category rating of Limited.

Figure 4: Critical Habitat Map

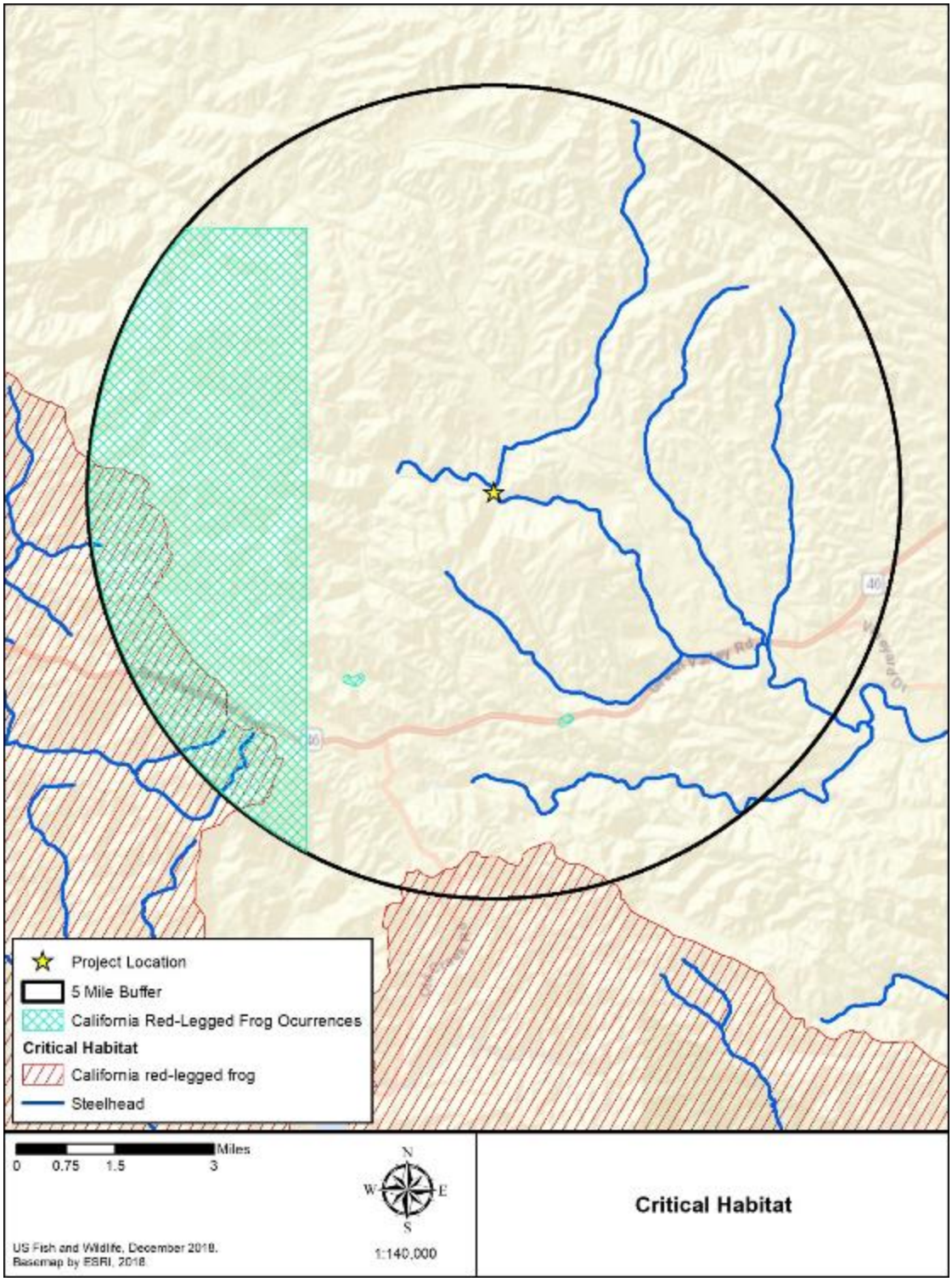


Table 4: Plants Observed in the BSA that are included in the Cal-IPC Plant Inventory

Scientific Name	Common Name	Cal-IPC Rating	Relative Density within the BSA
Avena spp.	wild oats	Moderate	Low/Sparse
Bromus diandrus	ripgut brome	Moderate	Low/Sparse
Bromus hordeaceus	soft chess brome	Limited	Low/Sparse
Carduus pycnocephalus	Italian thistle	Moderate	Low/Sparse
Conium maculatum	Poison hemlock	Moderate	Low/Sparse
Cynosurus echinatus	dogtail grass	Moderate	Low/Sparse
Festuca perennis	Italian rye	Moderate	Low/Sparse
Hordeum murinum	foxtail barley	Moderate	Low/Sparse
Marrubium vulgare	horehound	Limited	Low/Sparse
Plantago lanceolata	narrow leaf plantain	Limited	Low/Sparse
Polypogon monspeliensis	rabbit'sfoot grass	Limited	Low/Sparse
Rubus armeniacus	Himalayan blackberry	High	Low/Sparse
Rumex crispus	dock	Limited	Low/Sparse
Silybum marianum	milk thistle	Limited	Low/Sparse
Stipa milliacea	smilo grass	Limited	Low/Sparse
Torilis arvensis	hedge parsley	Moderate	Low/Sparse
Verbascum thapsus	wooly mullien	Limited	Low/Sparse

3.1.6. Wildlife Observed

No federally listed species were observed within the BSA. The list of wildlife species observed within the proposed action area during the surveys is included in Appendix D.

3.1.7. Habitat Connectivity

The California Essential Habitat Connectivity Project was queried for Essential Habitat Connectivity, which are the best available data describing key areas for maintaining connectivity between large blocks of land for wildlife corridor purposes (CDFW 2010). These key areas are referred to as Essential Connectivity Areas, which are only intended to be a broad-scale representation of areas that provide essential connectivity. The BSA does not fall within an Essential Connectivity Area. It is expected that additional linkages will be identified as new data becomes available for various species. For the purposes of this analysis, it is reasonable to assume that the riparian corridor within the proposed action area may be used by wildlife as movement corridors. The Jack Creek and Summit Creek riparian corridors provide habitat for many species.

Chapter 4. Results: Biological Resources, Discussion of Impacts and Mitigation

4.1. Federally Listed/Proposed Plant Species

Based on a review of sensitive species occurrences in the area and the official USFWS species list obtained for the proposed action, the following four federally listed plant species were evaluated for potential to occur within the BSA: the federally endangered California jewelflower (*Caulanthus californicus*), Chorro Creek bog thistle (*Cirsium fontinale* var. *obispoense*), and marsh sandwort (*Arenaria paludicola*), and the federally threatened spreading navarretia (*Navarretia fossalis*). The BSA was determined to not support suitable habitat or conditions for any of the four plant species evaluated for potential to occur; therefore, it is expected that the proposed action will have *no effect* to listed plant species.

4.2. Federally Listed/Proposed Animal Species Occurrences

Based on a review of sensitive species occurrences in the area and the official USFWS and NMFS species lists obtained for the proposed action, 12 federally listed wildlife species were evaluated for potential to occur within the BSA. These species include the federally endangered giant kangaroo rat (*Dipodomys ingens*), San Joaquin kit fox (*Vulpes macrotis mutica*), California clapper rail (*Rallus longirostris obsoletus*), California condor (*Gymnogyps californianus*), least Bell's vireo, southwestern willow flycatcher, and blunt-nosed leopard lizard (*Gambelia sila*), and the federally threatened Kern primrose sphinx moth (*Euproserpinus euterpe*), vernal pool fairy shrimp (*Branchinecta lynchi*), South-Central California Coast steelhead DPS, California red-legged frog, and California tiger salamander (*Ambystoma californiense*).

The BSA was determined to provide suitable habitat for the following four federally listed species: South-Central California Coast steelhead DPS, California red-legged frog, least Bell's vireo, and southwestern willow flycatcher (see Table 1). Each of these species is discussed further below.

One designated critical habitat occurs within the BSA for South-Central California Coast steelhead DPS. Potential project-related effects to the steelhead designated critical habitat on-site are discussed below in Section 4.2.2.

4.2.1. Discussion of South-Central California Coast Steelhead

Steelhead occupy streams in watersheds with perennial fresh water. The populations of steelhead on the California central coast are part of the South-Central California Coast DPS. The South-Central California Coast DPS of steelhead is federally listed as threatened, and the state considers the species to be a California Species of Special Concern (SSC).

Steelhead are genetically indistinct from rainbow trout and differ only in their behavior. They prefer cool, clear, coastal streams and rivers with a less than five percent gradient. Steelhead exhibit life cycle strategies similar to other salmonids, known as anadromy. Steelhead trout enter streams and rivers to prepare for migration to spawning grounds as soon as streamflow is adequate, and the summer sand bars present at the mouths of many coastal lagoons have breached.

Optimal habitat for steelhead on the Pacific Coast can be characterized by clear, cool water with abundant instream cover (e.g., submerged branches, rocks, logs), well-vegetated stream margins, relatively stable water flow, and a 1:1 pool-to-riffle ratio (Raleigh et al. 1984). However, steelhead are occasionally found in reaches of streams containing habitat that would be considered less than optimal. Steelhead within the central coast region start to migrate up coastal drainages following the first substantial seasonal rainfall. Spawning typically occurs during the spring in riffle areas that consist of clean, coarse gravels. Juveniles (smolts), after rearing for one to three years within freshwater, and post-spawning adults out-migrate to the ocean from March to July, depending on stream flows.

4.2.1.1. SURVEY RESULTS

The South-Central California Coast steelhead Recovery Planning Area, one of the 32 DPSs, extends from Monterey to San Luis Obispo Counties. Approximately 0.13 acre of South-Central California Coast steelhead DPS critical habitat are present within the proposed action area. This area is limited to the Jack Creek channel that is shown in Figure 3.

Although Jack Creek is designated as critical habitat for South-Central California Coast steelhead, there are no reported occurrences of this species within Jack Creek or within five miles of the BSA (CNDDB 2019). Additionally, according to the *San Luis Obispo County Regional Instream Flow Assessment* (Stillwater Sciences 2014), Jack Creek does not carry sufficient flows to provide steelhead habitat, although this information is based on gauging data prior to 1978. While habitat units are

hydrologically connected, it is expected that streams in the vicinity of the proposed action have insufficient water velocity to support food delivery or to provide migration among habitat units during the spring and summer. The study does state that additional data are needed for certain streams and does not address requirements of fish passage flows (Stillwater Sciences 2014). Individual steelhead were not identified within the BSA during the field surveys, although focused surveys were not conducted. This species is considered to have a low potential to occur, although steelhead may be present in the Salinas River and their presence within the BSA during construction cannot be ruled out unless Jack Creek is dry. Therefore, presence of South-Central California Coast steelhead is inferred.

4.2.1.2. CRITICAL HABITAT

Jack Creek is designated as critical habitat for the South-Central California Coast Steelhead DPS.

4.2.1.3. AVOIDANCE AND MINIMIZATION EFFORTS

The proposed action has the potential to result in "take" of steelhead; therefore, Caltrans must consult with NMFS under Section 7 of the ESA to obtain a Biological Opinion for the proposed action. The Biological Opinion will include several Reasonable and Prudent Measures and Terms and Conditions to reduce the effects on steelhead and their habitat. Implementation of the avoidance and minimization measures listed below, which apply to jurisdictional areas within the stream channel, will serve to avoid and minimize potential project-related adverse effects to steelhead and their habitat:

1 Prior to construction, the County of San Luis Obispo Department of Public Works will retain a qualified biological monitor(s) to monitor construction and ensure compliance with the avoidance and minimization efforts outlined within all the project environmental documents. At a minimum, monitoring will occur during initial ground disturbance activities and vegetation removal within the Jack Creek corridor. Monitoring may be reduced to part time once initial disturbance and vegetation removal activities are complete. The duration of monitoring should be at least once per week throughout the remaining construction phases and may be conducted by qualified personnel, unless specified otherwise by permitting agencies.

2 Prior to construction, all personnel will participate in an environmental awareness training program conducted by a qualified biologist. The program shall include a description of steelhead, steelhead critical habitat, its legal/protected status, avoidance/minimization measures to be implemented during the project, and the implications of violating federal Endangered Species Act and permit conditions.

3 Construction activities within jurisdictional areas will be conducted during the dry season when stream flows will be at annual lows (generally June 15 through October 31) in any given year, or as otherwise directed by the regulatory agencies. Deviations from this work window can be made with permission from the relevant regulatory agencies.

4 During in-stream work, a qualified biologist approved by the National Oceanic and Atmospheric Administration National Marine Fisheries Service and with experience in steelhead biology and ecology, aquatic habitats, biological monitoring (including diversion/dewatering), and capturing, handling, and relocating fish species will be retained. During in-stream work, the biological monitor(s) will monitor placement and removal of any required stream diversions/dewatering and only the approved biologist will capture stranded steelhead and other native fish species and relocate them to suitable habitat, as appropriate. The approved biologist(s) will capture steelhead stranded as a result of diversion/dewatering and relocate steelhead to the nearest suitable in-stream habitat. The approved biologist(s) will note the number of steelhead observed in the affected area, the number of steelhead relocated, and the date and time of the collection and relocation.

5 During in-stream work, if pumps are incorporated to assist in temporarily dewatering the site, intakes will be completely screened with no larger than 0.2-inch (five-millimeter) wire mesh to prevent steelhead and other sensitive aquatic species from entering the pump system. The form and function of pumps used during the dewatering activities will be checked daily, at a minimum, to ensure a dry work environment and minimize adverse effects to aquatic species and habitats.

4.2.1.4. PROJECT EFFECTS

Implementation of the proposed action may result in temporary impacts to the open water habitat in Jack Creek as result of construction activities within the proposed

action work area and equipment access into the river channel. Based on the current project plans, including the dewatering plans, approximately 5,100 square feet (0.12 acre) of temporary adverse effects and up to 50 square feet (less than 0.001 acre) of permanent effects (removal and replacement of RSP may encroach into the OHWM) would occur within the channel (Figure 5). The bridge design does not include any new piles or other permanent fill in the stream channel, with the exception of 375 square feet for replacement of RSP; therefore, no permanent impacts to steelhead are expected.

If present within the BSA during the proposed action, individual steelhead may be directly impacted. They may be stranded in portions of the creek that must be dewatered, become caught in dewatering pumps, or made vulnerable to predation from foraging birds and mammals. With implementation of avoidance and minimization measures, these potential impacts may be avoided.

Potential indirect impacts to steelhead from the proposed action may occur and include sediment deposition downstream of the work area, which may adversely impact downstream water quality. However, these potential indirect impacts to steelhead may be avoided through the use of appropriate silt and erosion control measures.

4.2.1.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

The proposed avoidance and minimization efforts will serve to reduce effects to individual steelhead and designated critical habitat. Further modifications to the proposed action are not necessary to mitigate effects on steelhead or its designated critical habitat.

4.2.1.6. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the vicinity of the proposed action area considered in this assessment. To date, the known Caltrans-related transportation projects to be considered for cumulative impacts would be the Jack Creek Road Bridge Replacement Project over Paso Robles Creek, the Graves Creek Bridge at Santa Lucia Road Bridge Replacement Project, and the Via Avenue Bridge Replacement Project over Atascadero Creek. All of these proposed actions have the potential to impact streams that flow into the Salinas River.

Figure 5: Jurisdictional Waters Impact Map

However, none of the proposed actions are expected to result in, or contribute to, cumulative impacts to steelhead, as any impacts will be mitigated through implementation of the restoration plan, installation of Best Management Practices (BMPs), and other measures. Therefore, no cumulative effects are likely to occur to steelhead and none are expected or anticipated.

4.2.2. Discussion of South-Central California Coast Steelhead Critical Habitat

South-Central California Coast steelhead streams are streams known to support spawning populations of South-Central California Coast steelhead and that are within the South-Central California Coast steelhead DPS, from Monterey to San Luis Obispo Counties. Following a status review in 2005, a final listing determination was issued on January 5, 2006, for the South-Central California Coast steelhead DPS, and critical habitat was designated within 32 DPS watersheds (NMFS 2005, 2011).

The physical and biological features of this critical habitat designation include the following:

- Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.
- Freshwater rearing sites with:
    (i) Water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility;
    (ii) Water quality and forage supporting juvenile development; and,
    (iii) Natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.
- Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
- Estuarine areas free of obstruction and excessive predation with:

(i) Water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh- and saltwater;

(ii) Natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels; and,

(iii) Juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation.

According to the South-Central California Coast Steelhead Recovery Plan (NMFS 2013), "Very High" threats to the Salinas River mainstem steelhead trout population include dams and surface water diversions, groundwater extraction, agricultural development, levees and channelization, flood control maintenance, and agricultural effluents; "High" threats include recreational facilities and non-native species; and "Medium" threats include urban development, roads, and culverts and road crossings (passage barriers).

Adverse modification of critical habitat is defined as a "direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species."

4.2.2.1. SURVEY RESULTS

Jack Creek is designated as critical habitat for the South-Central California Coast steelhead DPS (70 CFR 52488–52627). Critical habitat designated along Jack Creek is within the Paso Robles Hydrologic Sub-area 330981, in the Salinas River Hydrologic Unit 3309. Jack Creek converges with Paso Robles Creek about three miles southeast of the BSA, and Paso Robles Creek flows into the Salinas River, which eventually drains to the Pacific Ocean. Approximately 5,100 square feet (0.12 acre) of South-Central California Coast steelhead DPS critical habitat are present within the BSA. This area is limited to the Jack Creek channel shown in Figure 5.

4.2.2.2. AVOIDANCE AND MINIMIZATION EFFORTS

Implementation of the following efforts are recommended to avoid and minimize potential effects to steelhead critical habitat:

6 Prior to initiation of any construction activities, including vegetation clearing or grubbing, sturdy high-visibility fencing will be installed to protect the jurisdictional areas adjacent to the designated work areas. This fencing will be placed so that unnecessary adverse effects to the adjacent

habitats are avoided. No construction work (including storage of materials) will occur outside of the specified project limits. The fencing will remain in place during the entire construction period, be monitored periodically by a qualified biologist, and be maintained as needed by the contractor.

7 Prior to construction, a Storm Water Pollution Prevention Plan or Water Pollution control Plan will be prepared for the project. Provisions of this plan will be implemented during and after construction as necessary to avoid and minimize erosion and stormwater pollution in and near the work area.

8 Prior to construction, the California Department of Transportation and County of San Luis Obispo will ensure that a plan is in place for prompt and effective response to any accidental spills. Workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

9 During construction, erosion control measures (e.g., silt fencing, fiber rolls, and barriers) will remain available on-site and will be utilized as necessary to prevent erosion and sedimentation in jurisdictional areas. No synthetic plastic mesh products will be used for erosion control and use of these materials on-site is prohibited. Erosion control measures and other suitable best management practices used will be checked to ensure that they are intact, functioning effectively, and maintained on a daily basis throughout the duration of construction. The contractor will also apply adequate dust control techniques, such as site watering, during construction to protect water quality.

10 During construction, the cleaning and refueling of equipment and vehicles will occur only within a designated staging area and at least 60 feet (20 meters) from wetlands or other aquatic areas. At a minimum, equipment and vehicles will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills.

11 During construction, trash will be contained, removed from the work site, and disposed of regularly. Following construction, trash and construction debris will be removed from the work areas. Vegetation removed from the construction site will be taken to a permitted landfill to prevent the spread of invasive species. If soil from weedy areas (such as areas with poison

hemlock or other invasive exotic plant species) must be removed off-site, the top six inches (152 millimeters) containing the seed layer in areas with weedy species will be disposed of at a permitted landfill.

12 During construction, no pets will be allowed on the construction site.

13 Prior to construction, the County of San Luis Obispo Department of Public Works will prepare a comprehensive Habitat Mitigation and Monitoring Plan that provides for a 1:1 restoration ratio for temporary impacts and a 3:1 enhancement ratio for permanent impacts, unless otherwise directed by regulatory agencies (a conceptual plan is provided in Appendix F). To the extent feasible, mitigation activities will be implemented within the Biological Study Area and/or the Jack Creek riparian corridor and in areas in and adjacent to the Biological Study Area that support exotic species, contain agricultural trash, and have erosion. These areas provide the most optimal mitigation opportunities on-site. Any revegetation will be conducted using only native plant species. The final Habitat Mitigation and Monitoring Plan will identify the specific mitigation sites and it will be implemented immediately following project completion.

4.2.2.3. PROJECT EFFECTS

Implementation of the proposed action would result in temporary adverse effects to Jack Creek as result of dewatering activities within the proposed action area and equipment access into the channel. Based on the current dewatering plans, approximately 5,100 square feet (0.121 acre) of temporary adverse effects and 50 square feet (0.001 acre) of permanent effects (removal of concrete and replacement with RSP may encroach into the OHWM) would occur within the creek channel. The bridge design does not include any additional piles or other permanent fill in the active channel under normal flow conditions, with the exception of 375 square feet for replacement of RSP; therefore, no permanent adverse effects to steelhead critical habitat are expected. Implementation of the avoidance and minimization efforts would reduce potential proposed action-related adverse effects to water quality and designated critical habitat within Jack Creek. With the implementation of the final Habitat Mitigation and Monitoring Plan (HMMP) (a Conceptual HMMP is provided in Appendix F) and removal of non-native invasive species, the proposed action may affect but is not likely to adversely affect critical habitat for South-Central California Coast steelhead.

4.2.2.4. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

Modification to the proposed action is not necessary to mitigate effects on federally designated steelhead critical habitat.

4.2.2.5. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the vicinity of the proposed action area considered in this assessment. To date, the known Caltrans-related transportation proposed actions to be considered for cumulative impacts would be the Jack Creek Road Bridge Replacement Project over Paso Robles Creek, the Graves Creek Bridge at Santa Lucia Road Bridge Replacement Project, and the Via Avenue Bridge Replacement Project over Atascadero Creek. All of these proposed actions have the potential to impact streams that flow into the Salinas River. However, none are expected to result in, or contribute to, cumulative impacts to steelhead, as any impacts will be mitigated through implementation of the restoration plan, installation of BMPs, and other measures. Therefore, the proposed action is not likely to result in, or contribute to, cumulative impacts to federally designated critical habitat for South-Central California Coast steelhead.

4.2.3. Discussion of California Red-Legged Frog

The California red-legged frog is federally threatened and considered a SSC by the CDFW. It is recognized by the reddish color that forms on the underside of its legs and belly and the presence of a diagnostic dorsolateral fold. The California red-legged frog historically ranged from Marin County southward to northern Baja California (Stebbins 2003). Presently, Monterey, San Luis Obispo, and Santa Barbara Counties support the largest remaining California red-legged populations within California.

California red-legged frogs use a variety of areas, including aquatic, riparian, and upland habitats. They prefer aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 2.3 feet, and the presence of fairly sturdy underwater supports such as cattails (*Typha* spp.). The largest densities of this species are typically associated with dense stands of overhanging willows and an intermixed fringe of sturdy emergent vegetation (Jennings and Hayes 1994). The California red-legged frog typically breeds from January to July, with peak breeding occurring in February and March. Softball-sized egg masses are attached to subsurface vegetation, and hatched tadpoles require 11 to 20 weeks to metamorphose. Metamorphosis typically occurs from July to September.

The California red-legged frog uses both riparian and upland habitats for foraging, shelter, cover, and nondispersal movement. Upland refugia may be natural, such as the spaces under boulders or rocks and organic debris (e.g., downed trees or logs), or manmade, such as certain industrial debris and agricultural features (e.g., drains, watering troughs, abandoned sheds, or stacks of hay or other vegetation); the California red-legged frog will also use small mammal burrows and moist leaf litter as refugia (USFWS 2010). Adults are predominantly nocturnal, while juveniles can be active at any time of day. Riparian habitat degradation, urbanization, predation by bullfrogs (*Lithobates catesbeiana*), and historic market harvesting have all reportedly contributed to the decline of the species.

4.2.3.1. SURVEY RESULTS

No protocol surveys were conducted for California red-legged frog and the species was not observed during reconnaissance surveys. Suitable in-stream aquatic habitat is present within the BSA, and the banks of the creek support vegetation that could be used as refugia. California red-legged frog was documented in and asphalt-lined ditch on the south side of State Route 46, approximately three miles south of the proposed action area, in January 2006 (CNDDB Occurrence Number 861), and in Rocky Creek near Santa Rosa Creek, approximately three miles southwest of the proposed action area, in June 2006 (CNDDB Occurrence Number 898). There is also a non-specific occurrence from a stream with suitable wetland and well-developed riparian habitat 2.5 miles west of the proposed action area from October 2006 (CNDDB Occurrence Number 381). California red-legged frog was also documented in Paso Robles Creek in 2008, near the confluence of Paso Robles Creek with the Salinas River, more than five miles downstream of the proposed action area (CNDDB Occurrence 617). Based on this information, presence within the BSA is inferred.

4.2.3.2. CRITICAL HABITAT

Jack Creek and the proposed action area is not within a California red-legged frog designated critical habitat unit (see Figure 4).

4.2.3.3. AVOIDANCE AND MINIMIZATION EFFORTS

The following measures are consistent with Caltrans' *Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program* (USFWS 2011), which includes the following applicable measures:

14 Only U.S. Fish and Wildlife Service-approved biologists will participate in activities associated with the capture, handling, and monitoring of California red-legged frogs. Biologists authorized under the Programmatic Biological Opinion do not need to resubmit their qualifications for subsequent projects conducted pursuant to the Programmatic Biological Opinion, unless the U.S. Fish and Wildlife Service has revoked their approval at any time during the life of the Programmatic Biological Opinion.

15 Ground disturbance will not begin until written approval is received from the U.S. Fish and Wildlife Service that the biologist(s) is qualified to conduct the work. The California Department of Transportation will request approval of the biologist(s) from the U.S. Fish and Wildlife Service.

16 A U.S. Fish and Wildlife Service-approved biologist will survey the project area no more than 48 hours before the onset of work activities. If any life stage of the California red-legged frog is found and these individuals are likely to be killed or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The U.S. Fish and Wildlife Service-approved biologist will relocate the California red-legged frogs the shortest distance possible to a location that contains suitable habitat and will not be affected by the activities associated with the project. The relocation site should be in the same drainage to the extent practicable. The California Department of Transportation will coordinate with the U.S. Fish and Wildlife Service on the relocation site prior to the capture of any California red-legged frogs.

