**COUNTY OF MENDOCINO**
**DEPARTMENT OF PLANNING AND BUILDING SERVICES**
860 NORTH BUSH STREET · UKIAH · CALIFORNIA · 95482
752 SOUTH FRANKLIN STREET · FT. BRAGG · CALIFORNIA · 95437

JULIA KROG, DIRECTOR
TELEPHONE: 707-234-6650
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pbs@mendocinocounty.gov
www.mendocinocounty.org/pbs

August 27, 2025

Planning – Fort Bragg
Department of Transportation
Environmental Health -Fort Bragg
Building Inspection - Fort Bragg
Air Quality Management
Archaeological Commission
Sonoma State University
Caltrans
Department of Forestry/ CalFire
-Land Use
-Resource Management
Department of Fish and Wildlife
US Army Corps. Of Engineers
California Coastal Commission
Regional Water Quality Control Board
Cloverdale Rancheria
Redwood Valley Rancheria
Sherwood Valley Band of Pomo Indians
Mendocino Fire District

**CASE#:** CDP_2025-0006
**DATE FILED:** 3/4/2025
**OWNER:** California State Parks
**APPLICANT:** Brian Dewey, Assistant Deputy Director
**AGENT:** Joel Bonilla, Environmental Coordinator
**REQUEST:** Coastal Development Permit to remove an existing failed bridge across Little River with a new prefabricated bridge and perform habitat restoration at Van Damme State Park.
**LOCATION:** In the Coastal Zone, 0.3 miles north of Little River, on the east side of State Route 1 (SR-1), in Van Damme State Park, located at 8001 N. Highway 1 (APN 121-090-01).
**STAFF PLANNER:** Liam Crowley
**RESPONSE DUE DATE:** September 10 2025

**PROJECT INFORMATION CAN BE FOUND AT:**
www.mendocinocounty.org
Select "Government" from the drop-down; then locate Planning and Building Services/Public Agency Referrals.

Mendocino County Planning & Building Services is soliciting your input, which will be used in staff analysis and forwarded to the appropriate public hearing. You are invited to comment on any aspect of the proposed project(s). Please convey any requirements or conditions your agency requires for project compliance to the project coordinator at the above address, or submit your comments by email to pbs@mendocinocounty.org. Please note the case number and name of the project coordinator with all correspondence to this department.

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We have reviewed the above application and recommend the following (please check one):

☐ No comment at this time.

☐ Recommend conditional approval (attached).

☐ Applicant to submit additional information (attach items needed, or contact the applicant directly, copying Planning and Building Services in any correspondence you may have with the applicant)

☐ Recommend denial (Attach reasons for recommending denial).

☐ Recommend preparation of an Environmental Impact Report (attach reasons why an EIR should be required).

☐ Other comments (attach as necessary).

**REVIEWED BY:**

Signature _____ Department _____ Date _____

**CASE:** CDP_2025-0006

**OWNER:** California State Parks

**APPLICANT:** Brian Dewey, Assistant Deputy Director, California State Parks

**AGENT:** Joel Bonilla, Environmental Coordinator, California State Parks

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**APN/S:** 121-090-01

**PARCEL SIZE:** 140± Acres

**GENERAL PLAN:** Open Space Department of Parks & Recreation (OSDPR)

**ZONING:** Open Space (OS)

**EXISTING USES:** Open Space, Passive Recreation

**DISTRICT:** 5 (Williams)

**RELATED CASES:** See below.

**REFERRAL AGENCIES**

**LOCAL**
- ☒ Air Quality Management District
- ☒ Archaeological Commission
- ☒ Building Division (Fort Bragg)
- ☒ Department of Transportation (DOT)
- ☒ Environmental Health (EH)
- ☒ Mendocino Fire Protection District
- ☒ Planning Division (Fort Bragg)
- ☒ Sonoma State University

**STATE**
- ☒ CALFIRE (Land Use)
- ☒ CALFIRE (Resource Management)
- ☒ California Coastal Commission
- ☒ California Dept. of Fish & Wildlife
- ☒ CALTRANS
- ☒ Regional Water Quality Control Board

