



Biological Assessment

Bridge No. 21C0056
Napa County, California
04-NAP-0-CR

BRLS 5921 (061)

June 2021



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Executive Summary

The purpose of this Biological Assessment (BA) is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project may affect threatened, endangered, or proposed species and their critical habitats under the Federal Endangered Species Act (FESA) and to provide this information to the United States Fish and Wildlife Service (USFWS). Napa County, in coordination with GPA Consulting, has prepared this BA. The BA is also prepared in accordance with 50 Code of Federal Regulations (CFR) 402, legal requirements found in Section 7(a)(2) of the Endangered Species Act (16 U.S.C. 1536(c)) and with FHWA and Caltrans regulation, policy, and guidance. The document presents technical information upon which later decisions regarding project effects are developed.

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List of Abbreviated Terms

AASHTO	American Association of State Highway and Transportation Officials
AC	asphalt concrete
BA	Biological Assessment
BMP	Best Management Practice
bridge	Dry Creek Road Bridge
BSA	Biological Study Area
CA-12	California State Route 12
Caltrans	California Department of Transportation
central California coast steelhead	steelhead– central California coast DPS
CDFW	California Department of Fish and Wildlife
CIP	cast-in-place
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Napa County
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
ESU	Evolutionary Significant Unit
F	Fahrenheit
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
GIS	Geographic Information System
GPA	GPA Consulting
HUC	Hydrologic Unit Code
HAPC	Habitat Areas of Particular Concern
MBGR	metal beam guard rails
mph	miles per hour
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
PCEs	primary constituent element
RSP	rock slope protection
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WBD	Watershed Boundary Dataset
WICC	Watershed Information and Conservation Council

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Chapter 1. Introduction

1.1. Purpose and Need of Proposed Action

1.1.1. Introduction

Napa County (County), in cooperation with the California Department of Transportation (Caltrans), proposes to replace the existing structurally deficient Dry Creek Road Bridge (bridge) over Dry Creek as part of the Highway Bridge Program. The bridge (Bridge No. 21C0056) is approximately 0.8 mile west of Mt. Veeder Road and spans over Dry Creek in an unincorporated rural area of Napa County, California.

The County is the Lead Agency pursuant to the California Environmental Quality Act. Caltrans, under authority delegated by the Federal Highway Administration (FHWA), is the Lead Agency pursuant to the National Environmental Policy Act.

1.1.2. Project Purpose

The purpose of the project is to provide a safe, functional, and reliable crossing over Dry Creek on Dry Creek Road.

1.1.3. Project Need

The existing bridge is structurally deficient and is located in a seismically active region of northern California that includes several active faults capable of producing earthquakes and may cause strong ground shaking in the project area.

The following deficiencies have been observed:

- The substructure has deterioration consisting of cracking and weathering of the mortar in the joints of the stone masonry abutments. The top section of the retaining wall near Abutment Two has broken away and is leaning outward horizontally.
- There are two spalls (i.e. chipped material from corrosion, weathering, impacts, etc.) with exposed rebar on the exterior girder of Abutment Two. Rock pockets are scattered throughout the soffit (i.e. underside) and girders.
- The deck asphalt concrete (AC) overlay has potholes in the southbound direction for the right wheel line at Abutment One and the left wheel line at midspan. In addition, the width of the bridge does not meet standard lane and shoulder widths (i.e. minimum American Association of State Highway and Transportation Officials (AASHTO) standards for lane widths is 11 feet, the existing lane width on the bridge is nine feet).
- The approach metal beam guard rails (MBGR) at Abutment Two have sustained traffic hits. Damage includes missing timber blocking, ripped MBGR, out of plumb timber posts, and loose rail connections. The soil in which the timber posts are embedded has diminished lateral support due to the deterioration of the retaining wall.
- The bridge is identified as “unstable for calculated scour” for National Bridge Inventory Element 113, Scour Critical Bridges. Water is seeping through the abutment and leaking

steadily onto the scoured area underneath the wall.

Additionally, the current alignment of Dry Creek Road as it approaches the bridge does not provide for a clear sight line for approaching vehicles and does not meet current AASHTO or Caltrans standards.

1.2. Threatened, Endangered, Proposed Threatened, or Proposed Endangered Species, Critical Habitat

An updated species list was provided by United States Fish and Wildlife Service (USFWS) and/or National Marine Fisheries Service (NMFS) for the Action Area of this project (see **Appendix A**). The following listed and proposed species and/or designated critical habitats were identified on the updated federal species list and were considered during this analysis:

Table 1: Federal Endangered Species Act Species Summary Table

Common Name	Scientific Name	Federal Status	Critical Habitat	Determination
Plants				
Sonoma alopecurus	<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Endangered	None	No Effect
Clara Hunt's milk-vetch	<i>Astragalus claranus</i>	Endangered	None	No Effect
Sonoma sunshine	<i>Blennosperma bakeri</i>	Endangered	None	No Effect
Loch Lomond button-celery	<i>Eryngium constancei</i>	Endangered	None	No Effect
Burke's goldfields	<i>Lasthenia burkei</i>	Endangered	None	No Effect
Contra Costa goldfields	<i>Lasthenia conjugens</i>	Endangered	None	No Effect
Sebastopol meadowfoam	<i>Limnanthes vinculans</i>	Endangered	None	No Effect
Few-flowered navarretia	<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	Endangered	None	No Effect
Calistoga popcornflower	<i>Plagiobothrys strictus</i>	Endangered	None	No Effect
Napa blue grass	<i>Poa napensis</i>	Endangered	None	No Effect
Kenwood marsh checkerbloom	<i>Sidalcea oregana</i> ssp. <i>valida</i>	Endangered	None	No Effect
Two-forked clover or showy Indian clover	<i>Trifolium amoenum</i>	Endangered	None	No Effect
Amphibians				
California tiger salamander	<i>Ambystoma californiense</i>	Threatened	None	No Effect

Common Name	Scientific Name	Federal Status	Critical Habitat	Determination
California red-legged frog	<i>Rana draytonii</i>	Threatened	None	May Affect, Not Likely to Adversely Affect
Birds				
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	Threatened	None	No Effect
Northern spotted owl	<i>Strix occidentalis caurina</i>	Threatened	None	No Effect
Crustaceans				
California freshwater shrimp	<i>Syncaris pacifica</i>	Endangered	None	No Effect
Fish				
Delta smelt	<i>Hypomesus transpacificus</i>	Threatened	None	No Effect
Coho salmon - central California coast Evolutionary Significant Unit (ESU)	<i>Oncorhynchus kisutch</i>	Endangered	None	No Effect
Steelhead - central California coast Distinct Population Segment (DPS)	<i>Oncorhynchus mykiss irideus</i>	Threatened	May Affect, Not Likely to Adversely Modify	May Affect, Likely to Adversely Affect
Steelhead - northern California DPS	<i>Oncorhynchus (=salmo) mykiss</i>	Threatened	None	No Effect
Chinook salmon - California coastal ESU	<i>Oncorhynchus tshawytscha</i>	Threatened	None	No Effect
Longfin smelt	<i>Spirinchus thaleichthys</i>	Candidate	None	No Effect
Reptiles				
Green sea turtle; East Pacific DPS	<i>Chelonia mydas</i>	Threatened	None	No Effect

Candidate Species

There are no federal candidate species that may be affected by the Proposed Action.

Critical Habitat

The Proposed Action addressed within this document falls within critical habitat for steelhead (*Oncorhynchus mykiss irideus*). No other critical habitat has been designated in the Action Area.

Essential Fish Habitat

The project was evaluated for the presence of Pacific Coast Salmon Essential Fish Habitat (EFH) (for Coho (*Oncorhynchus kisutch*) and Chinook salmon (*Oncorhynchus tshawytscha*)) based on the five potential Habitat Areas of Particular Concern (HAPC) identified in the 2016 Pacific Coast Salmon Fishery Management Plan (Pacific Fishery Management Council, 2014). The HAPCs for Pacific Coast Salmon are comprised of (1) complex channels and floodplain habitats; (2) thermal refugia; (3) spawning habitat; (4) estuaries; and (5) marine and estuarine submerged aquatic vegetation. Although the five HAPCs for Pacific Coast Salmon are in the Biological Study Area (BSA), the BSA is outside of the known range for Chinook salmon and Coho salmon have been extinct in the Napa River since 1960 (Leidy, 2007); Therefore; there is no EFH in the BSA.

1.3. Consultation History

A preliminary agency coordination field meeting was held on November 28, 2017 between Mallika Ramachandran of the County, Garret Allen of the California Department of Fish and Wildlife (CDFW) Bay Delta Region, Daniel Logan of NMFS West Coast Region, Ron Oen of Biggs Cardosa Associates, Inc., and Marieka Schrader and Melissa Logue of GPA Consulting (GPA).

1.4. Description of Proposed Action

1.4.1. Project Summary

The bridge is a 34-foot long single span, reinforced concrete structure with “T” girders supported on cemented stone masonry abutments founded on erodible bedrock. The bridge is a single lane bridge with no shoulders that carries 2-way traffic. The approximate total bridge width is 20.5 feet while the structure curb-to-curb width is approximately 18 feet.

The project area is largely undeveloped and rural with several rural residential properties located along Dry Creek Road and Dry Creek Fork Road. The residential structures in the project vicinity are between approximately 250 feet and 600 feet from the existing bridge. No residences are visible from the existing bridge.

In the project area, Dry Creek Road is classified as a rural minor collector. The existing bridge and roadway approach are on a winding road alignment with limited views to and from the bridge because of the angle of the roadway and bridge, and trees and vegetation surrounding the roadway and bridge.

Within the project area, Dry Creek is a natural, un-lined waterway with medium to heavily vegetated banks and a rocky/cobbly creek bed. Several areas along the creek are lined with steep slopes and dense vegetation, such as poison oak, making the creek inaccessible at these locations.

There are overhead utility lines, which are not expected to require relocation. One 3-inch diameter AT&T conduit has been identified on the existing bridge and would require relocation to the new bridge.

The County proposes to replace the existing bridge structure on a new straight roadway alignment; the existing bridge and roadway would be removed while maintaining access to the properties along Dry Creek Road and Dry Creek Fork Road. The new bridge would be constructed

along a roughly east-west alignment located approximately 150 feet south of the existing bridge in order to straighten the bridge approach and bypass the hairpin curve segment of Dry Creek Road (see **Appendix B**).

The following improvements are proposed:

- The new structure would be single span and approximately 32 feet wide with two 11-foot lanes (one in each direction) and 3-foot shoulders on each side of the bridge.
- The new bridge would be approximately 81 feet in length, which is approximately 50 feet longer than the existing structure.
- The bridge structure would consist of a precast-prestressed concrete “wide-flange” girder bridge. The structure would consist of a single span with four precast “wide-flange” girders utilizing a cast-in-place (CIP) concrete deck. The CIP concrete deck would be placed on stay-in-place metal corrugated deck forms and would not require falsework within the creek to construct the bridge deck.
- Standard Caltrans concrete barriers would be utilized with tubular bicycle railing on each side of the bridge deck.
- New 15-foot-high embankment is proposed for the west approach.
- The proposed bridge substructure would consist of short seat cantilever abutments founded on two rows of Caltrans standard 24-inch Cast-in-Drilled-Hole piles. All excavation within the channel banks would remain outside of the 100-year water surface elevation.
- Access to existing properties would be maintained during construction and a permanent connector would be provided with the new structure.
- The approach to and from the bridge would be widened from 22 feet to 28 feet.
- Construction of the project would require excavation for new bridge abutments to a depth of approximately seven feet.
- Rock slope protection (RSP) would be placed in front of the proposed abutments to protect against scour. The bridge structural system would be designed assuming no RSP to ensure no collapse in the event of scoured abutment condition. The RSP would extend 25 feet beyond the edge of the bridge deck both upstream and downstream.
- Stormwater bioretention basins would be constructed where necessary.

The existing bridge would be removed. The wingwalls and existing abutment on the western bank (Abutment One) would be fully removed. The wingwalls and existing abutment on the eastern bank (Abutment Two) would be partially removed (up to 1-foot below the existing top of roadway) in order to not disturb and have to regrade the existing east creek bank. At Abutment One, the channel slope would be restored using a “soil burrito”¹ to re-establish the natural channel

¹ A soil burrito is a layer of dirt wrapped into a large piece of burlap.

vegetation on the western bank (see **Appendix C**). Toe rock slope protection “toe rock” would also be placed at the western toe of slope in the stream to further prevent scour. However, the toe rock would not function as traditional RSP and would predominantly be situated below ground. The purpose of the toe rock is to anchor the “soil burritos” and willow stakes in place to provide stability. At Abutment Two, regrading and/or use of toe rock would not be necessary because it is founded on bedrock, which is scour resistant. Only the western creek bank at the existing bridge would be regraded to a lesser slope (to approximately 4:1 or 3:1 slope), which requires some excavation, and “soil burritos” would be placed on top of the new slope and staked into place.

The portion of the road between the existing bridge and the proposed new roadway to the south would be demolished. The portion of the roadway north of the existing bridge that connects to Dry Creek Fork Road would be ground, overlain, and re-stripped to remove the connection to the existing bridge and connect only to Dry Creek Fork Road.

1.4.1.1. ANTICIPATED CONSTRUCTION SCHEDULE AND METHODS

Project construction is anticipated to take approximately 18 months (over two construction seasons). A construction season is typically defined as the combined spring, summer, and fall of any year. Full closure of Dry Creek Road may not be permissible during construction because the shortest detour route would be approximately 40 miles. Therefore, the bridge replacement and roadway realignment would be conducted in four stages.

- **Stage 1 (approximately five months, anticipate initiating in first year):** During Stage 1 construction, the new bridge over Dry Creek, approximately 100 feet of the roadway approach in each direction, and 200 feet of the access road would be constructed. Approximately 200 feet of the new roadway west of the new bridge, grading for the new roadway sections, and the temporary roadway sections would be built. Temporary roadway sections would be required to allow one lane of traffic through in each direction during Stage 2 of construction. Throughout Stage 1 construction, the existing Dry Creek Road would remain open to traffic in both directions. Temporary channelizers would be placed to protect construction crew from traffic during construction.
- **Stage 2 (approximately two months, anticipate initiating in first year):** During Stage 2 construction, approximately 50 feet of the new roadway west of the new bridge, grading for the new roadway section, and a temporary ramp from the existing road up onto the new roadway section would be built. The temporary ramp will allow for drivers to detour onto the new roadway section during Stage 3 of construction. Dry Creek Road would remain open to traffic with the temporary pavement from Stage 1 providing an adequate width for drivers. Temporary k-rail would be placed to protect construction crew from traffic during construction. Access to Driveways 2 and 3 [APN 027-330-015 and 027-330-017]) would be provided at all times by the contractor.
- **Stage 3 (approximately three months, anticipate initiating in second year):** During Stage 3 construction, the existing bridge and the temporary pavement would be demolished. Approximately 50 feet of proposed new roadway alignment, the remaining access road, the vegetated soil layers and toe rock at the existing bridge, and the bioretention area near the existing bridge would be constructed. Traffic would shift from the old Dry Creek Road to the

new Dry Creek Road using the ramp constructed during Stage 2. Temporary K-railing would be placed to protect personnel from traffic during construction.

- **Stage 4 (approximately three months, anticipate initiating in second year):** During Stage 4 construction, one lane per direction would need to be maintained during the day with construction occurring at night with a full road closure. The remaining Dry Creek Road the Midwest Guardrail System, the grind and overlay for Driveway 4, the access for Driveway 2 and 3, and the southern bioretention area would be constructed. Access to the properties adjacent to the project site will need to be maintained during the day. All temporary pavement would be removed.

1.4.1.2. ADDITIONAL CONSTRUCTION METHODOLOGY

Staging

Equipment and material staging would be within the project limits, anticipated to be south of Dry Creek and northwest of Dry Creek Road, 100 feet outside of the edge of the riparian area (as shown in **Figure 3**). Dry Creek would be accessed from the project footprint and additional access routes would not be required.

Vegetation Removal

The construction of the new single span bridge, new roadway encroachment, and demolition of the existing bridge over Dry Creek would result in removal of approximately 1.04 acres of vegetation within the action area, including 0.94 acres in the oak woodlands habitat and 0.10 acres of riparian habitat. Once construction is completed, the area would be revegetated using hydroseeding as a general erosion control. In addition, container plants would be used to replace native trees and shrubs.

Bioretention Basins

If feasible, half of the bioretention area near the existing bridge would be built during Stage 1. If not feasible, the bioretention basin near the existing bridge would be constructed in Stage 3. Additionally, if feasible, the partially constructed bioretention basins could potentially serve as a construction sediment control basin. This potential option would utilize a construction period configuration that allows water to pond and settle in the basin prior to discharging to the creek. However, regardless on whether the bioretention basins function during construction, all required Best Management Practices (BMP) would be in place throughout construction. Once constructed, the new bioretention basins would collect and treat future stormwater runoff from the new bridge and roadway prior to entering the Dry Creek.

Water Diversion

If water is flowing in the creek during construction, water diversions would be installed. Two separate water diversions would be required to complete construction of the new bridge during Stage 1 (water diversion 1) and removal of the existing bridge during Stage 3 (water diversion 2). Each water diversion would include placing a temporary cofferdam (pipe bypass) to isolate the in-stream and near-bank construction area. Barriers are placed end-to-end in a pre-designed configuration, and gravel-filled bags (or an inflatable cofferdam (e.g., aquadam, bladderdam, or similar) would be used at the toe of the barrier and also at their abutting ends to seal and prevent

movement of sediment beneath or through the barrier walls. The diversions would bisect the channel allowing water to flow through the site (see **Appendix D**). Both diversions would rely on gravity and the use of a pump is not anticipated. Because a water diversion would be installed, a fish relocation is anticipated to be needed. Fish would be relocated outside of the construction area, within approximately 1,000 feet up or down stream, to a location with clean, habitable water. Fish would be relocated within the same watershed.

Water diversion 1 would extend 50 feet upstream and downstream of the new bridge and would be removed at the end of Stage 1 construction. Water diversion 2 would extend approximately 140 feet upstream and approximately 90 feet downstream of the existing bridge and would be removed at the end of Stage 4 construction. Both water diversions would be removed at the end of each season and would not be left in the creek over winter.

1.4.2. Authorities and Discretion

The project sponsor is the County and because federal funding would be used for the project, the project is being processed through Caltrans' Office of Local Assistance. Caltrans has assumed FHWA responsibility for compliance with the National Environmental Policy Act, as assigned by FHWA pursuant to 23 USC 326.

1.4.3. Project Location

The bridge (Bridge No. 21C0056) over Dry Creek is located approximately 0.8 mile west of Mt. Veeder Road in an unincorporated rural area of Napa County, California (see **Figure 1** and **Figure 2**). The project area is within Section 31 of Township 7 north and Range 5 west of the Rutherford 7.5-minute topographic quadrangle.

Land in the Action Area consists of rural-residential properties, Dry Creek Road, Dry Creek Bridge, and Dry Creek. According to the Napa County General Plan, the land use surrounding the project area is zoned as Agriculture, Watershed, and Open Space (Napa County, 2013).

1.4.4. Define Action Area

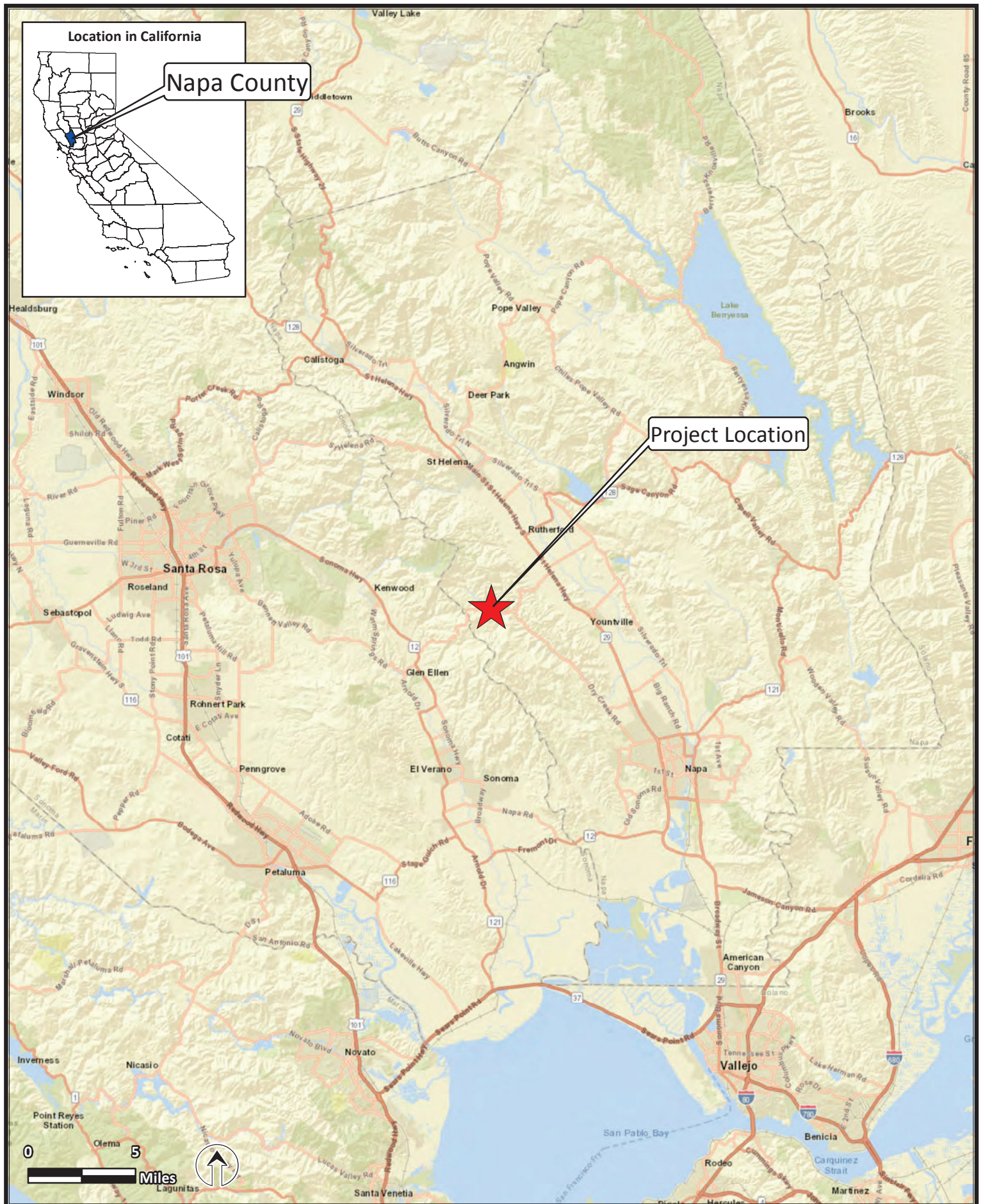
The BSA delineated for the project is also the project's Action Area. The BSA is located approximately 0.8 mile west of Mt. Veeder Road in unincorporated Napa County, California within Section 31 of Township 7 north and Range 5 west. The BSA is approximately 5.14 acres. The BSA was defined as the area that could be temporarily or permanently impacted by the project and includes the area outside of the project area that may be indirectly affected to the extent of any potential physical, chemical, or biotic effects (see **Figure 3**). The limits of the BSA were determined by reviewing project plans and aerial photography, evaluating potential jurisdictional areas during field visits, and considering potential noise, visual, and sedimentary effects.