17 Before any activities begin on a project, a U.S. Fish and Wildlife Service-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and its habitat, the specific measures that are being implemented to conserve the California red-legged frog for the current project, and the boundaries within which the project may be accomplished. Brochures, books, and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

18 A U.S. Fish and Wildlife Service-approved biologist will be present at the work site until California red-legged frogs have been relocated out of harm's way, workers have been instructed, and disturbance of the habitat has been completed. After this time, the County of San Luis Obispo Department of Public Works will designate a person to monitor on-site compliance with minimization measures. The U.S. Fish and Wildlife Service-approved biologist will ensure that this monitor receives the training outlined in Measure 17 above and in the identification of California red-legged frogs. If the monitor or the U.S. Fish and Wildlife Service-approved biologist recommends that work be stopped because California red-legged frogs would be affected in a manner not anticipated by the California Department of Transportation, County of San Luis Obispo, and U.S. Fish and Wildlife Service during the review of the proposed action, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the adverse effect immediately or require that all actions that are causing these effects to be halted. If work is stopped, the California Department of Transportation, County of San Luis Obispo, and U.S. Fish and Wildlife Service will be notified as soon as possible.

19 During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

20 All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 feet from riparian habitat or water bodies and in a location from where a spill would not drain directly toward aquatic habitat (e.g., on a slope that drains away from the water). The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the California Department of Transportation and County of San Luis Obispo will ensure that a plan is in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

21 Habitat contours will be returned to their original configuration at the end of project activities as much as practicable. This measure will be

implemented in all areas disturbed by activities associated with the project, unless the U.S. Fish and Wildlife Service, California Department of Transportation, and County of San Luis Obispo determine that it is not feasible, or modification of original contours would benefit the California red-legged frog.

22 The number of access routes, size of staging areas, and total area of activity will be limited to the minimum necessary to achieve the project goals. Environmentally Sensitive Areas will be delineated to confine access routes and construction areas to the minimum area necessary to complete construction and minimize the impact to California red-legged frog habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

23 The County of San Luis Obispo and California Department of Transportation will attempt to schedule work for times of the year when impacts to the California red-legged frog would be minimal. For example, work that would affect large pools that may support breeding would be avoided, to the maximum degree practicable, during the breeding season (November through May). Isolated pools that are important to maintain California red-legged frogs through the driest portions of the year would be avoided, to the maximum degree practicable, during the late summer and early fall. Habitat assessments, surveys, and coordination between the California Department of Transportation and U.S. Fish and Wildlife Service during project planning will be used to assist in scheduling work activities to avoid sensitive habitats during key times of year.

24 To control sedimentation during and after project implementation, the California Department of Transportation and County of San Luis Obispo will implement best management practices outlined in any authorizations or permits issued under the authorities of the Clean Water Act that it receives for the specific project. If best management practices are ineffective, the California Department of Transportation will attempt to remedy the situation immediately, in coordination with the U.S. Fish and Wildlife Service.

25 If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh no larger than 0.2 inch to prevent California red-legged frogs from entering the pump system. Water will be

released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.

26 Unless approved by the U.S. Fish and Wildlife Service, water will not be impounded in a manner that may attract California red-legged frogs.

27 A U.S. Fish and Wildlife Service-approved biologist will permanently remove any individuals of non-native species, such as bullfrogs, signal and red swamp crayfish, and centrarchid fishes from the project area, to the maximum extent possible. The U.S. Fish and Wildlife Service-approved biologist will be responsible for ensuring their activities are in compliance with the California Fish and Game Code.

28 If the California Department of Transportation and County of San Luis Obispo demonstrate that disturbed areas have been restored to conditions that allow them to function as habitat for the California red-legged frog, these areas will not be included in the amount of total habitat permanently disturbed.

29 To ensure that diseases are not conveyed between work sites by the U.S. Fish and Wildlife Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Task Force will be followed at all times.

30 Project sites will be revegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area. Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities with the project, unless the U.S. Fish and Wildlife Service, California Department of Transportation, and County of San Luis Obispo have determined that it is not feasible or practical.

31 The California Department of Transportation and County of San Luis Obispo will not use herbicides as the primary method used to control

invasive, exotic plants. However, if the California Department of Transportation and County of San Luis Obispo determine the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, it will implement the following additional measures to protect California red-legged frog:

a. The California Department of Transportation and County of San Luis Obispo will not use herbicides during the breeding season for California red-legged frog.

b. The California Department of Transportation and County of San Luis Obispo will conduct surveys for California red-legged frog immediately prior to the start of herbicide use. If found, California red-legged frog will be relocated to suitable habitat far enough from the project area that no direct contact with herbicide would occur.

c. Black locust and other invasive plants will be cut and hauled out by hand and painted with glyphosate-based products, such as Aquamaster® or Rodeo®.

d. Licensed and experienced California Department of Transportation staff or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site.

e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.

f. Herbicides will not be applied on or near open water surfaces (no closer than 60 feet from open water).

g. Foliar applications of herbicide will not occur when wind speeds are in excess of three miles per hour.

h. No herbicides will be applied within 24 hours of forecasted rain.

i. Application of herbicides will be done by qualified California Department of Transportation staff, County of San Luis Obispo staff, or contractors to ensure that overspray is minimized, that application is made in accordance with the label recommendations,

and that required and reasonable safety measures are implemented. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs Endangered Species Protection Program county bulletins.

j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 feet from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. The California Department of Transportation and County of San Luis Obispo will ensure that contamination of habitat does not occur during such operations. Prior to onset of work, the California Department of Transportation and County of San Luis Obispo will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

4.2.3.4. PROJECT EFFECTS

Construction of the proposed action could result in the injury or mortality of California red-legged frogs (if present) during diversion/dewatering of Jack Creek. The potential need to capture and relocate California red-legged frogs could subject these animals to stresses that could result in adverse effects. Injury or mortality could occur from accidental crushing by worker foot-traffic or construction equipment. Erosion and sedimentation could also occur, which could directly or indirectly affect water quality. An unknown number of California red-legged frogs could be subjected to take, but the potential for these adverse effects is anticipated to be low due to no observations of the species within the BSA during surveys. It is acknowledged that this could change through time, where habitat conditions and/or California red-legged frog numbers could fluctuate.

California red-legged frog presence has been inferred and there would be potential for take of the species during construction. The avoidance and minimization measures above are the relevant Programmatic Biological Opinion measures to qualify a proposed action for programmatic concurrence for the purposes of USFWS formal consultation (USFWS 2011).

4.2.3.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

The previously described avoidance and minimization efforts for adverse effects to California red-legged frog will minimize effects to California red-legged frog and its habitat. Modification to the proposed action is not necessary to mitigate effects to California red-legged frog.

4.2.3.6. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the vicinity of the proposed action area considered in this assessment. To date, the known Caltrans-related transportation projects to be considered for cumulative impacts would be the Jack Creek Road Bridge Replacement Project over Paso Robles Creek, the Graves Creek Bridge at Santa Lucia Road Bridge Replacement Project, and the Via Avenue Bridge Replacement Project over Atascadero Creek. All of these proposed actions have the potential to impact streams that flow into the Salinas River. However, none are expected to result in, or contribute to, cumulative impacts to California red-legged frog, as any impacts will be mitigated through implementation of the restoration plan, installation of BMPs, and other measures. Therefore, no cumulative effects are likely to occur to California red-legged frog and none are expected or anticipated.

4.2.4. Discussion of Least Bell's Vireo

Least Bell's vireo is a federal and state endangered species. Historically, least Bell's vireo was a common to locally abundant species in lowland riparian habitat, ranging from coastal southern California through the Sacramento and San Joaquin Valleys. By the time the species was federally listed in 1986, least Bell's vireo had been extirpated from most of its historic range. Populations were confined to eight counties south of Santa Barbara, with the majority of birds occurring in San Diego County. The population decline was the likely result of nest parasitism by brown-headed cowbirds (*Molothrus ater*) and habitat conversion to agriculture (USFWS 1998).

Least Bell's vireo requires riparian areas to breed and typically inhabit structurally diverse woodlands along watercourses. They occur in a number of riparian habitat types, including cottonwood-willow woodlands/forests, oak woodlands, and mule fat scrub. Several investigators have attempted to identify the habitat requirements of the least Bell's vireo by comparing characteristics of occupied and unoccupied sites, and have focused on two features that appear to be essential: (1) the presence of dense cover within three to six feet off the ground, where nests are typically placed; and (2) a dense, stratified canopy, which is needed for foraging (USFWS 1998).

Least Bell's vireo usually arrive in California during mid- to late-March. They build their nests in a variety of plants that provide concealment in the form of dense foliage. The nests are open-cup nests placed in the horizontal fork of a tree or shrub branch.

4.2.4.1. SURVEY RESULTS

Riparian habitat within the BSA may provide suitable foraging habitat for least Bell's vireo. The nearest known occurrence of least Bell's vireo in San Luis Obispo County was from Islay Creek in Montaña de Oro State Park (eBird 2019). The last confirmed breeding pair of this species in San Luis Obispo County was along the Salinas River near Bradley in 1983 (Roberson 2002). Common passerine bird species were observed during site visits and surveys; however, no protocol-level surveys for this species were conducted. Individuals or nesting pairs of this species are considered unlikely to occur in the project area, but cannot be ruled out due to the presence of suitable riparian habitat.

4.2.4.2. CRITICAL HABITAT

Federal critical habitat has been designated for least Bell's vireo, but the BSA is not within the boundaries of the designated critical habitat units.

4.2.4.3. AVOIDANCE AND MINIMIZATION EFFORTS

Implementation of the following efforts are recommended to avoid and minimize potential effects to least Bell's vireo (and other nesting migratory birds) if present:

32 Prior to construction, when feasible, tree removal will be scheduled to occur from September 2 through January 31, outside of the typical nesting bird season, to avoid potential adverse effects to nesting birds.

33 If construction activities are proposed during the typical nesting season (February 1 to September 1), a nesting bird survey will be conducted by qualified biologists no more than two weeks prior to the start of construction to determine presence/absence of nesting birds within the Biological Study Area and immediate vicinity. The California Department of Transportation will be notified if federally listed nesting bird species are observed during the surveys and will facilitate coordination with the U.S. Fish and Wildlife Service, if necessary, to determine an appropriate avoidance strategy. Likewise, coordination with California Department of Fish and Wildlife will be facilitated by the County of San Luis Obispo Department of Public Works, if necessary, to devise a suitable avoidance plan for state-listed nesting bird species.

4.2.4.4. PROJECT EFFECTS

The removal of vegetation could directly affect active bird nests and any eggs or young residing in nests. Indirect effects could also result from noise and disturbance associated with construction, which could alter perching, foraging, and/or nesting behaviors. While temporary loss of vegetation supporting potential nesting habitat would occur, this would be mitigated by habitat restoration. The implementation of the avoidance and minimization measures such as appropriate timing of vegetation removal, pre-activity surveys, and exclusion zones (if necessary) will reduce the potential for adverse effects to least Bell's vireo.

4.2.4.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

The previously described avoidance and minimization efforts for adverse effects to least Bell's vireo will minimize effects to these species and their habitat. Modification to the proposed action is not necessary to mitigate effects to these species.

4.2.4.6. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the vicinity of the proposed action area considered in this assessment. To date, the known Caltrans-related transportation proposed actions to be considered for cumulative impacts would be the Jack Creek Road Bridge Replacement Project over Paso Robles Creek, the Graves Creek Bridge at Santa Lucia Road Bridge Replacement Project, and the Via Avenue Bridge Replacement Project over Atascadero Creek. All of these proposed actions have the potential to impact streams that flow into the Salinas River. However, none are expected to result in, or contribute to, cumulative impacts to least Bell's vireo and other nesting birds, as any impacts will be mitigated through implementation of the restoration plan, installation of BMPs, and other measures. Therefore, no cumulative effects are likely to occur to least Bell's vireo and other nesting birds and none are expected or anticipated.

4.2.5. Discussion of Southwestern Willow Flycatcher

The southwestern willow flycatcher is a federal and state endangered species. It is a summer breeder within its range in the United States and is gone to wintering areas in Central America by the end of September. Southwestern willow flycatchers breed in areas from near sea level to 8,500 feet (2,600 meters), and establish nesting territories, build nests, and forage where mosaics of relatively dense and expansive growths of trees and shrubs are established, generally near or adjacent to surface water or underlain by saturated soil. Habitat characteristics such as dominant plant species, size

and shape of habitat patch, tree canopy structure, vegetation height, and vegetation density vary widely among breeding sites. Nests are typically placed in trees where the plant growth is most dense, where trees and shrubs have vegetation near ground level, and where there is a low-density canopy (USFWS 2014). Habitat not suitable for nesting may be used for migration and foraging.

4.2.5.1. SURVEY RESULTS

No protocol-level surveys for southwestern willow flycatcher were conducted. Riparian habitat within the BSA may provide suitable foraging habitat for southwestern willow flycatcher. There are currently no known occurrences of southwestern flycatcher in San Luis Obispo County. The nearest occurrence is from 1992 within the Santa Ynez River (eBird 2019). Individuals or nesting pairs of this species are considered unlikely, but cannot be ruled out due to the presence of suitable riparian habitat.

4.2.5.2. CRITICAL HABITAT

Federal critical habitat has been designated for southwestern willow flycatcher but the BSA is not within the boundaries of the designated critical habitat units.

4.2.5.3. AVOIDANCE AND MINIMIZATION EFFORTS

Implementation of the minimization efforts described for least Bell's vireo also apply to southeastern willow flycatcher (and other nesting migratory birds), including the requirement for preconstruction nesting bird surveys and avoidance of impacts to active bird nests.

4.2.5.4. PROJECT EFFECTS

The removal of vegetation could directly affect active bird nests and any eggs or young residing in nests. Indirect effects could also result from noise and disturbance associated with construction, which could alter perching, foraging, and/or nesting behaviors. While temporary loss of vegetation supporting potential nesting habitat would occur, this would be mitigated by habitat restoration. The implementation of the avoidance and minimization measures such as appropriate timing of vegetation removal, pre-activity surveys, and exclusion zones will reduce the potential for adverse effects to southwestern willow flycatcher (and other nesting bird species).

4.2.5.5. MODIFICATIONS TO THE PROJECT TO MITIGATE EFFECTS

The previously described avoidance and minimization efforts for adverse effects to least Bell's vireo will minimize effects to southwestern willow flycatchers and their

habitat. Modification to the proposed action is not necessary to mitigate effects on this species.

4.2.5.6. CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the vicinity of the proposed action area considered in this assessment. To date, the known Caltrans-related transportation proposed actions to be considered for cumulative impacts would be the Jack Creek Road Bridge Replacement Project over Paso Robles Creek, the Graves Creek Bridge at Santa Lucia Road Bridge Replacement Project, and the Via Avenue Bridge Replacement Project over Atascadero Creek. All of these proposed actions have the potential to impact streams that flow into the Salinas River. However, none are expected to result in, or contribute to, cumulative impacts to southwestern willow flycatcher, as any impacts will be mitigated through implementation of the restoration plan, installation of BMPs, and other measures. Therefore, no cumulative effects are likely to occur to southwestern willow flycatcher and other nesting birds and none are expected or anticipated.

Chapter 5. Conclusions and Determinations

5.1. Conclusions

Based on the USFWS and NMFS species lists for the proposed action (Appendix C), the results of the botanical surveys, and an in-depth review of federally protected plant occurrences in the area, federally protected plant species do not occur in the BSA; therefore, the proposed action is expected to have no effect on federally protected plants.

The BSA provides potentially suitable habitat for four federally protected animal species, and one designated critical habitat unit is located within the BSA. Project implementation has the potential to result in "take" of South-Central California Coast steelhead and California red-legged frog. Therefore, the proposed action may affect and is considered likely to adversely affect South-Central California Coast steelhead and California red-legged frog. Implementation of the proposed action is not likely to result in "take" of least Bell's vireo or southwestern willow flycatcher and is considered unlikely to adversely affect either of these two species because suitable avoidance and minimization efforts have been incorporated. Rationale for these determinations is provided in Chapter 4 and is summarized in Section 5.2 below.

5.2. Determinations

The purpose of this section is to summarize the effects determinations for each species evaluated in this BA. Table 5 below includes a summary of the proposed effects determinations for federally listed species. Chapter 4 provides more detailed discussions of each species and associated critical habitat.

Table 5: Federal Endangered Species Act Effects Determination

Common Name	Scientific Name	Legal Status	Rationale
Habitats			
South-Central California Coast steelhead DPS	*Oncorhynchus mykiss*	Critical Habitat	May affect, likely to adversely affect
California red-legged frog	*Rana draytonii*	Critical Habitat	No effect
Plants			
California jewelflower	*Caulanthus californicus*	Federally Endangered	No effect
Chorro Creek bog thistle	*Cirsium fontinale* var. *obispoense*	Federally Endangered	No effect

Common Name	Scientific Name	Legal Status	Rationale
marsh sandwort	*Arenaria paludicola*	Federally Endangered	No effect
salt marsh bird's beak	*Cordylanthus maritimus* ssp. *maritimus*	Federally endangered	No effect
spreading navarretia	*Navarretia fossalis*	Federally Threatened	No effect
Invertebrates			
Kern primrose Sphinx moth	*Euproserpinus euterpe*	Federally Threatened	No effect
Vernal pool fairy shrimp	*Branchinecta lynchi*	Federally Threatened	No effect
Fish			
South-Central California Coast steelhead DPS	*Oncorhynchus mykiss*	Federally Threatened	May affect, likely to adversely affect
Amphibians			
California red-legged frog	*Rana draytonii*	Federally Threatened	May affect, likely to adversely affect
California tiger salamander	*Ambystoma californiense*	Federally Threatened	No effect
Birds			
California clapper rail	*Rallus longirostris obsoletus*	Federally Endangered	No effect
California condor	*Gymnogyps californianus*	Federally Endangered	No effect
least Bell's vireo	*Vireo bellii pusillus*	Federally Endangered	May affect, not likely to adversely affect
southwestern willow flycatcher	*Empidonax traillii extimus*	Federally Endangered	May affect, not likely to adversely affect
Mammals			
giant kangaroo rat	*Dipodomys ingens*	Federally Endangered	No effect
San Joaquin kit fox	*Vulpes macrotis mutica*	Federally Endangered	No effect
Reptiles			
blunt-nosed leopard lizard	*Gambelia sila*	Federally Endangered	No effect

5.2.1. Federally Protected Plant Species

Federally protected plant species and suitable habitat for protected plant species do not occur in the BSA. Therefore, it is expected that implementation of the proposed action would have ***no effect*** on federally protected plant species.

5.2.2. Federally Protected Wildlife Species

5.2.2.1. SOUTH-CENTRAL CALIFORNIA COAST STEELHEAD

Based on the following criteria, it is expected that the proposed action ***may affect, and is likely to adversely affect*** steelhead during implementation:

- No individual steelhead were identified within the BSA during the field surveys, but the species is documented as occurring within the Salinas River and, although considered a low likelihood, could potentially occur in Jack Creek.
- If present within the BSA during project activities, individual steelhead may be directly affected: they may be stranded in portions of the creek that must be dewatered, become caught in dewatering pumps, or be made vulnerable to predation from foraging birds and mammals.
- Potential indirect effects to steelhead from the proposed action may occur and include sediment deposition downstream of the work area, which may adversely affect downstream water quality.

With incorporation of the recommended avoidance and minimization measures provided in Section 4.2.1.3, proposed action effects to steelhead will be minimized to the greatest extent practicable.

5.2.2.2. CRITICAL HABITAT FOR SOUTH-CENTRAL CALIFORNIA COAST STEELHEAD

Based on the following criteria, it is expected that the proposed action ***may affect, and is likely to adversely affect*** steelhead critical habitat:

- Approximately 5,100 square feet (0.12 acre) of South-Central California Coast steelhead DPS critical habitat are present within the BSA. This area is limited to the Jack Creek channel.
- Implementation of the proposed action would result in temporary effects to the open water habitat in Jack Creek as a result of construction activities within the proposed action area and equipment access into the river channel. Based on the current project plans, approximately 5,100 square feet (0.12 acre) of temporary adverse effects and up to 50 square feet (0.001 acre) of permanent effects (removal of concrete and replacement with RSP may encroach into the OHWM) would occur within the creek channel.
- The bridge design does not include any additional piles relative to the existing condition or other permanent fill in the stream bed (i.e., within the OHWM), with

the exception of up to 50 square feet for replacement of RSP; therefore, no permanent adverse effects to steelhead critical habitat are expected.

With incorporation of the recommended avoidance and minimization measures provided in Section 4.2.2.3, proposed action effects to steelhead critical habitat will be minimized to the greatest extent practicable.

5.2.2.3. CALIFORNIA RED-LEGGED FROG

Based on the following criteria, it is expected that the proposed action ***may affect, and is likely to adversely affect*** California red-legged frog:

- No protocol surveys were conducted for California red-legged frog and the species was not observed during reconnaissance surveys. Suitable in-stream aquatic habitat is present within the BSA, and the banks of the creek support vegetation that could be used as upland refugia.

- The nearest documented occurrences of California red-legged frog are within three miles of the proposed action area, including near State Route 46 in January 2006 (CNDDB Occurrence 861), in Rocky Creek in June 2006 (CNDDB Occurrence 898), and in other streams west of the proposed action area in October 2006 (CNDDB Occurrence Number 381). In addition, breeding habitat is reported from the confluence of Jack Creek with the Salinas River about five miles downstream of the proposed action area (CNDDB Occurrence 617). Based on this information, presence within the BSA is inferred.

- Construction of the proposed action could result in the injury or mortality of California red-legged frogs (if present) during diversion/dewatering of Jack Creek. The potential need to capture and relocate California red-legged frogs could subject these animals to stresses that could result in adverse effects.

- An unknown number of California red-legged frogs could be subjected to take, but the potential for these adverse effects is anticipated to be low due to no recorded observations of the species within the BSA.

With incorporation of the recommended avoidance and minimization measures provided in Section 4.2.3.3 (adopted from the Programmatic Biological Opinion [USFWS 2011]), proposed action effects to California red-legged frog will be minimized to the maximum extent feasible.

5.2.2.4. LEAST BELL'S VIREO

Based on the following criteria, it is expected that the proposed action ***may affect, but is not likely to adversely affect*** least Bell's vireo.

- Riparian habitat within the BSA may provide suitable foraging habitat for least Bell's vireo.
- The removal of vegetation could directly affect active bird nests and any eggs or young residing in nests. Indirect adverse effects could also result from noise and disturbance associated with construction, which could alter perching, foraging, and/or nesting behaviors.
- While temporary loss of vegetation supporting potential nesting habitat would occur, this would be mitigated by habitat restoration.

Implementation of the proposed action is not expected to affect least Bell's vireo with incorporation of the avoidance and minimization measures provided in Section 4.2.4.3.

5.2.2.5. SOUTHWESTERN WILLOW FLYCATCHER

Based on the following criteria, it is expected that the proposed action ***may affect, but is not likely to adversely affect*** southwestern willow flycatcher.

- Riparian habitat within the BSA may provide suitable foraging habitat for southwestern willow flycatcher.
- The removal of vegetation could directly affect active bird nests and any eggs or young residing in nests. Indirect adverse effects could also result from noise and disturbance associated with construction, which could alter perching, foraging, and/or nesting behaviors.
- While temporary loss of vegetation supporting potential nesting habitat would occur, this would be mitigated by habitat restoration.

Implementation of the proposed action is not expected to affect southwestern willow flycatcher with incorporation of the avoidance and minimization measures provided under the southwestern willow flycatcher discussion in Section 4.2.5.3.

Chapter 6. References

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Appendix A Project Plans

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INDEX OF SHEETS

COUNTY OF SAN LUIS OBISPO, CALIFORNIA
PUBLIC WORKS DEPARTMENT
DESIGN DIVISION

PLANS FOR THE CONSTRUCTION OF
DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT
BRIDGE No. 49C-0472 REPLACING BRIDGE No. 49C-0037
COUNTY CONTRACT No. 300514
FEDERAL AID PROJECT No. BRLO-5949(152)

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

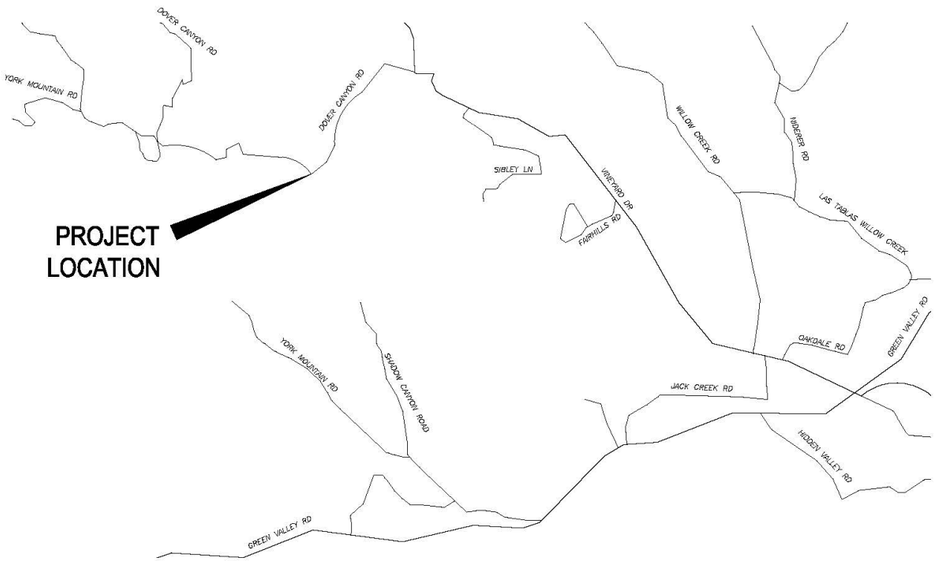
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

MARK THOMAS
16795 VON KARMEN AVE. SUITE 240
IRVINE, CA 92606

To Be Supplemented By State Standard and Specifications Plans Dated 2015.