**FEDERAL**
- ☒ US Army Corps. of Engineers

**TRIBAL**
- ☒ Cloverdale Rancheria
- ☒ Redwood Valley Rancheria
- ☒ Sherwood Valley Band of Pomo Indians

**ADDITIONAL INFORMATION:** Prior permits on the property included:

- **HZ236496:** Monitoring Well permit for geotechnical drilling and soil sampling associated with the subject bridge replacement project. Approved 01/28/2022.
- **CDP_2016-0004:** Coastal Development Permit to make a series of facility improvements at Van Damme State Park in campsite, parking, and trail areas. Improvements included but were not limited to construction of new accessible parking stalls, installation of CXT vault restrooms, removal of slide debris and installation of a retaining wall, replacement of interpretive information signs, and streambank stabilization. Approved 05/28/2020.
- **CDP_2001-0028:** Coastal Development Permit for the replacement of two vehicle bridges and relocation of an existing sewer line below the streambed in the Van Damme campground at Van Damme State Park. Withdrawn 10/26/2004.

Attachments include the following:
- Application Form (PDF Pages 3-7)
- Project Description (PDF Pages 8-12)
- Plans (PDF Pages 13-37)
- Biological Resources Assessment (PDF Pages 38-129)
- Special Status Plant Survey Report (PDF Pages 130-168)
- Alternatives Analysis (PDF Pages 169-171)
- Restoration Plan (PDF Pages 172-192)
- Historical Resource Determination (PDF Pages 193-194)
- CEQA Notice of Exemption (PDF Page 195)

**STAFF PLANNER:** LIAM CROWLEY **DATE:** 8/25/2025

## ENVIRONMENTAL DATA

**1. MAC**:
GIS
*None*

**2. FIRE HAZARD SEVERITY ZONE:**
CALFIRE FRAP maps/GIS
*High*

**3. FIRE RESPONSIBILITY AREA:**
CALFIRE FRAP maps/GIS
*State Responsibility Area (SRA)*

**4. FARMLAND CLASSIFICATION:**
GIS
*Semi-Agricultural & Rural Commercial Land (sAC) and Nonagricultural & Natural Vegetation (nv)*

**5. FLOOD ZONE CLASSIFICATION:**
FEMA Flood Insurance Rate Maps (FIRM)
*Yes*

**6. COASTAL GROUNDWATER RESOURCE AREA:**
Coastal Groundwater Study/GIS
*Marginal Water Resources (MWR)*

**7. SOIL CLASSIFICATION:**
Mendocino County Soils Study Eastern/Western Part
*Soil Unit No. 224*

**8. PYGMY VEGETATION OR PYGMY CAPABLE SOIL:**
LCP maps, Pygmy Soils Maps; GIS
*None*

**9. WILLIAMSON ACT CONTRACT:**
GIS/Mendocino County Assessor's Office
*None*

**10. TIMBER PRODUCTION ZONE:**
GIS
*None*

**11. WETLANDS CLASSIFICATION:**
GIS
*Little River (WTN Wetland Tidal Natural)*

**12. EARTHQUAKE FAULT ZONE:**
Earthquake Fault Zone Maps; GIS
*None*

**13. AIRPORT LAND USE PLANNING AREA:**
Airport Land Use Plan; GIS
*None*

**14. SUPERFUND/BROWNFIELD/HAZMAT SITE:**
GIS; General Plan 3-11
*None*

**15. NATURAL DIVERSITY DATABASE:**
CA Dept. of Fish & Wildlife Rarefind Database/GIS
*Yes*

**16. STATE FOREST/PARK/RECREATION AREA ADJACENT:**
GIS; General Plan 3-10
*Yes*

**17. LANDSLIDE HAZARD:**
Hazards and Landslides Map; GIS; Policy RM-61; General Plan 4-44
*Yes*

**18. WATER EFFICIENT LANDSCAPE REQUIRED:**
Policy RM-7; General Plan 4-34
*No*

**19. WILD AND SCENIC RIVER:**
www.rivers.gov (Eel Only); GIS
*None*

**20. SPECIFIC PLAN/SPECIAL PLAN AREA:**
Various Adopted Specific Plan Areas; GIS
*None*

**21. STATE CLEARINGHOUSE REQUIRED:**
Policy
*Yes*

**22. OAK WOODLAND AREA:**
USDA
*None*

**23. HARBOR DISTRICT:**
Sec. 20.512
*None*

### FOR PROJECTS WITHIN THE COASTAL ZONE ONLY

**24. LCP LAND USE CLASSIFICATION:**
LCP Land Use maps/GIS
*Riparian Vegetation, Flooding*

**25. LCP LAND CAPABILITIES & NATURAL HAZARDS:**
LCP Land Capabilities maps/GIS; 20.500
*Flooding, Marine Terrace Deposits*