1.4.5. Conservation Measures

The project would include conservation measures to avoid and minimize effects on the California red-legged frog (*Rana draytonii*), steelhead— central California coast Distinct Population Segment (DPS) (*Oncorhynchus mykiss irideus*) (central California coast steelhead), and steelhead critical habitat. The project footprint would be minimized to the extent feasible: Best Management Practices (BMP) to reduce dust, dirt, and construction debris from entering the creek would be

implemented; appropriate wildlife exclusion fencing would be installed and inspected regularly by a qualified biologist; pre-construction surveys for special-status wildlife would be performed; disturbed habitat would be returned to pre-construction conditions, if not better; and staging and storing of equipment and materials would be confined to designated areas.

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Sources: ESRI 2018.



**FIGURE 1: REGIONAL LOCATION
Dry Creek Road Bridge Replacement Project**

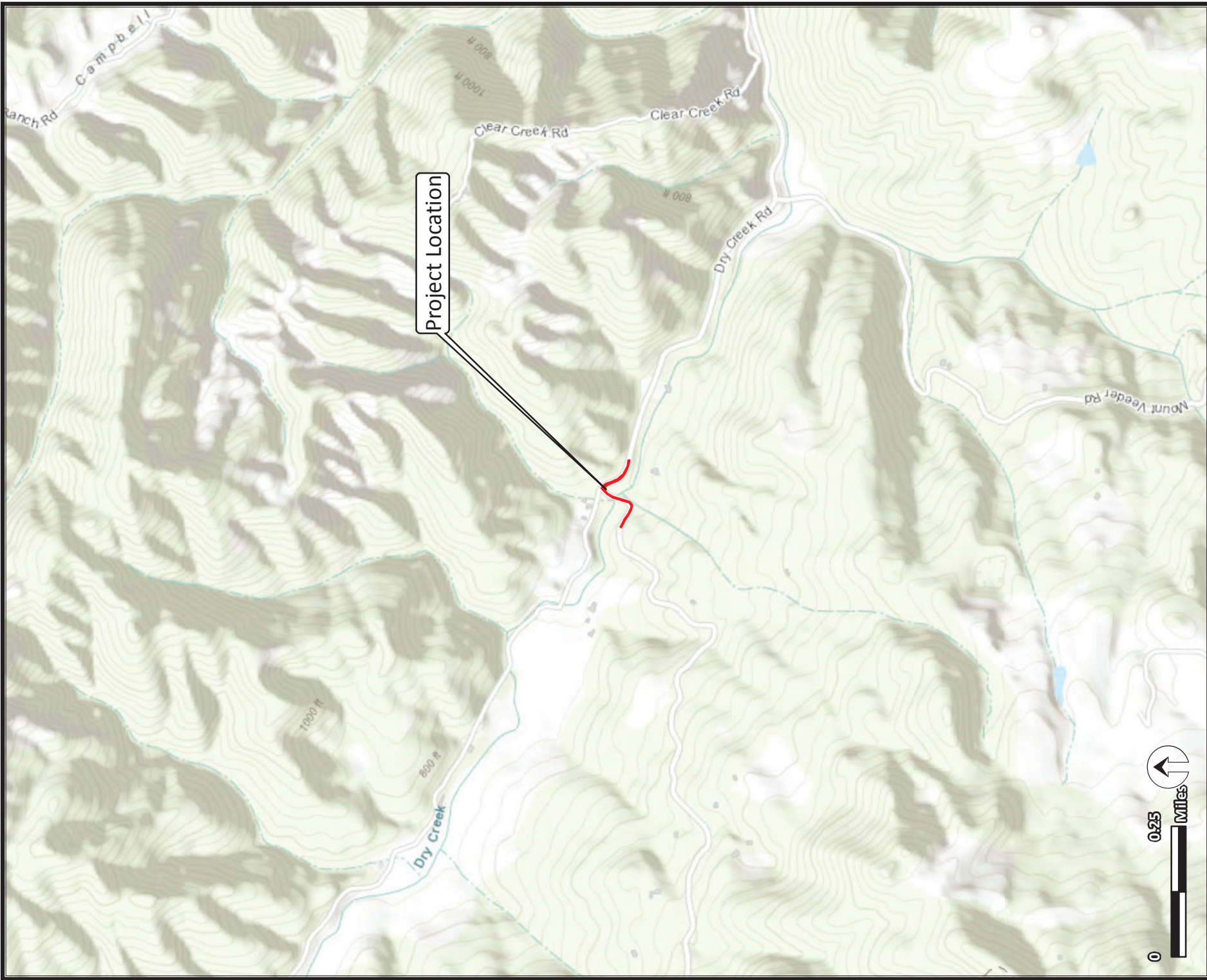


FIGURE 2: PROJECT LOCATION
Dry Creek Road Bridge Replacement Project

Sources: ESRI 2018.



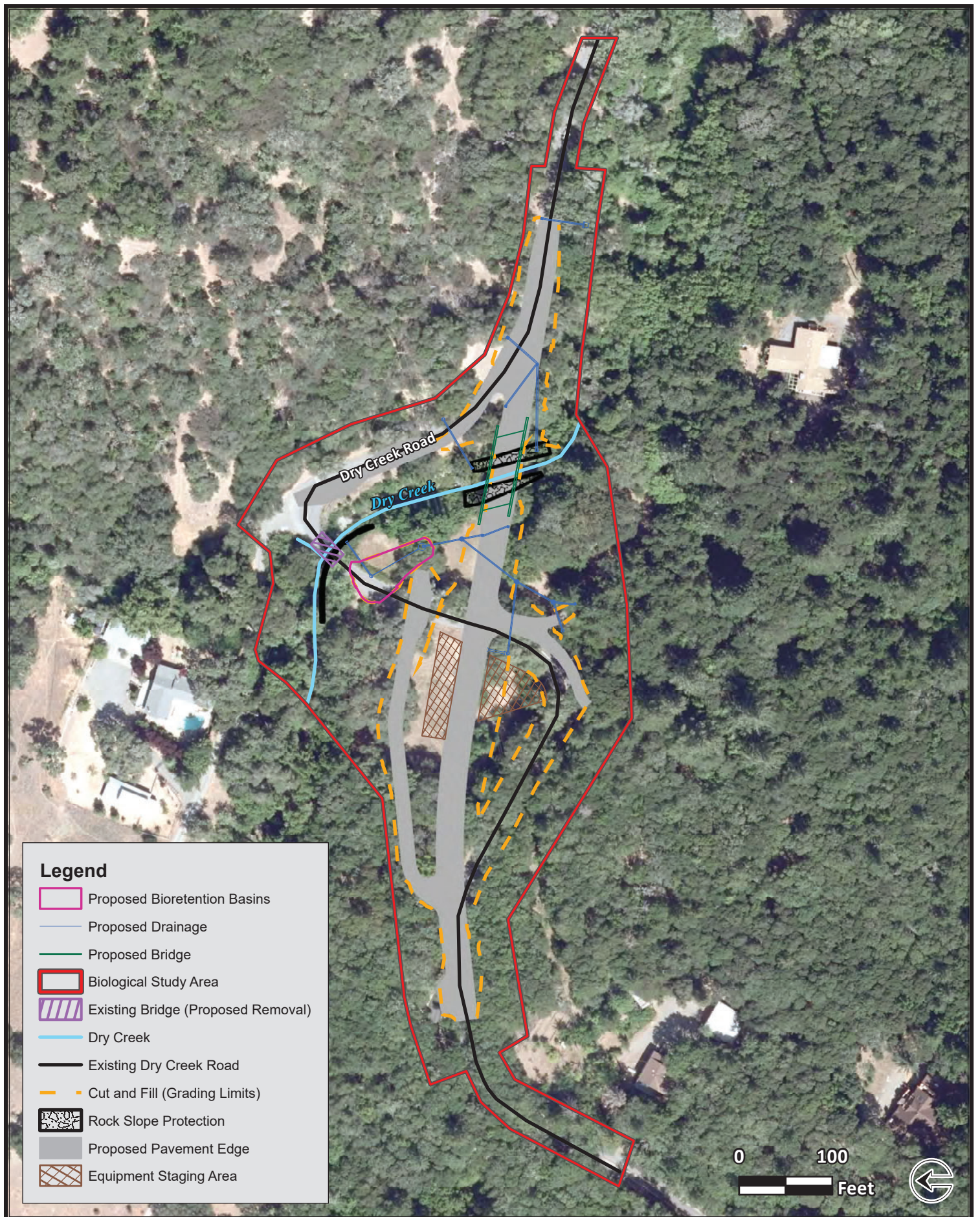


FIGURE 3. BIOLOGICAL STUDY AREA AND PROJECT FEATURES
Dry Creek Bridge Replacement Project



1.4.5.1. PROJECT DESIGN MODIFICATIONS FOR AVOIDANCE AND MINIMIZATION

The project has been designed to minimize impacts on habitat for the California red-legged frog, central California coast steelhead, and steelhead critical habitat. Removal and disturbance of vegetation has been minimized, the construction schedule has been minimized, modifications have been made to enhance wildlife passage through the creek, and the creek will be restored with more natural bank stabilization methods.

The creek banks would be restored using a “soil burrito” (a combination of native soil, biodegradable fabric, and planting), root wad system, and/or, similar method to re-establish the natural channel vegetation. Willow cuttings would be planted on the bank slopes (see **Appendix C**). In addition, construction would include removal of Abutment One on the western bank, which will result in the widening the existing, artificially narrow, channel bottleneck created at the existing bridge abutments to a more natural contour profile. Complete removal of Abutment Two on the eastern bank is not proposed because it is situated on bedrock and therefore, removal would not further widen the channel. Further, full removal of Abutment Two would require further disturbance to the bank and vegetation than would otherwise be necessary.

1.4.5.2. SPECIES SPECIFIC AVOIDANCE AND MINIMIZATION MEASURES OR BMPs FROM THE USFWS/NMFS BA CHECKLIST

California Red-Legged Frog

To avoid or minimize effects on the California red-legged frog, the County proposes to conduct pre-construction surveys and ensure the project area is maintained and operated in a way that minimizes and avoids the potential for incidental take. These avoidance and/or minimization measures and BMPs would be implemented as described in Section 1.4.5.3 Conservation Measures below.

Steelhead – Central California Coast DPS

To avoid or minimize effects on the central California coast steelhead, the County proposes to limit construction in the channel, restore creek banks using natural vegetative methods, implement measures to protect water quality, and compensate for project impacts on jurisdictional features. These avoidance and/or minimization measures and BMPs would be implemented as described in Section 1.4.5.3 Conservation Measures below.

Steelhead Critical Habitat

To avoid or minimize effects on the steelhead critical habitat, the County proposes to limit construction in the channel, restore creek banks using natural vegetative methods, implement measures to protect water quality, and compensate for project impacts on jurisdictional features. These avoidance, minimization, and mitigation measures and BMPs would be implemented as described in Section 1.4.5.3 Conservation Measures below.

1.4.5.3. CONSERVATION MEASURES

California Red-Legged Frog

To avoid and/or minimize project effects on the California red-legged frog and its habitat during project construction, the following measures would be implemented:

- Prior to the initiation of any work, including installation of exclusion fencing or clearing and grubbing activities, a qualified biologist would conduct an environmental worker awareness training for all project personnel. The training would discuss the sensitive habitats and special-status species with the potential to be within the construction site and would review the project's avoidance and minimization measures, and permitting conditions associated with biological resources.
- Pre-construction amphibian surveys would be conducted within 24 hours prior to start of construction by a qualified biologist.
- Following completion of pre-construction surveys, wildlife exclusion fencing would be erected around the entire construction area, including on the creek banks, to prohibit wildlife from entering the active construction area. Wildlife exclusion fencing would consist of construction grade polypropylene or similar fabric. The exclusion fencing would be a minimum of three feet tall above ground and be buried a minimum of four inches underground with the base folded, so wildlife cannot burrow beneath or create entry points. The exclusion fencing would remain in place throughout the duration of construction activities and would be regularly inspected and maintained in good working order by the construction contractor. The fencing would be completely removed following construction.
- If the California red-legged frog and/or foothill yellow-legged frog² is found in the construction area, the encounter would be treated on a case-by-case basis in coordination with regulatory agencies, but the general procedure would be as follows: 1) work would immediately be suspended in the vicinity of the animal; 2) a qualified biologist would evaluate the animal; 3) the animal would not be disturbed if it is not in danger and would be allowed to exit the construction site on its own.
- The exclusion fencing would be periodically inspected for trapped wildlife by a qualified biologist.
- Initial ground-disturbing activities would be avoided between November 1 and March 31, which is when California red-legged frogs are most likely to be moving through upland areas.
- Following completion of daily work activities, any temporary breaks in the wildlife exclusion fencing to allow for construction would be restored.
- Materials stored on-site that could provide shelter for California red-legged frogs and foothill yellow-legged frogs, such as on-site storage of pipes, conduits and other materials, would be elevated above ground.
- Trenches or pits one foot or deeper that are left unfilled for more than 48 hours would be securely covered with boards or other similar material to prevent entrapment of California red-

² While the foothill yellow-legged frog is not a FESA species, this species is included in an identical conservation measure within the Natural Environment Study. To maintain consistency between biological technical documents, this conservation measure retains reference to the foothill yellow-legged frog.

legged frogs and foothill yellow-legged frogs.

- During demolition of the existing road and bridge, all grindings and AC waste would be immediately removed offsite or be temporarily stored onsite. If the waste is stored onsite, the waste would be placed on construction grade plastic sheeting, geotextile fabric, or similar impervious material, and would be stored a minimum of 100 feet from Dry Creek. On or before the date of project completion, the waste would be transported to an approved disposal site.
- No construction activities would be allowed during rain events or within 24-hours following a rain event. Prior to construction activities resuming, a qualified biologist would inspect the construction area and all equipment/materials for the presence of special-status amphibians.
- Nighttime construction would only be permitted for select activities on a case-by-case basis, such as a bridge pour, in coordination with a qualified biologist.
- Take or suspected take of listed wildlife species would be reported immediately to a qualified biologist. A qualified biologist would be required to report the incident, or suspected incident, to the wildlife agencies within 24 hours.
- All project-related vehicle traffic would be restricted to established roads and construction areas, which include equipment staging, storage, parking, and stockpile areas.
- No pets would be allowed in the construction area, to avoid and minimize the potential for harassment, injury, and death of wildlife.
- Plastic monofilament netting, or similar material in any form, would not be used at the construction area.

With the implementation of the proposed measures listed above, the project is not expected to result in direct effects on, or any take of, the California red-legged frog. However, this cannot be completely ruled out. Therefore, the project may affect, but is not likely to adversely affect, the California red-legged frog.

Central California Coast Steelhead

To avoid and/or minimize project effects on the central California coast steelhead during project construction, the following measure would be implemented:

- Construction within the channel would be limited to between June 15 and October 15.
- The creek banks would be restored using a “soil burrito” (a combination of native soil, biodegradable fabric, and planting), root wad system, and/or similar method to re-establish the natural channel vegetation. Willow cuttings would be planted in the bank slopes.
- Willow cuttings would be planted along the Dry Creek banks.

With the implementation of the proposed measures listed above, the project is expected minimize and/or avoid direct effects on, and take of, central California coast steelhead. Given the small project footprint within the creek and proposed in-water work windows, few individuals would be at risk. Therefore, the project may affect, likely to adversely affect, the central California coast steelhead.

Steelhead Critical Habitat

To avoid and/or minimize project effects on the steelhead critical habitat during project construction, the avoidance and minimization measures proposed for central California coast steelhead, would be implemented. In addition, following coordination with NMFS, the County is proposing to restore the creek channel at the existing bridge by removing Abutment One in its entirety, which currently creates an artificial bottleneck of the stream; creating vegetated “soil burritos” with planted willow cuttings to naturally stabilize the slopes; and, installing a root wad on the western bank in proximity to the existing bridge (see **Appendix C**).

With the implementation of the proposed measures listed above, the project would mitigate project effects on steelhead critical habitat. Therefore, the project may affect, but is not likely to adversely affect or cause adverse modification to steelhead critical habitat.

1.4.6. Interrelated and Interdependent Actions

There are no interrelated or interdependent actions associated with the Proposed Action.

Chapter 2. Study Methods

2.1. Summary

After a review of the results of the California Natural Diversity Database (CNDDDB) query, USFWS species list, NMFS species list, and background research described below, biological surveys of the Action Area were conducted by biologists Ms. Schrader and Ms. Cunningham on April 27, May 12, and July 11, 2017. An additional site visit was conducted by Ms. Scudiere and Ms. Cunningham on February 13, 2018. The Action Area was visually surveyed on foot, to the extent feasible, and plant and animal species in the Action Area were identified to determine the potential for protected species to be in the Action Area.

Nomenclature for plants and animals conforms to the Jepson eFlora (Jepson Flora Project (eds.), 2018) and the CNDDDB. Species observed in the Action Area during the biological surveys are included in **Appendix E**.

2.1.1. Background Research

Prior to conducting the biological survey, available literature and imagery were reviewed to identify any special-status plants, wildlife, and/or sensitive habitats previously recorded within or near the BSA. Sources used to identify special-status species and/or habitats with potential to be in or near the BSA include the following:

- Natural Resources Conservation Service (NRCS) Web Soils Survey for Napa County, Western part California (NRCS, 2017);
- CDFW Biogeographic Information and Observation System (CDFW, 2018);
- USFWS' National Wetlands Inventory Wetlands Mapper (USFWS, 2018);
- NMFS West Coast Region California Species List (NMFS, 2016);
- NMFS EFH mapper (NMFS, 2018);
- CDFW CNDDDB for the Calistoga, Chiles Valley, Glen Ellen, Kenwood, Napa, Rutherford, Sonoma, St. Helena, and Yountville 7.5-minute series topographic quadrangles (CDFW, 2018)(see **Appendix A**);
- USFWS Information for Planning and Consultation Database (IPaC) (USFWS, 2018); and
- Google Earth (Google Earth, 2018) and Napa County Hi-resolution Aerial Imagery (Napa County, 2016).

2.2. Personnel and Survey Dates

Biological surveys were conducted by Ms. Schrader and Ms. Cunningham on April 27, May 12, and July 11, 2017. A follow up site visit was conducted by Ms. Scudiere and Ms. Cunningham on February 13, 2018. Representative photographs of the BSA were taken during the surveys and are included in **Appendix F**.

2.3. Resource Agency Coordination and Professional Contacts

2.3.1. National Marine Fisheries Service

A preliminary agency coordination field meeting with Mr. Logan of NMFS West Coast Region was held on November 28, 2017. Discussions included proposed seasonal constraints for central California coast steelhead, concerns about potential creek impacts from construction, restoration opportunities, and steelhead habitat improvement. In addition, NMFS confirmed that consultation for central California coast steelhead and steelhead critical habitat would be needed. An official species list was obtained from NMFS (NMFS, 2016). No other NMFS coordination has been conducted to date.

On April 30, 2021 Caltrans submitted the Biological Assessment package and initiated consultation with NMFS. On May 13, 2021 NMFS requested additional information on the project.

On May 17, 2021 County, Caltrans, and NMFS attended a coordination call to discuss the project and requested the BA be revised and re-submitted for the FESA administrative record.

2.3.2. United States Fish and Wildlife Service

An official species list was obtained from the Sacramento USFWS (USFWS, 2018).

On April 30, 2021 Caltrans submitted the Biological Assessment package and initiated consultation with USFWS.

No other USFWS coordination has been conducted to date.

2.4. Limitations and Assumptions that may Influence Results

In a less than normal rainfall year, annual plants may not germinate; their seeds may remain dormant until conditions that are more favorable exist. As a result, in dry years, annual plants may only be present in seed form, and there is a lower probability of identifying these plants in the field. In addition, perennial plants that are dormant during the dry season may not come out of dormancy or may even die during these years.

While the 2017/2018 wet season has been below average to date, the 2016/2017 wet season was considered an above average rainfall year for Napa County and is considered the third wettest year since record keeping began in 1893. This record setting rainfall was preceded by an average rainfall year in 2015/2016 (Resource Conservation District, 2017). Therefore, the 2017 survey year was a better than average year for detecting rare plants. Typically, plant survey results are considered valid for a 2-year period, after which additional surveys may be warranted to confirm presence or absence of individual species.

Botanical surveys for the project were conducted on April 27, May 12, and July 11, 2017. The BSA limits were increased after the botanical surveys had been completed; therefore, the entire BSA was not surveyed for the presence or absence of special-status plants. However, based on a review of aerial imagery and Google Earth street view, the vegetation communities within the expanded areas are consistent with the surveyed vegetation communities. Therefore, special-status plants with similar habitat requirements were assumed to have potential to be within the expanded areas of the BSA.