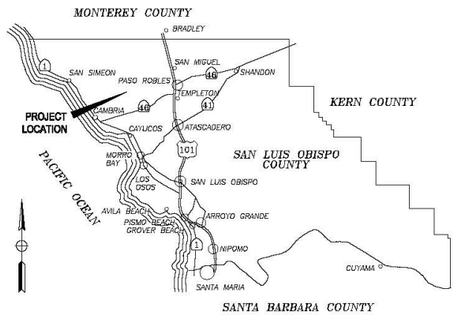
LOCATION MAP
NO SCALE

APPROVED: _____ ,20 _____

_____
DIRECTOR OF PUBLIC WORKS, R.C.E. 64745

LICENSE REQUIREMENTS:

THE SUCCESSFUL BIDDER SHALL POSSESS A CLASS A GENERAL ENGINEERING CONTRACTOR'S LICENSE AT THE TIME THIS CONTRACT IS AWARDED. IN THE ALTERNATIVE, THE SUCCESSFUL BIDDER SHALL POSSESS A SPECIALITY CONTRACTOR'S LICENSE AT THE TIME THIS CONTRACT IS AWARDED THAT PERMITS THE SUCCESSFUL BIDDER TO PERFORM WITH HIS OR HER OWN ORGANIZATION CONTRACT WORK AMOUNTING TO NOT LESS THAN 30% OF THE ORIGINAL TOTAL CONTRACT PRICE AND TO SUBCONTRACT THE REMAINING WORK IN ACCORDANCE WITH SECTION 8–1.01, "SUBCONTRACTING," OF THE STANDARD SPECIFICATIONS.



VICINITY MAP
NO SCALE

CALL BEFORE YOU DIG
1–800–227–2600

65% (NOT FOR CONSTRUCTION)

T-1

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

TITLE SHEET

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DCRL_T-1.DWG, 11/9/2018 9:47 AM, MTCo.ctb, RACHEL USEDOM

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Ex. 12/31/18 CIVIL STATE OF CALIFORNIA

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606

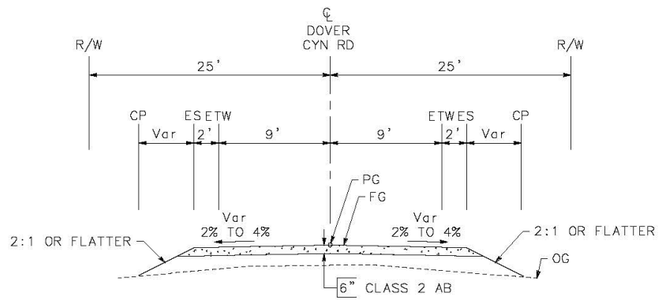
DESIGN CRITERIA:

DESIGN SPEED: 25MPH

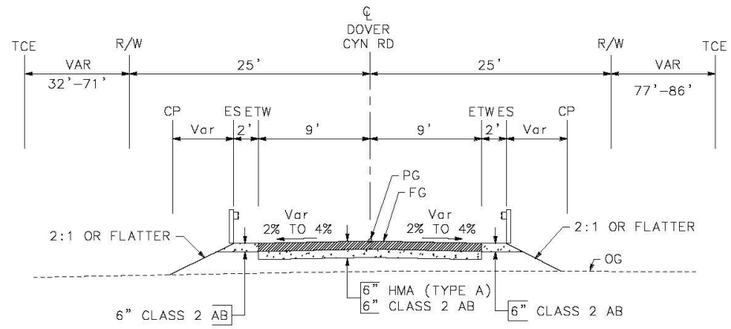
PRESENT ADT (2015): 60 VPD

DESIGN ADT (2025 TO 2030): 70 VPD

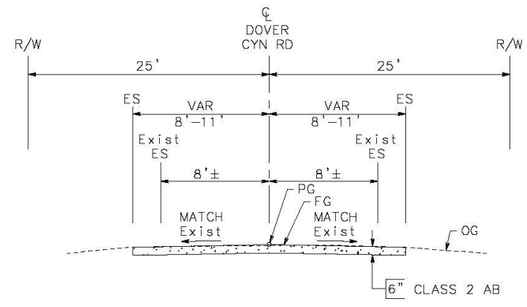
ROAD CLASSIFICATION: LOCAL



15+50.00 TO 18+71.00
21+48.00 TO 23+50.00
DOVER CANYON ROAD



18+71.00 TO 19+71.00 BB
20+48.00 EB TO 21+48.00
DOVER CANYON Rd



15+00.00 TO 15+50.00
21+48.00 TO 21+98.00
DOVER CANYON ROAD

X-1

NO SCALE

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

TYPICAL CROSS SECTIONS

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

NOTES:

1. CONTRACTOR SHALL COMPLY WITH BUSINESS AND PROFESSIONS CODE SECTION 8771(b) REGARDING REFERENCING, PRESERVING AND RECONSTRUCTING MONUMENTS, WHETHER OR NOT MONUMENTS ARE SHOWN IN THESE PLANS.
2. CONTRACTOR SHALL PROVIDE THE ENGINEER A MINIMUM OF TWO (2) WEEKS NOTICE PRIOR TO COMMENCING ANY WORK THAT COULD DAMAGE OR DESTROY ANY SURVEY MONUMENTS.

BASIS OF BEARING AND COORDINATES:

1. THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM 1983 (CCS83), ZONE 5, EPOCH 2010, BASED UPON STATIC OPUS SOLUTION WITH 2+ HOUR OBSERVATIONS OF CONTROL POINT #1000 AND #2112.
2. POINT #1000 OPUS SOLUTION USED NGS PID'S: DG7411, DG8341, DM7509, AND FV1022.
3. POINT #2112 OPUS SOLUTION USED NGS PID'S: DG8341, DG8359, DH3622, AND FV1022.

BASIS OF ELEVATION:

1. THIS PROJECT IS BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

LEGEND:

△ PROJECT CONTROL

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

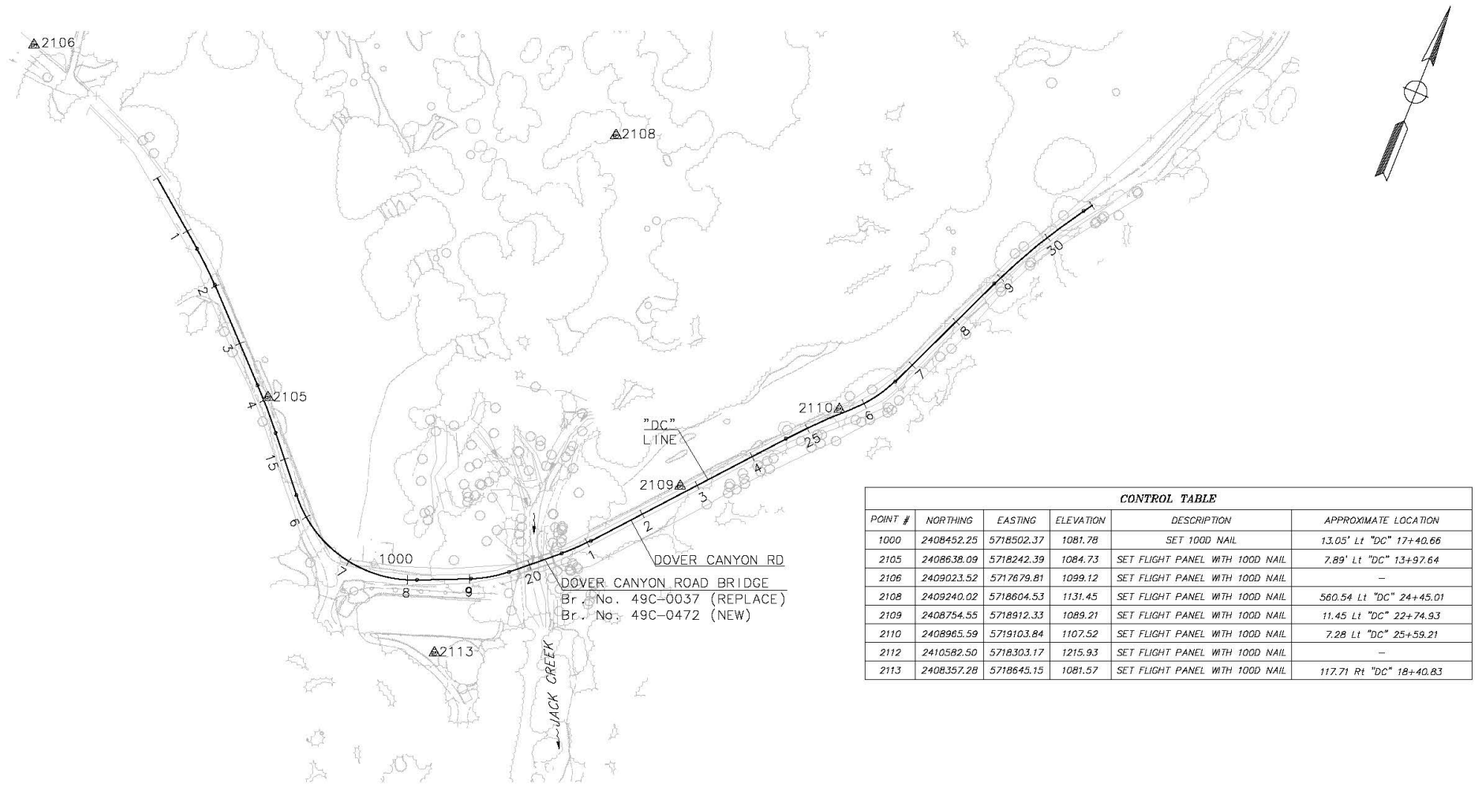
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

DRAFT

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606



CONTROL TABLE

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION	APPROXIMATE LOCATION
1000	2408452.25	5718502.37	1081.78	SET 100D NAIL	13.05' Lt "DC" 17+40.66
2105	2408638.09	5718242.39	1084.73	SET FLIGHT PANEL WITH 100D NAIL	7.89' Lt "DC" 13+97.64
2106	2409023.52	5717679.81	1099.12	SET FLIGHT PANEL WITH 100D NAIL	–
2108	2409240.02	5718604.53	1131.45	SET FLIGHT PANEL WITH 100D NAIL	560.54 Lt "DC" 24+45.01
2109	2408754.55	5718912.33	1089.21	SET FLIGHT PANEL WITH 100D NAIL	11.45 Lt "DC" 22+74.93
2110	2408965.59	5719103.84	1107.52	SET FLIGHT PANEL WITH 100D NAIL	7.28 Lt "DC" 25+59.21
2112	2410582.50	5718303.17	1215.93	SET FLIGHT PANEL WITH 100D NAIL	–
2113	2408357.28	5718645.15	1081.57	SET FLIGHT PANEL WITH 100D NAIL	117.71 Rt "DC" 18+40.83

PC-1

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

PROJECT CONTROL

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DCB_PC-1.DWG, 11/9/2018 10:18 AM, MTCo.ctb, RACHEL USEDOM

LEGEND:

- — — —C— — CUT LINE
- — — —F— — FILL LINE
- ——×—— FENCE (BARBED WIRE)
- ——■—■—— MIDWEST GUARDRAIL SYSTEM
- AITS SYSTEM
- HMA (TYPE A)

ABBREVIATIONS:

AITS	ALTERNATIVE IN-LINE TERMINAL SYSTEM
LP	LAMP POST
TELECOM	TELECOMMUNICATION
REM	REMOVE

CURVE DATA				
No.	R	Δ	T	L
1	1000.00'	4°41'35"	40.98'	81.91'
2	200.00'	72°47'32"	147.43'	254.09'

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

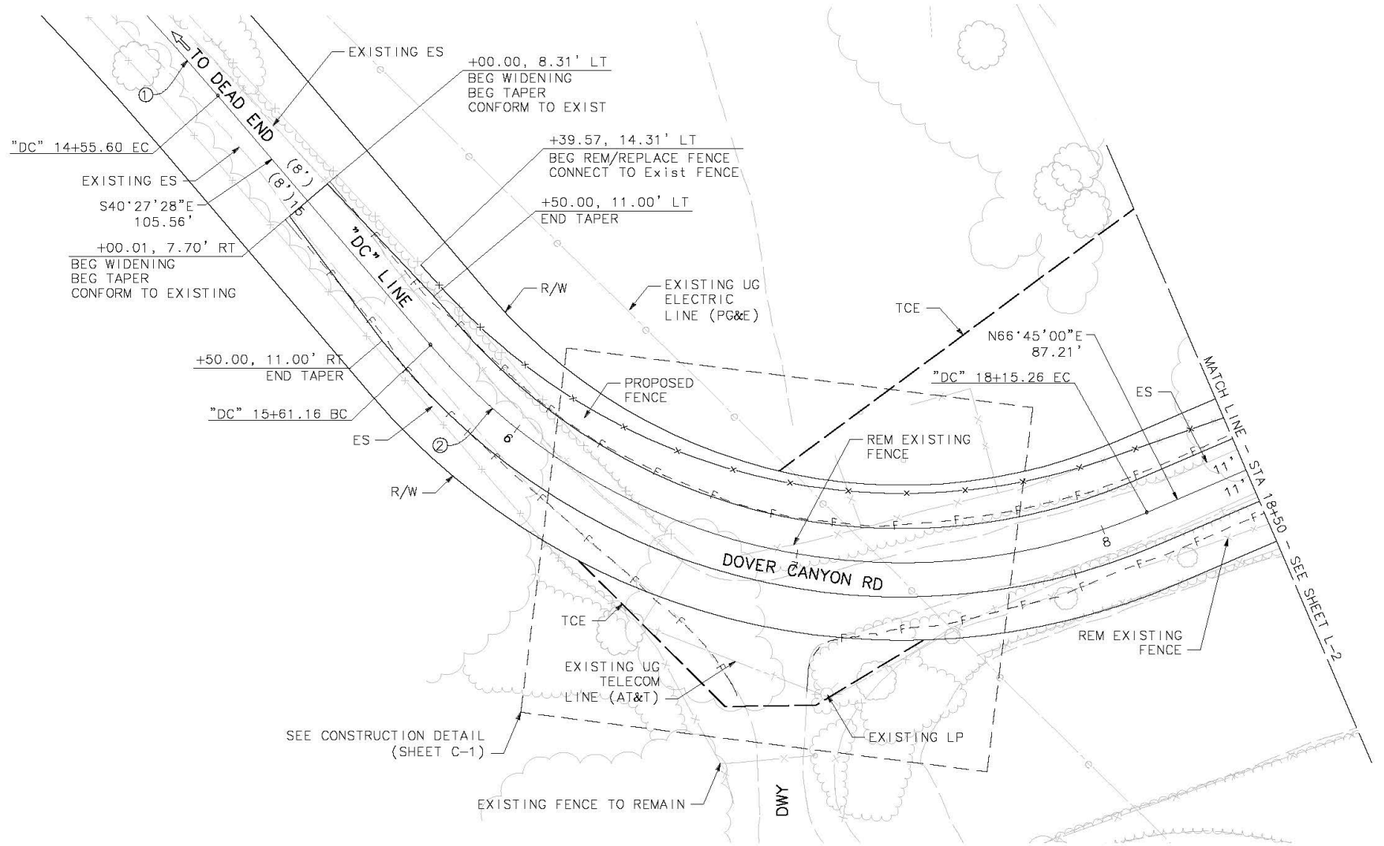
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

DRAFT

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606



L-1

0ft 20ft 40ft SCALE: 1" = 20'

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

LAYOUT

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DCBL-1 TO L-2.DWG, 11/9/2018 10:32 AM, MTDa.ctb, RACHEL USEDOM

CURVE DATA				
No.	R	Δ	T	L
3	200.00'	17°57'49"	31.61'	62.71'
4	350.00'	8°22'20"	25.62'	51.14'

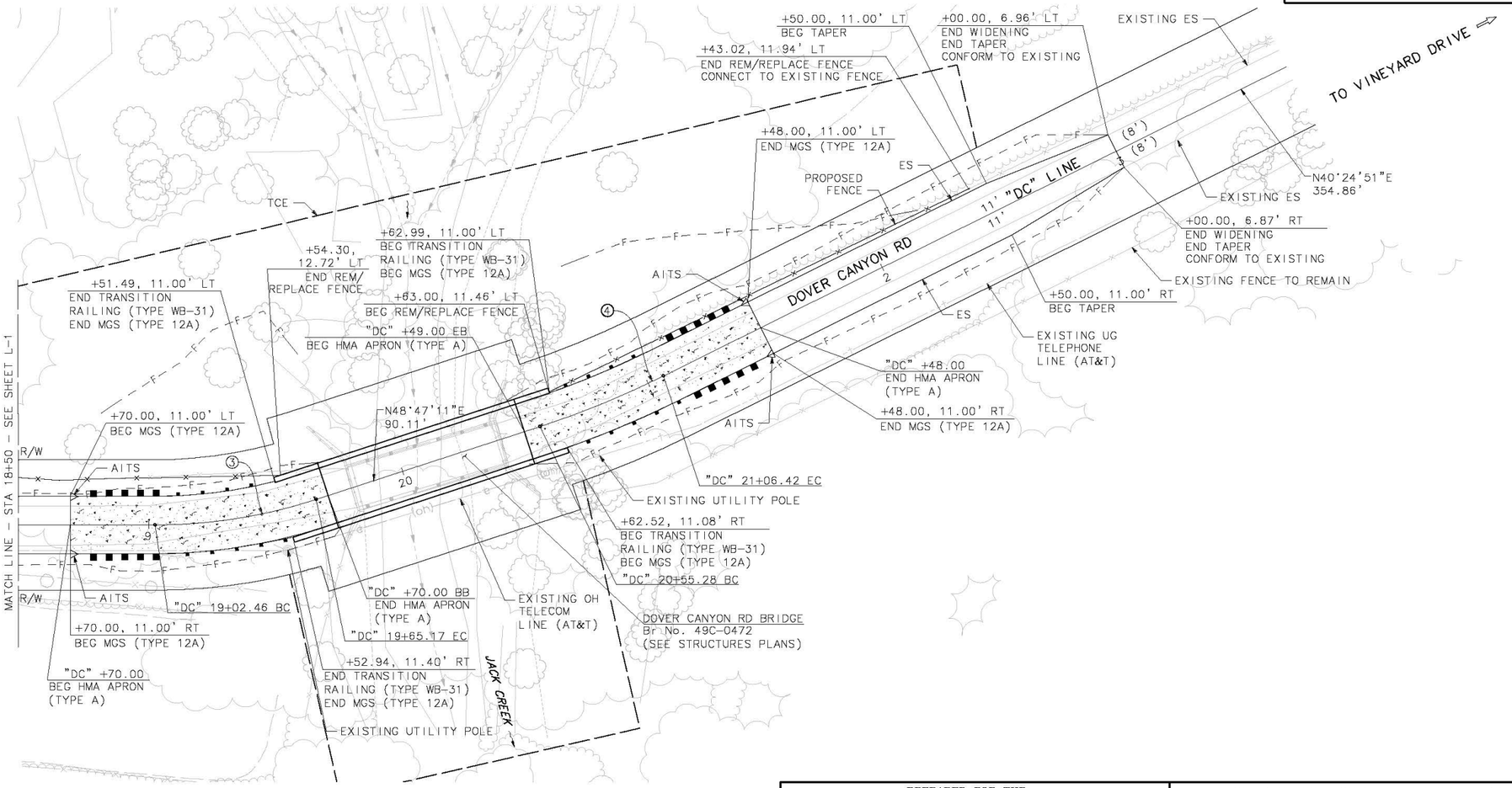
Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Ex. 12/31/18 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606



L-2

0ft 20ft 40ft SCALE: 1" = 20'

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

LAYOUT

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGES\CAD\SHEETS\DCB_L-1 TO L-2.DWG, 11/9/2018 10:27 AM, MTDc.dib, RACHEL USEDOM

9-Nov-18
10:27

acortez
DCB_L-1 TO L-2.dwg

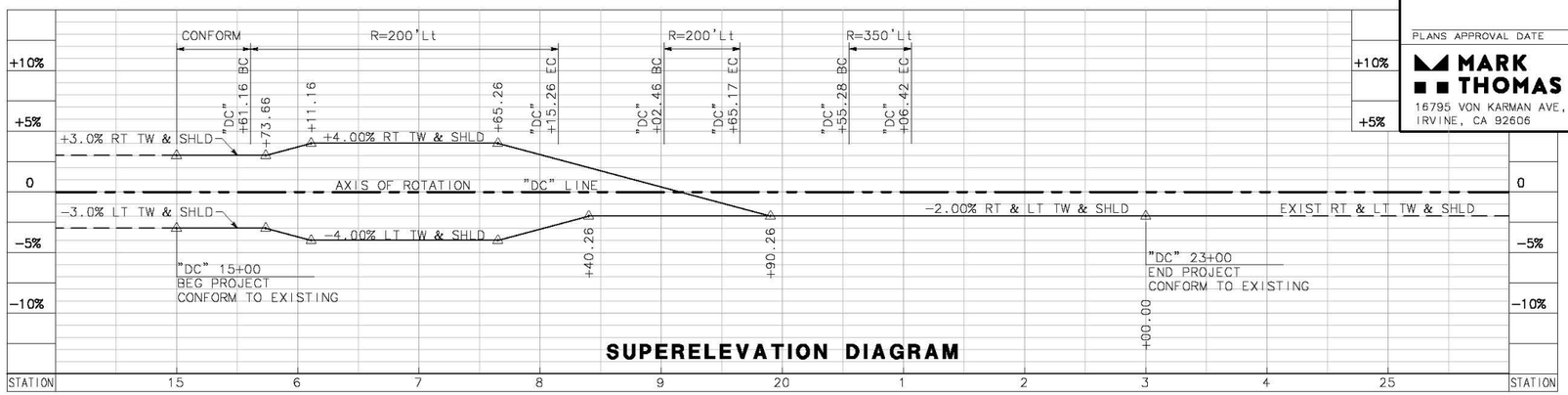
Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

REGISTERED CIVIL ENGINEER DATE

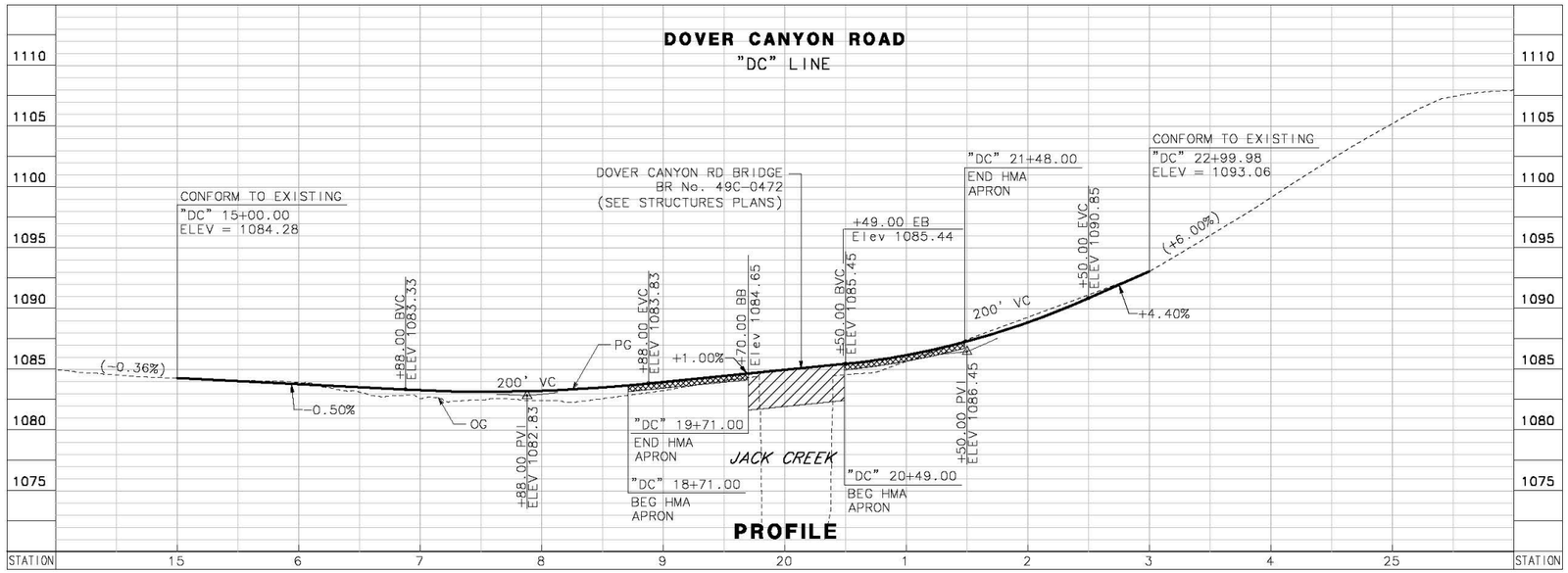
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606



SUPERELEVATION DIAGRAM



PROFILE

PS-1

Horiz SCALE: 1" = 50'
Vert SCALE: 1" = 5'

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

PROFILE AND SUPERELEVATION DIAGRAM

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DCB_PS-1.DWG, 11/9/2018 8:14 PM, MTCo.clb, ADRIAN CORTEZ

LEGEND:

6" CLASS 2 AB

FENCE (BARBED WIRE)

EXISTING FENCE

CURVE DATA				
No.	R	Δ	T	L
1	70.00'	23°30'33"	14.57'	28.72'
2	10.00'	70°48'21"	7.11'	12.36'