**26. LCP HABITATS & RESOURCES:**
LCP Habitat maps/GIS; 20.496
*Coastal Forest, Riparian, Perennial Stream, Anadromous Stream*

**27. COASTAL COMMISSION APPEALABLE AREA:**
Post LCP Certification Permit and Appeal Jurisdiction maps/GIS; 20.544
*Yes*

**28. CDP EXCLUSION ZONE:**
CDP Exclusion Zone maps/GIS
*None*

**29. HIGHLY SCENIC AREA:**
Highly Scenic & Tree Removal Area Maps/GIS; Secs. 20.504.015, 20.504.020
*Conditional Highly Scenic Area*

**30. BIOLOGICAL RESOURCES & NATURAL AREAS:**
Biological Resources & Natural Area Map; GIS; General Plan 4-9
*N/A*

**31. BLUFFTOP GEOLOGY:**
GIS; 20.500.020
*None*

Docusign Envelope ID: 278C5B28-ECAE-433F-9294-EDCBAB00FB6A

**COUNTY OF MENDOCINO**
**DEPT OF PLANNING AND BUILDING SERVICES**
120 WEST FIR STREET
FORT BRAGG, CA 95437
Telephone: 707-964-5379
FAX: 707-961-2427
pbs@co.mendocino.ca.us
www.co.mendocino.ca.us/planning

| Office Use Only | |
|---|---|
| Case No(s) | CDP_2025-0006 |
| CDF No(s) | |
| Date Filed | 3/3/2025 |
| Fee | $ 8,624.00 |
| Receipt No. | PRJ_065842 |
| Received by | Matt Goines |

# COASTAL ZONE APPLICATION FORM

## APPLICANT

Name: Brian Dewey, Assitant Deputy Director, California State Parks
Mailing Address: 2241 Harvard Street, Suite 200, Sacramento CA
City: Sacramento State: CA Zip Code: 95815 Phone:

## PROPERTY OWNER

Name: California State Parks
Mailing Address: 2241 Harvard Street, Suite 200, Sacramento CA
City: Sacramento State: CA Zip Code: 95815 Phone:

## AGENT

Name: Joel Bonilla, Environmental Coordinator, California State Parks
Mailing Address: 2241 Harvard Street, Suite 200, Sacramento CA
City: Sacramento State: CA Zip Code: 95815 Phone: (279) 499-1205

## PARCEL SIZE

166.4 ☐ Square feet ■ Acres

## STREET ADDRESS OF PROJECT

8001 CA-1, Little River, CA 95456

## ASSESSOR'S PARCEL NUMBER(S)

12109001 (Large parcel, but small project area)

I certify that the information submitted with this application is true and accurate.

DocuSigned by: Joel Bonilla 7AF3DCB045DD425... — 2/13/2025
Signature of Applicant/Agent — Date

DocuSigned by: Brian Dewey 4B24ADBC7E7B4B1... — 2/19/2025
Signature of Owner — Date

Docusign Envelope ID: 278C5B28-ECAE-433F-9294-EDCBAB00FB6A

# COASTAL ZONE - SITE AND PROJECT DESCRIPTION QUESTIONNAIRE

The purpose of this questionnaire is to relate information concerning your application to the Planning and Building Services Department and other agencies who will be reviewing your project proposal. Please remember that the clearer picture that your give us of your project and the site, the easier it will be to promptly process your application. Please answer all questions. Those questions which do not pertain to your project, please indicate "Not Applicable" or "N/A".

## THE PROJECT

1. Describe your project and include secondary improvements such as wells, septic systems, grading, vegetation removal, roads, etc.