During the biological surveys, portions of the BSA were inaccessible by foot. Because not all areas in the BSA could be surveyed on foot for botanical species, the potential for some special-status plant species to be in the BSA could not be ruled out based on the presence of suitable vegetative communities. Areas not accessible by foot were visually evaluated to the greatest extent feasible using binoculars during field evaluations.

Protocol surveys and protocol habitat assessments for the central California coast steelhead and California red-legged frog were not completed for the project. The central California coast steelhead and California red-legged frog are being inferred as present in the BSA. Dry Creek is a known migratory corridor and spawning stream for central California coast steelhead and the species has been observed within the BSA by local residents. There is suitable aquatic, riparian, and forest habitat in the BSA for California red-legged frog. However, although presence of the California red-legged frog in the BSA is inferred, there is a low potential for encountering the species during construction, as discussed in Section 4.3.1 below.

Chapter 3. Environmental Baseline

The Environmental Baseline describes the setting in which the project will be constructed and includes the effects from past and present federal, state, and private actions; proposed federal projects with completed Section 7 consultation; and contemporaneous state or private actions with consultation in progress. The environmental baseline also considers non-permitted actions (i.e. other non-federal actions occurring within the Action Area).

3.1. Habitat Conditions in the Action Area

Vegetation in the Action Area consists of mixed oak and riparian forests with patches of grassland containing native vegetation suitable for many wildlife species. The creek maintains conditions favorable to aquatic species, including amphibians and fish.

The Action Area contains suitable breeding and dispersal conditions for the California red-legged frog, including deep-water pools and emergent vegetation, and upland habitat with sufficient cover, soil moisture, and leaf-cover. However, no California red-legged frogs have been documented within the entire Dry Creek watershed and known populations are separated by topographical barriers including mountain ranges, and roads.

Dry Creek contains suitable water quality and adequate natural cover such as shade, aquatic vegetation, and large rocks for the central California coast steelhead. The Action Area is also known to support migrating central California coast steelhead.

The Action Area contains critical habitat primary constituent elements (PCE) for the central California coast steelhead, including appropriate water quantity and quality, substrates for spawning and rearing, a sufficient food source, and cover for safety and survival. Natural components of critical habitat cover within the Action Area include submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

3.2. Summary of Environmental Baseline

Available literature was reviewed to identify California red-legged frog, central California coast steelhead, and steelhead critical habitat within or near the Action Area. The California red-legged frog was recorded within a CNDDDB nine quad search area (Calistoga, Chilies Valley, Glen Ellen, Kenwood, Napa, Rutherford, Sonoma, St. Helena, and Yountville), and the USFWS species list search area. The central California coast steelhead was recorded within a CNDDDB nine quad search area, NMFS species list tool for the Rutherford quad, and the USFWS species list search area (CDFW, 2018); (USFWS, 2018).

3.3. Describe the Action Area

3.3.1. Physical Conditions in the Biological Study Area

3.3.1.1. TOPOGRAPHY

The BSA is in the United States Geological Survey (USGS) Rutherford 7.5-minute quadrangle. The topography of the BSA is gently sloping with an elevation of approximately 635 to 711 feet above mean sea level. The BSA is situated in a shallow valley just southwest of Napa Valley and

north of Mount Veeder.

3.3.1.2. CLIMATE

The BSA is in the northern California Climate Zone 15: Chilly Winters Along the Coast Range (Sunset Western Garden Collection, 2018). Based on the geographic climate data, including temperature and precipitation from Yountville, California, the average annual high temperature for the project vicinity is approximately 73.6 degrees F and the average annual low temperature is approximately 44.7 degrees F. The annual average rainfall is approximately 33.79 inches, with the greatest amount of rain typically falling in November through March (National Oceanic and Atmospheric Administration, 2018).

3.3.1.3. SOILS

According to the NRCS Web Soils Survey for Napa County, there are four soil units mapped within the BSA: Felton Gravelly Loam, 30 to 50 Percent Slopes; Lodo-Maymen-Felton Association, 30 to 75 Percent Slopes; Millsholm Loam, 6 to 55 Percent Slopes, Major Land Resource Area 15; and Sobrante Loam, 5 to 30 Percent Slopes (NRCS, 2017). The southwest portion of the BSA is Felton Gravelly Loam, 30 to 50 Percent Slopes. While the majority of the BSA, the central and northeastern portion of the BSA, is Lodo-Maymen-Felton Association, 30 to 75 Percent Slopes. Northeast of the bridge is Millsholm Loam, 6 to 55 Percent Slopes, MLRA. While the northwestern portion of the BSA is Sobrante Loam, 5 to 30 Percent Slopes. These soils are well drained, with the exception of Lodo-Maymen-Felton Association, 30 to 75 Percent Slopes, which are recorded as somewhat excessively drained.

3.3.1.4. HYDROLOGY

According to the USGS Watershed Boundary Dataset (WBD) Hydrologic Unit Code (HUC) 10 and WBD HUC 12 datasets, the project area is located within the Napa River Watershed, which covers approximately 133,467 acres, and Dry Creek Subwatershed, which covers approximately 18,471 acres (United States Geological Survey, 2018); (CDFW, 2018). However, the Napa County Watershed Information and Conservation Council (WICC) uses different parameters than the USGS to define the watersheds within the County and only delineates three watersheds within Napa County: Napa River, Putah Creek, and Suisun Creek. According to the Napa County WICC, the Napa River Watershed is bounded by Mount Saint Helena to the north, Mayacamas Mountains to the west, Howell Mountain, Altas Peak, and Mount George to the east, and the Napa-Sonoma Marsh to the south. The Napa River runs through the center of the watershed, draining numerous tributaries including Dry Creek from the headwaters of Mount Saint Helena to the San Pablo Bay. The 55-mile-long river traverses through forested mountain slopes, vineyards, urban areas, open pasture, grasslands, industrial zones, and marshes (Napa County WICC, 2018). Hydrological features in the BSA include Dry Creek and a roadside drainage to Dry Creek.

3.3.2. Biological Conditions in the Biological Study Area

3.3.2.1. VEGETATION COMMUNITIES

Vegetation communities were classified and delineated within Geographic Information System (GIS) based on a 0.1-acre size threshold. Vegetation communities smaller than 0.1 acre were included in the representative surrounding vegetation within the BSA. The boundaries of

vegetation communities included the footprint of a tree canopy. Because of their small acreage, some features within the BSA, including Dry Creek and developed areas associated with Dry Creek Road and residential roadways, were included in the representative surrounding vegetation communities mapped in the BSA.

The BSA is surrounded by rural residential properties, including residential structures such as houses and storage sheds. Vegetation communities classified within the BSA include *Quercus* Forest Alliance (Mixed Oak Forest), *Umbellularia Californica* Forest Alliance (California Bay Forest), and *Bromus* Semi-Natural Herbaceous Stands (Annual Brome Grassland) (see **Figure 4**). The vegetation communities in the BSA are described below.

Quercus Forest Alliance (Mixed Oak Forest)

This community is classified as Mixed Oak Forest in the California Native Plant Society (CNPS) Manual of California Vegetation (Sawyer, 2012). This community consists of three or more oak (*Quercus*) species that are present at greater than 30 percent coverage and are co-dominant in the tree canopy. Trees in this alliance are typically less than 100 feet tall, and the overall canopy is intermittent to continuous and can have up to two tiers of vegetation. The shrub layer varies from sparse to dense and herbaceous layer ranges from sparse to abundant and may be grassy. Within California, this alliance typically grows in valleys with gentle to steep slopes.

The Mixed Oak Forest is the dominant vegetation community in the BSA. Dominant species in the canopy layer include California black oak (*Quercus kelloggii*), interior live oak (*Quercus wislizeni*), and oracle oak (*Quercus x morehus*), with a lesser component of California buckeye (*Aesculus californica*), pacific madrone (*Arbutus menziesii*), California bay (*Umbellularia californica*), and Douglas fir (*Pseudotsuga menziesii*). The understory components are dominated by poison oak and California blackberry (*Rubis ursinus*). The Dry Creek Road, road shoulders, and bridge were included in the Mixed Oak Forest vegetation community.

Umbellularia Californica Forest Alliance (California Bay Forest)

This community is classified as California Bay Forest in the CNPS Manual of California Vegetation. This community typically consists of a California bay canopy represented at greater than 30 percent coverage. Trees in this alliance are typically less than 82 feet tall and the overall canopy is intermittent to continuous. The shrub layer varies from open to intermittent and the herbaceous layer ranges from sparse to abundant. This alliance typically grows on alluvial benches, stream sides, valley bottoms, coastal bluffs, inland ridges, steep north-facing slopes, and rocky outcrops.

Within the BSA, the California Bay Forest is along the embankments of Dry Creek. Dominant species in the canopy layer onsite include California bay, California buckeye, Douglas fir, and oak with a lesser component of Oregon ash (*Fraxinus latifolia*). Understory shrub species are dominated by poison oak, willow, California grape, wild rose, California blackberry, and Himalayan blackberry (*Rubus armeniacus*). In addition, the understory herbaceous species are dominated by scattered patches of torrent sedge, California mugwort (*Artemisia douglasiana*), and spearmint (*Mentha spicata*). The Dry Creek channel and tributary were included within the mapped California Bay Forest vegetation community. The California Bay Forest is within the riparian system on the banks of Dry Creek.

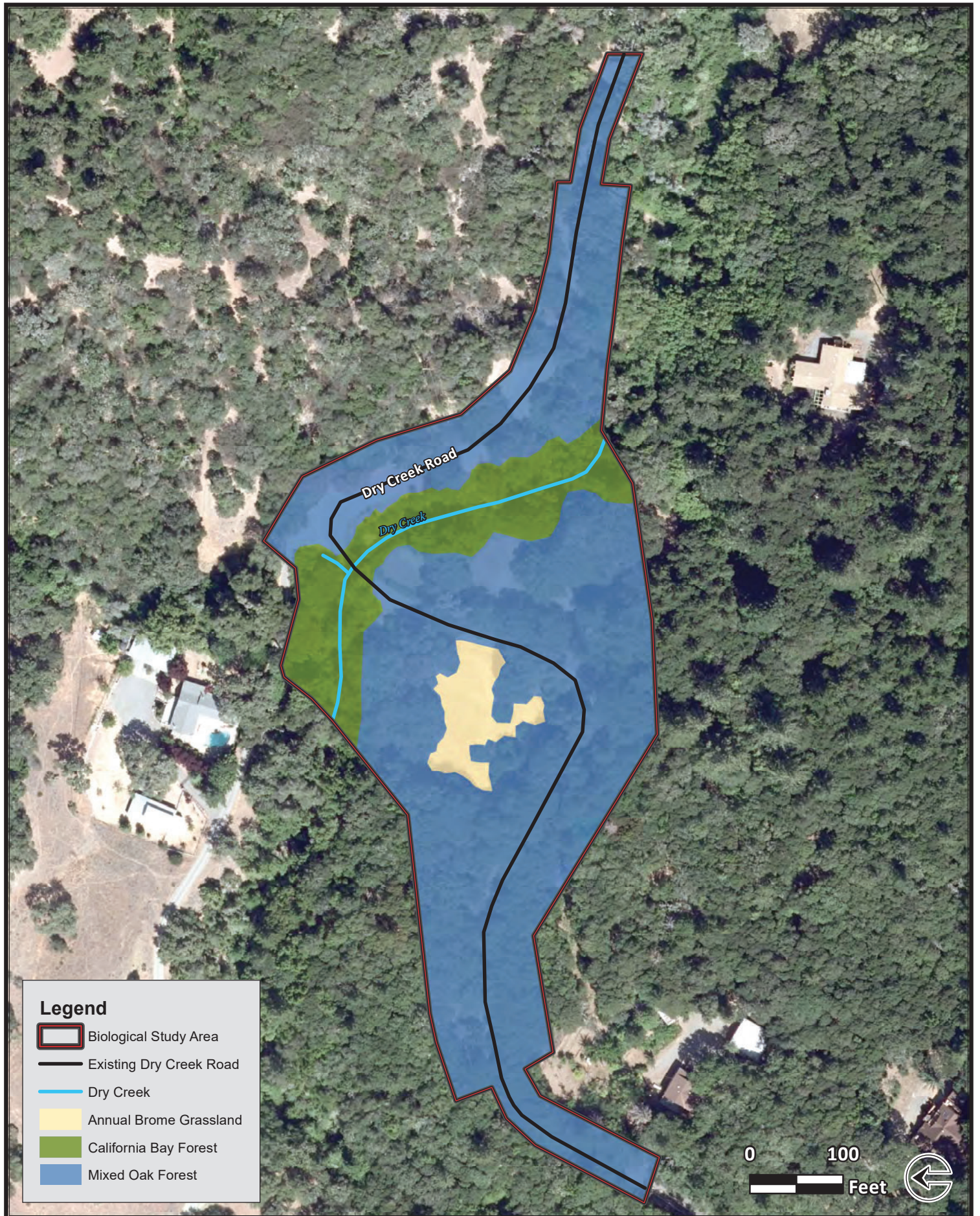


FIGURE 4. VEGETATION COMMUNITIES
Dry Creek Bridge Replacement Project



Bromus Semi-Natural Herbaceous Stands (Annual Brome Grassland)

This community is classified as Annual Brome Grassland in the CNPS Manual of California Vegetation. This community consists of a Bromus dominant or co-dominant with non-natives in the herbaceous layer. The herbaceous plants in this alliance are typically less than 30 inches tall and the overall cover is intermittent to continuous. Trees and shrubs may be present at low densities. This alliance can establish on all topographic settings in the California foothills, waste places (disturbed unused land), rangelands, and openings in woodlands. Dominant species in the grassland include ripgut brome (*Bromus diandrus*), soft brome (*Bromus hodeaceus*), and false brome (*Brachypodium distachyon*). Within the BSA, the Annual Brome Grassland community is a minor component of the overall vegetation and is an open area in the Mixed Oak Forest that may have once been a part of an old homestead.

3.3.2.2. WETLANDS AND WATERS HABITATS

Wetland and waters habitats within the BSA were classified according to the current USFWS' National Wetland Inventory classification system and were determined to fall into three general systems, Riverine and Palustrine (Cowardian, 1979), and Riparian (USFWS, 2009). Within the BSA, the Riverine, Palustrine, and Riparian systems were observed in association with Dry Creek.

Riverine System

A Riverine system includes all wetlands and deepwater habitats within natural and artificial stream, river, or ditch channels with two exceptions: 1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and 2) habitats with water containing ocean-derived salts of 0.5 part per thousand or greater. A channel is "an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water" (Cowardian, 1979). The Riverine system within the BSA includes Dry Creek.

Palustrine System

A Palustrine system includes all freshwater wetlands (such as marshes, bogs, and swamps) dominated by trees, shrubs, emergent herbaceous plants, floating leaved and submergent plants, mosses, and lichens. It also includes wetlands without such vegetation, but with the following characteristics: 1) an area larger than 20 acres, 2) a maximum water depth of 6.6 feet, and 3) a salinity of greater than 0.5 percent (Cowardian, 1979). The Palustrine system within the BSA includes the wetted and near-shore portions of the California Bay Forest, located adjacent to Dry Creek.

Riparian System

The USFWS Riparian system, defines riparian areas as plant communities contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic and lentic water bodies (rivers, streams, lakes, or drainage ways). Riparian areas are usually transitional between wetland and upland. Riparian areas have one or both of the following characteristics: 1) distinctly different vegetative species than adjacent areas, and 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms (USFWS, 2018) (USFWS, 2009). The Riparian System within the BSA includes portions of the California Bay Forest on the banks of

Dry Creek.

3.3.2.3. INVASIVE SPECIES

There are several species growing in the BSA that are listed by the California Invasive Plant Council (Cal-IPC) as invasive to California, including bigleaf periwinkle (*Vinca major*), Italian thistle (*Carduus pynoccephalus*), scotch broom (*Cytisus scoparius*), Himalayan blackberry, tree tobacco (*Nicotiana glauca*), and a number of invasive grasses including slender oat (*Avena barbata*) and soft brome (*Bromus hordeaceus*). A complete list of native, non-native, and invasive plant species observed in the BSA is included in **Appendix E**.

3.3.2.4. WILDLIFE

Habitat in the area is minimally disturbed. Many of the animal species observed during surveys included those commonly found in woodland areas, such as the oak titmouse (*Baeolophus inornatus*), California scrub jay (*Aphelocoma californica*), black phoebe (*Sayornis nigricans*), and white-tailed deer (*Odocoileus virginianus*). A complete list of wildlife species observed can be found in **Appendix E**. Presumed black phoebe nests were observed on the existing bridge. In addition, a pair of acorn woodpeckers (*Melanerpes formicivorus*) was nesting in the BSA within a large tree on the northeast side of the bridge. The vegetation communities and creek provide suitable habitat to support nesting birds, roosting bats, foraging mammals, migrating fish, amphibians, reptiles, and invertebrates.

3.3.2.5. HABITAT CONNECTIVITY

A migration or wildlife corridor is an area of habitat that connects two or more patches of habitat that would otherwise be isolated from each other. Wildlife corridors are typically adjacent to urban areas. A functional wildlife corridor allows for ease of movement between habitat patches and is important in preventing habitat fragmentation. Habitat fragmentation is typically caused by human development and can lead to a decrease in biodiversity and ecosystem functionality.

The Napa County General Plan classifies the land surrounding the BSA as Agriculture, Watershed, and Open Space. According to the CDFW BIOS, there are no essential wildlife connectivity areas or natural landscape blocks in the BSA. However, Dry Creek is a known migratory corridor for steelhead. While the BSA is not a high priority migration or travel corridor for land animals, the areas within the BSA may be used for local foraging and movement of terrestrial wildlife species in the project vicinity.

Chapter 4. Federally-Listed/Proposed Species and Designated Critical Habitat within Action Area

4.1. Federally-Listed/Proposed Species

The California red-legged frog was listed as federally threatened under the Federal Endangered Species Act (FESA) in 1996 (USFWS, 1996). Threats leading to the decline of the California red-legged frog include elimination or degradation of habitat from land development and land use activities and habitat invasion by non-native aquatic species (USFWS, 2002).

NMFS published the final determination for central California coast steelhead as threatened under the ESA of 1973 on January 5, 2006 (NMFS, 2006). Threats to the decline of the central California coast steelhead include overfishing, loss of freshwater and estuarine habitat, hydropower development, poor ocean conditions, and hatchery practices (NMFS, 2017).

4.2. Discussion of California Red-Legged Frog and Central California Coast Steelhead

4.2.1. California Red-Legged Frog

The California red-legged frog is federally listed as threatened under FESA and is considered a Species of Special Concern by the CDFW. Adult California red-legged frog typically range in size from 1.5 inches to 5.4 inches in length, with females attaining larger sizes than their male counterparts (USFWS, 2006); (USFWS, 2002). Food sources for adult California red-legged frog are predominantly invertebrates, with larger individuals sometimes consuming small vertebrates such as mice or tree frogs. Juveniles forage and are active during the night or day, but adults are predominantly active at night.

Breeding typically takes place from November through early April in seasonal or permanent ponds, marshes, or quiet stream pools with dense, shrubby, or emergent vegetation, at depths approximately 2.5 feet or greater. Eggs are often attached to emergent vegetation. This species requires 11 to 20 weeks of permanent water for larval development. California red-legged frogs disperse upstream and downstream of their breeding habitat to forage and find estivation habitat either within riparian areas or upland habitat within 300 feet of a riparian area (USFWS, 2002); (USFWS, 1996). However, estivation sites are typically within 100 feet from water in adjacent riparian vegetation (NMFS, 2017); (USFWS, 2018). Dispersal of California red-legged frog through upland habitats occurs during wet weather, starting in the fall, typically at night (USFWS, 2002); (USFWS, 1996). The species may estivate in rodent burrows, logs, densely vegetated areas, large cracks in the bottom of dried ponds, and sometimes man-made structures such as culverts and livestock troughs during dry periods. Estivation sites are typically within 100 feet from water in adjacent riparian vegetation (NMFS, 2017); (USFWS, 2018).

The California red-legged frog is currently known only from isolated populations in the Sierra Nevada, northern Coast, and northern Transverse Ranges. The populations have been divided

into eight recovery units, which include the Sierra Nevada Foothills and Central Valley; North Coast Range Foothills and Western Sacramento River Valley; North Coast and North San Francisco Bay; South and East San Francisco Bay; Central Coast; Diablo Range and Salinas Valley; Northern Transverse Ranges and Tehachapi Mountains; and Southern Transverse and Peninsular Ranges. The Action Area is within the North Coast and North San Francisco Bay California red-legged frog recovery area (USFWS, 2002).

Historically, the California red-legged frog was believed to be common throughout much of the western portion of the state, from Riverside County to Mendocino County along the Coast Range; from Calaveras County to Butte County in the Sierra Nevada; and in Baja California, Mexico (USFWS, 2018). However, the species has lost over 70 percent of its historic range in California (USFWS, 1996).

4.2.2. Central California Coast Steelhead

The central California coast steelhead is federally listed as threatened under FESA. Adult steelhead typically range in size from 40 to 72 centimeters in length and have a body mass of two to five kilograms. Adult females produce approximately 2,500 to 10,000 eggs. Steelhead are anadromous; therefore, they undergo a complex physiological change that enables them to transition from a freshwater to saltwater environment. Food sources for steelhead include small shrimp like crustaceans (euphausiids), squid, herring, and other small fishes available in the marine environment. Steelhead migrate several to hundred miles to the ocean, spend up to three to four years in the ocean to reach maturity, and then return to freshwater to spawn. Juvenile central California coast steelhead remain in cool, shady perennial streams for one or more years before migrating out to the ocean (Napa County WICC, 2018).

The central California coast steelhead population includes all naturally spawned populations of steelhead in coastal streams stretching from the Russian River to Aptos Creek, and the drainage of San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers; and tributaries to the Suisun Marsh and Cordelia slough. Summer-run steelhead prefer cold pools in the range of 50 Fahrenheit (F) to 59 F during summer months (DWR, 2003).