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

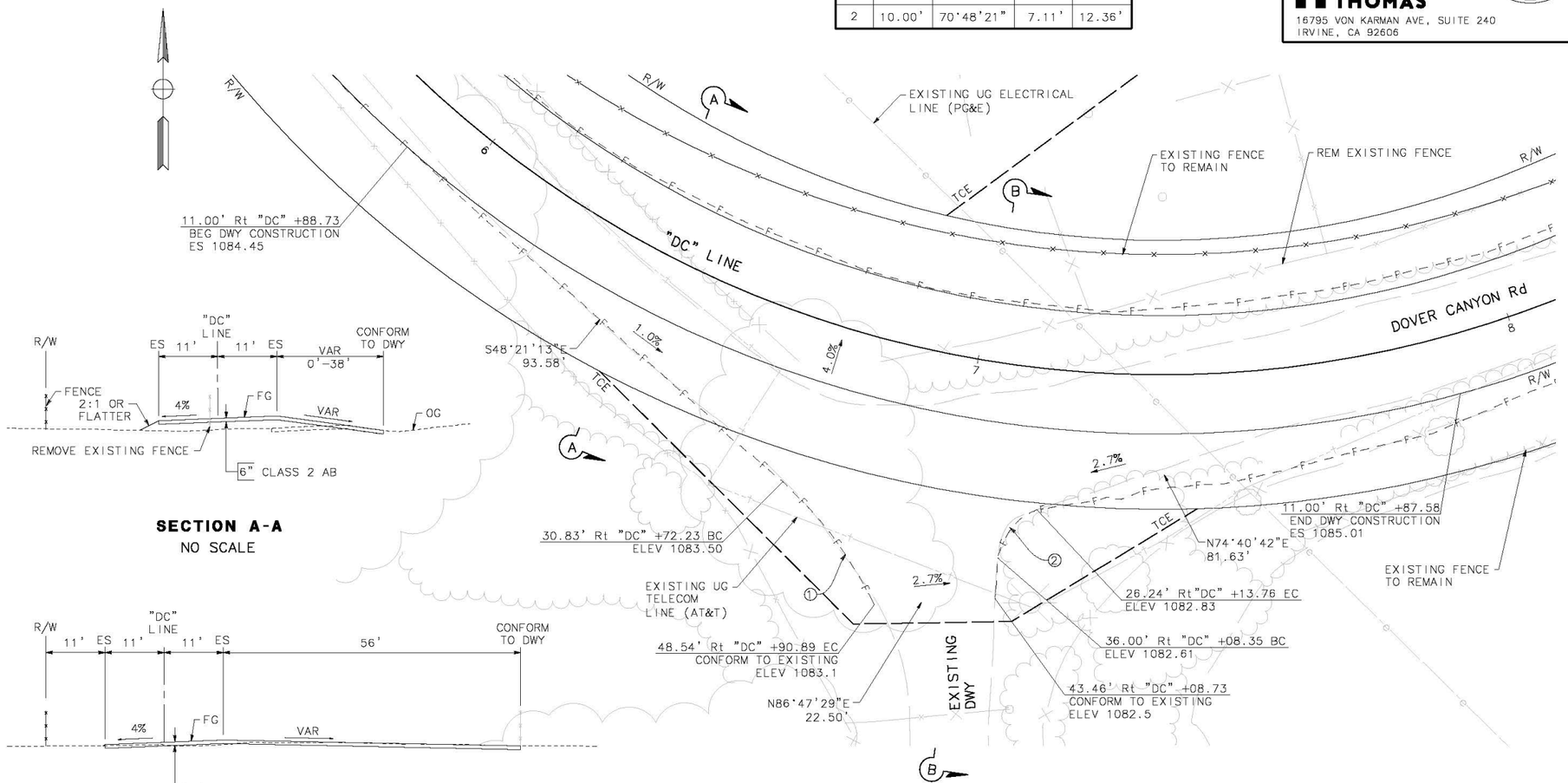
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

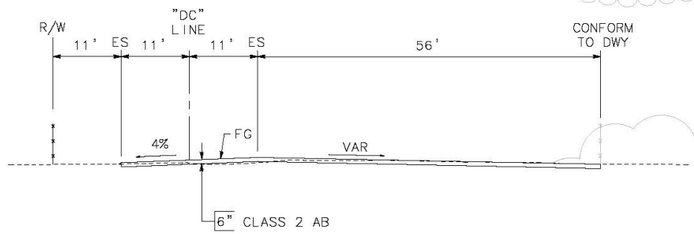
REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

DRAFT

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606



SECTION A-A
NO SCALE



SECTION B-B
NO SCALE

0ft 10ft 20ft SCALE: 1" = 10'

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

CONSTRUCTION DETAILS

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

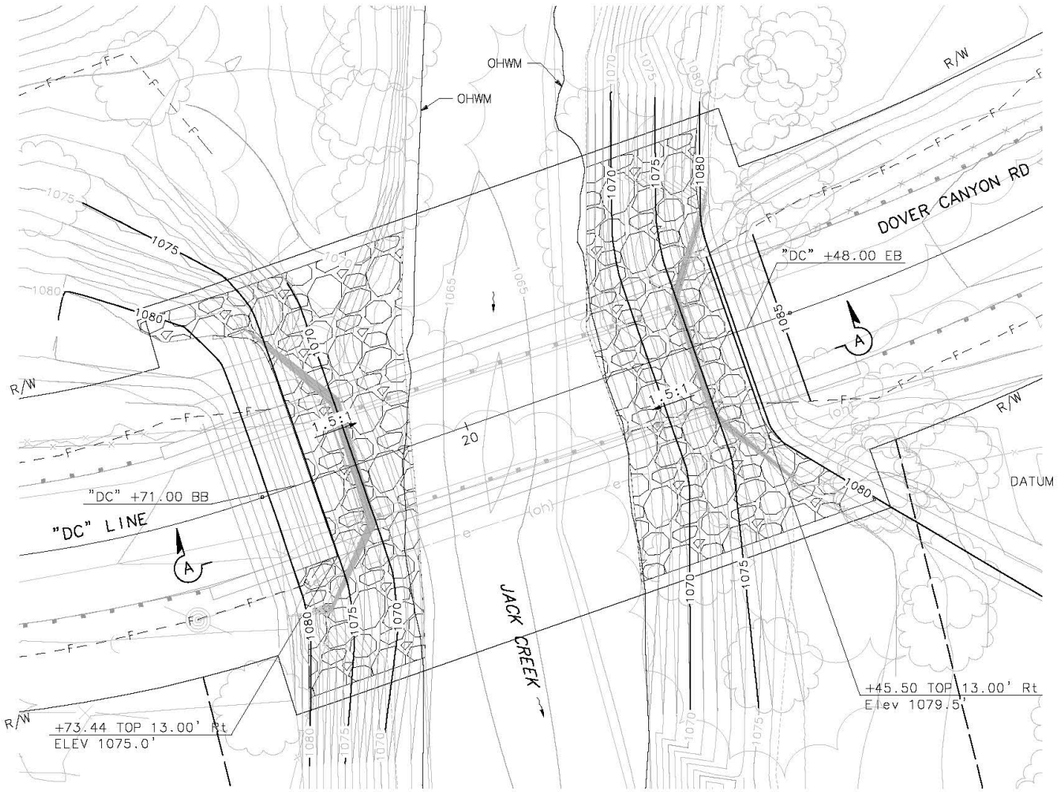
C-1

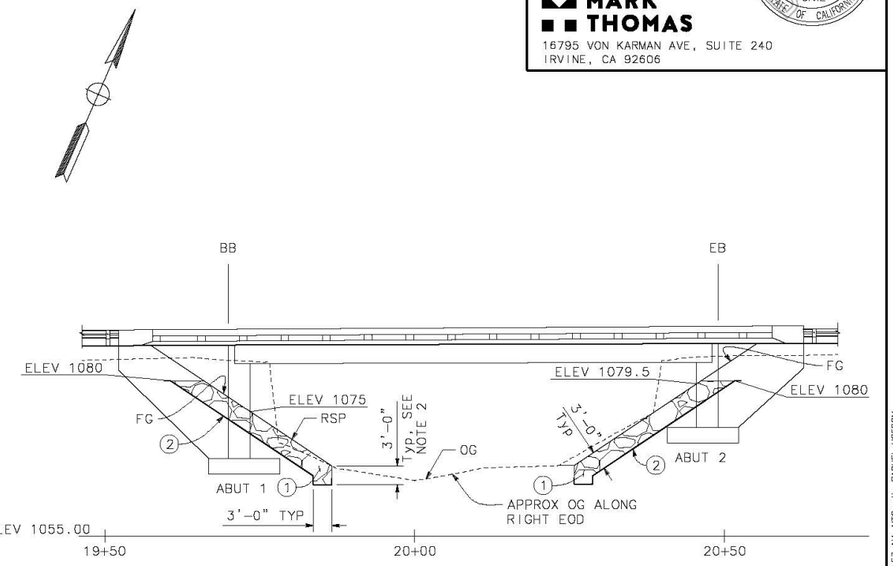
J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CAD\SHEETS\DRSL_C-1.DWG, 11/9/2018 10:41 AM, MTDx.ctb, RACHEL USEDOM

LEGEND:

— — —C— CUT LINE

— — —F— FILL LINE





SECTION A-A
NO SCALE

LEGEND:

(1) ROCK SLOPE PROTECTION (1/4T, CLASS V, METHOD B)

(2) ROCK SLOPE PROTECTION, FABRIC TYPE 8

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606

0ft 10ft 20ft SCALE: 1" = 10'

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

ROCK SLOPE PROTECTION DETAIL AND CONTOUR GRADING

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

G-1

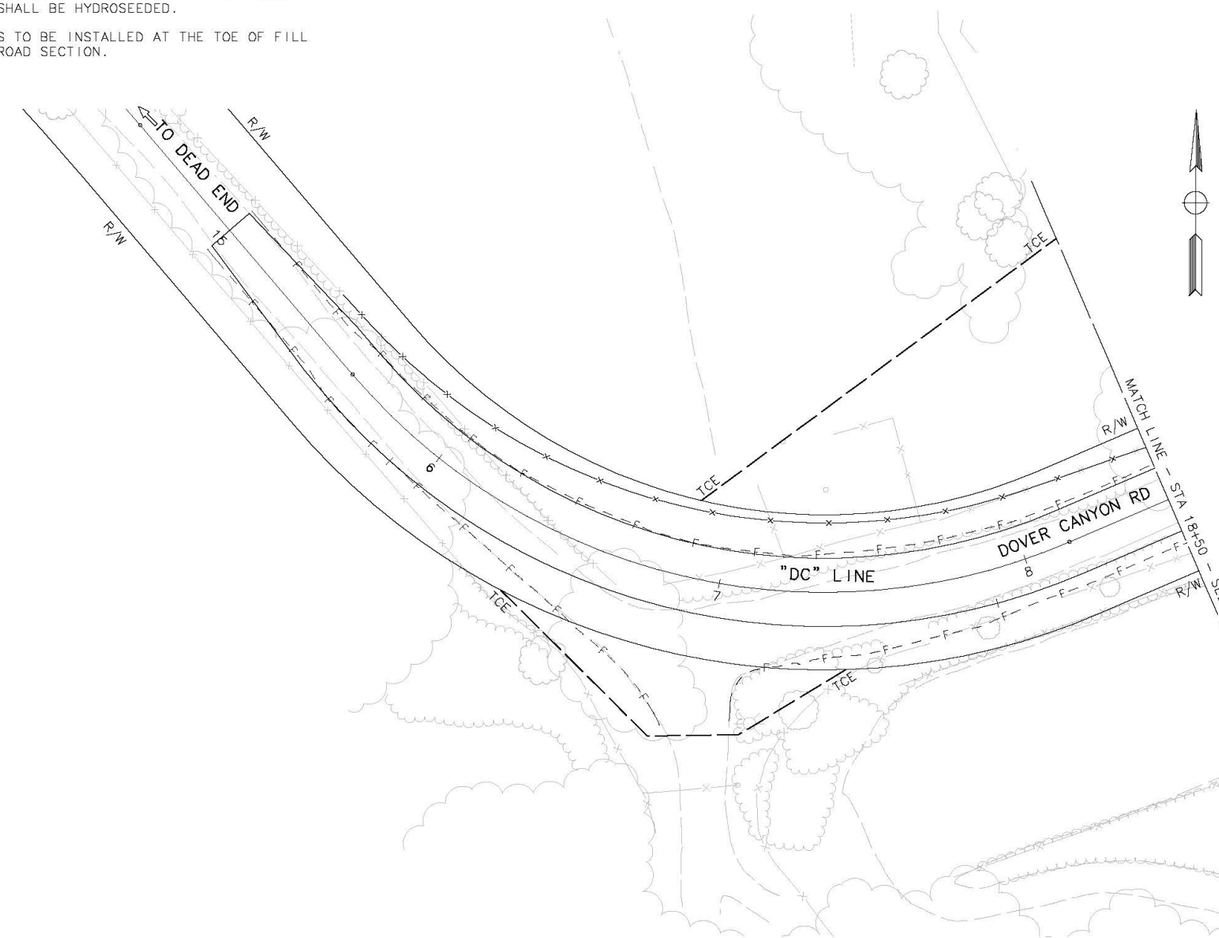
J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DRSL-C-1.DWG, 11/9/2018 10:53 AM, MTDx.ctb, RACHEL USEDOM

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR GENERAL EROSION CONTROL NOTES, SEE SHEET T-2.
3. PROPER DUST CONTROL SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
4. ALL DISTURBED SOIL AREAS OTHER THAN GRAVELED SURFACES SHALL BE HYDROSEEDED.
5. FIBER ROLLS TO BE INSTALLED AT THE TOE OF FILL SLOPES ON ROAD SECTION.

LEGEND:

- — — C — — C — CUT LINE
- — — F — — F — FILL SLOPE
- xx —xx— THVF —— TEMPORARY HIGH VISIBILITY FENCE
- HYDROSEED



0ft 20ft 40ft SCALE: 1" = 20'

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

MARK THOMAS
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PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

EROSION CONTROL AND PLANTING PLAN

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

EC-1

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\UCSB_EC-1 TO EC-2.DWG, 11/9/2018 11:05 AM, MTCo.ctb, RACHEL USEDOM

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

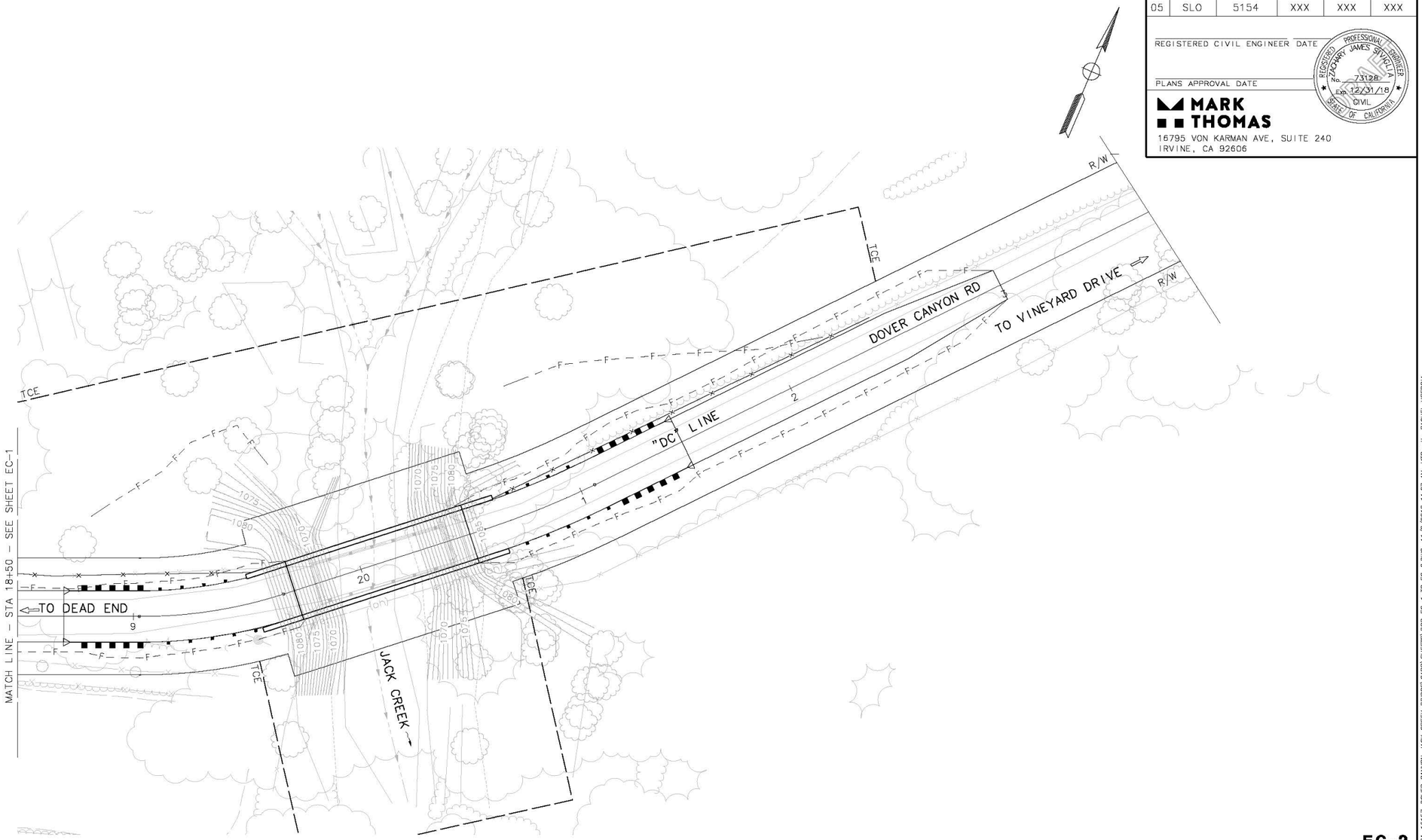
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

DRAFT

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606



EC-2

0ft 20ft 40ft SCALE: 1" = 20'

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

EROSION CONTROL AND PLANTING PLAN

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DCB_EC-1 TO EC-2.DWG, 11/9/2018 11:07 AM, MTDa.etb, RACHEL USEDOM

NOTES:

1. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE, EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE STAGE CONSTRUCTION PLANS.

LEGEND:

Ⓐ CONSTRUCTION AREA IDENTIFICATION

SIGN (1 POST)

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	PANEL SIZE (INCHES) L	x	D	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	QUANTITY OF SIGNS
Ⓐ	W20-1	48	x	48	ROAD WORK AHEAD	1 – 6" x 6"	3
Ⓑ	G20-2	36	x	18	END ROAD WORK	1 – 4" x 4"	2
Ⓒ	C40 (CA)	144	x	60	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2 – 6" x 8"	2
Ⓓ	SPECIAL				DOVER CANYON ROAD CLOSED 1 MI AHEAD. USE ALTERNATE ROUTE	PORTABLE CHANGEABLE MESSAGE SIGN	1

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

DRAFT

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16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606

Ⓓ PLACE AT DOVER CANYON RD AND VINEYARD DR INTERSECTION (PCMS)

0ft 100ft 200ft SCALE: 1" = 100'

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

CONSTRUCTION AREA SIGNS

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

CS-1

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DSE_CS-1.DWG, 11/9/2018 9:40 AM, MTDotStb, RACHEL USEDOM

CURVE DATA				
No.	R	Δ	T	L
1	200.00'	24°43'50"	43.85'	86.33'
2	600.00'	4°26'46"	23.29'	46.56'
3	400.00'	12°49'05"	44.93'	89.49'

LEGEND:

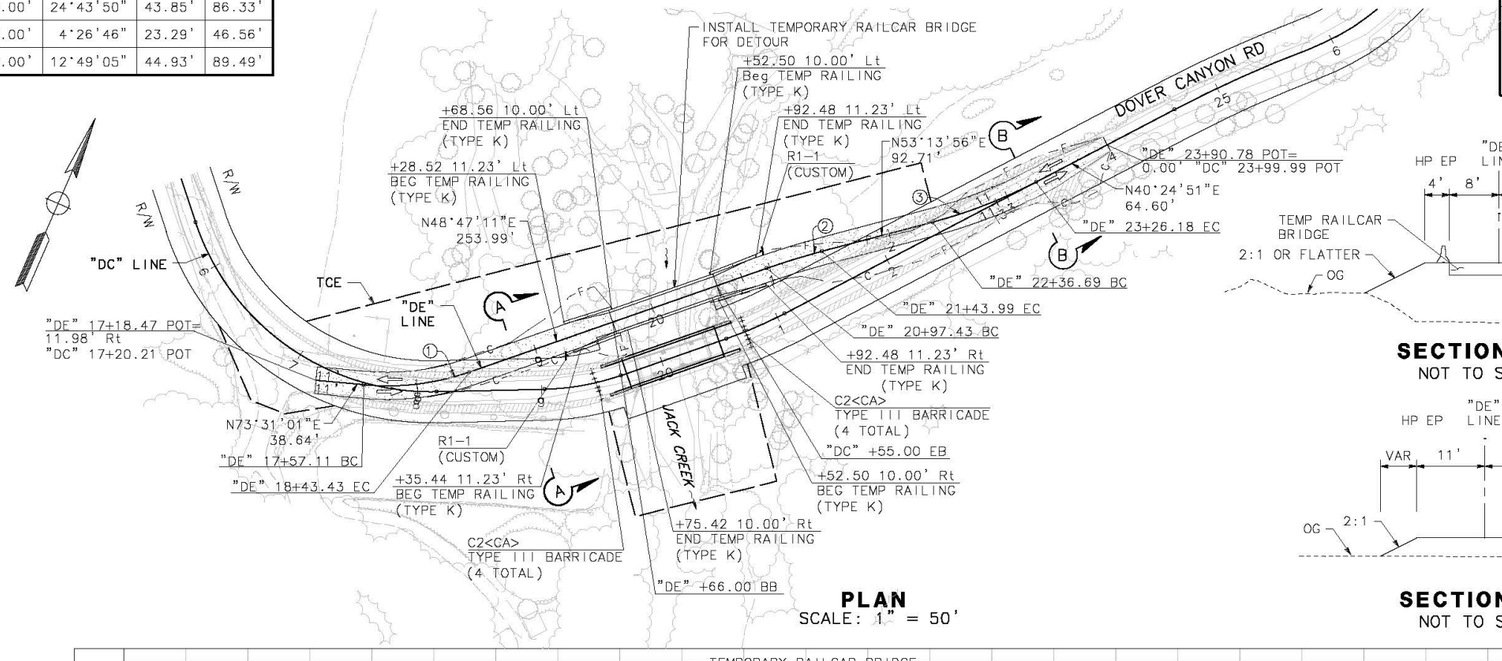
CLASS 2 AGGREGATE BASE

TEMPORARY RAILING (TYPE K)

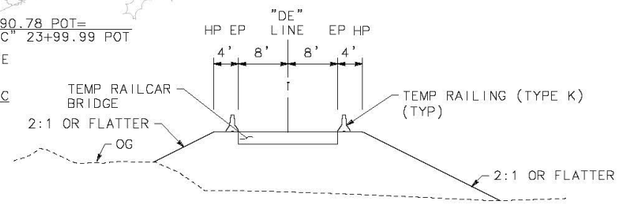
CONSTRUCTION AREA SIGN (SINGLE POST)

TFR TEMPORARY FIBER ROLLS

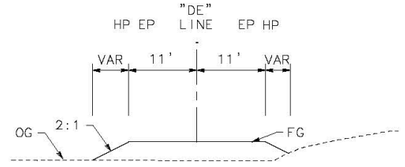
TYPE III BARRICADE



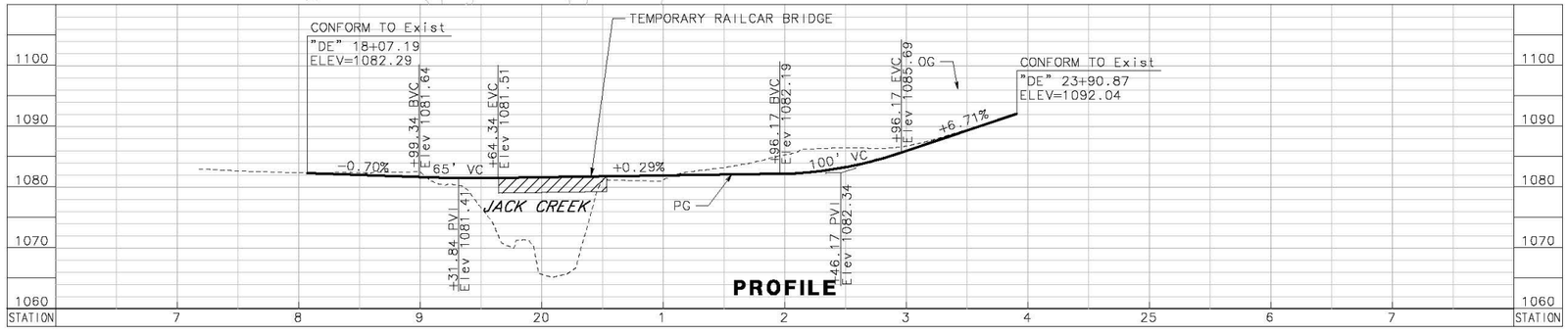
PLAN
SCALE: 1" = 50'



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE



PROFILE

Horiz SCALE: 1" = 50'
Vert SCALE: 1" = 10'

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

REGISTERED CIVIL ENGINEER DATE

PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

DETOUR PLAN AND PROFILE

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

DE-1

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DCB_DE-1.DWG, 11/9/2018 8:18 PM, MTCo.cta, ADRIAN CORTEZ

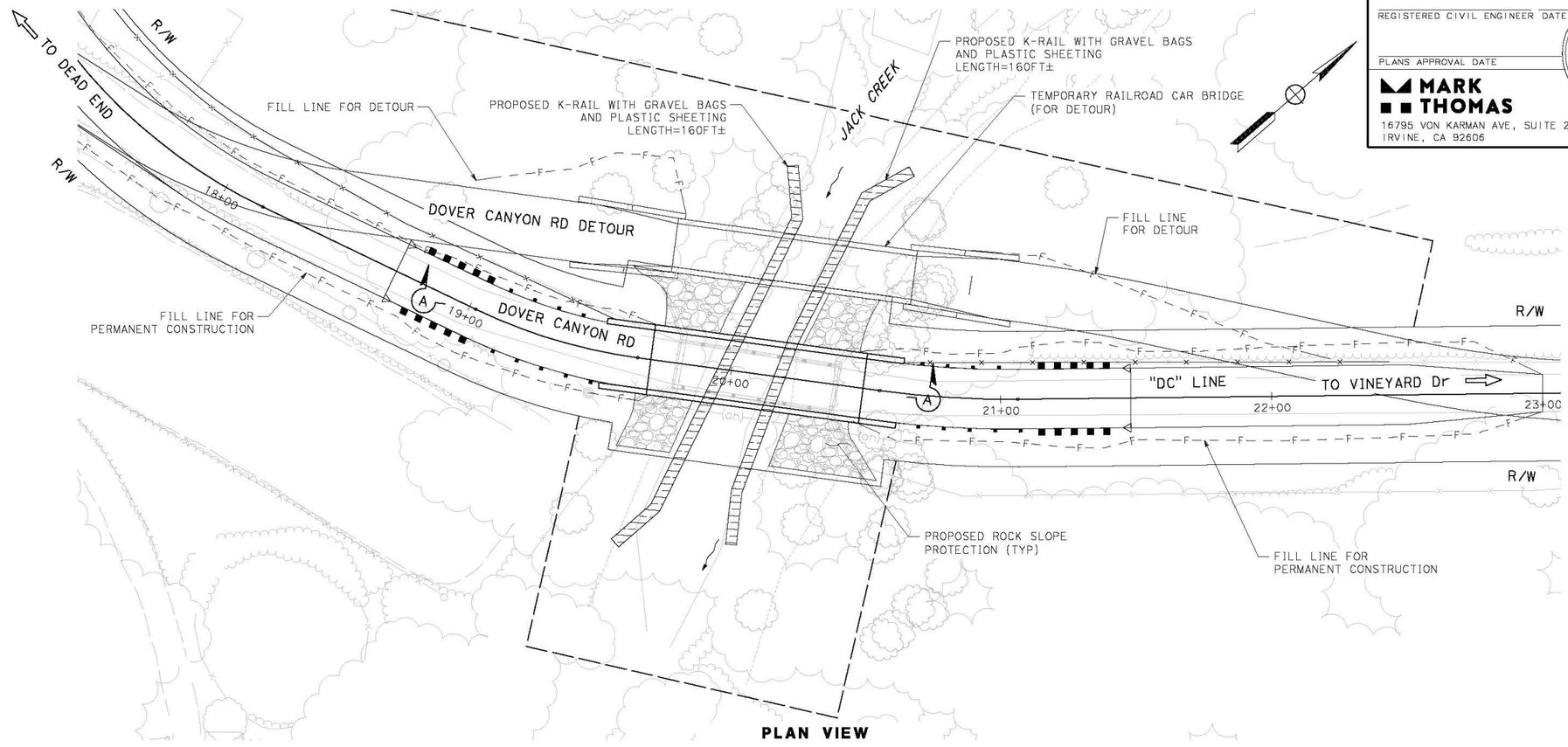
Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