California State Parks proposes a Habitat Restoration and Bridge replacement project at Van Damme State Park. The western Little River bridge is located approximately 0.5 miles inland on Park Road and spans the Little River near Campsite 20 and the hike and bike campsite. The bridge has failed and a temporary rail car bridge has been placed over the bridge for access. State Parks proposes to remove the old western Little River bridge and replace it with a new pre-fabricated bridge. Additionally, a portion of Park Road will be realigned at the bridge approach. Habitat Restoration work includes the following:
-Removal of existing fish passage impediment/barrier associated with old bridge (removal of old ford and retaining walls)
-Site Restoration (Restore and contour slopes of locations where old bridge structure was removed, restore slope failure locations just downstream, incorporate woody debris in stream as slope protection, erosion control, etc)

2. If the project is residential, please complete the following: Not applicable.

| TYPE OF UNIT | NUMBER OF STRUCTURES | SQUARE FEET PER DWELLING UNIT |
|---|---|---|
| ☐ Single Family | | |
| ☐ Mobile Home | | |
| ☐ Duplex | | |
| ☐ Multifamily | | |

If Multifamily, number of dwelling units per building: _____

3. If the project is commercial, industrial, or institutional, complete the following: Not applicable.

Total square footage of structures: The bridge is 49-ft long with two 12-ft wide traffic lanes
Estimated employees per shift: _____
Estimated shifts per day: _____
Type of loading facilities proposed: _____

4. Will the proposed project be phased? ☐ Yes ■ No
If Yes, explain your plans for phasing.

The project is anticipated to take 5 months. Construction activities would occur during daylight hours during the driest time of the year (June through October). Prior to construction commencing at the bridge site, the road into the park may need to cleared of low hanging tree limbs. Construction staging will be at campsites 20 and 21. Both sites are approximately 1500 square feet.

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12. Utilities will be supplied to the site as follows:

A. Electricity
- ☐ Utility Company (service exists to the parcel).
- ☐ Utility Company (requires extension of services to site: _____ feet _____ miles
- ☐ On Site generation, Specify: The bridge does not require utilities, but will support utilities along the side of the bridge.
- ☒ None

B. Gas
- ☐ Utility Company/Tank
- ☐ On Site generation, Specify: _____
- ☒ None

C. Telephone: ☐ Yes ☒ No

13. Will there by any exterior lighting? ☐ Yes ☒ No
If yes, describe below and identify the location of all exterior lighting on the plot plan and building plans.

14. What will be the method of sewage disposal?

- ☐ Community sewage system, specify supplier _____
- ☐ Septic Tank
- ☒ Other, specify This project will not have sewage disposal. This is a habitat enhancement and bridge replacement project.

15. What will be the domestic water source?

- ☐ Community water system, specify supplier _____
- ☐ Well
- ☐ Spring
- ☒ Other, specify This project does not require a water source.

16. Is any grading or road construction planned? ☒ Yes ☐ No
If yes, grading and drainage plans may be required. Also, describe the terrain to be traversed (e.g., steep, moderate slope, flat, etc.).

For grading and road construction, complete the following:

A. Amount of cut: 550 cubic yards
B. Amount of fill: 325 cubic yards
C. Maximum height of fill slope: flush with ground feet
D. Maximum height of cut slope: flush with ground feet
E. Amount of import or export: 159 cubic yards
F. Location of borrow or disposal site: Location of borrow TBD. All removed soil will be disposed at the local landfill.

Docusign Envelope ID: 278C5B28-ECAE-433F-9294-EDCBAB00FB6A

5. Are there existing structures on the property? ■ Yes ☐ No
If yes, describe below and identify the use of each structure on the plot plan.

Western Little River bridge will be removed as a part of this project. Additionally, a short segment of Park Road will be realigned to meet the new bridge.

6. Will any existing structures be demolished? ■ Yes ☐ No
Will any existing structures be removed? ■ Yes ☐ No

If yes to either question, describe the type of development to be demolished or removed, including the relocation site, if applicable.

Western Little River bridge will be removed as a part of this project. Demolition of the existing bridge would take place after the new proposed bridge is in service. The Bridge foundation, abutments, ford and old retaining walls will be removed. Demolished materials would be placed in the project staging areas (for temporary storage) or loaded directly onto trucks and removed from the project site and disposed of properly. Additionally, a short segment of Park Road will be realigned to meet the new bridge. Please refer to the attached plans for additional information.