Historical data on central California coast steelhead populations does not exist. It is believed that there has been a 7-fold decline since the mid-1960s in the Russian River, which is the largest river system in the DPS.

4.3. Survey Results

4.3.1. California Red-Legged Frog

The California red-legged frog has been observed within 10 miles of the BSA, with the closest observation approximately eight miles to the southwest (see **Table 2**). There is no known hydrological connection between these populations and Dry Creek, and there are large topographical features between these populations and the BSA. Topographical features that separate known occurrences of California red-legged frog from the BSA include California State Route 12 (CA-12), Sonoma Valley (City of Kenwood and City of Glen Ellen), and the Coastal Range mountains (Google Earth, 2019).

Table 2. California Red-Legged Frog Observations near Biological Study Area

Occurrence Number	Distance and Direction	Location Information	Site Date
40	8.65 miles to the west	Sonoma Mountains within the Trione Annadel State Park	July 7, 2015
757	9.56 miles to the west	Adjacent to southern edge of Trione Annadel State Park	September 9, 2004
897	9.54 miles to the southwest	Sonoma Mountains, southwest of Jack London State Historic Park	November 19, 2016
1408	8.60 miles to the southwest	Sonoma Mountains, west of Jack London State Historic Park	July 15, 2013
1409	8.05 miles to the southwest	Sonoma Mountains, north of Jack London State Historic Park	April 29, 2013
1410	8.29 miles to the southwest	Sonoma Mountains, west of Jack London State Historic Park	July 27, 2013
1411	8.67 miles to the southwest	Sonoma Mountains, southwest of Jack London State Historic Park	November 30, 2015
1413	9.24 miles to the southwest	Sonoma Mountains, west of Jack London State Historic Park	April 11, 2013

There is suitable aquatic, riparian, and woodland habitat in the BSA. Within the BSA, Dry Creek contains suitable deep-water pools and shrubby emergent aquatic vegetation required for breeding. In addition, the BSA is vegetated with Mixed Oak Forest, an oak woodland habitat suitable for upland dispersal. Therefore, the potential for this species to be in the BSA cannot be ruled out. However, no California red-legged frogs were observed during general biological surveys conducted for the project and the potential for the California red-legged frog to be encountered during construction is low.

4.3.2. Central California Coast Steelhead

Dry Creek is a known migratory corridor, and spawning and rearing stream, for the central California coast steelhead. Both the mature adults and young of the year are regularly observed within the BSA by local residents (Sarrow, 2018). Based on other steelhead populations in adjacent Sonoma County, steelhead spawning typically begins in January and continues through mid-April. While the exact timing of central California coast steelhead spawning within the Napa River Watershed is unknown, adult migrating central California coast steelhead would be expected to enter the Dry Creek Subwatershed within the January to April time range.

4.4. Status of Designated Critical Habitat in Action Area

4.4.1. California Red-Legged Frog

Critical habitat for the California red-legged frog was designated by USFWS on April 13, 2006 (USFWS, 2006) and the revised final critical habitat was designated on March 17, 2010 (USFWS, 2010). The project is outside of designated California red-legged frog critical habitat.

4.4.2. Central California Coast Steelhead

Final critical habitat for steelhead, including the central California coast steelhead population, was designated by NMFS on September 2, 2005 (NMFS, 2005). Critical habitat for steelhead is delineated based on a set of PCEs that support one or more life stages. The following are the steelhead critical habitat PCEs as described in the Federal Register:

- PCE-1. Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation and larval development;
- PCE-2. Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and 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;
- PCE-3. Freshwater migration corridors free of obstruction 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;
- PCE-4. Estuarine areas free of obstruction with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh-and saltwater; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation;
- PCE-5. Nearshore marine areas free of obstruction with water quality and quantity conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation; and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and
- PCE-6. Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation (NMFS, 2005).

The Action Area is within designated steelhead critical habitat (NMFS, 2005). Dry Creek contains PCE-2 and PCE-3, as described above.

Chapter 5. Effects of the Project on the Action Area

5.1. Deconstruct Action

Project activities that may affect the California red-legged frog, central California coast steelhead, and steelhead critical habitat include vegetation removal, grading, installation and removal of a water diversion structure, demolition of the existing bridge, and construction of the new bridge, and bank, and streambed re-establishment efforts.

5.1.1. Construction Scenario (Summary)

Project construction would be conducted in four stages over a 18-month period. Construction vehicles and equipment would be brought into the staging areas and material required for construction would be stockpiled on-site as needed. Staging areas would be located on existing hardscape and adjacent to roadway.

A new bridge would be constructed over Dry Creek (see **Attachment B**). Construction of the bridge would not require falsework within the creek. Excavation for the bridge abutments would remain outside of the 100-year water surface elevation. RSP would be placed in front of the new bridge abutments to protect against scour. The approach to and from the bridge would be widened and a 15-foot-high embankment would be constructed at the west approach. Embankment soil would be sourced from onsite to the greatest extent possible. Any remainder would be clean fill sourced from a borrow site offsite.

The existing bridge would be removed. At Abutment One, the channel slope would be restored using a “soil burrito” to re-establish the natural channel vegetation. “Toe rock” would also be placed at the western toe of slope in the stream to stabilize the “soil burritos” and willow staking. At Abutment Two, regrading and/or use of toe rock would not be necessary because it is founded on rock, which is scour resistant. The western creek bank at the existing bridge would be regraded to a lesser slope (approximately 4:1 or 3:1) and “soil burritos” would be placed on top of the new slope and staked into place. A water diversion would be installed to allow work within the wetted portion of the channel during abutment removal. The portion of the road between the existing bridge and the proposed new roadway to the south would be demolished.

5.1.2. Sequencing and Schedule

Project construction is anticipated to take approximately 18 months (over two construction seasons). A construction season is typically defined as the combined spring, summer, and fall of any year. Full closure of Dry Creek Road may not be permissible during construction because the shortest detour route would be approximately 40 miles. Therefore, the bridge replacement and roadway realignment would be conducted in four stages.

- **Stage 1 (approximately five months, anticipate initiating in first year):** During Stage 1 construction, the new bridge over Dry Creek and approximately 100 feet of the roadway approach in each direction and 200 feet of the access road would be constructed. Approximately 200 feet of the new roadway west of the new bridge, grading for the new

roadway sections, and the temporary roadway sections would be built. Temporary roadway sections would be required to allow one lane of traffic through in each direction during Stages 2 of construction. Throughout Stage 1 construction, the existing Dry Creek Road would remain open to traffic in both directions. Temporary channelizers would be placed to protect construction crew from traffic during construction.

- **Stage 2 (approximately two months, anticipate initiating in first year):** During Stage 2 construction, approximately 50 feet of the new roadway west of the new bridge, grading for the new roadway section, and a temporary ramp from the existing road up onto the new roadway section would be built. The temporary ramp will allow for drivers to detour onto the new roadway section during Stage 3 of construction. Dry Creek Road would remain open to traffic with the temporary pavement from Stage 1 providing an adequate width for drivers. Temporary k-rail would be placed to protect construction crew from traffic during construction. Access to Driveways 2 and 3 [APN 027-330-015 and 027-330-017] would be provided at all times by the Contractor.
- **Stage 3 (approximately three months, anticipate initiating in second year):** During Stage 3 construction, the existing bridge and the temporary pavement would be demolished. Approximately 50 feet of proposed new roadway alignment, the remaining access road, the vegetated soil layers and toe rock at the existing bridge, and the bioretention area near the existing bridge would be constructed. Traffic would shift from the old Dry Creek Road to the new Dry Creek Road using the ramp constructed during Stage 2. Temporary K-railing would be placed to protect personnel from traffic during construction.
- **Stage 4 (approximately three months, anticipate initiating in second year):** During Stage 4 construction, one lane per direction would need to be maintained during the day with construction occurring at night with a full road closure. The remaining Dry Creek Road, the Midwest guardrail system, the grind and overlay for Driveway 4, the access for Driveway 2 and 3, and the southern bioretention area would be constructed. Access to the properties adjacent to the project site will need to be maintained during the day. All temporary pavement would be removed.

5.1.3. Stressors from Project Actions

Stressors induce an adverse response in an organism by any physical, chemical, or biological alteration of the environment (or resource) that can lead to a response from the individual. Stressors can act directly on an individual, or indirectly through effects to a resource.

5.1.3.1. CALIFORNIA RED-LEGGED FROG

The project could result in direct and indirect stressors on the California red-legged frog. Direct stressors could include trampling and crushing. Indirect stressors could include loss of vegetative cover and introduction of pollutants.

5.1.3.2. CENTRAL CALIFORNIA COAST STEELHEAD

The project could result in direct and indirect stressors on the central California coast steelhead. Direct stressors could include trampling and crushing, and relocation. Indirect stressors could include loss of vegetative cover, introduction of pollutants, increased temperature, increased

turbidity, and creek bed modifications.

5.1.3.3. STEELHEAD CRITICAL HABITAT

The project could result in direct stressors on steelhead critical habitat PCE-2 and PCE-3. Direct stressors resulting from the project action could include loss of vegetative cover, introduction of pollutants, increased temperature, increased turbidity, and creek bed modifications.

5.1.4. Project Operation and Maintenance

California Red-Legged Frog

Following construction, the County does not anticipate a need for ongoing maintenance or debris removal because the design meets Caltrans requirements for hydraulics, which requires the County design for a 50-year storm event. Should a 50-year, or greater, storm event occurs, bridge and vegetation maintenance control measures would be implemented within the County right of way, which may include repair of bridge railings, decks, approaches, and substructures; removal of debris from the creek channel, and repair of erosion protection structures along the creek banks. These activities could result in trampling and crushing, a direct stressor, or loss of vegetative cover and introduction of pollutants from equipment, indirect stressors. However, because the project action would include replacement of an existing bridge and roadway that is currently being maintained, potential future project operation and maintenance activities would not result in any additional stressors beyond current conditions.

Central California Coast Steelhead

Following construction, the County does not anticipate a need for ongoing maintenance or debris removal because the design meets Caltrans requirements for hydraulics, which requires the County design for a 50-year storm event. Should a 50-year, or greater, storm event occurs, bridge and vegetation maintenance control measures would be implemented within the County right of way, which may include removal of debris from the creek channel, and repair of erosion protection structures along the creek banks. These activities could result in loss of vegetative cover, increased turbidity, introduction of pollutants from equipment, and modifications to creek bed habitat, indirect stressors. However, because the project action would include replacement of an existing bridge and roadway that is currently being maintained, potential future project operation and maintenance activities would not result in any additional stressors beyond current conditions.

Steelhead Critical Habitat

Following construction, the County does not anticipate a need for ongoing maintenance or debris removal because the design meets Caltrans requirements for hydraulics, which requires the County design for a 50-year storm event. Should a 50-year, or greater, storm event occurs, bridge and vegetation maintenance control measures would be implemented within the County right of way, which may include removal of debris from the creek channel, and repair of erosion protection structures along the creek banks. These activities could result in loss of vegetative cover, increased turbidity, introduction of pollutants from equipment, and creek bed modifications, direct stressors. However, because the project action would include replacement of an existing bridge and roadway that is currently being maintained, potential future project operation and maintenance activities would not result in any additional stressors beyond current conditions.

5.2. Exposure to Stressors from the Action

Exposures are defined as the interaction of the species, their resources, and the stressors that result from the project action.

5.2.1. California Red-Legged Frog

The project action could expose individual California red-legged frogs to direct and indirect stressors. Operation of construction vehicles and equipment during vegetation removal, grading, bank stabilization, and in-water work could directly expose the California red-legged frog to an increased risk of trampling or crushing and indirectly expose the California red-legged frog to pollutants. Vegetation removal and ground disturbance for construction access routes, grading and bank stabilization, bridge construction, and demolition activities could indirectly expose the California red-legged frog to a loss of vegetation cover necessary for breeding and dispersal.

5.2.2. Central California Coast Steelhead

The project action could expose individual central California coast steelhead to direct and indirect stressors. Installation of a water diversion and demolition of the existing bridge abutments could directly expose the central California coast steelhead to an increased risk of trampling or crushing and relocation. Operation of construction vehicles and equipment could indirectly expose the central California coast steelhead to pollutants. Vegetation removal and ground disturbance for construction access routes, grading and bank stabilization, bridge construction, and demolition activities could indirectly expose the central California coast steelhead to a loss of vegetation cover, increase in turbidity, and increase in temperature. Placement of less than 0.005 acre RSP within the OHWM could indirectly expose the species to an increase in turbidity. Work in the creek, demolition of the existing bridge abutments, and the permanent placement of RSP within the OHWM could indirectly expose the central California coast steelhead to minor modifications to creek bed habitat.

5.2.3. Steelhead Critical Habitat

The project action could expose steelhead critical habitat to direct stressors. Operation of construction vehicles and equipment could directly expose steelhead critical habitat to pollutants. Vegetation removal and ground disturbance for construction access routes, grading and bank stabilization, bridge construction, and demolition activities could directly expose steelhead critical habitat to a loss of vegetation cover, an increase in turbidity, and an increase in temperature. Placement of less than 0.005 acre RSP within the OHWM could indirectly expose the steelhead critical habitat to an increase in turbidity. Work in the creek, the permanent placement of less than 0.005 acre of RSP within the OHWM, and demolition of the existing bridge abutments could directly expose the steelhead critical habitat to modifications to the creek bed.

5.3. Response to the Exposure

5.3.1. California Red-Legged Frog

Direct Stressors

Trampling or crushing of individual California red-legged frogs could result in potential of injury and/or mortality of all life stages. However, the potential for the California red-legged frog to be encountered during construction is low (see Section 4.3.1), and given the small project footprint and an anticipated low density of species within the region, few individuals, if any, would be at risk.

Indirect Stressors

Loss of vegetation cover could result in increased predation and/or reduction in soil-litter moisture, which is important for breeding and dispersal. Exposure to pollutants could decrease future survival of individuals (Andrés Egea-Serrano, 2012). However, the potential for the California red-legged frog to be encountered during construction is low and given the small project footprint and an anticipated low density of species within the region, few individuals, if any, would be at risk.

5.3.2. Central California Coast Steelhead

Direct Stressors

Trampling or crushing of individual central California coast steelhead could result in potential of injury and/or mortality. Relocation during construction dewatering could require handling and moving of adult or juvenile central California coast steelhead, which could result in injury and/or death. However, given the small project footprint within the creek and proposed in-water work windows, few individuals would be at risk.

Indirect Stressors

Loss of vegetation cover, especially overhanging branches, could result in increased predation. Loss of vegetation cover could also result in increased creek temperatures, which could decrease reproductive success and increase risk of bacterial infections and parasites. Increased water turbidity could disrupt the central California coast steelhead's ability to find food, avoid predation, and ability to absorb oxygen. Channel alterations to central California coast steelhead habitat could disrupt the water quality, foraging opportunities, and cover for the central California coast steelhead. However, a "soil-burrito" method is proposed at the existing bridge, which is a combination of rolled biodegradable fabrics with native soils, which would be planted with native cuttings to promote riparian growth, provide slope stabilization, and promote overhanging vegetative cover. Also, a root wad is proposed to be installed on the western bank in proximity to the existing bridge to improve the stream habitat (see **Appendix C**). Given the small project footprint, only a small amount of vegetative cover would be removed, and any resulting potential increase in temperature, turbidity, disease or predation, would be negligible. In addition, given the small amount of in-water work, the small quantity of RSP to be placed in the creek bed, and proposed in-water work windows, few individuals would be exposed.

5.3.3. Steelhead Critical Habitat

Direct Stressors

Loss of vegetation cover, especially overhanging branches, would reduce the natural cover element of the designated steelhead critical habitat PCE-2 and PCE-3. In addition, placement of less than 0.005 acre RSP within the OHWM, increased temperature, pollutants, and/or turbidity could disrupt the water quality element of designated steelhead critical habitat PCE-2 and PCE-3. However, a “soil-burrito” method is proposed at the existing bridge, which is a combination of rolled biodegradable fabrics with native soils, which would be planted with native cuttings to promote riparian growth, provide slope stabilization, and promote overhanging vegetative cover. Also, a root wad is proposed to be installed on the western bank in proximity to the existing bridge to improve the stream habitat (see **Appendix C**). In addition, the new bridge structure would be outside of the creek and the existing bridge Abutment One, which has created an artificial bottleneck, would be completely removed, which would restore the creek to a more natural contour profile and enhance the water quality and mobility elements of steelhead critical habitat PCE-2 and PCE-3.

5.4. Effects of the Action

Effect is a description of the manner in which the action may affect any listed species or critical habitat and an analysis of any cumulative effect (50 CFR 402.02). The effect of the action is the consequence (behavioral, physical, or physiological) of a response to a stressor.

5.4.1. California Red-Legged Frog

No California red-legged frogs were observed within the Action Area, but there is suitable aquatic, riparian, and woodland habitat for breeding and dispersal; therefore, potential for this species to be in the Action Area cannot be ruled out and presence of the California red-legged frog in the Action Area is inferred. Should the California red-legged frog forage within or move through the Action Area, the project action could have direct and indirect effects on the species.

The operation of construction vehicles and equipment within the Action Area could directly affect the species if individuals were to be crushed or trampled, resulting in injury or mortality. Loss of vegetation cover could indirectly affect the species by increasing predation and/or loss in soil-litter moisture, which is important for the species breeding and dispersal. Increased pollutants entering the creek could indirectly affect the California red-legged frog by decreasing the chance of future survival.

The potential for encountering the species during construction is low, because the closest observation of California red-legged frog is approximately eight miles away, and there is no known hydrological connection between California red-legged frog populations and the Action Area. Given the small project footprint and an anticipated low density of species within the region, few individuals, if any, would be expected to disperse, forage, or breed within the Action Area during the project action. Therefore, few individuals, if any, would be at risk of direct and indirect effects on the California red-legged frog and no take of the species is anticipated.

With the implementation of the proposed avoidance and/or minimization measures in Section 5.5.1, potential direct and indirect effects on the California red-legged frog would be discountable.

Therefore, the project may affect but is not likely to adversely affect the California red-legged frog.

5.4.2. Central California Coast Steelhead

Dry Creek is a known migratory corridor, and spawning and rearing stream, for central California coast steelhead; therefore, presence of the central California coast steelhead in the Action Area is inferred. Because this species is known to be in the Action Area, the potential for direct and indirect effects on the central California coast steelhead is anticipated to be high. Should the central California coast steelhead be within the Action Area during construction, the project action could have direct and indirect effects on the species.

Installation of a water diversion and demolition of the existing bridge abutments could directly affect migrating adult or juvenile central California coast steelhead should individuals be crushed or trampled, resulting in injury or mortality. In addition, handling and moving of central California coast steelhead could cause injury and/or mortality. Therefore, take of the species could result from the project. However, given the small project footprint within the creek and proposed in-water work windows, few individuals would be at risk.

Operation of construction vehicles and equipment could indirectly affect the central California coast steelhead should pollutants enter the water. Vegetation removal and ground disturbance for construction access routes, grading and bank stabilization, bridge construction, and demolition activities would result in a loss of vegetative cover. Loss of vegetation cover, especially overhanging branches, could indirectly affect the species by increasing predation, increasing creek temperatures, and increasing turbidity. Placement of less than 0.005 acre RSP within the OHWM, just within the creek bed, and within the creek bank slopes could indirectly affect the species by increasing turbidity.

Work in the creek, demolition of the existing bridge abutments, and the permanent placement of RSP within the OHWM could indirectly affect central California coast steelhead by modifying creek bed habitat. These modifications to central California coast steelhead habitat could indirectly affect central California coast steelhead by disrupting water quality, foraging opportunities and cover. However, a “soil-burrito” method is proposed at the existing bridge, which is a combination of rolled biodegradable fabrics with native soils, which would be planted with native cuttings to promote riparian growth, provide slope stabilization, and promote overhanging vegetative cover. Also, a root wad is proposed to be installed on the western bank in proximity to the existing bridge to improve the stream habitat (see **Appendix C**).

With the implementation of the proposed avoidance and/or minimization measures in Section 5.5.1, potential direct and indirect effects on the central California coast steelhead as a result of the project action would be minimized to the extent feasible, but some take may result. Therefore, the project may affect, likely to adversely affect, the central California coast steelhead.

5.4.3. Steelhead Critical Habitat

The Action Area is within designated steelhead critical habitat and contains PCE-2 and PCE-3.

Operation of construction vehicles and equipment could directly affect the steelhead critical habitat should pollutants enter flowing water. Vegetation removal and ground disturbance for construction access routes, grading and bank stabilization, bridge construction, and demolition activities would result in a loss of vegetative cover. Loss of vegetation cover, especially overhanging branches, could directly affect steelhead critical habitat by reducing the natural cover element of steelhead critical habitat PCE-2 and PCE-3. In addition, placement of less than 0.005 acre RSP within the OHWM, increased temperature, pollutants, and/or turbidity could directly affect steelhead critical habitat by disrupting the water quality element of the designated steelhead critical habitat PCE-2 and PCE-3. However, a “soil-burrito” method is proposed at the existing bridge, which is a combination of rolled biodegradable fabrics with native soils, which would be planted with native cuttings to promote riparian growth, provide slope stabilization, and promote overhanging vegetative cover. In addition, the new bridge structure would be outside of the creek and the existing bridge Abutment One, which has created an artificial bottleneck, would be completely removed, which would restore the creek to a more natural contour profile and enhance the water quality and mobility elements of steelhead critical habitat PCE-2 and PCE-3. Further, a root wad is proposed to be installed on the western bank in proximity to the existing bridge to improve the stream habitat.

With the implementation of the proposed avoidance and/or minimization measures in Section 5.5.1, potential direct effects on steelhead critical habitat as a result of the project action would be discountable. Therefore, the project may affect, but is not likely to adversely modify, steelhead critical habitat.

5.5. Conservation Measures and Compensation Proposal

Conservation measures help to minimize or avoid adverse effects of a Proposed Action on listed species or critical habitat, to help implement recovery plans, or develop information.