REGISTERED CIVIL ENGINEER DATE

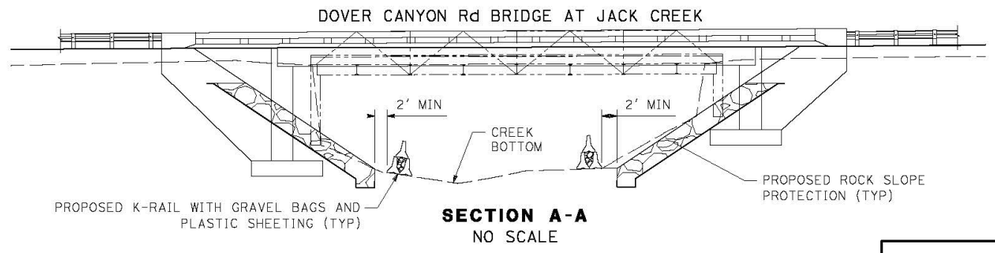
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606



PLAN VIEW



SECTION A-A
NO SCALE

0ft 20ft 40ft SCALE: 1" = 20'

DW-1

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

DIVERSION AND DEWATERING PLAN

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

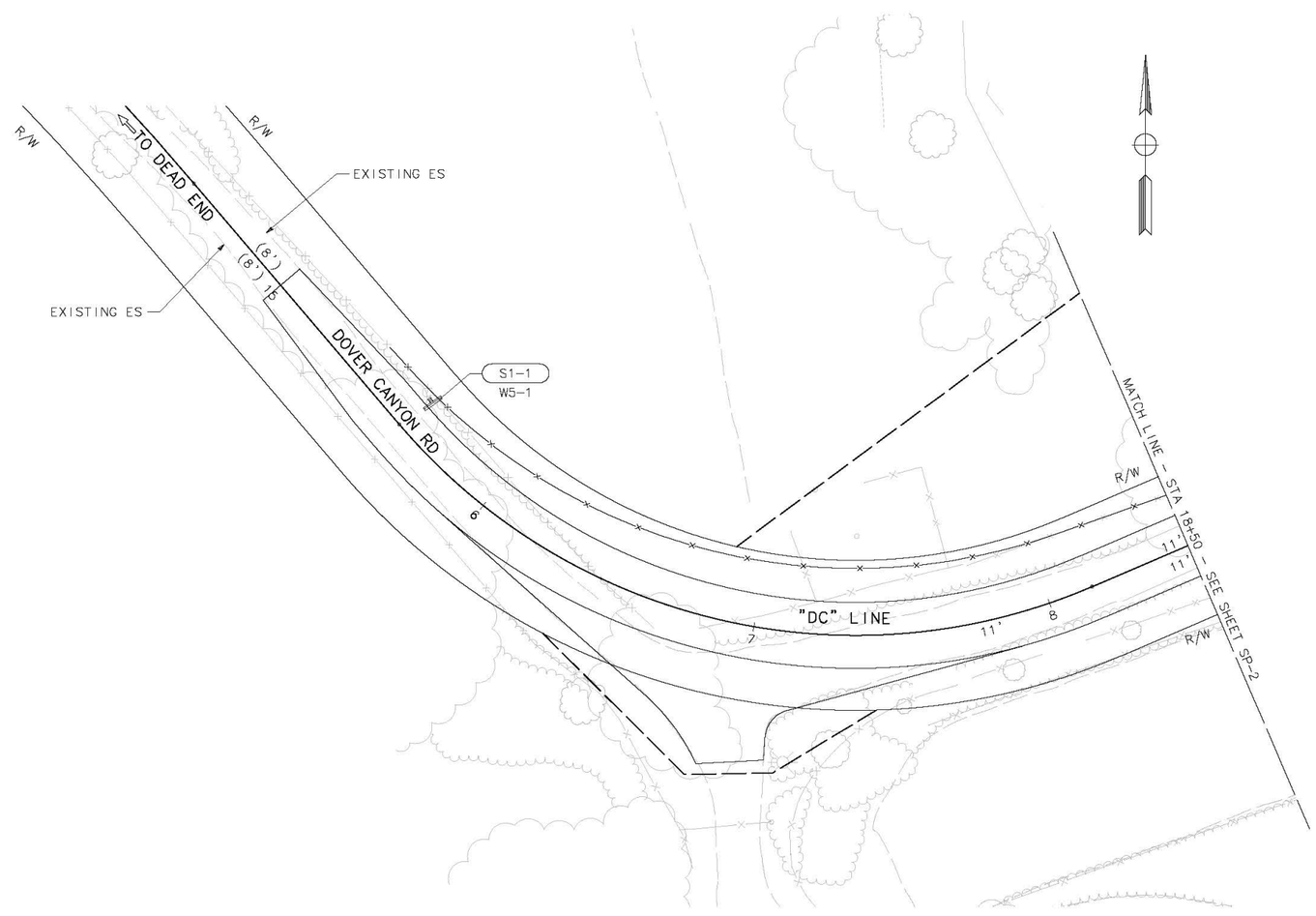
J:\SAN LUIS OBISPO-SA-1615\-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DCB_DW-1.DWG, 11/9/2018 11:24 AM, MYCadTb, RACHEL USEDOM

NOTES:

1. FEDERAL SIGN CODES ARE SHOWN UNLESS DESIGNATED BY <CA> WHICH INDICATES A CALIFORNIA SIGN CODE.

LEGEND:

- ROADSIDE SIGN (ONE POST)
- (SX-X) ROADSIDE SIGN NUMBER



0ft 20ft 40ft SCALE: 1" = 20'

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Ex. 12/31/18 CIVIL STATE OF CALIFORNIA

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

SIGN PLAN

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

SP-1

J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CAD\SHEETS\DCB_SP-1 TO SP-2.DWG, 11/9/2018 11:34 AM, MTCo.ctb, RACHEL USEDOM

Dist	COUNTY	ROAD NO.	JOB NO.	SHEET No.	TOTAL SHEETS
05	SLO	5154	XXX	XXX	XXX

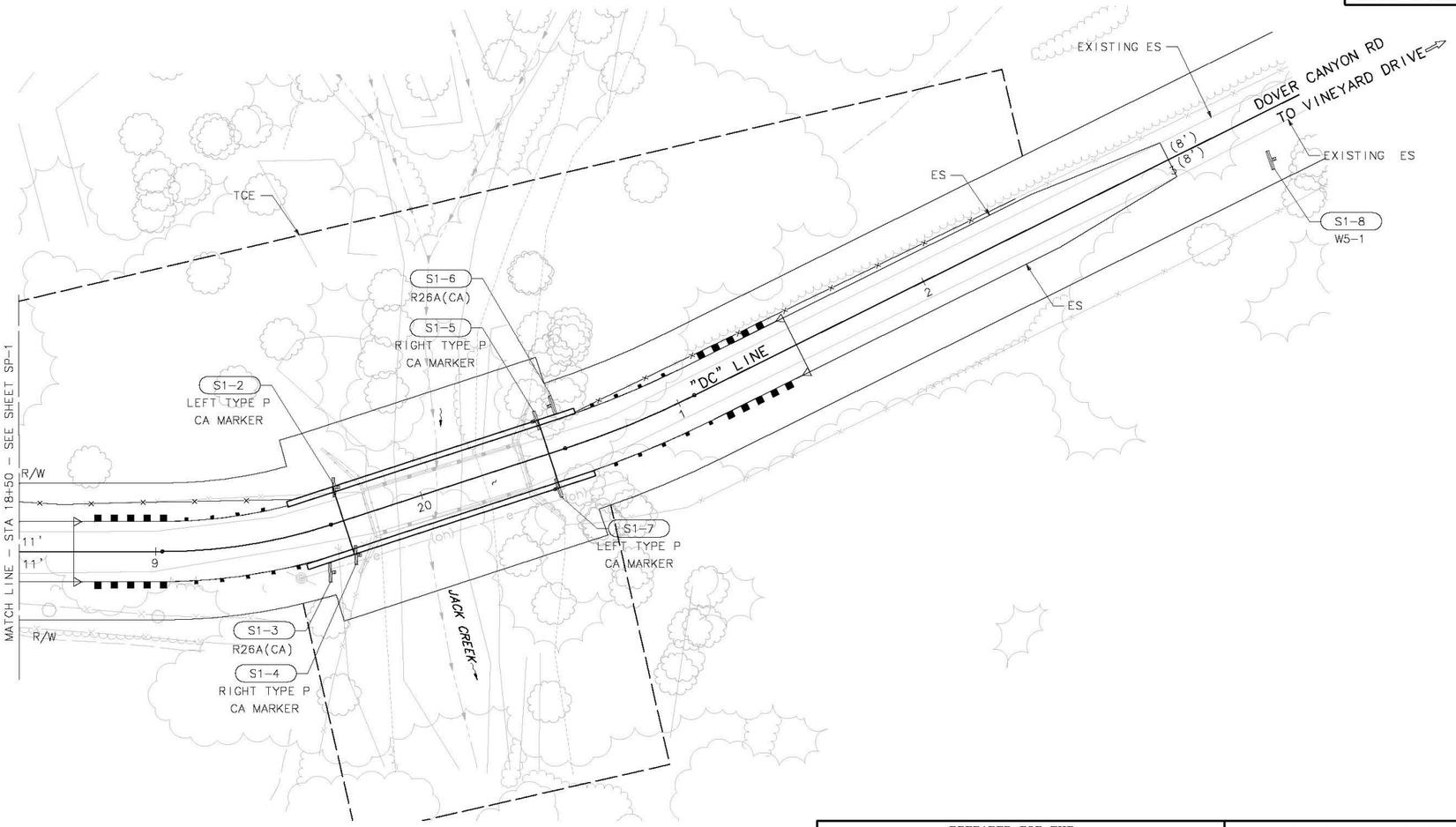
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ZACHARY JAMES SIVIGLIA No. 73128 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

DRAFT

MARK THOMAS
16795 VON KARMAN AVE, SUITE 240
IRVINE, CA 92606



SP-2

0ft 20ft 40ft SCALE: 1" = 20'

PREPARED FOR THE
SAN LUIS OBISPO COUNTY
PUBLIC WORKS DEPARTMENT
976 OSOS STREET, ROOM 206, SAN LUIS OBISPO, CALIFORNIA 93408

DOVER CANYON ROAD AT JACK CREEK BRIDGE REPLACEMENT PROJECT

SIGN PLAN

Designer	Date	Drawn By	Date	Project Manager	Date
R.USEDOM	06/2018	AC	06/2018	Z.SIVIGLIA	06/2018

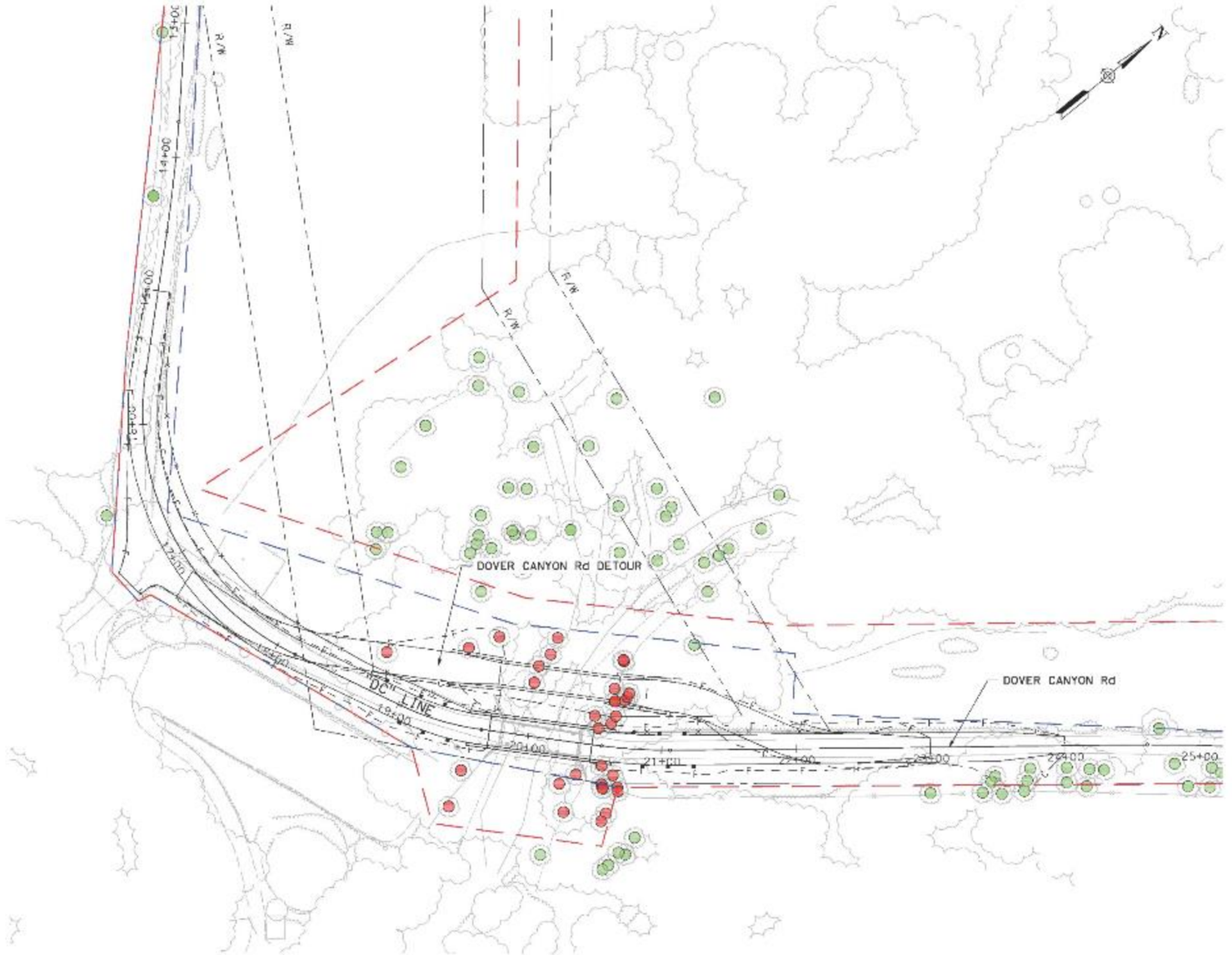
J:\SAN LUIS OBISPO-SA-16157-DOVER CANYON-JACK CREEK BRIDGE\CADD\SHEETS\DOR_SP-1 TO SP-2.DWG, 11/9/2018 11:30 AM, MYCa.ctb, RACHEL USEDOM

LEGEND:

- Exist TREE TO REMAIN
- Exist TREE TO BE REMOVED
- LIMIT OF WORK
- AREA OF POTENTIAL EFFECTS

TREE DATA: TO BE REMOVED

Point #	Northing	Easting	Row Description
2457052	2408574.45	5718798.02	TREE 18INOAK
2457060	2408598.79	5718768.14	TREE 10INOAK
2457054	2408569.53	5718809.33	TREE 6IN
2457067	2408617.80	5718761.98	TREE 12INOAK
2547060	2408552.06	5718815.94	TREE 6IN15D
2457056	2408562.46	5718799.74	TREE 12INOAK
2457064	2408623.48	5718760.19	TREE 20INOAK
2457065	2408636.24	5718739.52	TREE 30INOAK
2457053	2408571.06	5718806.61	TREE 8INOAK
2457055	2408563.52	5718797.60	TREE 6IN
2457058	2408572.78	5718787.22	TREE 18INSPLIT OAK
2547058	2408540.15	5718775.49	TREE 24INOAK
2457059	2408589.28	5718764.56	TREE 8IN
2547057	2408528.70	5718794.47	TREE 24INOAK
2457061	2408605.00	5718768.36	TREE 10INOAK
2547059	2408562.35	5718800.30	TREE 12IN3CD OAK
2457063	2408620.58	5718761.33	TREE 8INOAK
2547061	2408545.43	5718818.05	TREE 8IN15D
2457066	2408617.70	5718750.34	TREE 8INOAK
2457067	2408611.65	5718757.56	TREE 15INOAK
2457068	2408611.64	5718757.69	TREE 15INOAK
2547006	2408491.66	5718720.90	TREE 48INOAK BWF ATTACHED
2547072	2408507.76	5718618.62	TREE 36INOAK
2547036	2408467.11	5718735.74	TREE 60INOAK
2547055	2408554.02	5718779.60	TREE 15INOAK
2547079	2408593.22	5718758.01	TREE 10IN15D OAK
2547089	2408555.78	5718666.25	TREE 10IN3CD OAK
2547090	2408578.44	5718664.99	TREE 20IN15D OAK
2547101	2408575.57	5718707.74	TREE 36INCLUSTER
2547102	2408586.23	5718700.70	TREE 10IN20D
2547103	2408598.88	5718699.88	TREE 30INCLUSTER
2547104	2408610.51	5718694.17	TREE 36INCLUSTER
2547111	2408636.56	5718738.57	TREE 36IN4CD OAK



BRIDGE No.: 49C-0037
FEDERAL PROJECT No.: BRLO-5949(152)

PLAN VIEW
SCALE: 1" = 40'

DRAWN BY: R.USEDOM
CKD. BY: Z.SIVIGLIA
DATE: 07/23/2018
SCALE: AS SHOWN

DOVER CANYON AT JACK CREEK BRIDGE REPLACEMENT PROJECT
POTENTIAL TREE IMPACTS

MARK THOMAS
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SUITE 240
IRVINE, CA 92606

Appendix B Diversion and Dewatering Plan

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DIVERSION/DEWATERING PLAN

Dover Canyon Road at Jack Creek Bridge Replacement Project

Federal Project No. BRLO-5949 (132), Bridge No. 49C-0037

Prepared For:
San Luis Obispo County
Public Works Department

Prepared By:
Mark Thomas
July 2018

MEMO

Project Description

The County of San Luis Obispo Public Works Department (County) is proposing to replace a nearly 100-year-old, single lane bridge (Bridge No. 49C-0037) along Dover Canyon Road at Jack Creek. Implementation of the Project will replace the existing, structurally deficient Warren pony steel truss bridge with a new concrete, two-lane bridge that will carry emergency vehicles, including fully loaded fire trucks, and improve access to the public and properties along Dover Canyon Road. The Project is a safety improvement project, funded in part by the Federal Highway Administration (FHWA) via the California Department of Transportation's (Caltrans) Highway Bridge Program (HBP). According to the Caltrans Bridge Inspection Report (BIR) dated August 3, 2015, the bridge is classified as functionally obsolete with a sufficiency rating of 48.5, and has been programed for replacement.

During the project initiation phase, the design team identified multiple alignment alternatives for the bridge and adjacent roadway. These alternatives focused on either maintaining the existing alignment, or realigning the bridge to improve the right angle curve just west of the existing structure. It was determined by the Project Development Team (PDT) that maintaining the existing bridge and roadway alignment while correcting the right-angle curve to meet the desired design speed was the preferred alternative. This alternative minimizes right of way conflicts and construction impacts.

Road closure is proposed for construction of the project, however there is no viable detour for Dover Canyon Road at the bridge crossing. To maintain the existing bridge alignment, two detour alternatives were considered: a temporary bridge and an at-grade crossing. The design team determined that a temporary bridge was the most feasible detour alternative. Resident access across Jack Creek will be maintained by a temporary bridge that will be constructed upstream of the existing bridge structure.

Water Diversion Plan

Based on historical summer flow records, average Jack Creek flows are expected to be approximately 1.1cfs between June and October. Due to the low volume of summer flow, a temporary dam and pipe diversion system is not anticipated to be necessary. To avoid impacts to fish and other aquatic life, construction within Jack Creek is planned to occur during the non-rainy season.

A water diversion system consisting of temporary k-rail will narrow the channel, keeping water out of the work area. Temporary k-rail will be installed a minimum of two feet from the toe of the proposed rock slope protection (RSP). The temporary K-rail will be cleaned, filled with clean gravel bags, and lined with clean plastic sheeting to keep water from seeping into the work area. Approximately 160ft of k-rail will be placed along each bank, running parallel to direction of flow. K-rail will be installed approximately 50ft upstream and downstream of the permanent bridge structure. Placement of the k-rail will require minor grading and excavation within Jack Creek. Any imported clean crushed rock used in the diversion system will be removed offsite or incorporated into permanent roadway fill when construction activity has finished. All diversion and dewatering activities will adhere to Caltrans Standard Specifications. See Attachment A for a typical layout of the k-rail diversion plan.

After construction of the permanent structure and roadway is complete, the contractor will remove the temporary k-rail and restore all disturbed areas within the creek to pre-construction conditions. The temporary k-rail will be removed in a manner that will provide the least amount of disturbance as possible to the existing creek environment.

MARK THOMAS

ATTACHMENT A

JACK CREEK DIVERSION AND DEWATERING EXHIBIT

MEMO 2

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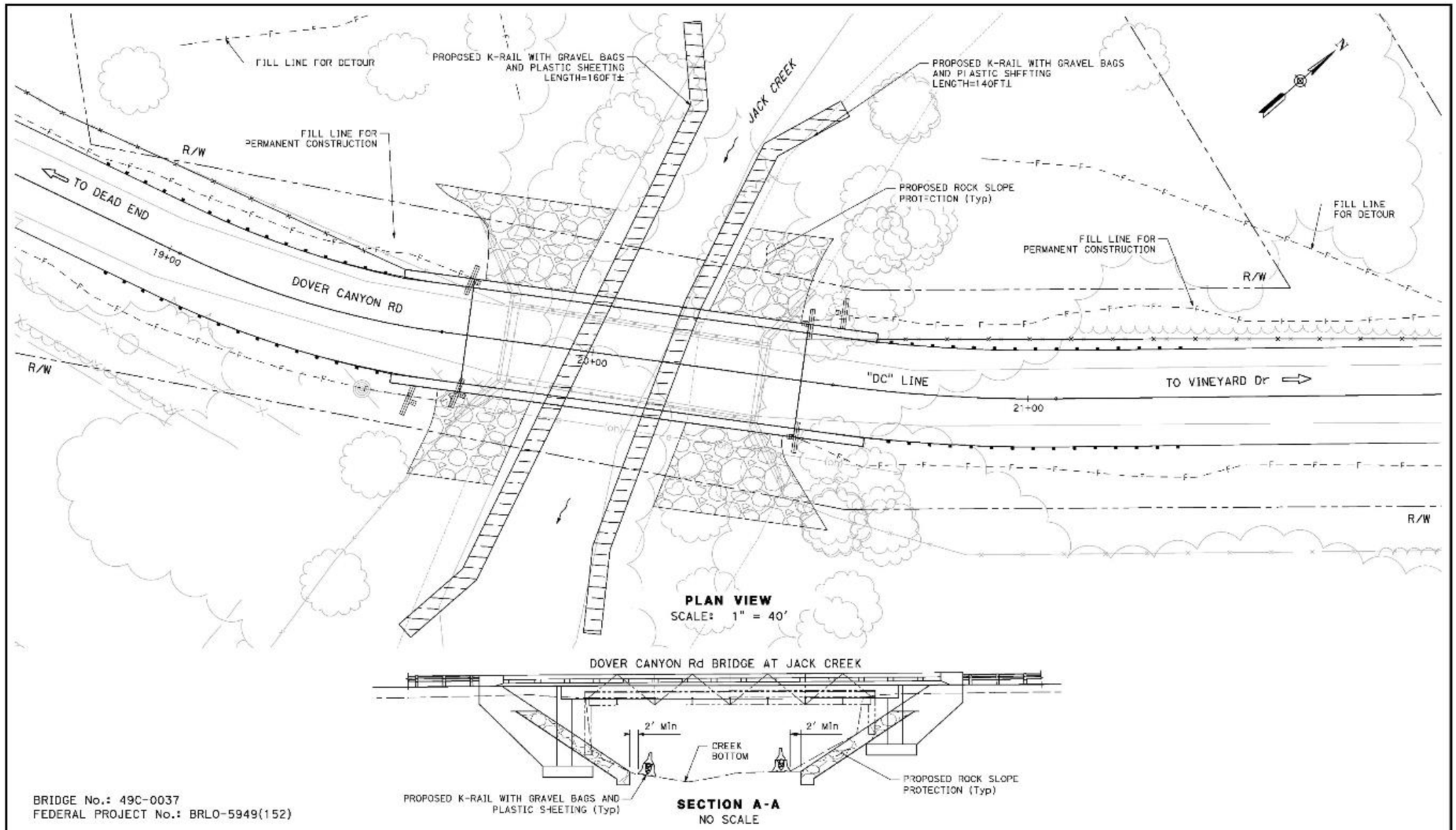

BRIDGE No.: 49C-0037
FEDERAL PROJECT No.: BRLO-5949(152)

DRAWN BY: R.USEDOM
CKD. BY: Z.SIVIGLIA
DATE: 07/11/2018
SCALE: AS SHOWN

DOVER CANYON AT JACK CREEK BRIDGE REPLACEMENT PROJECT

JACK CREEK DIVERSION AND DEWATERING PLAN

MARK THOMAS
201 N CALLE CESAR CHAVEZ
SUITE 101
SANTA BARBARA, CA 93103

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Appendix C USFWS and NMFS Species Lists

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Phone: (805) 644-1766 Fax: (805) 644-3958

In Reply Refer To:
Consultation Code: 08EVEN00-2018-SLI-0313
Event Code: 08EVEN00-2020-E-00057
Project Name: Dover Canyon Road at Jack Creek Bridge Replacement Project

October 10, 2019

Subject: Updated 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 list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve conflicts with respect to threatened or endangered species or their critical habitat prior to a

written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*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.]