7. Project Height. Maximum height of structure The bridge match the elevation of existing ground surface feet.

8. Lot area (within property lines): _____ ☐ square feet ■ acres

9. Lot Coverage:

| | EXISTING | NEW PROPOSED | TOTAL |
|---|---|---|---|
| Building coverage (bridge) | -600 to be removed square feet | 1176 square feet | 1176 of bridge square feet |
| Paved area Road | 4500 to be removed square feet | 8050 of new road square feet | 8050 of new road square feet |
| Landscaped area | 0 square feet | 0 square feet | 0 square feet |
| Unimproved area | 0 square feet | 0 square feet | 0 square feet |

GRAND TOTAL: 9226 square feet
(Should equal gross area of parcel)

10. Gross floor area: _____ square feet (including covered parking and accessory buildings).

11. Parking will be provided as follows: Not Applicable

Number of Spaces Existing_____ Proposed_____ Total_____

Number of covered spaces _____ Size_____
Number of uncovered spaces _____ Size_____
Number of standard spaces _____ Size_____
Number of handicapped spaces _____ Size_____

Docusign Envelope ID: 278C5B28-ECAE-433F-9294-EDCBAB00FB6A

17. Will vegetation be removed on areas other than the building sites and roads? ☒ Yes ☐ No
If yes, explain:

12 trees, predominantly red alder, and one grand fir with a 47 dbh will be removed to accommodate the new bridge. The root wad from the grand fir will be salvaged and placed at the base of the slope to promote fish habitat. The root wad will be ballasted and confined with riprap to prevent buoyancy and dislodging. If practical, the material from the red alders will also be used to aid with revegeation. Please refer to the attached biological document for more information.

18. Does the project involve sand removal, mining or gravel extraction? ☐ Yes ☒ No
If yes, detailed extraction, reclamation and monitoring may be required.

19. Will the proposed development convert land currently or previously used for agriculture to another use? ☐ Yes ☒ No
If yes, how many acres will be converted? _____ acres (An agricultural economic feasibility study may be required.)

20. Will the development provide public or private recreational opportunities? ☒ Yes ☐ No
If yes, explain:

The project aims to replace a bridge within Van Damme State Park. The bridge will provide public access to recreational users.

21. Is the proposed development visible from:

A. State Highway 1 or other scenic route? ☐ Yes ☒ No
B. Park, beach or recreation area? ☒ Yes ☐ No

B. Yes. The project is within a State Park.

22. Will the project involve the use or disposal of potentially hazardous materials such as toxic substances, flammables, or explosives? ☐ Yes ☒ No
If yes, explain:

23. Does the development involve diking, filling, dredging or placing structures in open coastal waters, wetlands, estuaries or lakes?

A. Diking ☐ Yes ☒ No
B. Filling ☐ Yes ☒ No
C. Dredging ☐ Yes ☒ No
D. Placement of structures in open coastal waters, wetlands, estuaries or lakes ☐ Yes ☒ No

Amount of material to be dredged or filled? _____ cubic yards.

Location of dredged material disposal site: _____

Has a U.S. Army Corps of Engineers permit been applied for? ☐ Yes ☒ No

If you need additional room to answer any question, attach additional sheets.

State of California • Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION
Northern Service Center • 2241 Harvard St, Suite 200
Sacramento, California 95815

# Little River Restoration and Bridge Replacement
## Project Description

### Background

Van Damme State Park is located 3 miles south of Mendocino on Highway One. The Little River bisects the park. Park Road is an approximately 2-mile-long paved road that meanders along Little River, serving as the park's primary access for vehicle access (see Figure 1). The western Little River Bridge is located approximately 0.5 miles inland on Park Road, spanning the Little River near Campsite 20 and the hike and bike campsite. The original bridge, which was built circa 1951, consisted of a two-span corrugated metal arch on concrete abutments. Years of scour undermined the bridge foundations and it ultimately failed in 2018. A single lane, temporary rail car bridge is in place and carries traffic over the river.