5.5.1. Conservation Measures

California Red-Legged Frog

To avoid and/or minimize project effects on the California red-legged frog and their habitat during project construction, the County proposes to implement the following measures:

- Prior to the initiation of any work, including installation of exclusion fencing or clearing and grubbing activities, a qualified biologist would conduct an environmental worker awareness training for all project personnel. The training would discuss the sensitive habitats and special-status species with the potential to be within the construction site and would review the project’s avoidance and minimization measures, and permitting conditions associated with biological resources.
- Pre-construction amphibian surveys would be conducted within 24 hours prior to start of construction by a qualified biologist.
- Following completion of pre-construction surveys, wildlife exclusion fencing would be erected

around the entire construction area, including on the creek banks, to prohibit wildlife from entering the active construction area. Wildlife exclusion fencing would consist of construction grade polypropylene or similar fabric. The exclusion fencing would be a minimum of three feet tall above ground and be buried a minimum of four inches underground with the base folded, so wildlife cannot burrow beneath or create entry points. The exclusion fencing would remain in place throughout the duration of construction activities and would be regularly inspected and maintained in good working order by the construction contractor. The fencing would be completely removed following construction.

- If the California red-legged frog and/or foothill yellow-legged frog is found in the construction area, the encounter would be treated on a case-by-case basis in coordination with regulatory agencies, but the general procedure would be as follows: 1) work would immediately be suspended in the vicinity of the animal; 2) a qualified biologist would evaluate the animal; 3) the animal would not be disturbed if it is not in danger and would be allowed to exit the construction site on its own.
- The exclusion fencing would be periodically inspected for trapped wildlife by a qualified biologist.
- Initial ground-disturbing activities would be avoided between November 1 and March 31, which is when California red-legged frogs are most likely to be moving through upland areas.
- Following completion of daily work activities, any temporary breaks in the wildlife exclusion fencing to allow for construction would be restored.
- Materials stored on-site that could provide shelter for California red-legged and foothill yellow-legged frogs, such as on-site storage of pipes, conduits and other materials, would be elevated above ground.
- Trenches or pits one foot or deeper that are left unfilled for more than 48 hours would be securely covered with boards or other similar material to prevent entrapment of California red-legged and foothill yellow-legged frogs.
- During demolition of the existing road and bridge, all grindings and AC waste would be immediately removed offsite or be temporarily stored onsite. If the waste is stored onsite, the waste would be placed on construction grade plastic sheeting, geotextile fabric, or similar impervious material, and would be stored a minimum of 100 feet from Dry Creek. On or before the date of project completion, the waste would be transported to an approved disposal site.
- No construction activities would be allowed during rain events or within 24-hours following a rain event. Prior to construction activities resuming, a qualified biologist would inspect the construction area and all equipment/materials for the presence of special-status amphibians.
- Nighttime construction would only be permitted for select activities on a case-by-case basis, such as a bridge pour, in coordination with a qualified biologist.
- Take or suspected take of listed wildlife species would be reported immediately to a qualified biologist. A qualified biologist would be required to report the incident, or suspected incident, to the wildlife agencies within 24 hours.

- All project-related vehicle traffic would be restricted to established roads and construction areas, which include equipment staging, storage, parking, and stockpile areas.
- No pets would be allowed in the construction area, to avoid and minimize the potential for harassment, injury, and death of wildlife.
- Plastic monofilament netting, or similar material in any form, would not be used at the construction area.

Central California Coast Steelhead

To avoid and/or minimize project effects on the central California coast steelhead during project construction, the County proposes to implement the following:

- Construction within the channel would be limited to between June 15 and October 15.
- The Dry Creek banks would be restored using a “soil burrito” (a combination of native soil, biodegradable fabric, and planting), root wad system, and/or similar method to re-establish the natural channel vegetation. Willow cuttings would be planted in the bank slopes.
- Willow cuttings would be planted along the Dry Creek banks.

Steelhead Critical Habitat

To minimize project effects on steelhead critical habitat, the conservation measures proposed for central California coast steelhead, would be implemented.

5.5.2. Compensation

California Red-Legged Frog

With implementation of proposed avoidance and minimization measures described in Section 5.5.1, adverse effects on the California red-legged frog are not anticipated; therefore, mitigation is not proposed.

Central California Coast Steelhead

With the implementation of proposed avoidance and minimization measures discussed in Section 5.5.1, effects on central California coast steelhead would be minimized. In addition, following coordination with NMFS, the County is proposing to restore the creek channel at the existing bridge by removing Abutment One in its entirety, which currently creates an artificial bottleneck of the stream; creating vegetated “soil burritos” with planted willow cuttings to naturally stabilize the slopes; and, installing a root wad on the western bank in proximity to the existing bridge (see **Appendix C**).

Steelhead Critical Habitat

With the implementation of proposed avoidance and minimization measures discussed in Section 5.5.1, effects on steelhead critical habitat would be minimized. Furthermore, it is anticipated that the compensatory mitigation described under central California coast steelhead, would be adequate to mitigate for project impacts on steelhead critical habitat, and no additional compensatory mitigation is proposed.

5.6. Effects of Interrelated and Interdependent Actions/ Conclusions and Determinations

5.6.1. Interrelated actions

Interrelated actions are actions that are part of a larger action and depend on the larger action for their justification [50 CFR §402.02] (i.e., this project would not occur “but for” a larger project). Interrelated actions are typically associated with the Proposed Action. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. There are no interrelated actions associated with this project.

5.6.2. Interdependent actions

Interdependent actions are actions having no independent utility apart from the Proposed Action. [50 CFR §402.02]. Interdependent actions are those that have no independent utility apart from the action under consideration. There are no interdependent actions associated with this project.

5.7. Cumulative Effects

Cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area described in this biological assessment. Future Federal actions that are unrelated to the Proposed Action are not considered in this section because they require separate consultation pursuant to Section 7 of the Act.

5.7.1. California Red-Legged Frog

The cumulative setting for the California red-legged frog is primarily along the Coast Range, from Calaveras County to Butte County in the Sierra Nevada. Habitat removal from current and future development in the area is the biggest threat to the California red-legged frog. Other threats include mining, overgrazing by cattle, invasion of nonnative plants, impoundments, water diversions, degraded water quality, and introduced predators, such as bullfrogs. Cumulative effects associated with the project on the California red-legged frog are expected to be discountable because of the small scale of the project, the low potential for encountering the California red-legged frog, and implementation of the proposed avoidance and/or minimization measures in Section 5.5.1.

5.7.2. Central California Coast Steelhead

The cumulative setting for the central California coast steelhead is the extent of its range, primarily within the central California coast. Dams that block steelhead passage from current and future development in the area are the biggest threat to the steelhead. Other threats include the destruction and modification of habitat including pollution and climate change, overfishing, and introduction of diseases and predatory species. Cumulative effects associated with the project on the central California coast steelhead are expected to be discountable because of the small scale of the project and implementation of the proposed avoidance and/or minimization, measures in Section 5.5.1.

5.7.3. Steelhead Critical Habitat

The cumulative setting for the steelhead critical habitat is the extent of its range, within the central

California coast. Stream habitat loss from current and future development in the area is the biggest threat to the steelhead critical habitat. Cumulative effects associated with the project on steelhead critical habitat are expected to be discountable because the scale of the project is small, and the PCEs in the Action Area would be temporarily modified and then returned to pre-existing conditions. In addition, the removal of the channel bottleneck at the existing bridge location would return the creek to a more natural state, which would enhance existing PCEs for steelhead critical habitat in the Action Area.

5.8. Determination

5.8.1. Species and Critical Habitat Determination

5.8.1.1. NO EFFECT

A no effect determination was made for the following species. No consultation is required.

- Sonoma Alopecurus (*Alopecurus aequalis* var. *sonomensis*)
- Clara Hunt's milk-vetch (*Astragalus claranus*)
- Sonoma sunshine (*Blennosperma bakeri*)
- Loch Lomond button-celery (*Eryngium constancei*)
- Burke's goldfields (*Lasthenia burkei*)
- Contra Costa goldfields (*Lasthenia conjugens*)
- Sebastopol meadowfoam (*Limnanthes vinculans*)
- Few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*)
- Calistoga popcornflower (*Plagiobothrys strictus*)
- Napa blue grass (*Poa napensis*)
- Kenwood marsh checkerbloom (*Sidalcea oregana* ssp. *valida*)
- Two-forked clover or showy Indian clover (*Trifolium amoenum*)
- California tiger salamander (*Ambystoma californiense*)
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)
- Northern spotted owl (*Strix occidentalis caurina*)
- California freshwater shrimp (*Syncaris pacifica*)
- Delta smelt (*Hypomesus transpacificus*)
- Coho salmon - central California coast Evolutionary Significant Unit (ESU)
- Steelhead - northern California DPS (*Oncorhynchus mykiss irideus*)
- Chinook salmon - California coastal ESU
- Green sea turtle; East Pacific DPS (*Chelonia mydas*)

5.8.1.2. MAY EFFECT-NOT LIKELY TO ADVERSELY AFFECT

A may affect-not likely to adversely affect determination was made for the following species and critical habitat. Informal consultation is required.

- California red-legged frog
- Steelhead critical habitat

5.8.1.3. MAY AFFECT-LIKELY TO ADVERSELY AFFECT

A may affect-likely to adversely affect determination was made for the following species. Formal consultation is required.

- Steelhead – central California coast

5.8.2. Discussion Supporting DeterminationCalifornia Red-Legged Frog

Within the Action Area, there is suitable aquatic, riparian, and woodland habitat for the California red-legged frog; therefore, the presence of California red-legged frog is inferred within the Action Area. However, the potential for encountering the species during construction is low, because no California red-legged frogs were observed during general biological surveys, the closest observation of California red-legged frog is approximately eight miles away, and there is no known hydrological connection between California red-legged frog populations and the Action Area.

Although the presence of the California red-legged frog is inferred, the project scale is small, and the chance of encountering a California red-legged frog during construction is minimal. In addition, with the implementation of the proposed avoidance and/or minimization measures discussed in Section 5.5.1, no direct take of the California red-legged frog is anticipated, and any project effects would be discountable. Therefore, the project may affect, but is not likely to adversely affect, the California red-legged frog.

Central California Coast Steelhead

Migrating adult or juvenile central California coast steelhead are known to be present year-round in Dry Creek. Because in-water work is anticipated, the project may result in take (harm, harass or mortality) of central California coast steelhead; therefore, the project may affect, likely to adversely affect, central California coast steelhead. However, with the implementation of avoidance, minimization, and/or mitigation discussed in Section 5.5, adverse effects on central California coast steelhead would be substantially minimized.

Steelhead Critical Habitat

Dry Creek has been designated as steelhead critical habitat. Steelhead critical habitat PCEs 2.) and 3.) could be affected by project activities; however, with the implementation of avoidance, minimization, , and/or mitigation discussed in Section 5.5, effects on steelhead critical habitat would be substantially minimized; therefore, the project may affect, but is not likely to adversely modify steelhead critical habitat.

Chapter 6. Literature Cited

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Appendix A. NMFS, USFWS Species, CNDDDB Lists

Rivas, Dan@DOT

From: NMFS SpeciesList - NOAA Service Account <nmfs.wcrca.specieslist@noaa.gov>
Sent: Friday, April 16, 2021 10:45 AM
To: Rivas, Dan@DOT
Subject: Federal ESA - - NOAA Fisheries Species List Re: Federal Highway Administration - County of Napa Dry Creek Road Bridge Replacement Project, BRLS-5921(061)

EXTERNAL EMAIL. Links/attachments may not be safe.

Please retain a copy of each email request that you send to NOAA at nmfs.wcrca.specieslist@noaa.gov as proof of your official Endangered Species Act SPECIES LIST. The email you send to NOAA should include the following information: your first and last name; email address; phone number; federal agency name (or delegated state agency such as Caltrans); mailing address; project title; brief description of the project; and a copy of a list of threatened or endangered species identified within specified geographic areas derived from the NOAA Fisheries, West Coast Region, California Species List Tool. You may only receive this instruction once per week. If you have questions, contact your local NOAA Fisheries liaison.

Rivas, Dan@DOT

From: Rivas, Dan@DOT
Sent: Friday, April 16, 2021 10:45 AM
To: nmfs.wcrca.specieslist@noaa.gov
Subject: Federal Highway Administration - County of Napa Dry Creek Road Bridge Replacement Project, BRLS-5921(061)

Federal agency: Federal Highway Administration - California Division
Federal agency address: 650 Capitol Mall, Suite 4-100, Sacramento, CA 95814-4708
Non-federal agency representative (if any): California Department of Transportation
Non-federal agency representative (if any) address: 111 Grand Avenue, Oakland, CA 94612
Project title: County of Napa Dry Creek Road Bridge Replacement Project, BRLS-5921(061) Local Assistance Project]
Point-of-Contact: Dan Rivas, dan.rivas@dot.ca.gov, (510) 496-9416

Quad Name **Rutherford**

Quad Number **38122-D4**

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) - **X**
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
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 - **X**
SCCC Steelhead Critical Habitat -
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) -
Sperm Whale (E) -

ESA Pinnipeds

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

Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
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 -



United States Department of the Interior



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

In Reply Refer To:
Consultation Code: 08ESMF00-2019-SLI-0693
Event Code: 08ESMF00-2021-E-02123
Project Name: Dry Creek Bridge Replacement

January 14, 2021

Subject: Updated list of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

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

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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

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

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

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

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

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

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

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

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

Attachment(s):

- Official Species List
-

Official Species List

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

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2019-SLI-0693

Event Code: 08ESMF00-2021-E-02123

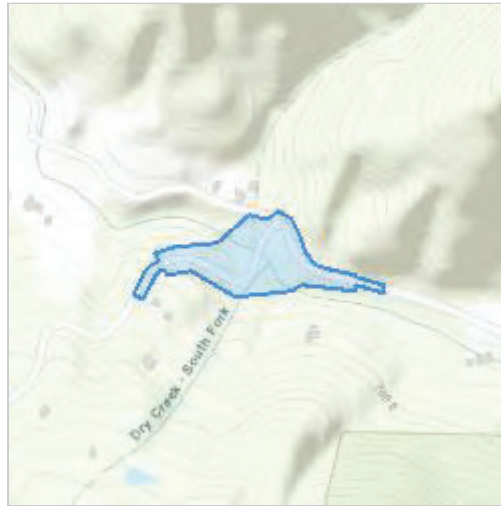
Project Name: Dry Creek Bridge Replacement

Project Type: TRANSPORTATION

Project Description: The existing Dry Creek Bridge (Bridge No. 21C0056) is located along Dry Creek Road in Napa County, 0.8-miles west of Mount Veeder Road, and near the intersection with Dry Creek Fork Road. The proposed project includes replacing the existing structurally deficient bridge and realigning the existing roadway. Construction is anticipated in the year of 2021.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.410761379206164,-122.45205630119469,14z>



Counties: Napa County, California

Endangered Species Act Species

There is a total of 6 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 Fisheries¹, 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.

Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
California Freshwater Shrimp <i>Syncaris pacifica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7903	Endangered

Flowering Plants

NAME	STATUS
Clara Hunt's Milk-vetch <i>Astragalus clarianus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3300	Endangered

Critical habitats

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



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Calistoga) OR Chiles Valley OR Glen Ellen OR Kenwood OR Napa OR Rutherford OR Sonoma OR St. Helena OR Yountville

Dry Creek Bridge Replacement Project, Napa County, CA

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter striatus sharp-shinned hawk	ABNKC12020	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G5T2	S2	1B.2
Alopecurus aequalis var. sonomensis Sonoma alopecurus	PMPOA07012	Endangered	None	G5T1	S1	1B.1
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos stanfordiana ssp. decumbens Rincon Ridge manzanita	PDERI041G4	None	None	G3T1	S1	1B.1
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Astragalus claranus Clara Hunt's milk-vetch	PDFAB0F240	Endangered	Threatened	G1	S1	1B.1
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Blennosperma bakeri Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Bombus crotchii</i> Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
<i>Brodiaea leptandra</i> narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
<i>Buteo regalis</i> ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
<i>Buteo swainsoni</i> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<i>Caecidotea tomalensis</i> Tomales isopod	ICMAL01220	None	None	G2	S2S3	
<i>Calasellus californicus</i> An isopod	ICMAL34010	None	None	G2	S2	
<i>Castilleja ambigua var. meadii</i> Mead's owls-clover	PDSCR0D404	None	None	G4T1	S1	1B.1
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
<i>Ceanothus divergens</i> Calistoga ceanothus	PDRHA04240	None	None	G2	S2	1B.2
<i>Ceanothus purpureus</i> holly-leaved ceanothus	PDRHA04160	None	None	G2	S2	1B.2
<i>Ceanothus sonomensis</i> Sonoma ceanothus	PDRHA04420	None	None	G2	S2	1B.2
<i>Centromadia parryi ssp. parryi</i> pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
<i>Coastal and Valley Freshwater Marsh</i> Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<i>Coturnicops noveboracensis</i> yellow rail	ABNME01010	None	None	G4	S1S2	SSC
<i>Cypseloides niger</i> black swift	ABNUA01010	None	None	G4	S2	SSC
<i>Dicamptodon ensatus</i> California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
<i>Downingia pusilla</i> dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Eremophila alpestris actia</i> California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G3	S3	1B.2
<i>Eryngium constancei</i> Loch Lomond button-celery	PDAPI0Z0W0	Endangered	Endangered	G1	S1	1B.1
<i>Eryngium jepsonii</i> Jepson's coyote-thistle	PDAPI0Z130	None	None	G2	S2	1B.2
<i>Extriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
<i>Falco peregrinus anatum</i> American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
<i>Fritillaria liliacea</i> fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
<i>Gonidea angulata</i> western ridged mussel	IMBIV19010	None	None	G3	S1S2	
<i>Haliaeetus leucocephalus</i> bald eagle	ABNKC10010	Delisted	Endangered	G5	S3	FP
<i>Hemizonia congesta ssp. congesta</i> congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
<i>Hesperolinon sharsmithiae</i> Sharsmith's western flax	PDLIN010E0	None	None	G2Q	S2	1B.2
<i>Horkelia tenuiloba</i> thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2
<i>Hydrochara rickseckeri</i> Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
<i>Hydroporus leechi</i> Leech's skyline diving beetle	IICOL55040	None	None	G1?	S1?	
<i>Lasthenia burkei</i> Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
<i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<i>Lathyrus jepsonii var. jepsonii</i> Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
<i>Layia septentrionalis</i> Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Legenere limosa</i> legenere	PDCAM0C010	None	None	G2	S2	1B.1
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	PDPLM09140	None	None	G2G3	S2S3	1B.2
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
<i>Limnanthes vinculans</i> Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
<i>Linderiella occidentalis</i> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<i>Lupinus sericatus</i> Cobb Mountain lupine	PDFAB2B3J0	None	None	G2?	S2?	1B.2
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	ABPBXA301W	None	None	G5T2	S2	SSC
<i>Myotis evotis</i> long-eared myotis	AMACC01070	None	None	G5	S3	
<i>Myotis thysanodes</i> fringed myotis	AMACC01090	None	None	G4	S3	
<i>Myotis volans</i> long-legged myotis	AMACC01110	None	None	G5	S3	
<i>Myotis yumanensis</i> Yuma myotis	AMACC01020	None	None	G5	S4	
<i>Navarretia leucocephala ssp. bakeri</i> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<i>Navarretia leucocephala ssp. pauciflora</i> few-flowered navarretia	PDPLM0C0E4	Endangered	Threatened	G4T1	S1	1B.1
<i>Navarretia rosulata</i> Marin County navarretia	PDPLM0C0Z0	None	None	G2	S2	1B.2
Northern Vernal Pool Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
<i>Nycticorax nycticorax</i> black-crowned night heron	ABNGA11010	None	None	G5	S4	
<i>Oncorhynchus mykiss irideus pop. 8</i> steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
<i>Pandion haliaetus</i> osprey	ABNKC01010	None	None	G5	S4	WL
<i>Penstemon newberryi var. sonomensis</i> Sonoma beardtongue	PDSCR1L483	None	None	G4T3	S3	1B.3
<i>Phalacrocorax auritus</i> double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
<i>Plagiobothrys strictus</i> Calistoga popcornflower	PDBOR0V120	Endangered	Threatened	G1	S1	1B.1



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Poa napensis</i> Napa blue grass	PMPOA4Z1R0	Endangered	Endangered	G1	S1	1B.1
<i>Progne subis</i> purple martin	ABPAU01010	None	None	G5	S3	SSC
<i>Puccinellia simplex</i> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Sagittaria sanfordii</i> Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2
<i>Sidalcea hickmanii ssp. napensis</i> Napa checkerbloom	PDMAL110A6	None	None	G3T1	S1	1B.1
<i>Sidalcea oregana ssp. hydrophila</i> marsh checkerbloom	PDMAL110K2	None	None	G5T2	S2	1B.2
<i>Sidalcea oregana ssp. valida</i> Kenwood Marsh checkerbloom	PDMAL110K5	Endangered	Endangered	G5T1	S1	1B.1
<i>Spergularia macrotheca var. longistyla</i> long-styled sand-spurrey	PDCAR0W062	None	None	G5T2	S2	1B.2
<i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
<i>Streptanthus hesperidis</i> green jewelflower	PDBRA2G510	None	None	G2G3	S2S3	1B.2
<i>Stygobromus cowani</i> Cowan's amphipod	ICMAL05D70	None	None	G1	S1	
<i>Symphyotrichum lentum</i> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
<i>Syncaris pacifica</i> California freshwater shrimp	ICMAL27010	Endangered	Endangered	G2	S2	
<i>Taricha rivularis</i> red-bellied newt	AAAAF02020	None	None	G4	S2	SSC
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Trachusa gummifera</i> San Francisco Bay Area leaf-cutter bee	IIHYM80010	None	None	G1	S1	
<i>Trichostema ruygtii</i> Napa bluecurls	PDLAM220H0	None	None	G1G2	S1S2	1B.2
<i>Trifolium amoenum</i> two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1