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:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

Project Summary

Consultation Code: 08EVEN00-2018-SLI-0313

Event Code: 08EVEN00-2020-E-00057

Project Name: Dover Canyon Road at Jack Creek Bridge Replacement Project

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: The County of San Luis Obispo is proposing to replace the existing bridge on Dover Canyon Road at Jack Creek (Bridge No. 49C-0037) just south of the confluence of east-west trending Jack Creek and north-south trending Summit Creek. The bridge is a single-span, simply-supported, steel Warren pony truss with steel floor beams and a timber deck. The structure is founded on concrete spread footing abutments and is 63 feet long by 16 feet wide, with a clear width of 15.75 feet between the bridge rails. The proposed project will replace the existing bridge with a new concrete, two-lane bridge that will be able to carry emergency vehicles, including fully-loaded fire trucks, and improve access to the public and properties served by Dover Canyon Road. The project is a safety improvement project, funded in part by the Federal Highway Administration (FHWA) via Caltrans's Highway Bridge Program. The Area of Potential Effect is approximately 5.7 acres.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.58059003210235N120.83245538581238W

Counties: San Luis Obispo, CA

Endangered Species Act Species

There is a total of 15 threatened, endangered, or candidate species on this species list.

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

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

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

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
Giant Kangaroo Rat *Dipodomys ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6061	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Condor *Gymnogyps californianus* Population: U.S.A. only, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia sila* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Insects

NAME	STATUS
Kern Primrose Sphinx Moth *Euproserpinus euterpe* 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/7601	Threatened

Lauren Brown

From: Lauren Brown
Sent: Monday, February 4, 2019 2:21 PM
To: 'nmfswcrca.specieslist@noaa.gov'
Cc: 'Robbins, Michaela'; 'Matthew Willis'; Jon Claxton
Subject: Requesting Updated Official Species List for the Dover Canyon Road at Jack Creek Bridge Replacement Project.

On behalf of California Department of Transportation (Caltrans) District 5, I hereby am requesting and updated Official Species List for the Dover Canyon Road at Jack Creek Bridge Replacement Project. The project is located in a rural area along Dover Canyon Road, west of the city of Paso Robles and community of Templeton, in San Luis Obispo County, California. The County of San Luis Obispo is proposing to replace the existing bridge just south of the confluence of east-west trending Jack Creek and north-south trending Summit Creek. The bridge is a single-span, simply-supported, steel Warren pony truss with steel floor beams and a timber deck. The structure is founded on concrete spread footing abutments and is 63 feet long by 16 feet wide, with a clear width of 15.75 feet between the bridge rails. The proposed project will replace the existing bridge with a new concrete, two-lane bridge that will be able to carry emergency vehicles, including fully-loaded fire trucks, and improve access to the public and properties served by Dover Canyon Road. The project is a safety improvement project, funded in part by the Federal Highway Administration via Caltrans's Highway Bridge Program. Caltrans is the lead agency for the project with its FHWA-delegated authority.

Based on the NMFS Google Earth output provided below, South-Central California Coast steelhead Distinct Population Segment and South Central California Coast steelhead Critical habitat must be addressed for the project.

Michaela Robbins, Caltrans District 5 biologist, will be the agency contact for this project. Her contact information is:

Michaela Robbins, District Biologist
(805) 549-3422
Environmental Stewardship Branch
Caltrans District 5

Quad Name **York Mountain**
Quad Number **35120-E7**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) - **X**
SC Steelhead DPS (E) -

1

CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat - X
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

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

2

Sperm Whale (E) -

ESA Pinnipeds

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

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds
See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Lauren Brown
Senior Biologist
SWCA Environmental Consultants
1422 Monterey Street, Suite C-200
San Luis Obispo, CA, 93401
P 805.543.7095 x6613. | F 805.543.2357 | M. 805.268.8898

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Appendix D List of Species Observed in the BSA

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Plant Species Observed at Dover Canyon Road at Jack Creek Bridge

Scientific Name	Common Name	Native	Notes-WIS/Cal-IPC*
Nomenclature follows The Jepson Online Interchange for California Floristics http://ucjeps.berkeley.edu/interchange/.			
Ferns			
Dryopteris arguta	wood fern	Yes	
Equisetum sp.	horsetail	Yes	FAC (or wetter)
Adiantum jordanii	California maidenhair	Yes	FAC
Gymnosperms			
Pinaceae	**Pine Family**		
Pinus sabiana	gray pine	Yes	
Angiosperms			
Adoxocaceae			
Sambucus nigra ssp. *caerulea*	black elderberry	Yes	FACU
Anacardiaceae	**Sumac Family**		
Toxicodendron diversilobum	poison oak	Yes	FACU
Apiaceae	**Carrot Family**		
Conium maculatum	poison hemlock	No	FACW, Cal-IPC moderate
Daucus pusillus	wild carrot	Yes	
Osmorhiza berteroi	sweet cicely	Yes	
Sanicula crassicaulis	sanicula	Yes	
Sanicula hoffmannii	Hoffmann's sanicle	Yes	CRPR 4.2
Torilis arvensis	hedge parsley	No	FAC, Cal-IPC moderate
Apocynaceae	**Milkweed Family**		
Asclepias fascicularis	narrow leaf milkweed	Yes	
Asteraceae	**Sunflower Family**		
Ambrosia psilostachya	western ragweed	Yes	FACU
Artemisia douglasiana	mugwort	Yes	FAC
Baccharis pilularis	coyote brush	Yes	
Baccharis salicifolia	mulefat	Yes	FAC
Carduus pycnocephalus	Italian thistle	No	Cal-IPC moderate
Erigeron canadensis	Canada horseweed	Yes	FACU
Senecio vulgaris	common groundsel	No	
Silybum marianum	milk thistle	No	Cal-IPC limited
Boraginaceae	**Borage Family**		
Amsinckia spectablilis	seaside fiddleneck	Yes	
Brassicaceae	**Mustard Family**		
Brassica sp.	mustard	No	
Cardamine californica	milk maids	Yes	
Cardamine oligosperma	little western bittercress	Yes	FAC

Scientific Name	Common Name	Native	Notes-WIS/Cal-IPC*
Caprifoliaceae	**Honeysuckle Family**		
Lonicera interrupta	chaparral honeysuckle	Yes	
Symphoricarpos albus	common snowberry	Yes	FACU
Caryophyllaceae	**Pink Family**		
Cerastium glomeratum	Sticky mouse-eared chickweed	No	UPL
Stellaria media	chickweed	No	FACU
Convolvulaceae	**Morning-Glory Family**		
Convolvulus arvensis	bindweed	No	
Fabaceae	**Pea Family**		
Lotus corniculatus	bird's-foot trefoil	No	FAC
Lupinus nanus	sky lupine	Yes	
Lupinus succulentus	succulent lupine	Yes	
Melilotus albus	white sweetclover	No	
Melilotus indicus	annual yellow sweetclover	No	FACU
Melilotus officinalis	yellow sweetclover		FACU
Trifolium sp.	clover		
Vicia americana	American vetch	Yes	
Fagaceae	**Oak Family**		
Quercus agrifolia	coast live oak	Yes	
Quecus lobata	blue oak	Yes	FACU
Geraniaceae	**Geranium Family**		
Geranium molle	storkbill	No	
Lamiaceae	**Mint Family**		
Clinopodium douglasii	yerba buena	Yes	
Marrubium vulgare	white horehound	No	FACU, Cal-IPC limited
Mentha spicata	spearmint	No	FACW
Mentha sp.	mint	Yes	
Stachys ajugoides	hedge-nettle	Yes	OBL
Lauraceae	**Laurel Family**		
Umbellularia californica	California bay	Yes	FAC
Montiaceae	**Miner's Lettuce Family**		
Claytonia perfoliata	miner's lettuce	Yes	FAC
Onagraceae	**Evening-Primrose Family**		
Epilobium ciliatum	willowherb	Yes	FACW
Plantangenaceae	**Plantain Family**		
Plantago lanceolata	narrow leaf plantain	No	FAC, Cal-IPC limited
Plantago major	common plantain		FAC
Platanaceae	**Sycamore Family**		
Platanus racemosa	California sycamore	Yes	FAC

Scientific Name	Common Name	Native	Notes-WIS/Cal-IPC*
Polygonaceae	**Buckwheat Family**		
Rumex crispus	curly dock	No	FAC, Cal-IPC limited
Ranunculaceae	**Buttercup Family**		
Clematis ligusticifolia	Western virgin's bower	Yes	FAC
Rhamnaceae	**Buckthorn Family**		
Frangula californica	California coffeeberry	Yes	
Rosacea	**Rose Family**		
Fragaria vesca	wild strawberry	Yes	UPL
Rosa californica	California wild rose	Yes	FAC
Rubus armeniacus	Himalayan blackberry	No	FAC, Cal-IPC high
Rubus ursinus	California blackberry	Yes	FAC
Rubiaceae	**Madder Family**		
Galium aparine	bedstraw	Yes	FACU
Galium andrewsii	phlox-leaved bedstraw	Yes	
Salicaceae	**Willow Family**		
Salix lasiolepis	arroyo willow	Yes	FACW
Salix laevigata	red willow	Yes	FACW
Scropulariaceae	**Figwort Family**		
Scrophularia californica	California figwort	Yes	FAC
Verbascum thapsus	woolly mullein	No	FACU, Cal-IPC limited
Urticacacea	**Nettle Family**		
Urtica dioica	stinging nettle	Yes	FAC
Verbenaceae	**Verbena Family**		
Verbena lasiostachys	western vervain	Yes	FAC
Monocots			
Cyperaceae	**Sedge Family**		
Carex spp.	sedges	Yes	FAC (or wetter)
Scirpus pungens	common threesquare	Yes	FACW
Juncaceae	**Rush Family**		
Juncus effussus	common bog rush	Yes	FACW
Juncus xiphioides (or *J. phaeocephalus*)	iris-leaved rush (or brown-headed rush)	Yes	OBL or FACW
Poaceae	**Grass Family**		
Avena spp.	wild oats	No	Cal-IPC moderate
Brachypodium sp.	false brome	No	
Bromus catharticus	rescue grass	No	
Bromus diandrus	rip-gut brome	No	Cal-IPC moderate
Bromus hordeaceus	soft chess brome	No	FACU, Cal-IPC limited
Cynosurus echinatus	dogtail grass	No	Cal-IPC moderate
Elymus triticoides	beardless wild rye	Yes	FAC
Festuca bromoides	brome fescue	No	

Scientific Name	Common Name	Native	Notes-WIS/Cal-IPC*
Festuca perennis	Italian rye grass	No	Cal-IPC moderate
Gastridium phleoides	nit grass	No	FACU
Hordeum murinum	foxtail barley	No	FACU, Cal-IPC moderate
Muhlenbergia rigens	deer grass	Yes	FAC
Poa annua	annual blue grass	No	FAC
Poa bulbosa	bulbous blue grass	No	FACU
Polypogon monspeliensis	rabbit'sfoot grass	No	FACW, Cal-IPC limited
Stipa miliacea var. *miliacea*	smilo grass	No	Cal-IPC limited

Source: Surveys: 3/24/2017 (SLO County Biologists); 05/13/2017 (SWCA biologist).
*WIS = Wetland Indicator Status
OBL (Obligate Wetland) = almost always occur in wetlands
FACW (Facultative Wetland) = usually occur in wetlands, but may occur in non-wetlands
FAC (Facultative) = occur in wetlands and non-wetlands
FACU (Facultative Upland) = usually occur in non-wetlands, but may occur in wetlands
UPL (Obligate Upland) = almost never occur in wetlands
CalIPC = California Invasive Plant Council, species included on the Inventory of Invasive Species
CRPR = California Rare Plant Rank, Species included on the CDFW/CNPS rare plant inventory – List 4.2 (a watch list)

Wildlife Species Observed at Jack Creek Bridge

Scientific Name	Common Name	Species Status/ Notes
Birds		
Cathartes aura	turkey vulture	MBTA
Sialia mexicana	western bluebird	MBTA
Aphelocoma californica	California scrub jay	MBTA
Cyanocitta stelleri	Steller's jay	MBTA
Baeolophus inornatus	oak titmouse	MBTA
Melozone crissalis	California towhee	MBTA
Zenaida macroura	mourning dove	MBTA
Melanerpes formicivorus	acorn woodpecker	MBTA
Anas platyrhynchos	mallard	MBTA
Empidonax difficilis	Pacific-slope flycatcher	MBTA
Mammals		
Didelphis virginiana	opossum	
Canis latrans	coyote	
Otospermophilus beecheyi	California ground squirrel	
Odocoileus hemionus	mule deer	
Amphibians		
Pseudacris sp.	tree frog	

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Appendix E Photo Documentation

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Photo E-1. Jack Creek Bridge on Dover Canyon Road, facing north. Photo taken June 1, 2016.

Photo E-2. Annual brome grassland adjacent to valley oak woodland. Photo taken May 13, 2017.

Photo E-3. The bridge over Jack Creek, with arroyo willow thicket on the banks of the creek and overlapping oak canopy. Photo taken May 13, 2017.

Photo E-4. Jack Creek stream channel. Photo taken May 13, 2017.

Appendix F Conceptual Habitat Mitigation and Monitoring Plan

Conceptual Habitat Mitigation and Monitoring Plan for the Dover Canyon Road at Jack Creek Bridge Replacement Project, San Luis Obispo County, California

Federal Project Number BRLO-5949(152)

JANUARY 2020

PREPARED FOR

County of San Luis Obispo
Department of Public Works

PREPARED BY

SWCA Environmental Consultants

Conceptual Habitat Mitigation and Monitoring Plan for the Dover Canyon Road at Jack Creek Bridge Replacement Project San Luis Obispo County, California

Federal Project Number BRLO-5949(152)

Prepared for

County of San Luis Obispo
Department of Public Works
976 Osos Street, #207
San Luis Obispo, CA 93408
Attn: Matthew Willis, Environmental Specialist

Prepared by

Jon Claxton, Project Manager

SWCA Environmental Consultants
1422 Monterey Street, Suite C200
San Luis Obispo, CA 93401
(805) 543-7095
www.swca.com

SWCA Project No. 38997

January 2020

CONTENTS

Appendices

Figures

Tables

1 INTRODUCTION

This Conceptual Habitat Mitigation and Monitoring Plan (HMMP) has been prepared by SWCA Environmental Consultants (SWCA) to describe proposed methods for mitigating project impacts to valley oak woodland and riparian habitats associated with the Dover Canyon Road over Jack Creek Bridge Replacement Project (project). The project is anticipated to result in permanent and temporary impacts to U.S. Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Regional Water Quality Control Board (RWQCB) jurisdictional waters in Jack Creek and upland valley oak woodland, including the removal of native trees.

This document is conceptual and is intended to assist project planners in preparing agency permit applications. The mitigation strategy and implementation methods presented in this Conceptual HMMP will need to be modified or augmented to include site-specific detailed planting and monitoring plans following receipt of agency comments during the permitting process, then a Final HMMP will be prepared. The Conceptual HMMP incorporates guidelines presented in the *Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for South Pacific Division USACE* (USACE 2015), the *Checklist for Compensatory Mitigation Proposals* (USACE 2008a), and the *Final Rule for Compensatory Mitigation for Losses of Aquatic Resources* (USACE 2008b). The previously prepared *Dover Canyon Road over Jack Creek Bridge Replacement Project Natural Environmental Study* (NES) (SWCA 2019) and its associated appendices (e.g., Biological Assessment) fully describe the scope and impacts of the proposed project. In summary, the project will impact a total of 2.85 acres (0.11 acre permanent and 2.74 acres temporary), including developed areas such as the road, bridge, and other paved areas. The project will also require the removal of up to 28 native trees, including valley oak (*Quercus lobata*) and coast live oak (*Quercus agrifolia*), with diameter at breast height (DBH) ranging from 6 to 60 inches.

2 PROJECT AND SITE DESCRIPTION

2.1 Responsible Parties and Financial Assurances

As the project applicant, the party responsible for meeting the mitigation obligation pursuant to anticipated conditions of the USACE Nationwide Permit Authorization and other pertinent permits will be:

County of San Luis Obispo
Department 0f Public Works
976 Osos Street, Room 207
San Luis Obispo, CA 93408

The applicant, the County of San Luis Obispo (County), has included sufficient funding in the overall project budget to implement the Final HMMP and any required contingency actions.

2.2 Project Location

The project site is located on Dover Canyon Road where it crosses Jack Creek in rural Paso Robles, San Luis Obispo County, California, in Township 27 South, Range 11 East, Section 18. The study area appears on the U.S. Geological Survey (USGS) York Mountain, California 7.5-minute quadrangle (Figures 1 and 2).

Figure 1. Project vicinity map.

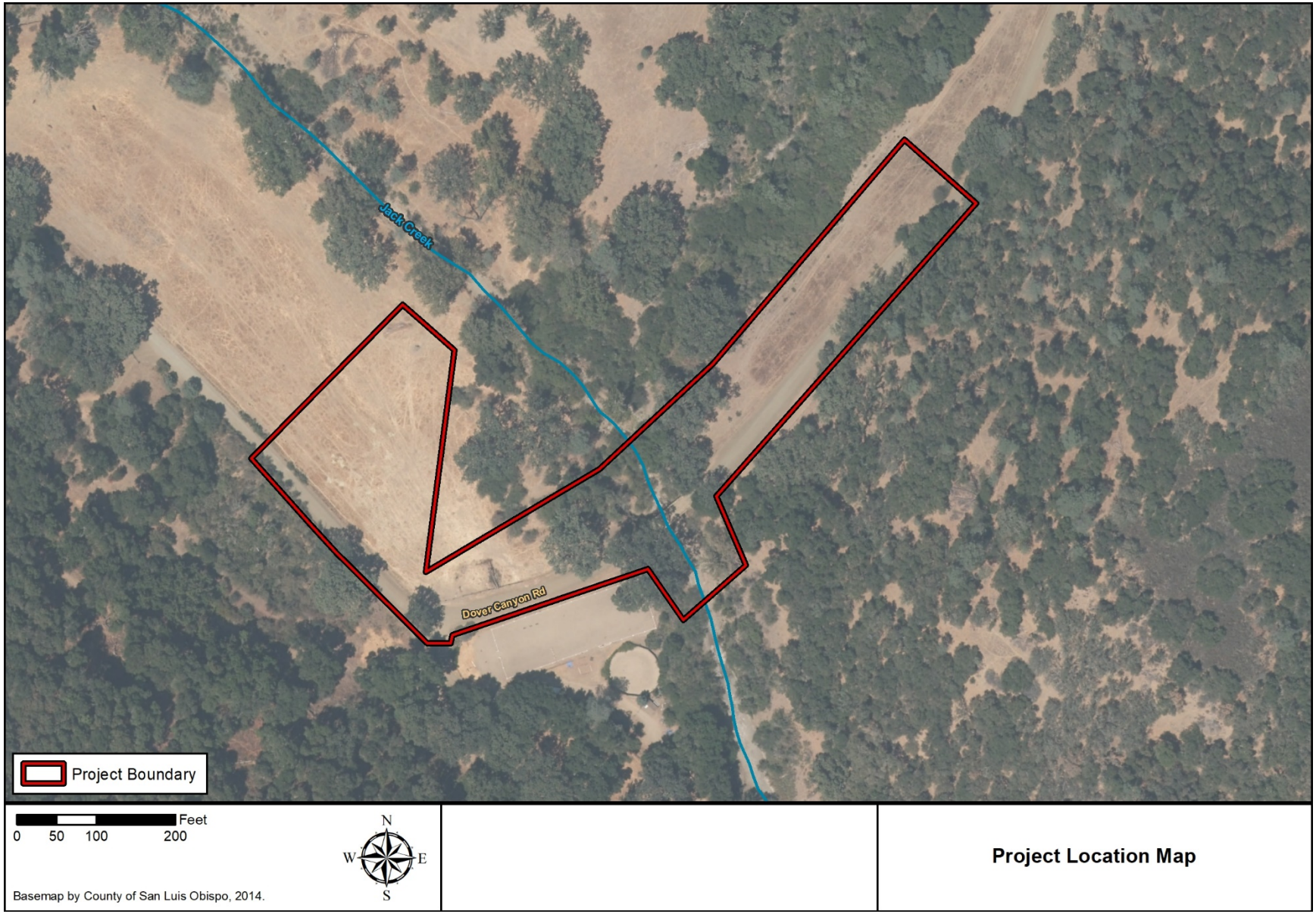

Figure 2. Project location map.

Dover Canyon Road is generally oriented in the northeast-southwest direction at the project site and Jack Creek flows to the south under the bridge. The immediate project area is sparsely populated. The bridge and approach roadway are located entirely within the boundaries of one parcel (Assessor's Parcel Number [APN] 014-211-001). A single-family residence associated with the parcel is located approximately 1,000 feet from the bridge. Adjacent properties are zoned rural agricultural and are part of the Adelaida Sub Area of the North County Planning Area. The surrounding terrain is generally mountainous oak woodland, typical of the Santa Lucia Mountain Range.

2.3 Project Description

The purpose of this project is to replace a 95-year-old, single-lane bridge (Bridge No. 49C-0037) with a new concrete, two-lane bridge that will carry emergency vehicles, including fully loaded fire trucks, and improve access to the public and properties served by Dover Canyon Road. The project is a safety improvement project, funded in part by the Federal Highway Administration (FHWA) through the California Department of Transportation (Caltrans) Highway Bridge Program (HBP). The existing bridge is a single-span, simply supported steel Warren pony truss with steel floor beams and a timber deck. The existing structure is founded on concrete spread footing abutments and is 63 feet long by 16 feet wide, with a clear width of 15.75 feet between the bridge rails. The new bridge is proposed to be a single-span, precast prestressed concrete slab unit bridge slightly longer than the existing bridge. The replacement structure will be approximately 79 feet long, allowing it to clear Jack Creek and align the abutments with the approximate existing top of bank. The structure will be approximately 26 feet wide to accommodate two 9-foot lanes, 2-foot shoulders, and barriers. The abutments will sit on spread footing foundations with cast-in-drilled-hole piles anchoring them to the bedrock. Vegetation clearing and the removal of 33 native trees, including 24 oak trees, will likely be required.

The project will require temporary construction easements (TCEs), and the County will resurrect and enforce the existing right-of-way (ROW) and acquire any additional ROW needed for the project. A TCE will be needed to construct a detour bridge over the creek while construction takes place. The detour bridge will be located approximately 12 feet north of the existing bridge. The detour road will veer off the existing roadway, free span the creek using a standard temporary railcar bridge (approximately 62 feet long and nine feet wide), and then rejoin the roadway. The TCE will also be used for construction staging and will occupy approximately 0.71 acre. This area is currently an unused, uncultivated, undeveloped field. South of the roadway a TCE with an area of approximately 0.25 acre will be used in construction. Access to local residences will be kept clear while construction takes place.

AT&T communication lines are within the project limits and will likely be relocated to the proposed structure. No other private or public utilities are expected to be encountered within the project limits. Utility relocation notifications and procedures will follow standard County procedures and Caltrans *Local Assistance Procedures Manual* (LAPM), Chapter 14: Utility Relocation (Caltrans 2019), procedures.

The project will result in temporary impacts to the creek channel during construction. If surface flows are present within the work area, water would be temporarily diverted away from the streambanks. Although exact materials, lengths, and locations used to construct the diversion system will depend on field conditions, the County will most likely use a system of concrete k-rail, washed gravel-filled bags, and impermeable sheet plastic allowing flows to remain within the primary low-flow channel of the creek through the project site. The approximately 160-foot-long diversion structures will act as cofferdams to divert flow from the work areas (abutments). The diversion will remain in place until construction activities are complete. Upon completion of diversion activities, the County will remove equipment and infrastructure associated with the diversion in a manner that will not adversely impact water quality and its beneficial uses. Diversion locations will be restored to preexisting conditions.

The diversion will be designed to completely isolate the work area from the wetted channel. If surface flow is present within the work area after the diversion is installed or if groundwater is encountered during construction, the County will conduct dewatering activities. This will be accomplished by pumping the water from inside the diversion confines, which will likely be groundwater not surface water. Pumps will be fitted with appropriately sized protective screens at intake ends to prevent fish and other aquatic species from entering the pumps. Water will be pumped to a temporary sediment basin or to adjacent uplands to capture waterborne sediment before being discharged at a location downstream of the dewatered area. Sediment trapped in the basin will be removed and either incorporated in the backfill material behind the abutment or removed from the site.

Construction will likely require the following equipment: air compressor, bobcat, bulldozer/loader, compactor, concrete truck and pump, crane, debris bin, drill rig, dump truck, flatbed truck, haul truck, holding tanks, mixing tanks, recirculating pumps, and water truck through the project site with longitudinal culverts.

2.4 Existing Conditions

The Biological Study Area (BSA) is west of the city of Paso Robles in a rural area of San Luis Obispo County surrounded by agricultural and low-density residential land uses. Dover Canyon Road is a winding, paved rural road through rolling oak woodland terrain typical of the Santa Lucia Mountain Range. There is an equestrian facility located immediately southwest of the project site and the bridge over Jack Creek serves 10 to 12 residential properties. Elevation in this area is approximately 1,075 to 1,125 feet (325 to 340 meters) above mean sea level.

Paso Robles is subject to a Mediterranean climate with hot and dry summer seasons and cooler temperatures with light to moderate precipitation during the winter seasons. The average temperatures in this area range between 33 degrees Fahrenheit (°F) during the months of January and December and 92 °F in July and August based on data collected at the Paso Robles, California Station (046730) (Western Regional Climate Center [WRCC] 2018). The average annual precipitation in this area is 15.21 inches, with the majority of rain falling between December and March (WRCC 2018).