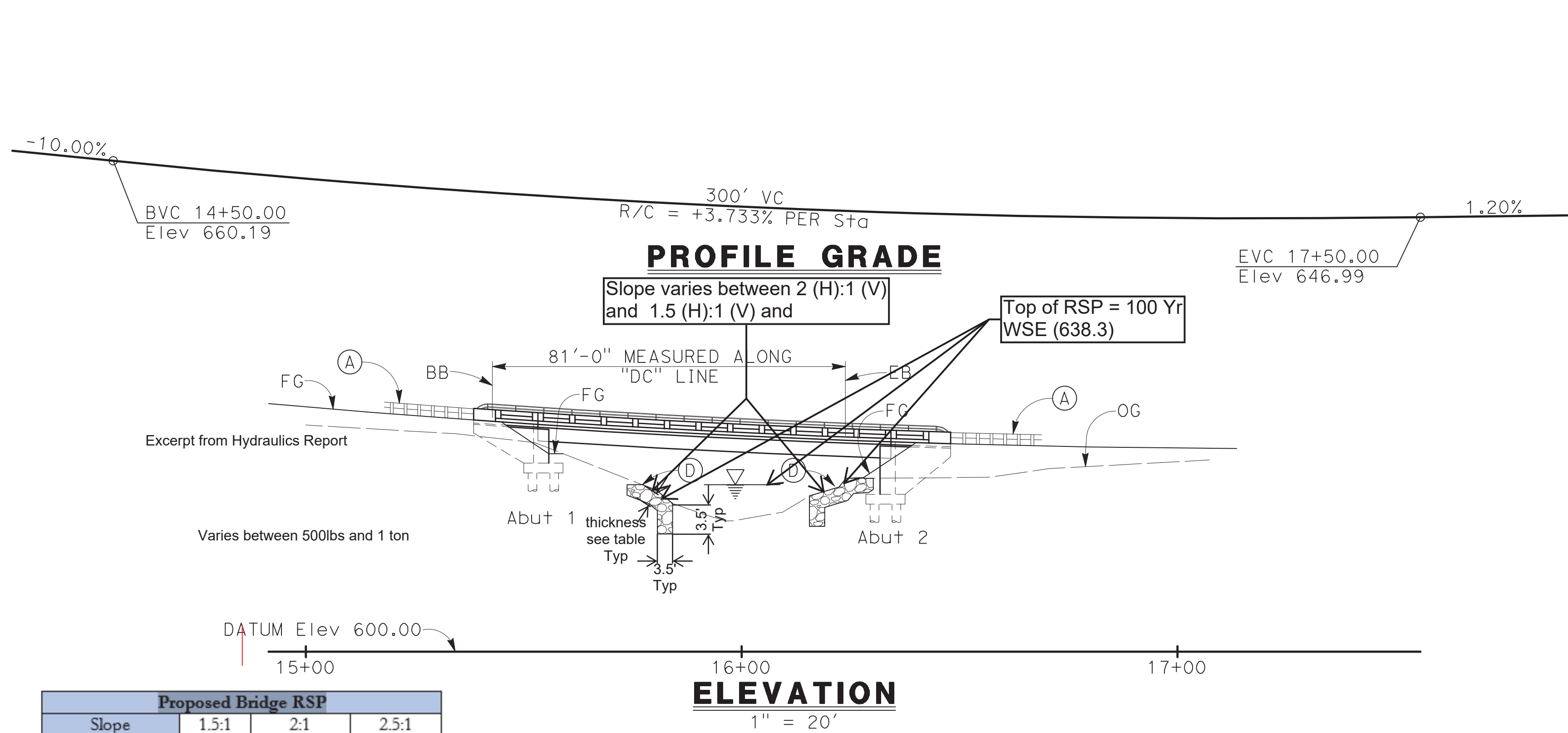
Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



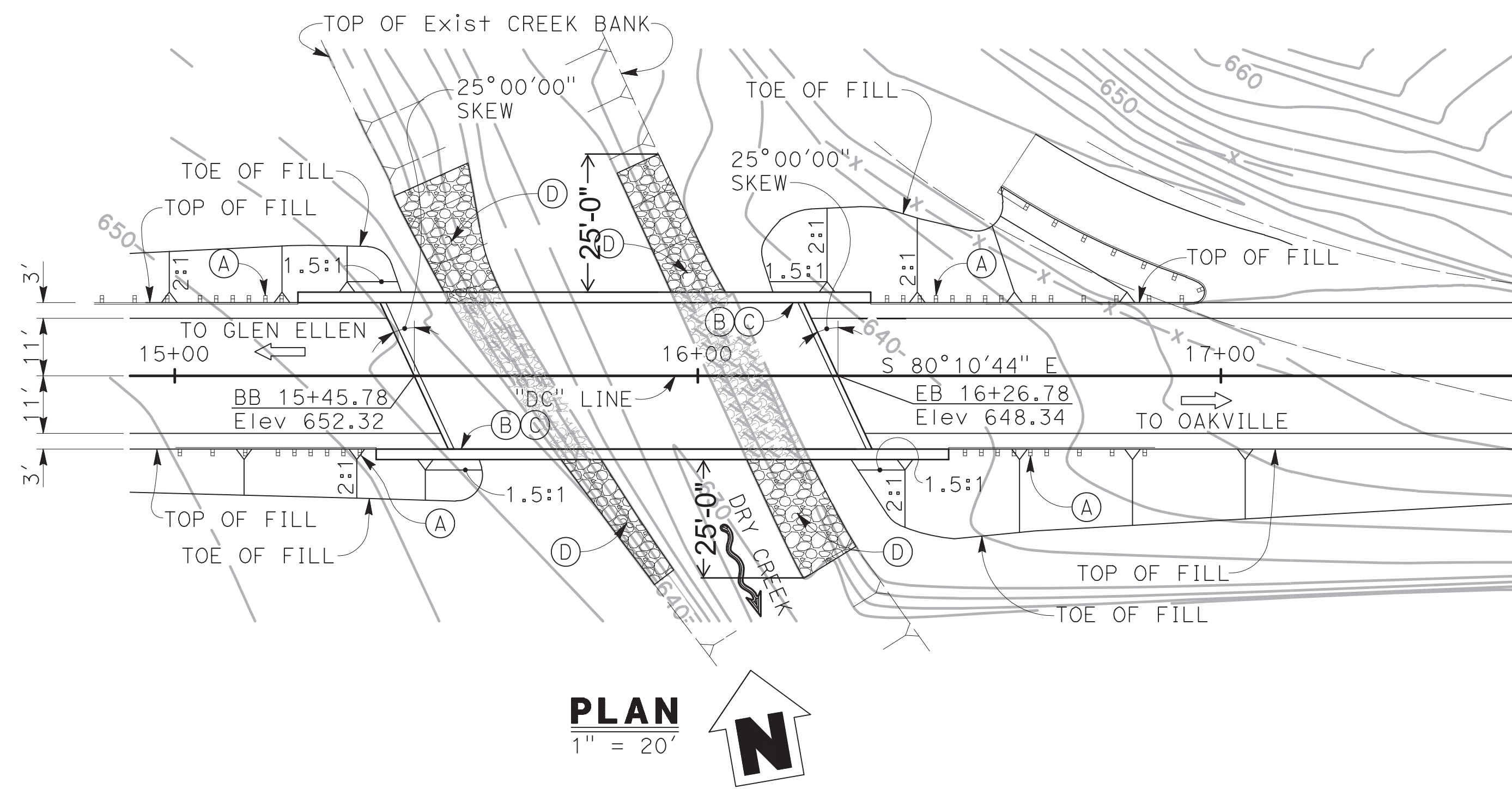
Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<i>Valley Needlegrass Grassland</i> Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
<i>Viburnum ellipticum</i> oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 106

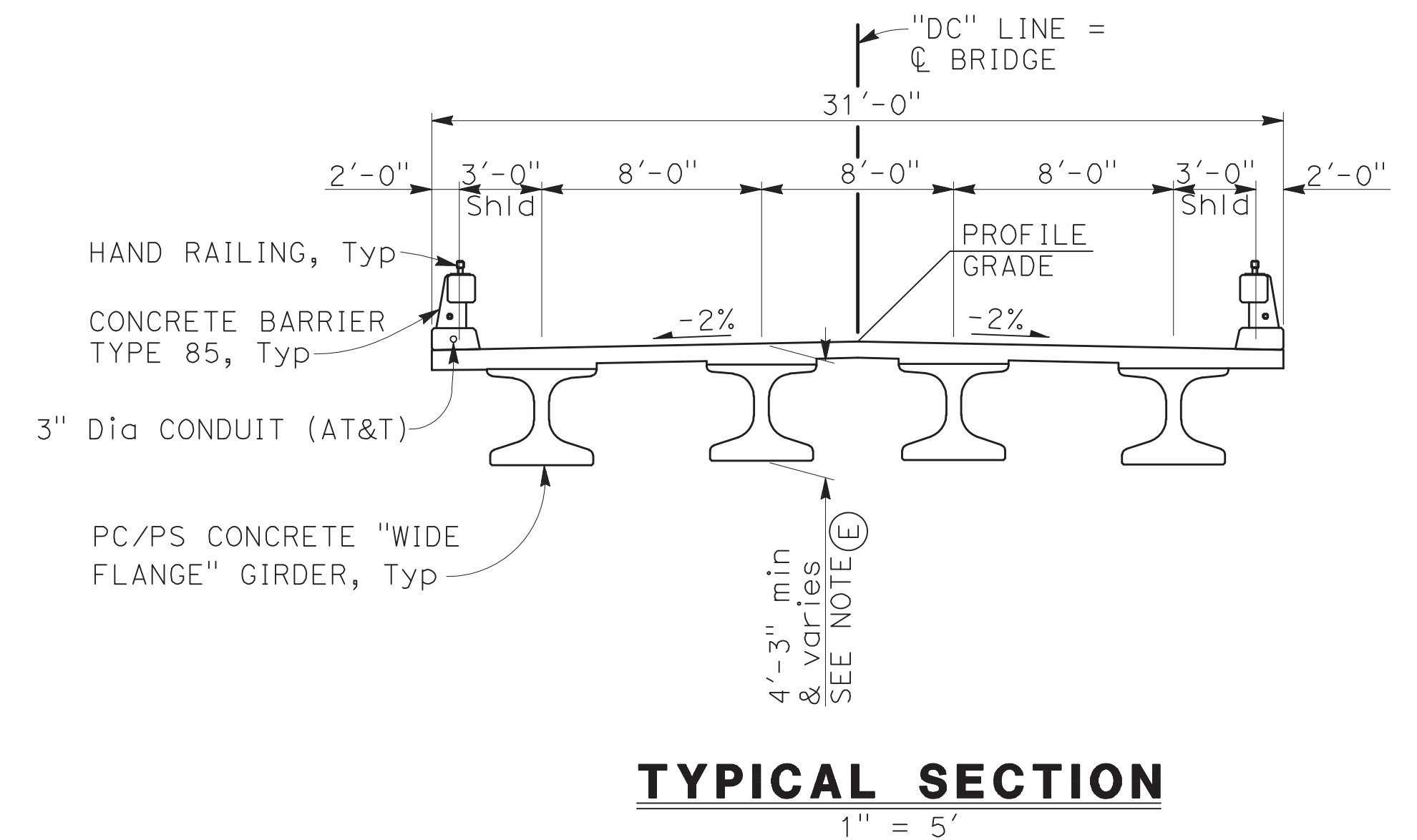
Appendix B. Proposed Bridge & RSP Exhibit



Proposed Bridge RSP			
Slope	1.5:1	2:1	2.5:1
D ₅₀ (in)	30	21	18
Weight	1 ton	3/8 ton	500 lbs
Thickness (in)	48	42	36
Class	VIII	VI	V
Estimated Volume (CY)	200	170	125



NOTE:
The contractor must verify all controlling field dimensions before ordering or fabricating any material.

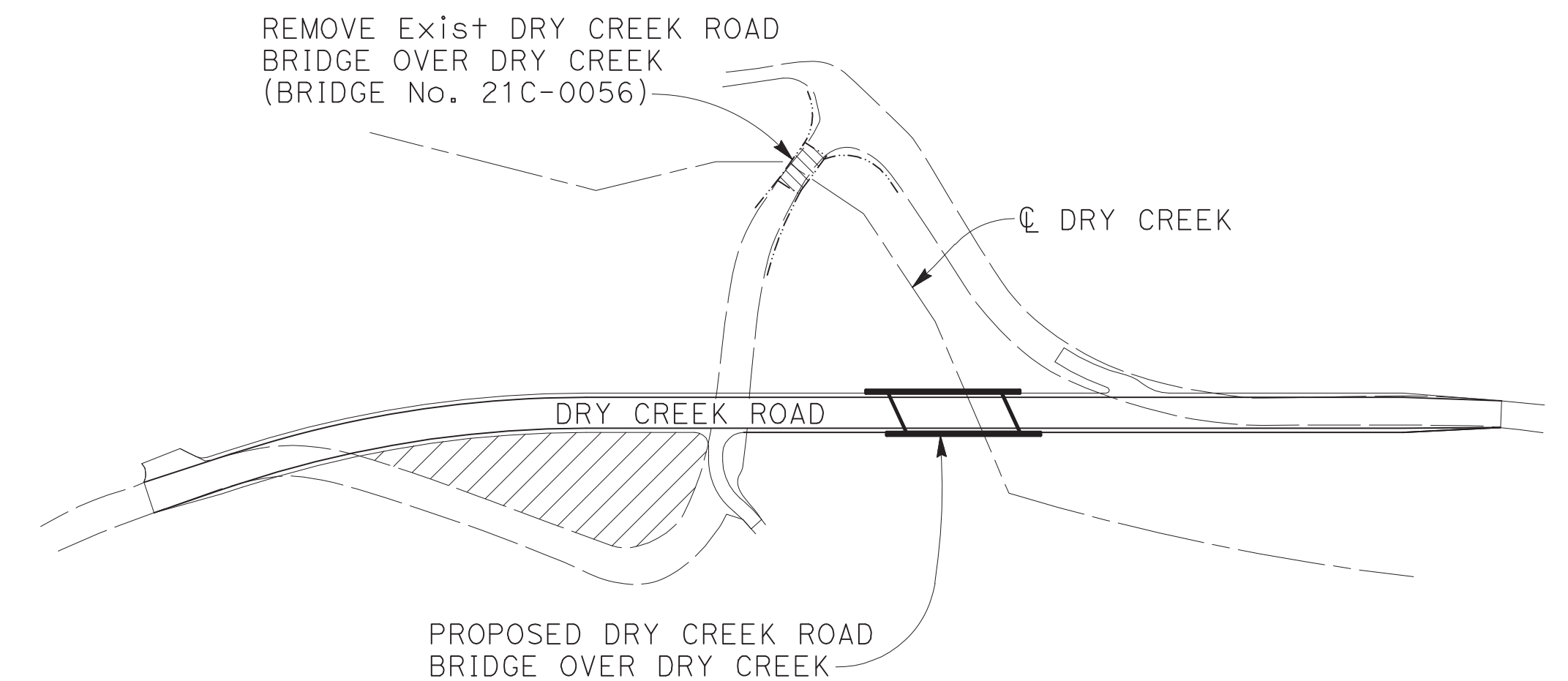


TYPICAL SECTION

- NOTES:
- (A) Midwest Guardrail System, see "ROADWAY PLANS"
 - (B) Paint "Bridge No. 21C-0143"
 - (C) Paint "Dry Creek Road Bridge Over Dry Creek"
 - (D) Rock Slope Protection
 - (E) Minimum Structure depth is 4'-3". Structure depth at BB & EB is 4'-6 1/8"

LEGEND:

- Indicates Potential Contractor Staging Area
- Indicates Traffic Direction
- Indicates Direction of Flow



SITE PLAN

NO SCALE

PLAN CHECK SET/NOT FOR CONSTRUCTION (5/5/20)

REV	DESCRIPTION	DATE



BIGGS CARDOSA ASSOCIATES INC
STRUCTURAL ENGINEERS

865 The Alameda
San Jose, California 95128
408-296-6515



DATE: 05/31/18

DESIGN: NBP

SCALE: AS SHOWN

DRAWN: SMH

FILE NAME: 2015261SA-S1.dwg

CHKD: JAA

SURVEY NOTE:

SHEET TITLE
LIMITS OF ROCK SLOPE PROTECTION & PROPOSED BRIDGE SECTION EXHIBIT

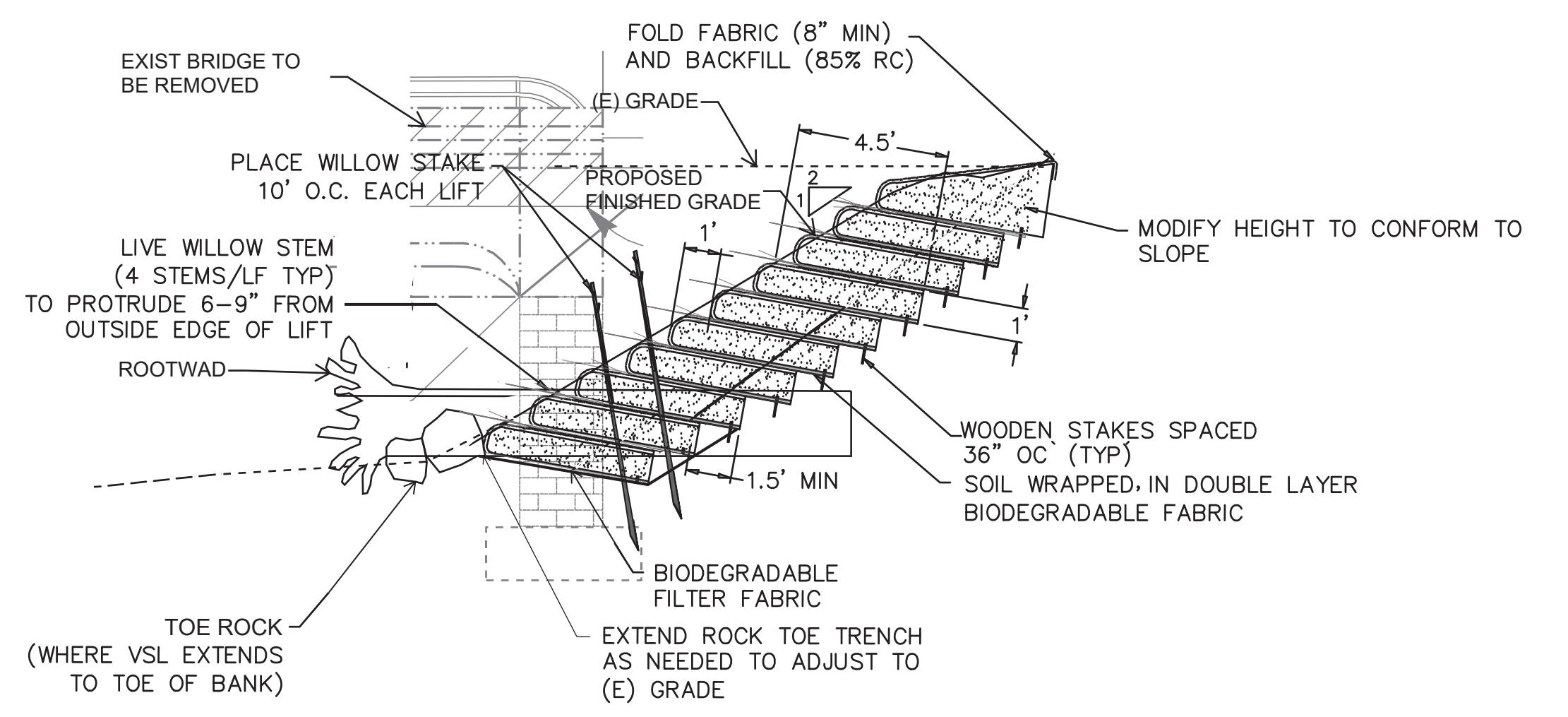
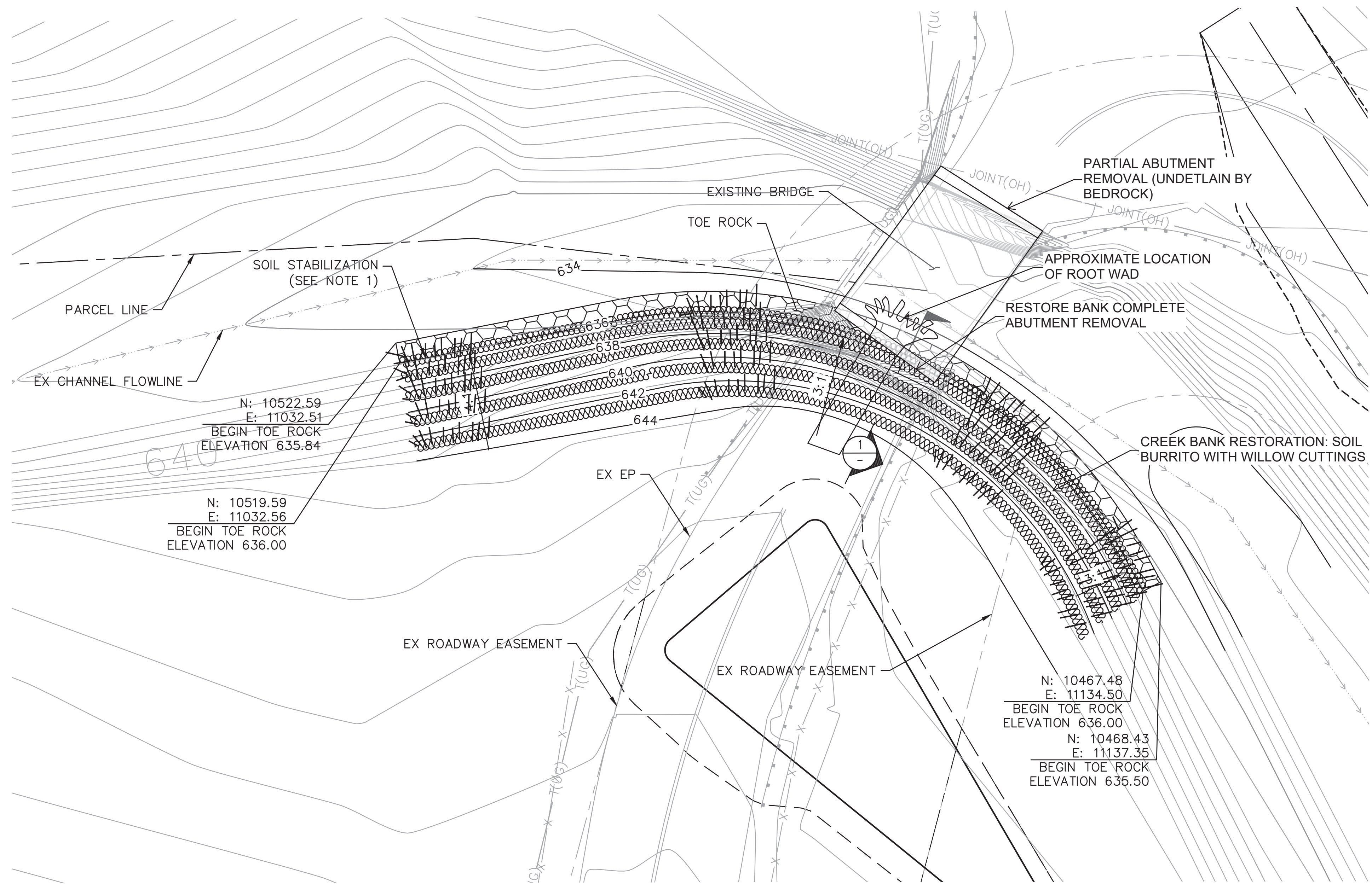
PROJECT TITLE
DRY CREEK ROAD BRIDGE OVER DRY CREEK, BRIDGE No. 21C-0143, RDS 15-22, BRLS-5921(061)