A review of the Natural Resources Conservation Service (NRCS) web soil surveys map indicated the project site is underlain by three soil types: Pico fine sandy loam, 2 to 9 percent slopes; Still clay loam, 0 to 2 percent slopes; and Xerofluevents-Riverwash Association, 0 to 5 percent slopes. Pico fine sandy loam soils are found on alluvial fans along footslopes and typically consist of alluvium derived from calcareous sedimentary sources. They are well-drained soils with a low runoff class, more than 80 inches to a restrictive layer and water table. Still clay loam soils are found on alluvial flats on toe slopes and consist of alluvium-derived sedimentary rock. They are well-drained soils with a runoff class, more than 80 inches to a restrictive layer and water table. This soil type is considered prime farmland, if irrigated. Xerofluevents-Riverwash Association soils are found on alluvial fans, floodplains, and stream terraces and consist of mixed alluvium derived from igneous and sedimentary rock. These are somewhat excessively drained soils with a very low runoff class and more than 80 inches to a restrictive layer and water table (NRCS 2018).

The BSA is located within the Paso Robles Creek Subwatershed (Hydrologic Unit Code [HUC]: 180600050402), which is within the larger Paso Robles Creek-Salinas River Watershed (HUC: 1806000504). The Paso Robles Creek-Salinas River Watershed encompasses approximately 143,654 acres in northern-central San Luis Obispo County and includes a portion of the Salinas River and adjacent tributaries. Upper Paso Robles Creek and its tributaries are steep pre-Quaternary non-infiltrative headwaters with steep, moderately infiltrative early to mid-tertiary valleys (SLO Watershed Project 2018). The Dover Canyon Road Bridge is over Jack Creek, just south of the confluence of Summit Creek

with Jack Creek. Both Jack Creek and Summit Creek are intermittent streams that convey water seasonally. Jack Creek flows into Paso Robles Creek about 3 miles southeast of the BSA, and Paso Robles Creek flows into the Salinas River, which eventually drains to the Pacific Ocean.

The BSA consists of 3.82 acres and encompasses all areas of potential ground disturbance (including staging areas) for the proposed project and supports valley oak woodland and grassland habitats adjacent to the bridge, and arroyo willow thicket and streambed associated with the creeks. Impacts to habitats and natural communities are illustrated in Figure 3, listed in Table 1, and described in detail below; the descriptions use the naming conventions of *A Manual of California Vegetation* (Sawyer et al. 2009) and include the *Preliminary Description of Terrestrial Natural Communities of California* (Holland 1986) for comparison. Plant names follow the *Jepson Manual, Vascular Plants of California* (Baldwin et al. 2012).

Table 1. Estimated Impacts Habitat and Natural Communities of Concern

Habitat	Estimated Impacts (Acres)	
	Permanent	Temporary
Annual Brome Grassland	0.02	2.05
Valley Oak Woodland*	0.01	0.34
Arroyo Willow Thicket	0.04	0.21
Streambed (includes Steelhead Critical Habitat)*	0.00	0.12
Developed	0.04	0.02
Total	**0.11**	**2.74**

*Indicates Natural Community of Concern.

2.4.1 *Annual Brome Grassland*

Upland areas where non-native grasses and other native and non-native herbaceous plant species dominate are classified as annual brome grasslands (Sawyer et al. 2009) or non-native grassland (Holland 1986). Plant species within this habitat type are primarily non-native and naturalized grasses, including bromes (*Bromus diandrus*, *B. hordeaceus*, *B. catharticus*), wall barley (*Festuca bromioides*), wild oats (*Avena* spp.), and foxtail (*Hordeum marinum*), are the dominant grasses. This habitat type provides limited resources for wildlife and is utilized primarily by species tolerant of human activities. The disturbed condition of these lands within the BSA reduces their habitat value and ability to sustain sensitive plants or diverse wildlife assemblages, although they may provide shelter for reptiles and small mammals. A total of 0.02 acre of annual brome grassland will be permanently removed and 2.05 acres would be temporarily affected by project construction.

2.4.2 *Valley Oak Woodland*

Valley oak woodland alliance (Sawyer et al. 2009) or valley oak woodland (Holland 1986) is present within the BSA, with valley oak, dominant or co-dominant, and coast live oak forming an open to continuous canopy within and adjacent to the BSA. This plant community typically occurs on alluvial or residual soils in valley bottoms or lower slopes that may be intermittently flooded. Within the BSA, valley oaks are more prevalent adjacent to the riparian corridor and coast live oak is more common on the upland slopes. The understory is a mix of native shrubs, such as coyote brush (*Baccharis pilularis* ssp. *consanguinea*), common snow berry (*Symphoricarpos albus*), and poison oak (*Toxicodendron diversilobum*), and native and non-native grasses and herbaceous species including bromes, wild oats, deer grass (*Muhlenbergia rigens*), and California figwort (*Scrophularia californica*).

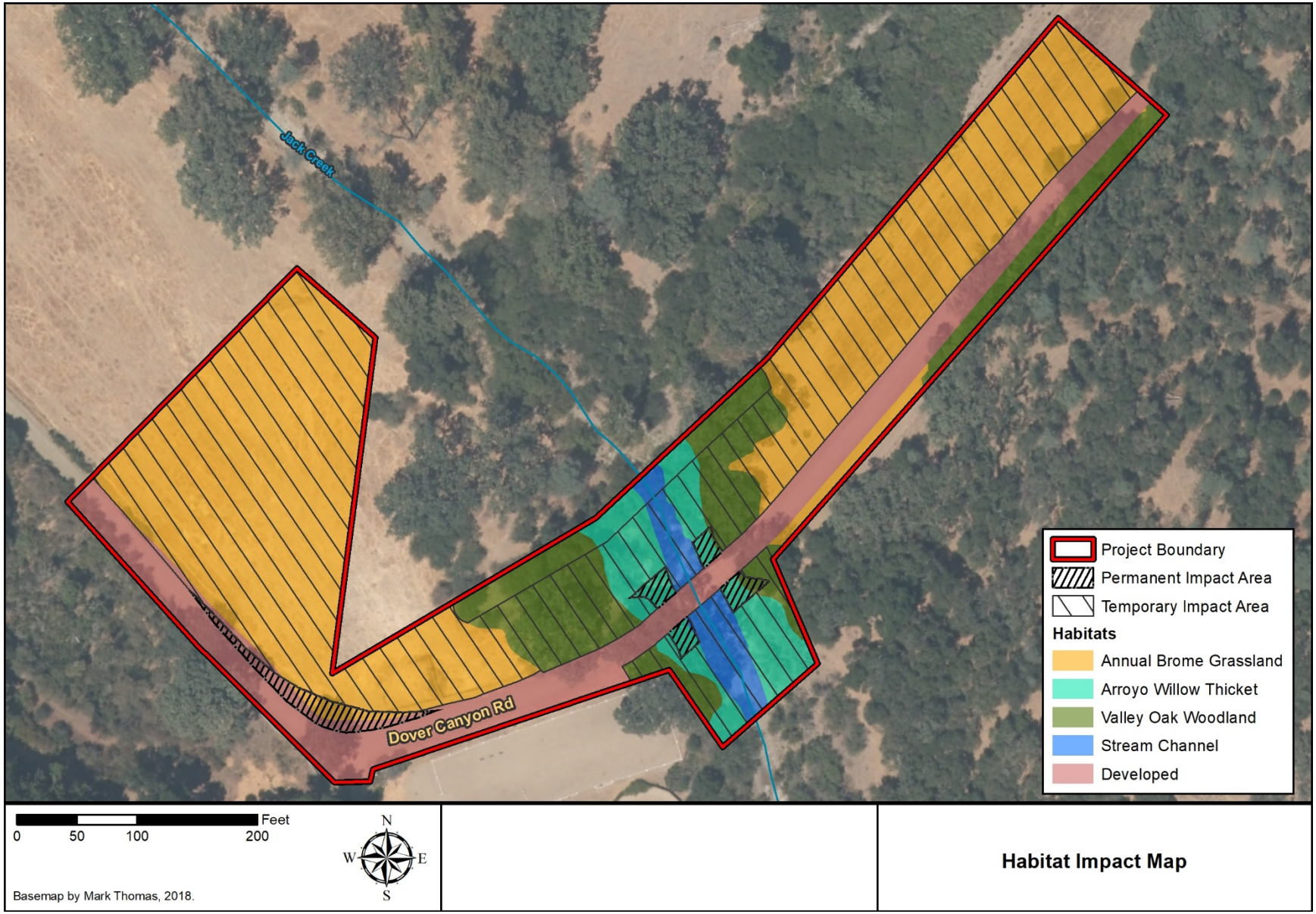

Figure 3. Habitat impact map.

Valley oak woodland is considered a natural community of concern by the CDFW (CDFW CA Code 71.040.00). A total of 0.01 acre of valley oak woodland will be permanently impacted and 0.34 acre will be temporarily impacted from project construction. In addition, the project will also require the removal of 33 native trees, including valley oak and coast live oak, with DBH ranging from 6 to 60 inches.

2.4.3 *Arroyo Willow Thicket*

Jack Creek supports arroyo willow thicket (Sawyer et al. 2009) or Central Coast riparian scrub (Holland 1986). Both shrub and tree forms of arroyo willow (*Salix lasiolepis*) are dominant on the banks of the creek, with California sycamore (*Platanus racemosa*) and California bay (*Umbellularia californica*) present. Valley oak trees are also mixed in with the willows, although most of the oak canopy is from larger trees rooted outside the streambanks. The understory includes black elderberry (*Sambucus nigra* ssp. *caerulea*), mulefat (*Baccharis salicifolia*), mugwort (*Artemisia douglasiana*), and stinging nettle (*Urtica dioica* ssp. *holosericea*). The arroyo willow thicket (Central Coast riparian scrub) is within CDFW and RWQCB jurisdictions. A total of 0.04 acre of arroyo willow thicket will be permanently impacted and 0.21 acre will be temporarily impacted by project activities.

2.4.4 *Stream Channel*

The stream channel includes the active channel and lower floodplain that is seasonally flooded under normal circumstances (i.e., normal precipitation patterns and amounts). Within the stream channel, plant species include mulefat and mugwort, and patches of sedges (*Carex* spp., *Scirpus pungens*), rushes (*Juncus effusus*, *J. xiphioides*), hedge nettle (*Stachys ajugoides*), and other herbaceous plants. A total of 0.12 acre of stream channel will be temporarily impacted by project activities.

2.5 Summary of Impacts to Jurisdictional Areas

A jurisdictional delineation was conducted for the project and potential federal and state jurisdictional areas were identified within the proposed BSA. The results of the delineation are preliminary and are subject to review by the resource agencies prior to issuance of any permits. During the permit review process, the resource agencies may elect to conduct a site visit to verify the conditions and extents of the jurisdictional areas identified and will approve or request amendments to the report based on their findings.

Based on the conditions observed in the field, Jack Creek is likely subject to USACE, CDFW, and RWQCB jurisdiction. This is due to the presence of a clearly identifiable ordinary high water mark (OHWM), the evidence of a defined bed and bank, connectivity to relatively permanent waters (the Salinas River via Paso Robles Creek), presence of riparian vegetation, and evidence of wetland hydrology. The existing riparian vegetation of Jack Creek extends beyond the top of bank in some areas; therefore, CDFW jurisdiction is mapped to include those areas within the outermost extent of riparian vegetation. The RWQCB also asserts jurisdiction over Waters of the State through the Porter Cologne Act. The definition of this state jurisdiction is general, and no formal delineation process is in place at this time; therefore, RWQCB will also commonly utilize the extent of riparian as the extent of their jurisdiction under the Porter Cologne Act.

Temporary impacts to 0.12 acre of stream channel are subject to the jurisdiction of the USACE, CDFW, and RWQCB, and permanent impacts to 0.043 acre and temporary impacts to 0.44 acre are subject to the jurisdiction of the CDFW and RWQCB (Figure 4; Table 2).

Figure 4. Jurisdictional areas impact map.

Table 2. Impacts to Jurisdictional Areas on the Project Site

Agency	Jurisdictional Areas	Temporary Impacts			Permanent Impacts		
		Area (ft^2)	Area (ac)	Linear Feet[1]	Area (ft^2)	Area (ac)	Linear Feet[1]
USACE	Other Waters of the United States[2]	5,100	0.12	179.0	46.5	0.001	25.0
	Total USACE Impacts	**5,100**	**0.12**	**179.0**	**46.5**	**0.001**	**25.0**
CDFW/ RWQCB	Streambed/Intermittent Stream[3]	5,100	0.12	179.0	**46.5**	**0.001**	**25.0**
	Riparian[4]	9,214.8	0.320	179.0	1,825.3	0.042	45.0
	Total CDFW/RWQCB Impacts	**14,441.8**	**0.44**	**179 .0**	**1,871.8**	**0.043**	**45.0**
	Total USACE/CDFW/RWQCB Impacts[5]	**14,441.8**	**0.44**	**179 .0**	**1,871.8**	**0.043**	**45.0**

[1] Linear feet are measured parallel to the stream.

[2] USACE Waters of the United States include jurisdictional features at or below the OHWM that lack one or more of the wetland parameters; there would be a minor amount of incursion into the OHWM for removal of existing concrete and placement of rock slope protection.

[3]Streambed/Intermittent Stream = Other Waters of the United States.

[4] Area above the OHWM to the top of bank or outer edge of riparian canopy.

[5] Same as RWQCB and CDFW impacts since Other Waters of the United States is included in Stream Channel.

2.5.1 *Summary of Impacts to Non-jurisdictional Areas*

Areas outside the creek and its associated riparian habitats consist primarily of valley oak woodland, annual brome grassland, and developed areas associated with the road, bridge, and residential properties. These habitats would be disturbed by the proposed project, but compensatory mitigation is not addressed in this Conceptual HMMP because they do not constitute jurisdictional areas requiring compensatory mitigation by the USACE, RWQCB, and CDFW. However, upland areas temporarily disturbed during construction activities could be hydroseeded with an erosion control seed mix containing an assemblage of native riparian or grassland species, as appropriate, to increase the function and values of adjacent jurisdictional areas, with agency and property owner approval. In addition, tree planting requirements may be incorporated into the Conceptual HMMP, if considered appropriate and with approval by regulatory agencies and property owners.

The project will impact 0.35 acre of valley oak woodland (0.01 acre of permanent and 0.34 acre of temporary impacts), which is considered sensitive in the State of California and has a rarity rank of S3, indicating this plant community is rare to locally common throughout its range (CDFW CA Code 6271.040.00) (CDFW 2010). A total of 28 native trees (7 valley oaks, 12 coast live oaks, 4 red willows, 4 arroyo willows, and 1 California bay) within the valley oak woodland and riparian habitats are proposed for removal within the temporary and permanent impact areas (Figure 5; Table 3).

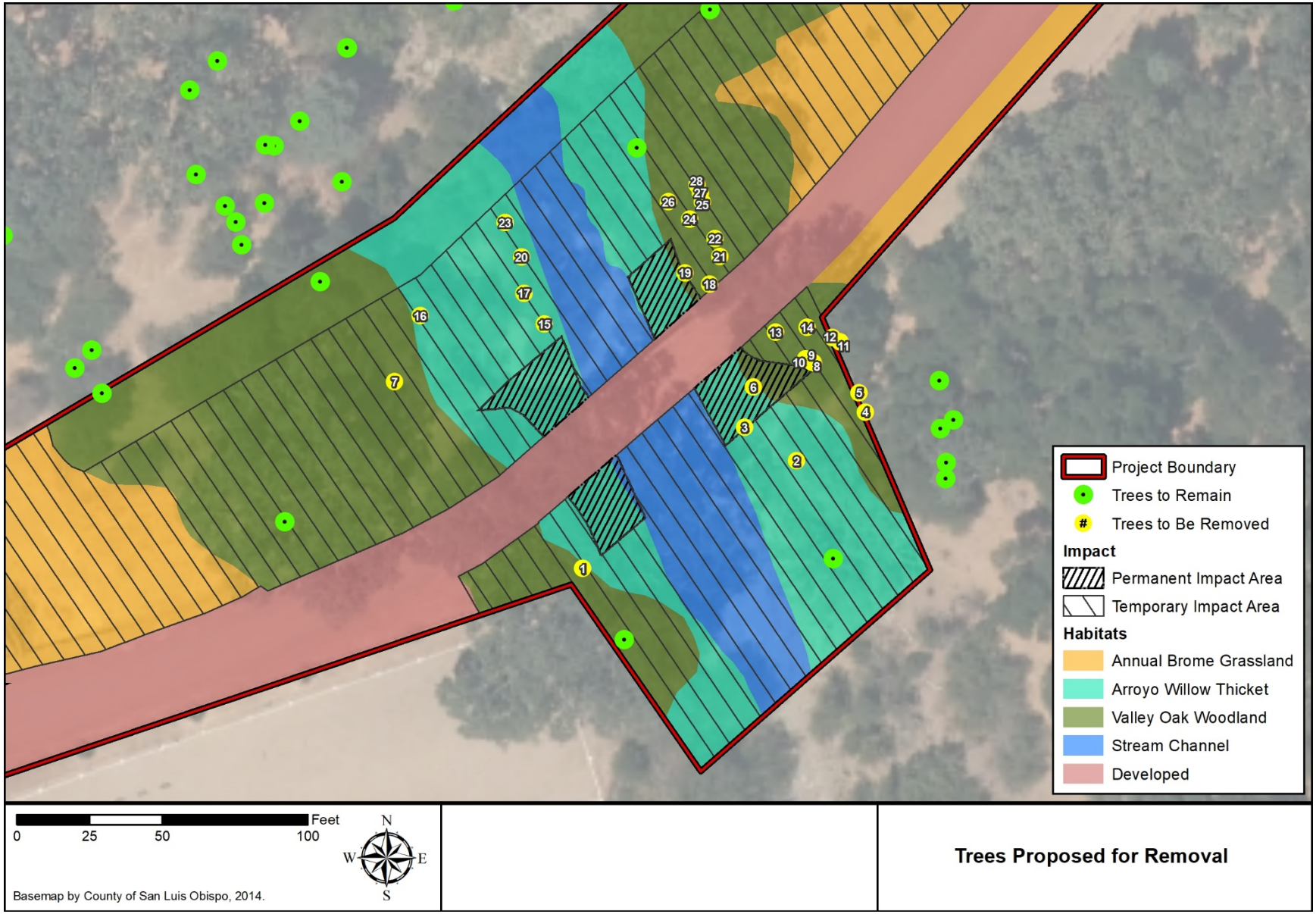

Figure 5. Trees proposed for removal.

Table 3. Trees Proposed to be Removed

Tree Number	DBH (inches)	Tree Type	Tree Number	DBH (inches)	Tree Type[1]
1	48	Valley Oak	15	36	Arroyo Willow
2	24	Red Willow	16	20	Coast Live Oak
3	24	Red Willow	17	10	Arroyo Willow
4	8	Coast Live Oak	18	8	Coast Live Oak
5	6	Valley Oak	19	10	Coast Live Oak
6	15	Red Willow	20	30	Arroyo Willow
7	10	Red Willow	21	10	Coast Live Oak
8	12	Coast Live Oak	22	10	Coast Live Oak
9	12	Coast Live Oak	23	36	Arroyo Willow
10	6	Coast Live Oak	24	15	Valley Oak
11	6	Coast Live Oak	25	12	Valley Oak
12	18	Coast Live Oak	26	8	California Bay
13	18	Coast Live Oak (split)	27	8	Valley Oak
14	18	Valley Oak	28	20	Valley Oak

2.6 Function and Value Assessment

As previously stated, the project site is located within the Paso Robles Creek Subwatershed (HUC: 180600050402), which is within the larger Paso Robles Creek-Salinas River Watershed (HUC: 1806000504). Jack Creek and Summit Creek, which joins Jack Creek just upstream of the project site, are intermittent streams that convey water seasonally. As of the State Water Resources Control Board (SWRCB) *Final 2012 Integrated Report*, Jack Creek, Summit Creek, and Paso Robles Creek are not identified as Clean Water Act Section 303(d) listed impaired waterbodies (SWRCB 2012).

Based on initial observations and the size of the BSA, the portion of Jack Creek within the BSA provides low physical/hydrological functions (flood control, ground water recharge, and sediment traps), low chemical functions (waste treatment/pollution interception or biogeochemical cycling), and moderate ecological functions (fish and wildlife habitat, endangered species habitat, and wildlife migration). Values, such as recreation (bird and wildlife watching), aesthetics, and education, from the Jack Creek corridor, especially in the vicinity of the BSA, would be low as this portion of the creek is in a remote, rural residential area surrounded by private properties that would be difficult to access by the public and the values are restricted to the private residences adjacent to the creek.

The portion of Jack Creek within the BSA, as well as Summit Creek upstream of the BSA, are designated as critical habitat for the South-Central California Coast steelhead Distinct Population Segment (DPS). Final ruling on critical habitat for the South-Central California Coast steelhead DPS was established by the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) on September 2, 2005 (*Federal Register* 70(170):52488–52537). Potential impacts to steelhead designated critical habitat that may result from project implementation include temporary loss of vegetation and other minor modifications to the stream channel. Jack Creek could function as steelhead migration habitat, and spawning or rearing habitat may occur in portions of the creek, although suitable habitat within the BSA appears to be limited. Because trees and other surrounding vegetation function to shade the stream and

filter sediments, tree removals required for project implementation may have an indirect effect on water quality and temperatures (depending on the distance from the waterline), which in turn would affect habitat for steelhead.

3 GOAL OF THE CONCEPTUAL HABITAT MITIGATION AND MONITORING PLAN

The goal of this Conceptual HMMP is to mitigate for permanent and temporary impacts to jurisdictional areas and restore appropriate native vegetation to disturbed portions of the project site. This Conceptual HMMP addresses the project-related impacts to USACE, CDFW, and RWQCB jurisdictional areas using on-site and in-kind habitat restoration and enhancement within the stream channel and riparian habitats associated with Jack Creek in the project area. The following compensatory mitigation ratios are proposed for planning purposes only:

- On-site mitigation for permanent impacts to jurisdictional areas, including arroyo willow thicket, will be implemented at a 3:1 ratio.
- On-site mitigation for temporary impacts to jurisdictional areas, including stream channel arroyo willow thicket will be implemented at a 1:1 ratio.
- On-site mitigation for riparian trees, including valley oaks.

3.1 Mitigation Strategy

USACE Mitigation Rule has established a preferred hierarchy for mitigation that includes, in descending order: (1) mitigation banks; (2) in-lieu fee programs; and (3) permittee-responsible mitigation (USACE 2015). Since the project will impact a total of 16,313.6 square feet (0.483 acre) of jurisdictional features and the need to stabilize bank slopes and revegetate areas temporarily impacted by construction, the compensatory mitigation strategy proposed in this plan is primarily on-site and in-kind (i.e., essentially the same species, functions, and values as the habitats to be impacted). However, if there is not sufficient area to meet mitigation requirements, additional mitigation strategies may need to be developed (such as contributing to a mitigation bank or in-lieu fee program, or off-site mitigation within the Jack Creek, Summit Creek, or Paso Robles Creek Watersheds, if acceptable programs or restoration areas are available). The locations of proposed mitigation areas are identified on Figure 6.

Table 4 provides a summary of potential project-related impacts that would be subject to environmental permitting by USACE, under Section 404 of the Clean Water Act; CDFW, under Sections 1600–1602 of the California Fish and Game Code; and RWQCB, under Section 401 of the Clean Water Act. Table 4 also includes proposed mitigation ratios to compensate for permanent and temporary impacts expected from the proposed project. The summary presented below is for initial planning purposes; the actual mitigation requirements will be determined through the permitting process, and a final Compensatory Mitigation Plan will need to be approved by the USACE, CDFW, and RWQCB.

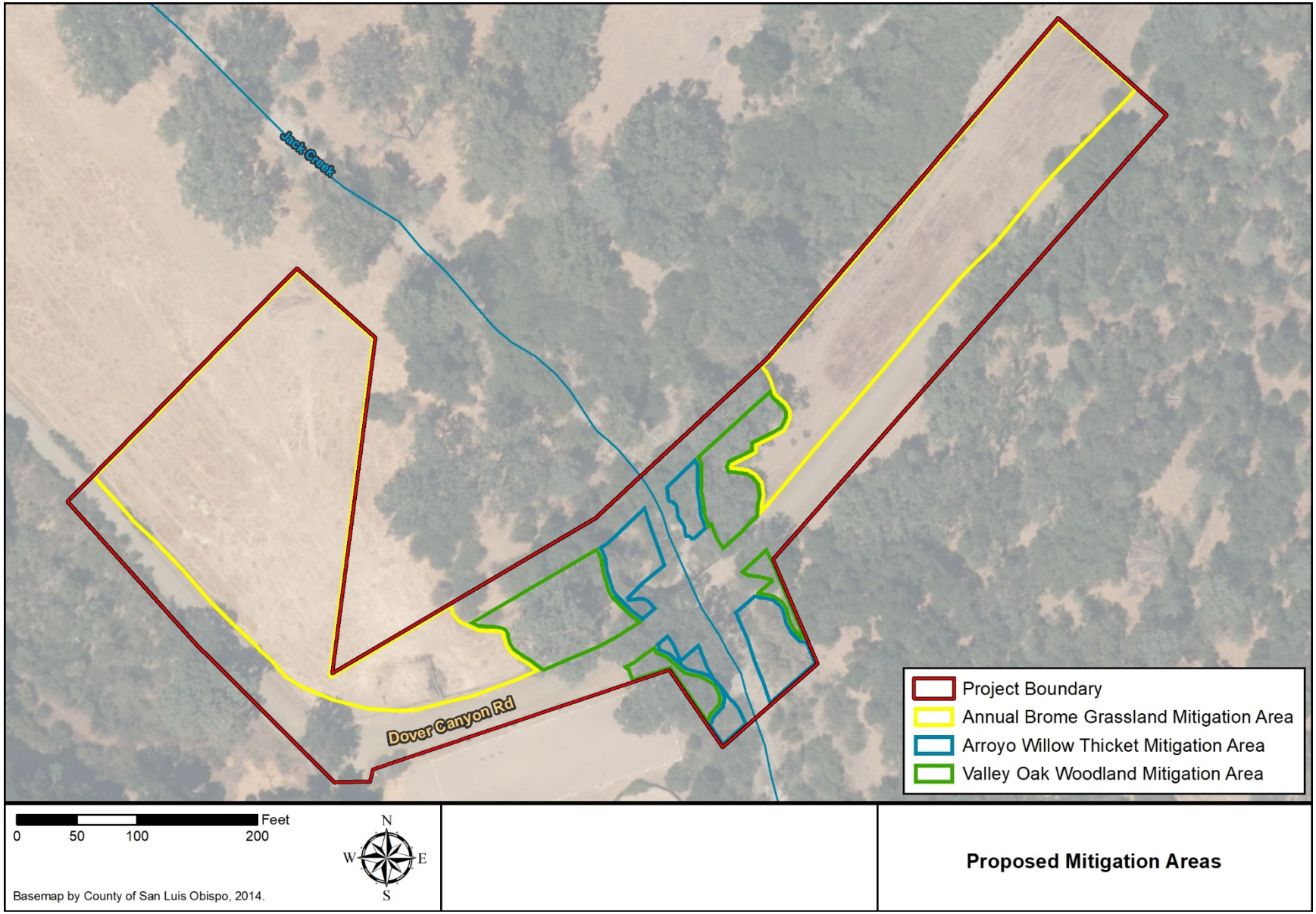

Figure 6. Proposed mitigation areas.