S1

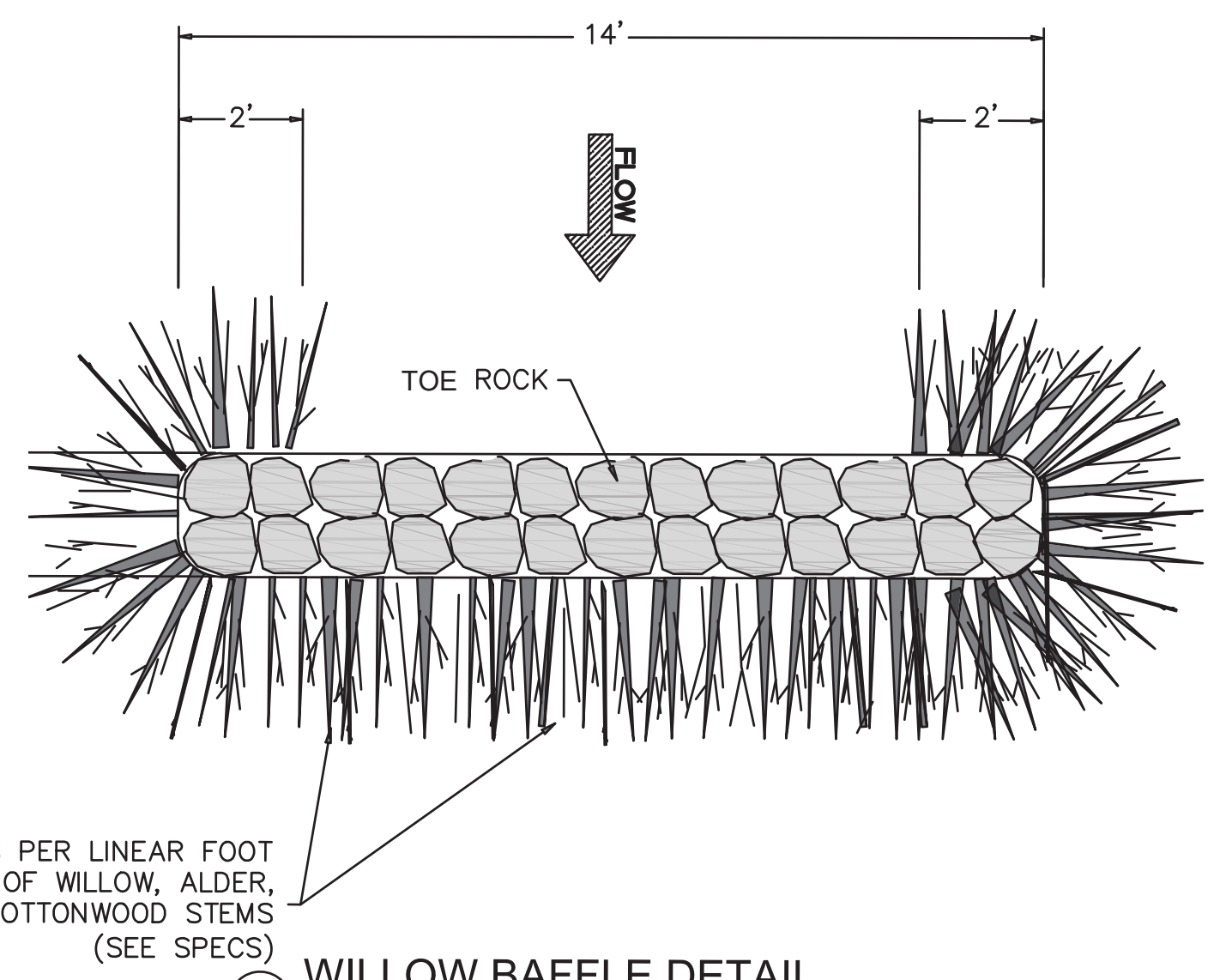
35 OF 51
SHEET OF

2015261A-S1

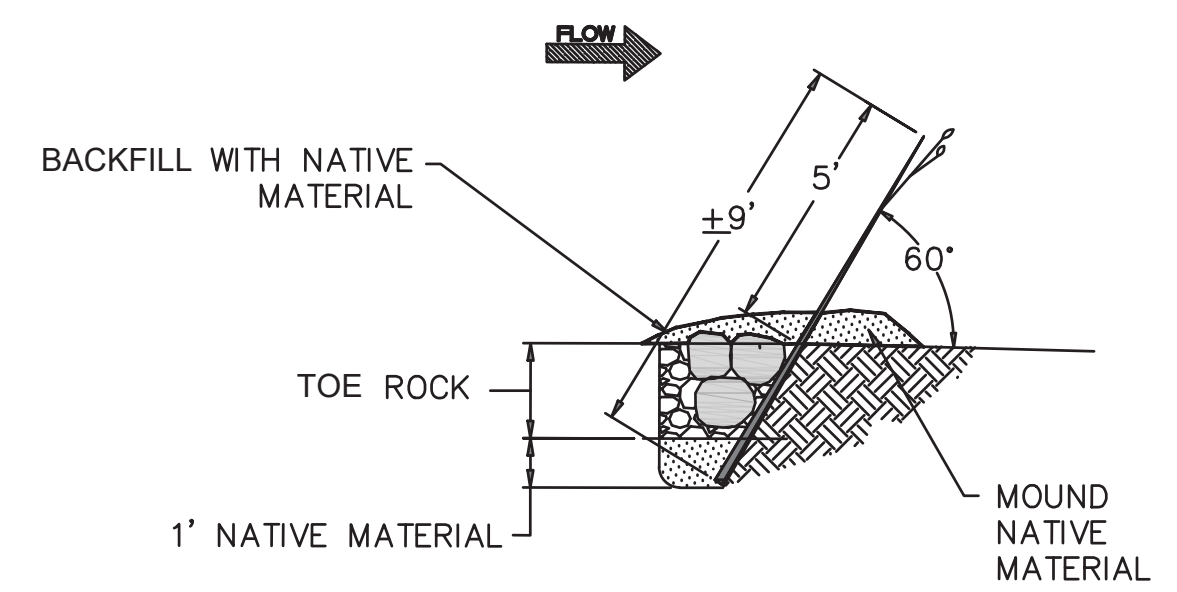
Appendix C. Creek Restoration Exhibit



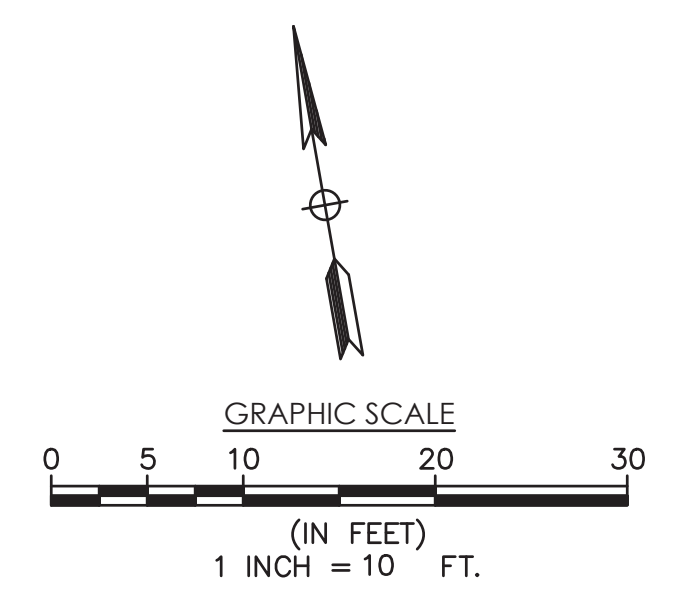
1 VEGETATED SOIL LIFT DETAIL
SECTION VIEW SCALE: N.T.S.



2 WILLOW BAFFLE DETAIL
PLAN VIEW SCALE: N.T.S.



3 WILLOW BAFFLE DETAIL
PLAN VIEW SCALE: N.T.S.



NOTES:

- UTILIZE A SOIL STABILIZATION FOR NATURALLY VEGETATED CHANNEL BANK. SEE DETAIL 1, 2 AND 3 ON THIS SHEET.

LEGEND:

- TOE ROCK
- EX CHANNEL FLOWLINE
- VEGETATED SOIL LIFT
- EX ROADWAY EASEMENT
- PARCEL LINE
- PR RIGHT OF WAY
- T(UG) EX TELECOMMUNICATIONS UNDERGROUND
- JOINT(OH) EX JOINT OH

REV	DESCRIPTION	DATE

65% - NOT FOR CONSTRUCTION



BKF
ENGINEERS / SURVEYORS / PLANNERS

980 9th Street, Suite 1770
Sacramento, CA 95814
TEL. 916.556.5827

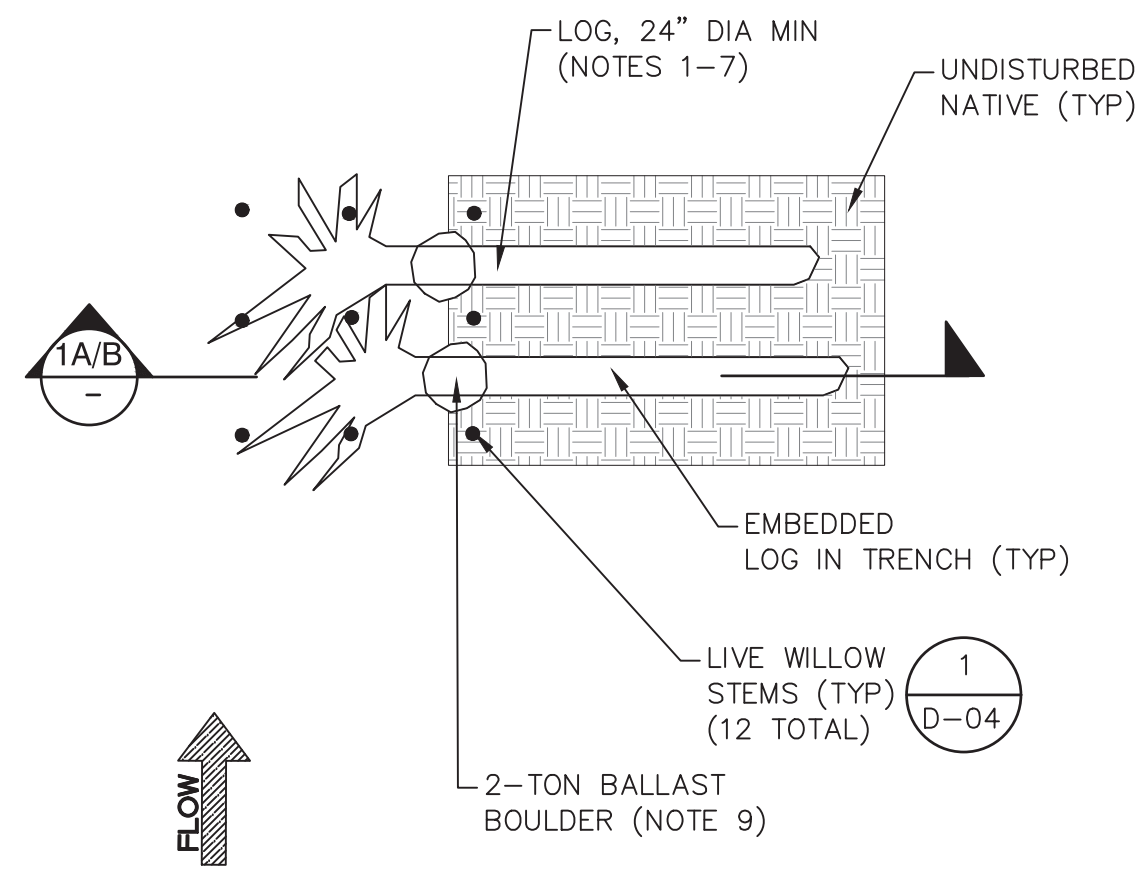
DATE:	5/11/2020	DESIGN:	E. MOHNEY
SCALE:	1" = 10'	DRAWN:	S. NGUYEN
FILE NAME:	09 CD-1.dwg	CHKD:	S. AMPARO
SURVEY NOTE:			

SHEET TITLE
CREEK RESTORATION EXHIBIT
AT EXISTING BRIDGE

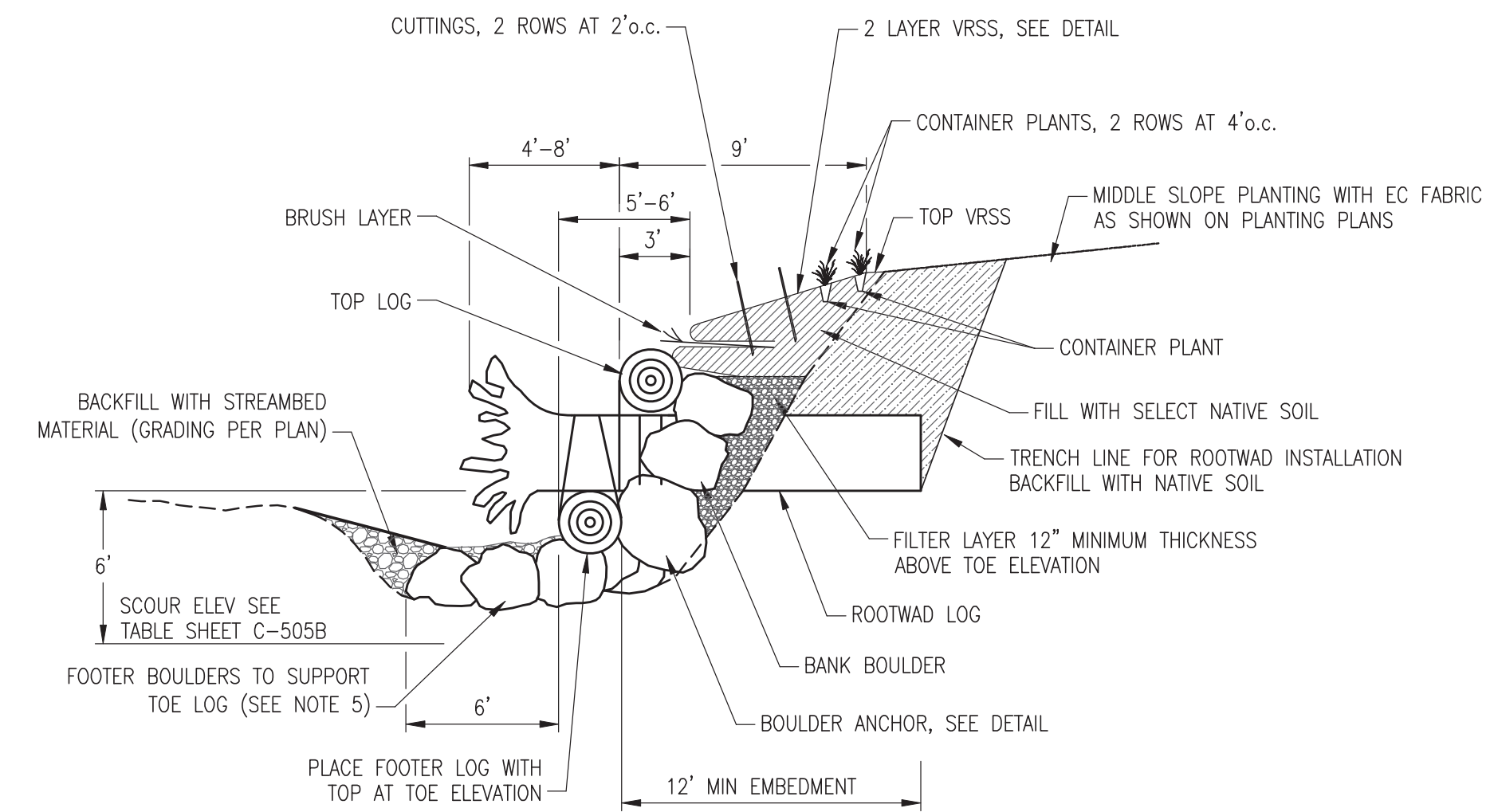
PROJECT TITLE
**DRY CREEK BRIDGE
REPLACEMENT**

PROJECT NUMBER
20141065-21

CD-1
SHEET 14 OF 33

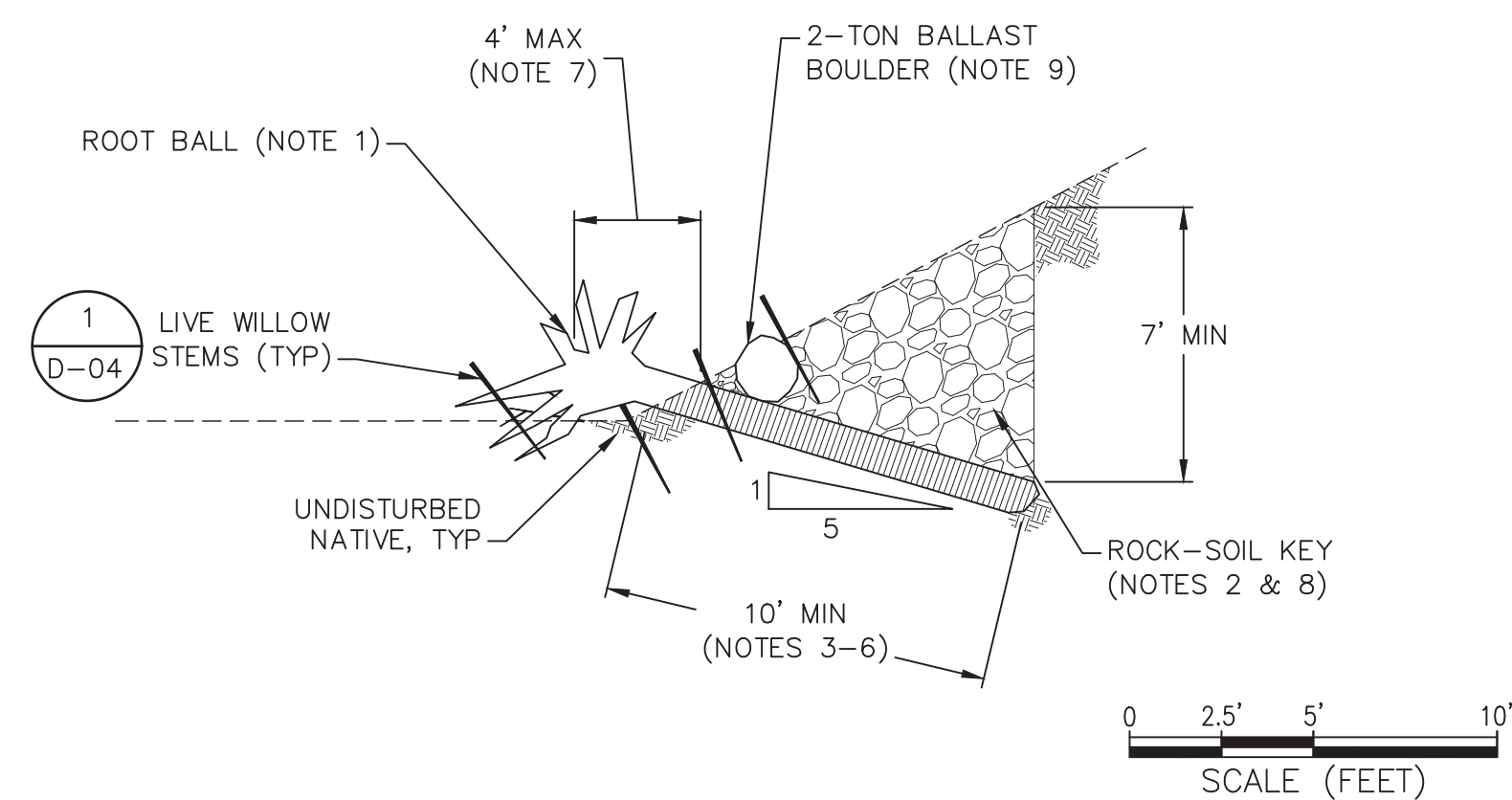


1 **LARGE ROOTWAD HABITAT STRUCTURE (CONCEPTUAL)**
 PLAN VIEW AT EXISTING BRIDGE SCALE: 1" = 5'

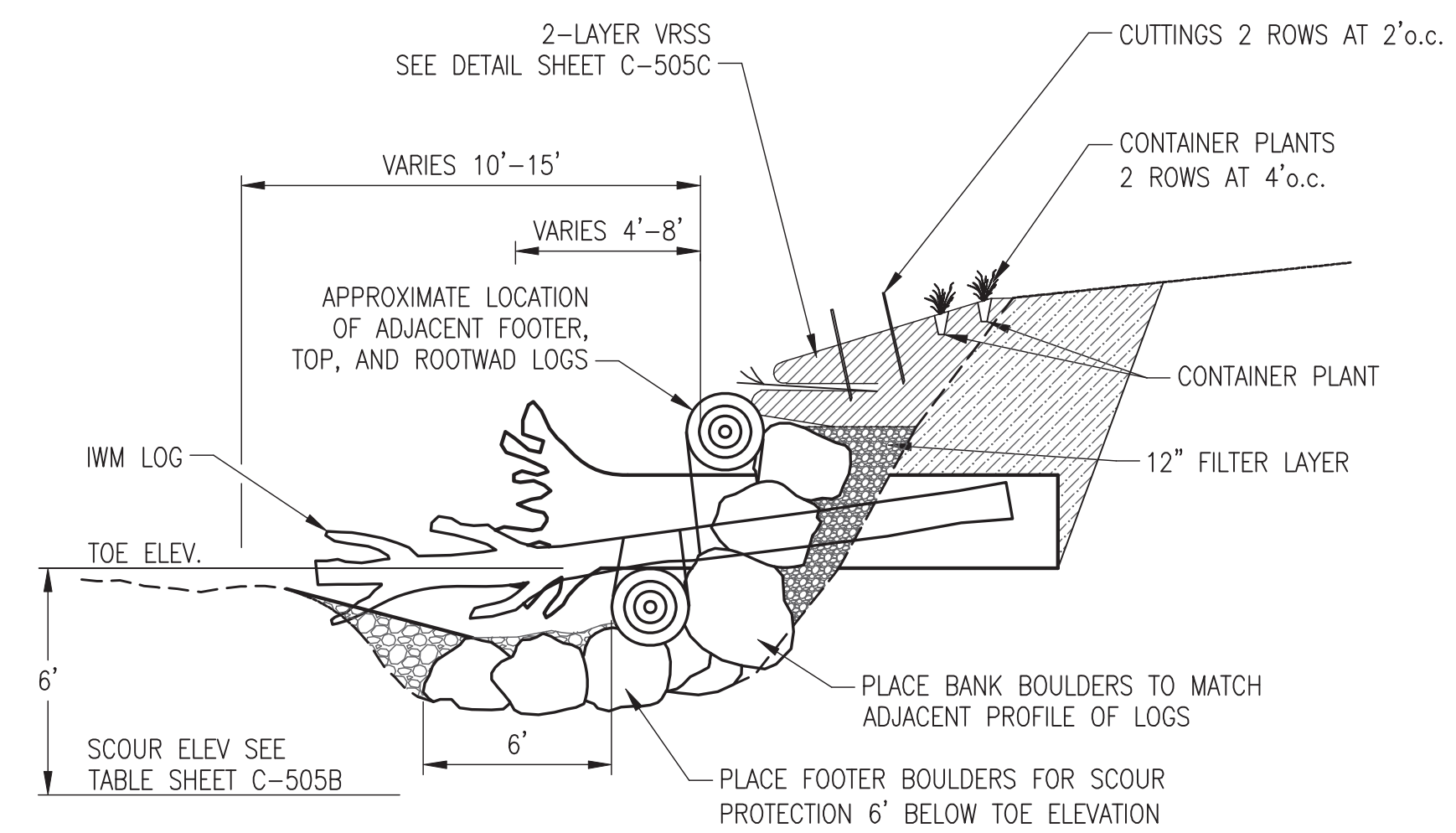


ROCK/ROOTWAD REVETMENT (CONCEPTUAL)
 AT EXISTING BRIDGE

NOTE:
 PLACE FOOTER BOULDERS TO FORM IRREGULAR BUT CONTINUOUS LAYER WITH EACH ROCK BEARING ON ADJACENT ROCKS AT 3 OR MORE POINTS.



1A **LARGE ROOTWAD HABITAT STRUCTURE - AT SLOPE (CONCEPTUAL)**
 SECTION VIEW AT EXISTING BRIDGE SCALE: 1" = 5'



ROCK/ROOTWAD REVETMENT (CONCEPTUAL)
 AT EXISTING BRIDGE

NOTE:
 PLACE FOOTER BOULDERS TO FORM IRREGULAR BUT CONTINUOUS LAYER WITH EACH ROCK BEARING ON ADJACENT ROCKS AT 3 OR MORE POINTS.

65% - NOT FOR CONSTRUCTION

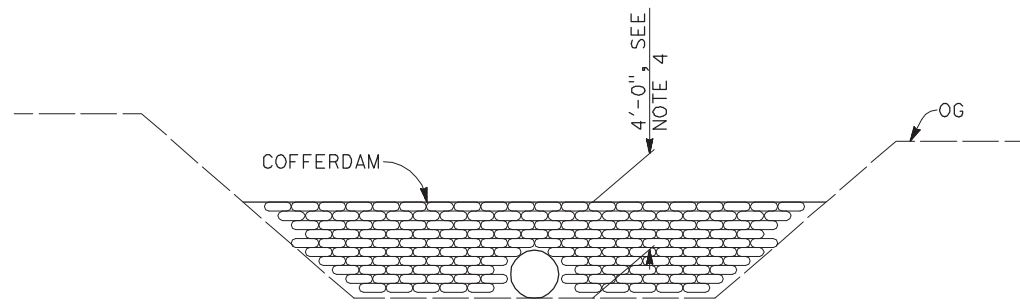
REV	DESCRIPTION	DATE



DATE:	5/11/2020	DESIGN:	E. MOHNEY
SCALE:	1" = 10'	DRAWN:	S. NGUYEN
FILE NAME:	09 CD-1.dwg	CHKD:	S. AMPARO
SURVEY NOTE:			

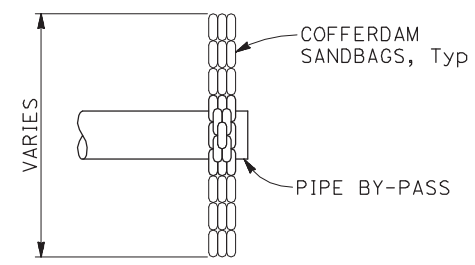
SHEET TITLE CONCEPTUAL ROOT WAD USE AT EXISTING BRIDGE	
PROJECT TITLE DRY CREEK BRIDGE REPLACEMENT	
PROJECT NUMBER 20141065-21	CD-1 SHEET 14 OF 33

Appendix D. Water Diversion Exhibit



PIPE BY-PASS,
MATCH EXISTING
SLOPE OF CREEK

SECTION A
NO SCALE



DETAIL 1
NO SCALE

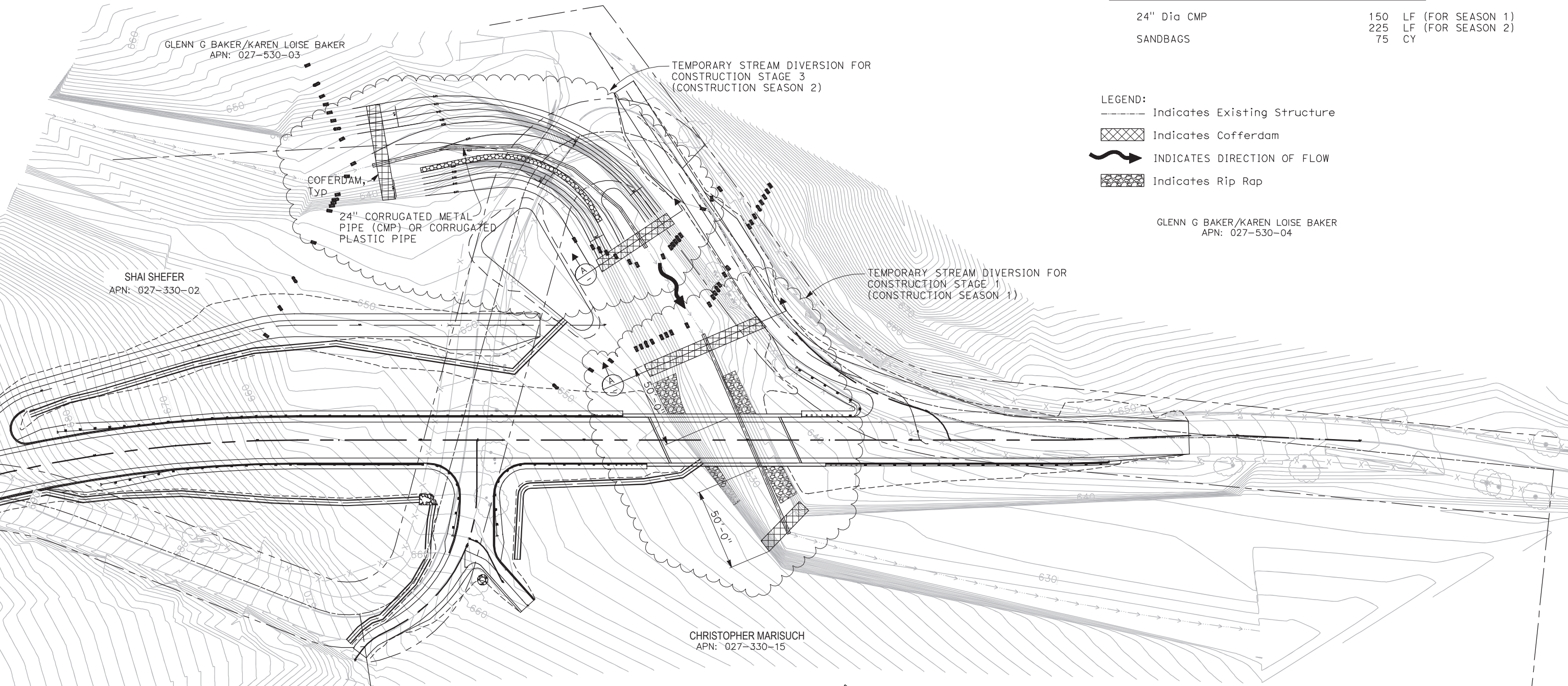
- DEWATERING NOTES:**
1. TEMPORARY WATER DIVERSION FACILITIES SHALL BE IN PLACE PRIOR TO INITIATION OF OTHER WORK. WATER DIVERSION FACILITIES ARE ONLY REQUIRED IF WATER IS FLOWING IN THE CREEK.
 2. PRIOR TO REMOVING WATER DIVERSION FACILITIES OR RELEASING WATER TO THE PROJECT AREA, ALL BANK PROTECTION AND RESTORING SHALL BE COMPLETE.
 3. UPON COMPLETION OF THE PROJECT, ALL MATERIAL USED IN THE TEMPORARY BYPASS SHALL BE REMOVED FROM THE SITE.
 4. NUMBER OF BAGS AND ARRANGEMENT MAY VARY WITH ON-SITE CONDITIONS.
 5. WATER DIVERSION FACILITIES TO BE DESIGNED BY CONTRACTOR

APPROXIMATE TEMPORARY WATER DIVERSION QUANTITIES

24" Dia CMP	150 LF (FOR SEASON 1)
SANDBAGS	225 LF (FOR SEASON 2)
	75 CY

- LEGEND:**
- Indicates Existing Structure
 - ▣ Indicates Cofferdam
 - INDICATES DIRECTION OF FLOW
 - ▨ Indicates Rip Rap

GLENN G BAKER/KAREN LOISE BAKER
APN: 027-530-04



CHRISTOPHER MARISUCH
APN: 027-330-15

PLAN
1" = 30'



MADLINE M HERLIHY
APN: 027-330-17

Appendix E. Species Observed in the BSA

Dry Creek Bridge Replacement Project- List of Species Observed in the BSA

Scientific Name	Common Name	Native/Non-native/Invasive
Plant Species		
ANGIOSPERMS (EUDICOTS)		
ANACARDIACEAE		
<i>Toxicodendron diversilobum</i>	poison oak	native
APIACEAE		
<i>Angelica californica</i>	California angelica	native
<i>Anthriscus caucalis</i>	bur chervil	non-native
<i>Coriandrum sativum</i>	cilantro	non-native
<i>Sanicula crassicaulis</i>	gamble weed	native
APOCYNACEAE		
<i>Vinca major</i>	bigleaf periwinkle	non-native/invasive
ASTERACEAE		
<i>Artemisia douglasiana</i>	California mugwort	native
<i>Baccharis glutinosa</i>	Douglas' baccharis	native
<i>Carduus pycnocephalus</i>	Italian thistle	non-native/invasive
<i>Erigeron</i> sp.	unknown	unknown
<i>Madia elegans</i>	common madia	native
<i>Rhagadiolus stellatus</i>	endive daisy	non-native
BETULACEAE		
<i>Alnus rhombifolia</i>	white alder	native
BORAGINACEAE		
<i>Phacelia</i> sp.	phacelia	native
BRASSICACEAE		
<i>Cardamine californica</i>	California toothwort	native
<i>Cardamine oligosperma</i>	bitter cress	native
CAPRIFOLIACEAE		
<i>Sambucus nigra</i>	black elderberry	native
<i>Symphoricarpos</i> sp.	snowberry	native
CARYOPHYLLACEAE		
<i>Cerastium glomeratum</i>	mouse ear chickweed	non-native
<i>Petrorhagia</i> sp.	pink grass	non-native
<i>Stellaria media</i>	common chickweed	non-native
CONVOLVULACEAE		
<i>Convolvulus arvensis</i>	field bindweed	non-native
DATISCAEAE		
<i>Datisca glomerata</i>	durango root	native
ERICACEAE		
<i>Arbutus menziesii</i>	Pacific madrone	native
<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	whiteleaf manzanita	native
EUPHORBIACEAE		
<i>Euphorbia</i> sp.	spurge	unknown
FABACEAE		
<i>Acmispon americanus</i>	spanish lotus	native
<i>Cytisus scoparius</i>	scotch broom	non-native/invasive
<i>Lathyrus cicera</i>	red peavine	non-native

<i>Lathyrus hirsutus</i>	rough pea	non-native
<i>Lathyrus latifolius</i>	everlasting pea	non-native
<i>Lupinus</i> sp.	lupine	native
<i>Melilotus indicus</i>	annual yellow sweetclover	non-native/invasive
<i>Rupertia physodes</i>	California tea	native
<i>Trifolium hirtum</i>	rose clover	non-native/invasive
<i>Trifolium incarnatum</i>	crimson clover	non-native
<i>Trifolium</i> sp.	clover	unknown
<i>Vicia</i> sp.	vetch	non-native/invasive
FAGACEAE		
<i>Quercus agrifolia</i>	coast live oak	native
<i>Quercus kelloggii</i>	California black oak	native
<i>Quercus wizlizeni</i>	interior live oak	native
<i>Quercus</i> × <i>morehus</i>	oracle oak	native
GERANIACEAE		
<i>Geranium dissectum</i>	cut leaved geranium	non-native/invasive
<i>Geranium purpureum</i>	herb robert	non-native
JUGLANDACEAE		
<i>Juglans hindsii</i>	northern California black walnut	native
<i>Juglans regia</i>	English walnut	non-native
LAMIACEAE		
<i>Mentha spicata</i>	spearmint	non-native
<i>Prunella</i> sp.	self heal	non-native
<i>Stachys rigida</i>	rough hedgenettle	native
LAURACEAE		
<i>Umbellularia californica</i>	California bay	native
MONTIACEAE		
<i>Claytonia</i> sp.	miner's lettuce	native
OLEACEAE		
<i>Fraxinus latifolia</i>	Oregon ash	native
ONAGRACEAE		
<i>Clarkia gracilis</i> ssp. <i>gracilis</i>	graceful clarkia	native
PLANTAGINACEAE		
<i>Plantago lanceolata</i>	English plantain	non-native
POLEMONIACEAE		
<i>Leptosiphon</i> sp.	unknown	native
POLYGONACEAE		
<i>Eriogonum nudum</i>	naked buckwheat	native
<i>Rumex</i> sp.	dock	unknown
PRIMULACEAE		
<i>Lysimachia arvensis</i>	scarlet pimpernel	non-native
<i>Primula clevelandii</i>	padre's shooting star	native
RANUNCULACEAE		
<i>Ranunculus muricatus</i>	pricklefruit buttercup	non-native
<i>Ranunculus occidentalis</i>	western buttercp	native
ROSACEAE		
<i>Drymocallis glandulosa</i>	sticky cinquefoil	native

<i>Fragaria vesca</i>	wild strawberry	native
<i>Heteromeles arbutifolia</i>	toyon	native
<i>Malus</i> sp.	apple	non-native
<i>Physocarpus capitatus</i>	Pacific ninebark	native
<i>Rosa</i> sp.	rose	unknown
<i>Rubus ursinus</i>	California blackberry	native
<i>Rubus armeniacus</i>	Himalayan blackberry	non-native/invasive
RUBIACEAE		
<i>Galium aparine</i>	common bedstraw	native
<i>Sherardia arvensis</i>	field madder	non-native
SALICACEAE		
<i>Salix laevigata</i>	red willow	native
SAPINDACEAE		
<i>Aesculus californica</i>	California buckeye	native
SAXIFRAGACEAE		
<i>Lithophragma parviflorum</i>	pink woodland star	native
SCROPHULARIACEAE		
<i>Verbascum blattaria</i>	moth mullein	non-native
SOLANACEAE		
<i>Nicotiana acuminata</i>	manyflower tobacco	non-native
<i>Datura stramonium</i>	jimsonweed	non-native
<i>Nicotiana glauca</i>	tree tobacco	non-native/invasive
<i>Solanum americanum</i>	American black nightshade	native
URTICACEAE		
<i>Urtica urens</i>	dwarf nettle	non-native
VERBENACEAE		
<i>Verbena litoralis</i>	seashore vervain	non-native
VITACEAE		
<i>Vitis californica</i>	California wild grape	native
ZYGOPHYLLACEAE		
<i>Tribulus terrestris</i>	puncture vine	non-native
ANGIOSPERMS (MONOCOTS)		
ARACEAE		
<i>Lemna</i> sp.	duckweed	native
CYPERACEAE		
<i>Carex nudata</i>	naked sedge	native
<i>Carex</i> sp.	sedge	unknown
<i>Cyperus eragrostis</i>	tall cyperus	native
IRIDACEAE		
<i>Iris fernaldii</i>	fernald's iris	native
<i>Sisyrinchium bellum</i>	blue eyed grass	native
JUNCACEAE		
<i>Juncus</i> sp.	rush	native
LILIACEAE		
<i>Allium triquetrum</i>	three-cornered leek	non-native
<i>Chlorogalum</i> sp.	soap plant	native
<i>Dichelostemma</i> sp.	unknown	native

<i>Trillium</i> sp.	wakerobin	native
POACEAE		
<i>Avena barbata</i>	slender oat	non-native/invasive
<i>Briza minor</i>	little quaking grass	non-native
<i>Bromus carinatus</i>	California brome grass	native
<i>Bromus hordeaceus</i>	soft brome	non-native/invasive
<i>Bromus madritensis</i>	foxtail chess	non-native/invasive
<i>Bromus</i> sp.	brome	unknown
<i>Deschampsia</i> sp.	hairgrass	native
<i>Elymus caput-medusae</i>	medusa head	non-native/invasive
<i>Elymus glaucus</i>	blue wild rye	native
<i>Festuca perennis</i>	Italian rye grass	non-native/invasive
<i>Hordeum</i> sp.	barley	unknown
TYPHACEAE		
<i>Typha</i> sp.	cattail	unknown
GYMNOSPERMS		
CUPRESSACEAE		
<i>Juniperus</i> sp.	juniper	unknown
PINACEAE		
<i>Picea engelmannii</i>	Engelmann spruce	native
<i>Pseudotsuga menziesii</i>	Douglas fir	native
PTERIDOPHYTES		
PTERIDACEAE		
<i>Pellaea andromedifolia</i>	coffee fern	native

Scientific Name	Common Name	Native Status
Wildlife Species		
BIRDS		
<i>Aphelocoma californica</i>	California scrub-jay	native
<i>Baeolophus inornatus</i>	oak titmouse	native
<i>Cathartes aura</i>	turkey vulture	native
<i>Corvus brachyrhynchos</i>	American crow	native
<i>Corvus corax</i>	common raven	native
<i>Junco hyemalis</i>	dark-eyed junco	native
<i>Melanerpes formicivorus</i>	acorn woodpecker	native
<i>Melospiza crissalis</i>	California towhee	native
<i>Pheucticus melanocephalus</i>	black-headed Grosbeak	native
<i>Sayornis nigricans</i>	black phoebe	native
<i>Setophaga petechia</i>	yellow warbler	native
<i>Tachycineta bicolor</i>	tree swallow	native
<i>Trochilinae</i> sp.	hummingbird	native
<i>Turdus migratorius</i>	American robin	native
<i>Vireo cassinii</i>	Cassin's vireo	native
MAMMALS		
<i>Odocoileus virginianus</i>	white-tailed deer	native
<i>Thomomys bottae</i>	Botta's pocket gopher	native
<i>Chiroptera</i> sp.	bats	native

Appendix F. Representative Photographs of the BSA



Figure 1. Dry Creek Bridge taken from the southwest bank of Dry Creek facing northeast; February 2018



Figure 2. Dry Creek Road Bridge facing east; April 2017



Figure 3. Dry Creek Road northern approach from the southeast; April 2017



Figure 4. Dry Creek Road Bridge northern approach from the southwest; April 2017



Figure 5. Dry Creek facing north taken from ontop of Dry Creek Bridge; April 2017



Figure 6. Dry Creek channel south of bridge and facing upstream; April 2017



Figure 7. Underneath Dry Creek Bridge facing east; May 2017



Figure 8. Grassland facing north of Dry Creek Road and west of Dry Creek Bridge; April 2017



Figure 9. Grassland facing east toward Dry Creek; April 2017



Figure 10. Dry Creek Bridge taken from the southeast bank of Dry Creek facing north; February 2018