Table 4. Summary of Impacts and Proposed Mitigation Acreage Requirements

Jurisdictional Feature	Impact Type	Impact Area (acres)	Mitigation Ratio	Required Mitigation Area (acres)
Waters of the United States/State (USACE, CDFW, RWQCB) [1]	Permanent	0.001[1]	N/A	N/A
	Temporary	0.12	1:1	0.12
Other Waters of the State (CDFW, RWQCB) [2]	Permanent	0.042	3:1	0.126
	Temporary	0.32	1:1	0.32
	Total Mitigation Acreage Required for USACE/CDFW/RWQCB Combined Permanent and Temporary Impacts			**0.566**
	USACE/CDFW/RWQCB Mitigation available on-site in Temporary Impact Areas			**0.44**
	Additional Mitigation Area Required			**0.126**
	Additional Mitigation Areas Available On-site			**0**

[1] Area within the OHWM; there would be a minor amount of incursion into the OHWM for removal of existing concrete and placement of rock slope protection; mitigation not proposed for this action.

[2] Includes areas from the OHWM to top of bank, and to outer edge of riparian canopy if it extends beyond top of bank.

Based on the calculations presented in Table 4, there is not sufficient area for the proposed mitigation to be completed on-site. In addition to impacts to habitat, native trees removed as part of the project construction may require replacement or alternative mitigation. The following mitigation strategies are proposed for the project:

- Vegetation of areas temporarily disturbed by construction. This can include upland and jurisdictional riparian and streambed areas and falls under permittee-responsible mitigation.
- Contribute to a local mitigation bank for projects that result in tree removal to supplement on-site mitigation and meet the compensatory mitigation requirements, if available.
- Determine if other in-lieu fee or mitigation banking opportunities are available within the Paso Robles Creek Subwatershed or the larger Paso Robles Creek-Salinas River Watershed.

Other mitigation strategies may also be considered or developed during the permitting process.

3.1.1 *Permanent Impacts Mitigation Areas*

Permanent impacts will result from installation of the approach abutments, placement of rock slope protection, and construction of the fill slopes. A 3:1 mitigation ratio is proposed to compensate for permanent impacts to jurisdictional areas. Since mitigation is not available within the permanent impact area, the permanent impact mitigation area could include those areas immediately downstream and upstream of the temporary impact area or adjacent to the BSA that could be enhanced to improve habitat function and value. Habitat enhancement activities may include removing non-native and invasive plant species from the creek banks, such as Himalayan blackberry (*Rubus armeniacus*) and poison hemlock (*Conium maculatum*), and planting riparian forest and scrub species.

3.1.2 *Temporary Impacts*

Temporarily impacted areas are expected to be returned to the preconstruction condition following project completion. Temporary impacts will occur within the dewatering and construction corridor that spans upstream and downstream of the proposed bridge. The corridor would include the dewatered area, temporary road crossing, and associated riparian vegetation removal. Project staging areas have been selected to minimize unnecessary impacts to native riparian vegetation. Temporary impacts to jurisdictional areas on the creek banks can be mitigated at a 1:1 ratio by restoring the topography and vegetation in the temporarily impacted areas. Temporary impact restoration activities should focus on recontouring the disturbed areas (if needed), stabilizing banks (using placing geotextiles, erosion control blankets, or other suitable methods or materials), and revegetation by applying an appropriate seed mix and supplemental planting container stock or cuttings, as needed. Temporary impacts within the creek channel itself will likely restore naturally.

3.2 Target Functions and Values

The intent of the mitigation described in this Conceptual HMMP is to restore and enhance the diverse and valuable biological and hydrologic resources within the BSA. The project will replace the existing bridge and should restore the disturbed areas associated with that action to the same or better natural conditions that were present prior to disturbance. Although there would be permanent removal of about 0.042 acre of riparian vegetation, a significant decrease in functions and values is not expected because loss of vegetation will be minimized, and implementation of bank stabilization measures and restoration of temporary disturbed areas will ensure there are no long-term effects to Jack Creek downstream of the project site.

3.3 Time Lapse between Impacts and Expected Compensatory Mitigation Success

Implementation of the Final HMMP could begin upon completion of construction activities within temporary impact areas. Revegetation ideally would occur in the fall and early winter, when the plant materials have the greatest chance of becoming established. The standard 5-year monitoring period is proposed for the project, with mitigation success anticipated to occur within the 5-year timeframe. Table 5 provides a conceptual schedule for mitigation and monitoring.

Table 5. Conceptual Mitigation and Monitoring Schedule

YEAR 1	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Implementation Tasks												
Construction Monitoring						X	X	X	X	X		
Prepare Planting Areas										X		
Install and Water Plantings											X	
Site/Revegetation Monitoring										X	X	X
Mitigation Implementation Report					X							
YEAR 2	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
First Year Tasks												
Weeding/Maintenance	X		X	X		X		X			X	
General Site Monitoring			X			X				X		X
Biological Data Collection						X						
Year 1 Annual Report					X							
YEAR 3	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Second Year Tasks												
Weeding/Maintenance		X		X		X		X			X	
General Site Monitoring			X			X				X		X
Biological Data Collection						X						
Year 2 Annual Report					X							
YEAR 4	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Third Year Tasks												
Weeding/Maintenance		X		X		X		X		X		
General Site Monitoring			X					X				X
Biological Data Collection						X						
Year 3 Annual Report												X
YEAR 5	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Fourth Year Tasks												
General Site Monitoring				X								X
Biological Data Collection						X						
Year 4 Annual Report					X							
YEAR 6	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**
Fifth Year Tasks												
General Site Monitoring						X						
Biological Data Collection						X						
Year 5 Annual Report					X							
Final Site Monitoring											X	
Completion Report												X

*Schedule subject to change if date of implementation is delayed or permit conditions dictate otherwise.

4 MITIGATION AND RESTORATION IMPLEMENTATION PLAN

Implementation of the restoration and mitigation activities are typically conducted or overseen by an approved restoration specialist. The restoration specialist oversees all site preparation, invasive weed removal, seeding, and planting installation, and ensures conformity with the Final HMMP. Restoration and enhancement activities commence upon completion of grading and construction, and prior to the onset of the rainy season. Preferably, all plant materials used in the project site are collected locally, from within or close to the project site. Sources of native plant material may also be used from upstream of the project site, if sufficient plant material is not available locally.

4.1 Debris Removal

Mitigation may include removal of woody debris or other foreign material (such as large pieces of concrete or trash), if the removal will not affect the function of the stream within the BSA, especially if the removal has the potential to increase erosion or sedimentation issues within or downstream of the project site, or affects habitat for South-Central California Coast steelhead or other special-status species. The existence of pools of water that remain in the stream for extended periods, especially downstream of the bridge, may be the result of a combination of fallen trees and other woody debris creating dams where water can pool or flow at reduced rates. Any debris removal should consider whether the removal would result in improvement to the functions and values of the habitat within the project site, such as reduce potential erosion, scouring, or bank instability, or restoration of normal flows in the stream channel. If the debris present contributes to the habitat functions, it should remain in place as much as feasible (i.e., unless removal is required within the construction zone). All construction-related trash should be removed from the project area using methods that minimize disturbance to the creek bed, banks, and adjacent slopes (e.g., using mechanical equipment from the top of bank). Vegetation cover should not be pulled out, wherever possible. Should areas be disturbed during trash or debris removal, recontouring to match the existing natural grade and/or be consistent with adjacent undisturbed area and revegetating as appropriate may be required.

4.2 Site Preparation

Site preparation of temporary impact areas should consist of restoring the disturbed areas to original contours, where feasible. Areas that cannot be returned to original contours can be graded to a hydrologically stable configuration that matches adjacent undisturbed areas. Bare areas can be hydroseeded and erosion control material, such as erosion control blankets, can be used to stabilize slopes and disturbed upland areas, as appropriate. Container stock or cuttings may be planted after slope stabilization measures are installed, where appropriate. Applied seed mixes may include County, Caltrans, or resource agency-approved species or a mix composed of locally collected native species with different mixes for upland and riparian areas, if required. Seed mix may include native species currently present in the project area such as deer grass, coyote brush, elderberry, California figwort, mugwort, and California blackberry (*Rubus californica*), which could replace Himalayan blackberry. Native grasses not found in the project area, but in nearby areas, may be suitable to add to the upland hydroseed mix, such as purple needlegrass (*Stipa pulchra*) and small fescue (*Festuca microstachys*).

4.2.1 *Invasive Species Removal*

Prior to planting in temporary impact mitigation areas, it is recommended that treatment to remove invasive weeds and invasive species seed banks be implemented, such as a grow-and-kill cycle. This, or

other suitable preparatory action, should be completed prior to planting efforts. Grow-and-kill cycle details are described below, although other methods may be employed.

- All areas to be planted are watered repeatedly to stimulate germination of existing weed seeds.
- Sprouted weeds may be sprayed with an approved herbicide, covered with black plastic for a period of at least 4 weeks, or removed by hand to conclude at least one grow-and-kill cycle prior to planting on the site.
- Herbicide use should be minimized, wherever feasible, and restricted to application of the glyphosate-based herbicide Aquamaster® within 60 feet of the streambed and above the OHWM. All herbicide applications are performed by an individual in possession of a Qualified Applicators License and with experience managing invasive weed species in sensitive habitats. Any herbicide applications must be done in a manner that protects native aquatic species.
- Other mechanical means of removal (in addition to covering with black plastic or hand removal) using mowers or other equipment may also be employed; however, the equipment should be staged and used in a way that avoids further impact to the creek channel.
- Invasive species removal should be conducted prior to planting for all mitigation areas (i.e., revegetation or enhancement areas). Large non-native trees, shrubs, and herbaceous species, if present, should be removed using mechanical methods, such as chain saws and hand tools, with application of an approved herbicide (e.g., glyphosate-based herbicide Aquamaster®) used as a follow-up control method (i.e., to control resprouting) or to minimize disturbance to native vegetation or stream banks, as needed. No grading or contouring should occur in enhancement areas. Planting should occur following approval of invasive species removal efforts by the restoration specialist.

4.3 Use of Container Stock

Container stock may be used to supplement hydroseeding in the mitigation area, such as planting native trees to mitigate for trees removed during project construction. The project should utilize native riparian tree and understory species that currently occur in the BSA. Such species include but are not limited to, valley oak, arroyo willow, black elderberry, California sycamore, coast live oak, and others. Planting standards are provided in Section 4.5 below. The restoration specialist should oversee container stock installation.

4.4 Cuttings

Willow cuttings are often used in restoration of riparian areas; however, willows are not recommended for planting at the project site. Willows are a fast-growing species that can form dense stands that impede water flow, and it is likely they will readily resprout in the areas temporarily impacted by construction. Therefore, it is recommended that willow cuttings only be used if there is insufficient regrowth or in areas where erosion may be a concern and other plantings are inappropriate. Other species that can be planted from cuttings include mulefat and California blackberry, although these species may be more successful if grown in containers rather than direct planting of cuttings.

If willow cuttings are used in the mitigation sites, they may be salvaged from trees trimmed to clear space for the new bridge. Salvage cuttings should be properly treated, stored, and installed as soon as possible—preferably within the same day they are trimmed. Additional cuttings may be obtained from healthy populations of adjacent unimpacted trees in or near the BSA, although no more than 20% of material from individual plants should be removed as cuttings.

The restoration specialist should oversee cutting, collecting, and planting efforts in the field. If it is determined that cuttings from the riparian corridor will not adequately supply the replanting effort, container stock may be utilized.

4.5 Planting Methodology

Temporarily impacted areas could be restored by recontouring the disturbed slopes and revegetated with container stock and cuttings installed above the OHWMs. Upper bank areas could be stabilized with a riparian/grassland hydroseed mix per the project Stormwater Pollution Prevention Plan and planted with riparian shrubs and trees.

Permanent impacts to jurisdictional areas could be compensated by enhancing riparian vegetation, and by removing debris and invasive weed species from within the permanent impact (i.e., enhancement) mitigation area. Removal of invasive species may provide opportunities for planting native trees and shrubs to enhance the existing native plant communities, although these areas are limited within the project site. Plantings could consist of container stock and may be installed following removal of invasive weed species.

4.5.1 *Installation*

4.5.1.1 SOIL STABILIZATION AND SEEDING

Soil stabilization methods following construction and recontouring are typically described in the Storm Water Pollution Prevention Plan or Erosion Control Plan for the project. In general, once erosion control measures are in place, all bare soil located above the OHWM may be seeded with an approved native riparian/grassland mix to ensure establishment of native vegetative growth and for long-term soil stabilization purposes.

4.5.1.2 ROCK SLOPE PROTECTION

In some cases, soil-filled rock slope protection could be incorporated into the project, although this may not be suitable for the project as the rock slope protection area will be small and planning may affect the integrity of the bridge and its support structure. If appropriate, cuttings (see above) may be installed between the rocks to increase function and values and to provide habitat for wildlife (e.g., nesting birds, steelhead, etc.). The cuttings could be installed as discussed in the Caltrans *Erosion Control Toolbox* (Caltrans 2016).

4.5.1.3 CONTAINER STOCK

Container stock, if used, could be installed by hand using the following general methods:

- Container stock should be planted at 5-foot centers in unvegetated areas and in gaps within vegetated areas.
- Prior to planting container stock, an area 2 feet in diameter at each proposed planting location is manually cleared of non-native species.
- All planting holes are dug to equal the depth and 1.5 times the width of the rootball or rhizome.
- Plants are removed from the container, placed in the center of the pit, and backfilled with native material. Rootballs or rhizomes should not be disturbed when planting.

- After the soil has been well firmed around the rootball and watered, the crown of the rootball will be at the surrounding finish grade of the slopes.

4.5.1.4 CUTTINGS

Cuttings may be installed by hand and subject to the following conditions:

- Cuttings are typically planted within 24 hours after harvesting, and may be soaked in water for a minimum of 8 hours before planting.
- Cuttings are to be planted at 8-foot centers.
- Prior to planting cuttings, an area 2 feet in diameter at each proposed plant site is manually cleared of any weed growth.
- Cuttings are placed in deep narrow holes made with a digging bar. At least 50% of the cutting should be buried in the ground. Each planting hole should be filled with water and covered with soil following cutting placement.

4.6 As-Built Conditions

An as-built plan (i.e., landscaping plan or schematic) should be prepared and submitted to interested agencies prior to the start of the 5-year monitoring period. The purpose of the as-built plan is to illustrate the final construction of the mitigation and restoration areas, define planting locations, and detail any final modifications not included in the Final HMMP.

5 MAINTENANCE PLAN

Maintenance during plant establishment is necessary to ensure success of the mitigation effort. The conceptual 5-year maintenance period begins immediately upon completion of the mitigation planting. At the end of the maintenance period, the appropriate regulatory resource agencies review the monitoring reports and evaluate whether the performance standards have been met. The maintenance program ensures that watering of installed plants, weed control, debris removal, vandalism, replanting, plant protection, and site protection are performed adequately.

5.1 Watering

Supplemental water may be applied to the restoration plantings through temporary drip irrigation, water truck, hand watering, or any method that promotes establishment of plantings early in the restoration. Watering should not be done in the final 2 years of restoration to ensure the vegetation is well established and sustainable without additional maintenance.

5.2 Weed Control and Herbicide Use

Weed control can be performed by hand methods during regularly scheduled monitoring site visits (see Table 5). However, if the use of herbicides is deemed necessary, they may be utilized on a limited basis.

5.3 Trash Removal

Any incidental trash will be removed from the mitigation area, as necessary, during the regularly scheduled monitoring visits (see Table 5).

5.4 Vandalism

Vandalism of the site is not expected. Any vandalism of restoration plantings that compromise success goals may be rectified with replacement plantings.

5.5 Remedial Planting

Remedial planting may be performed as necessary to remain in compliance with the targeted success goals/criteria. Any such plantings will be performed per the Final HMMP planting methods and requirements.

5.6 Fertilizing

The use of fertilizers is not anticipated.

6 MONITORING PLAN

In order to accomplish project goals and objectives, the monitoring program provides qualitative data to be used to determine the success of the mitigation area and to identify the need for subsequent mitigation.

The project restoration specialist collects and evaluates data indicating the relationship between actual site conditions and the performance criteria. Field monitoring and sampling is followed by preparation of brief reports that include photo documentation and evaluation of the success of the mitigation effort based on whether or not the annual performance goals for that year were met.

6.1 Monitoring Schedule

The monitoring program would consist of general monitoring visits and annual biological data collection visits (see Table 5). General monitoring visits can be conducted concurrently with maintenance visits. The focus of general monitoring visits is to assess the plantings' need for supplemental water or other maintenance-related issues. The focus of the biological monitoring visits is to collect quantitative data that will provide an assessment of the site's relative vegetative cover of freshwater marsh and willow riparian scrub vegetation.

At a minimum, the restoration specialist monitors the site quarterly during the first 3 years after planting and semi-annually for the fourth and fifth years of the monitoring program (see Table 5). After large storm events that inundate the site, the restoration specialist inspects the site for damage. It is the responsibility of the restoration specialist to ensure that the project is maintained as necessary during the monitoring period.

Permanent photo points may be established throughout the mitigation site to assist in tracking the success of the mitigation program. Permanent photo points may also be established during the preparation of the as-built plan, and ground view photos taken during each monitoring year from the same vantage point.

6.2 Performance Goals

Table 6 lists the annual performance standards for the mitigation areas. The mitigation areas should be monitored as necessary until the final success criteria are met. In addition to the performance standards below, the restoration and mitigation areas may have no more than 5% cover of non-native invasive species, as defined by the California Invasive Species Council. If the program is determined to be unsuccessful, the restoration specialist may recommend appropriate contingency measures. The mitigation sites are not considered successful until the involved regulatory agencies have provided written verification that the final success criteria have been met. It is anticipated that by the third year, the mitigation sites will be well established and functioning such that it should be self-sustaining for the long term. Vegetation should survive for 2 years without supplemental watering.

Table 6. Performance Standards and Final Success Criteria

Mitigation Area	Mitigation Area Native Vegetative Cover Goal				
	Year 1	Year 2	Year 3	Year 4	Year 5
Temporary Impact Restoration Area	20%	35%	50%	65%	80%
Permanent Impact (or Enhancement) Mitigation Area	30%	45%	55%	60%	85%

6.3 Other Attributes to be Monitored

In addition to monitoring for successful restoration of plant communities, it is necessary to determine if other biotic as well as physical and hydrological attributes of Jack Creek present prior to disturbance are present once restoration is complete to ensure all of the functions of the project site are restored. The California Rapid Assessment Method (CRAM) for wetlands, which is the current standard for monitoring the conditions of wetlands throughout California, utilizes a qualitative method for measuring physical, hydrological, and biotic attributes of riverine systems and may be used to measure the before and after conditions of a project site (California Wetlands Monitoring Workgroup 2009). The CRAM condition scores can be correlated with wetland functions in certain circumstances. For stream restoration, the CRAM score before construction is compared with the CRAM score after restoration to ensure the condition of the site is improved or, at a minimum, there is no degradation as a result of the project. However, there are several methods for qualitatively or quantitatively assessing wetland functions. For this project, qualitative methods may be sufficient to ensure the stream bed and banks are restored to pre-project conditions. Below is a brief description of the attributes and recommended methods of recording presence of biotic, physical, and hydrological attributes during restoration.

Monitoring should be conducted in accordance with the schedule in Table 5, and reported annually. The goal of the restoration is to have the biotic, physical, and hydrological functions of the project site restored to equal or better than conditions present prior to disturbance. The final monitoring report should include a comparison of the before or as-built conditions with those recorded as present during the monitoring period and upon completion of the project to ensure successful restoration of biotic, physical, and hydrological attributes within the project site.

6.3.1 *Biotic Attributes*

In addition to cover of vegetation and percent of invasive plant species, measured through the performance standards described in Section 6.2, biotic attributes include sustainability of the vegetation,

the biotic structure (i.e., richness of the plant community, number of plant layers), and wildlife use of habitat. The following should be recorded during monitoring:

- Record the presence of native volunteer species during monitoring as an indication the site conditions are suitable for development of self-sustaining natural habitat.
- New non-native species occurrences noted during monitoring must be removed before they produce seed. Monitoring activities will observe and record the presence of such species and determine if action is required.
- All wildlife or wildlife sign observed in and around the mitigation areas will be documented as to species, number, and functional use of habitat (e.g., feeding, nesting, roosting, etc.).

6.3.2 *Physical Attributes*

Physical attributes include the micro- and macro-topography within a wetland or stream and the different types of physical surfaces or features that can provide habitat for aquatic, wetland, or riparian species. The following should be recorded during monitoring:

- Cobbles, boulders, sediment mounds, plant hummocks, and islands;
- Pools or depressions (in wet or dry channels);
- Undercut banks or slumps;
- Organic debris in the channel or on the floodplain, debris jams, and standing snags; and
- Filamentous algae or algal mats.

6.3.3 *Hydrological Attributes*

Hydrological attributes include the water source, as well as the stability of the channel and the ability of the water to move into and out of the area in question. The project is not likely to have an effect on or be affected by a water source, other than the water that will likely be present in the project area during construction. The project includes a water diversion plan, and ensuring restoration of streambed and flow is required once the project is complete.

- Ensuring the main channel geometry is restored shall be achieved by measuring the main channel geometry (e.g., width to depth ratio, sinuosity, etc.) once restoration is complete and comparing it with the post-construction as-built plan.

6.4 Reporting Requirements

The different regulatory agencies that have discretionary approval over the bridge replacement project have varying reporting requirements associated with the mitigation effort. The reporting requirements for each agency are discussed below.

6.4.1 *U.S. Army Corps of Engineers*

Annual reports should be written pursuant to the USACE Monitoring Report Guidelines (refer to Appendix A) during the 5-year monitoring period.

6.4.2 *California Department of Fish and Wildlife*

CDFW typically requires submittal of annual monitoring reports that must include photo documentation to detail the progression of the revegetation efforts.

6.4.3 *Regional Water Quality Control Board*

An RWQCB water quality certification typically requires submittal of a project completion report and five annual monitoring reports pertaining to the project.

7 COMPLETION OF COMPENSATORY MITIGATION

7.1 Notification of Completion

The agencies (USACE, CDFW, and RWQCB) are notified in writing upon completion of the monitoring period and attainment of the success criteria. At the end of the monitoring period, the restoration specialist requests agency verification that the final success criteria have been met. The restoration specialist may request agency verification of compliance prior to the end of the monitoring period if the final success criteria have been met at an earlier date.

Following receipt of the final monitoring report, the agencies may request a site visit to confirm the completion of the compensatory mitigation effort and any jurisdictional delineation. The compensatory mitigation effort is not be considered complete without an on-site inspection by an agency representative or written confirmation that approved success criteria have been achieved.

8 CONTINGENCY MEASURES

8.1 Adaptive Management

The mitigation sites should be self-sustaining (i.e., no maintenance or artificial irrigation) for a period of 2 years to be considered successful. If replanting is determined to be necessary, replanted areas will be monitored and maintained for a period agreeable to the relevant regulatory agencies. If a total site failure is evident, the applicant shall coordinate with the involved regulatory agencies to determine an acceptable solution or what alternative compensatory mitigation will be required. Identification of alternative mitigation sites may be necessary. However, if the site trends indicate that the success criteria will eventually be met but in a longer timeframe than anticipated, maintenance and monitoring will continue until the criteria have been satisfied.

8.2 Long-Term Management

Long-term management of the restoration site is the responsibility of the County.

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APPENDIX A

Monitoring Report Guidelines

U.S. Army Corps of Engineers
Mitigation and Monitoring Report Requirements

The required compensatory mitigation monitoring reports shall be a minimum of six pages and a maximum of eight pages. The following information shall be included within the report of the specific pages described below:

Pages 1-2:

1. Project Information
    1. Project Name.
    2. Applicant name, address, and phone number.
    3. Consultant name, address, and phone number (for permit application, if necessary).
    4. Corps permit file number.
    5. Acres of impact and type(s) of habitat impacted (or proposed for impact)
    6. Date project construction commenced (or proposed to begin).
    7. Location of the project and directions to site (including latitude/longitude or UTM coordinates).
    8. Date of the report and the corresponding permit conditions pertaining to the compensatory mitigation.
    9. Amount and information on any required performance bond or surety.
2. Compensatory Mitigation Site Information
    1. Location and directions to the site (including latitude/longitude or UTM coordinates).
    2. Size and type(s) of habitat existing at the site and proposed for restoration, enhancement, and/or creation.
    3. Stated purpose/goals for the compensatory mitigation site.
    4. Date site construction and planting completed.
    5. dates of previous maintenance and monitoring visits.
    6. Name, address, and contact number of responsible agent for the site.
    7. Name, address, and contact number for designer.
3. Brief Summary of Remedial Actions(s) and Maintenance of the Compensatory Mitigation Site

Page 2 or 3:

1. Map of the compensatory mitigation site
    1. 8 ½ Diagram of the site including:
        1. Habitat types (as constructed).
        2. Locations of photographic record stations.
        3. Landmarks
        4. Inset defining location of the site.

Page 3 or 4:

1. List of Corps-approved success criteria.
2. Table of results from the monitoring visits versus performance standards for specified target dates.

Page 4, 5, and/or 6:

1. Photographic record of the site during most recent monitoring visit at record stations (at least four photos on at least one page, no more than two pages).

Page 5, 6, or 7:

1. Summary of field data taken to determine compliance with performance criteria. At least one page, no more than two pages.

Page 6, 7, 8 (if needed):

1. Summary of any significant events that occurred on the site that may affect ultimate compensatory mitigation success.

The completed monitoring reports shall be submitted unbound to the Corps for inclusion into the official case file. Electronic copies of these reports can be submitted in-lieu of written reports and may be required in the future.