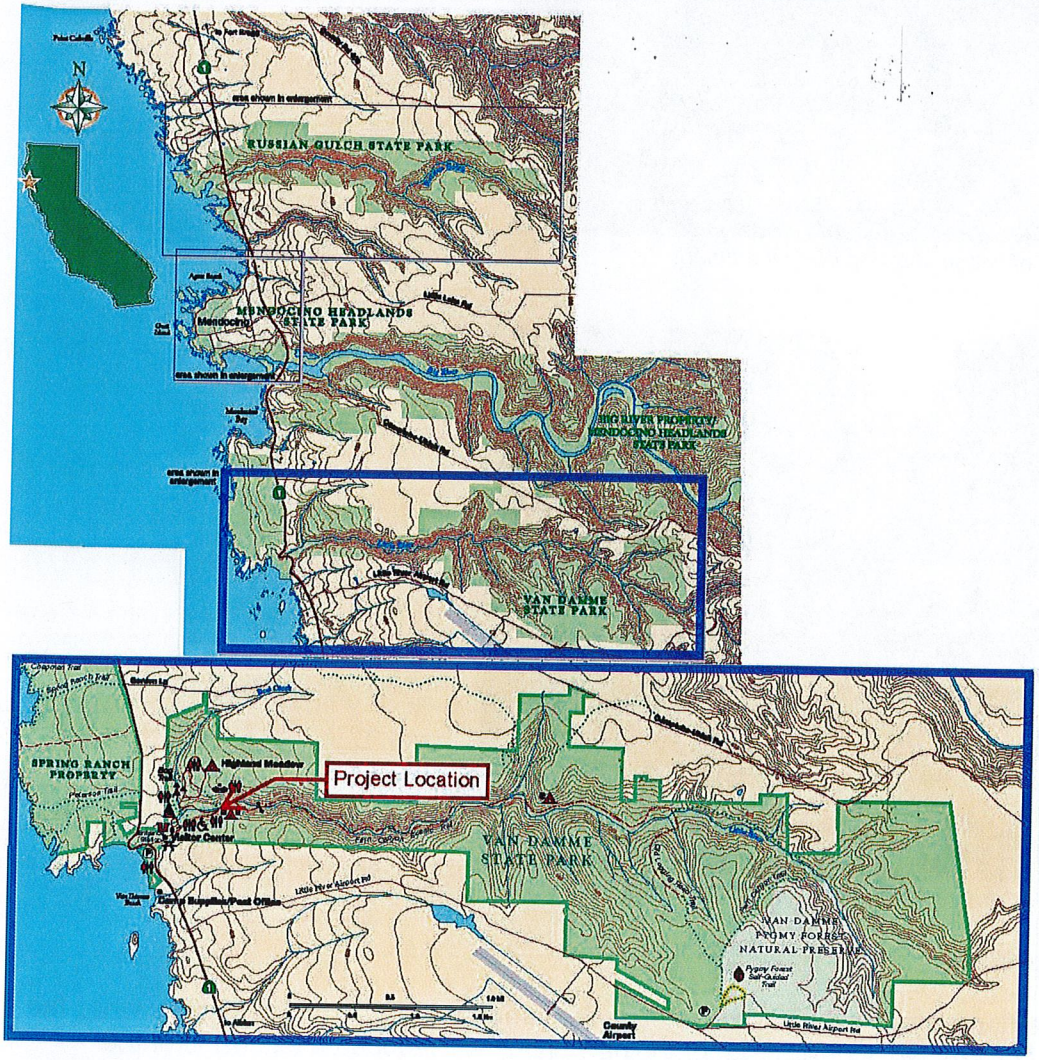



*FIGURE 1*

### Purpose

The single lane, temporary bridge is in need of replacement. The underlying arch culverts are sagging and the concrete abutment on the south arch extends into the river causing both fish passage impediments as well as downstream erosion. The narrowness of the railcar bridge is prohibitive for truck turning movements and the utilities over the bridge are sagging. The entire structure is prone to failure.



*Downstream view of bridge showing fish impediment*



*Upstream view of bridge showing retaining wall and sagging utility*

## Project Description

Access requirements make it necessary to leave the temporary railcar bridge in place while the new bridge is constructed. Construction of the new bridge will require an extension of the roadway on the south side of the river. Pavement conforms will be necessary on the north side of the river. The abutments for the bridge will be placed on a steel pile foundation. Class IV rock

slope protection will be necessary around the abutments to minimize scouring.

The bridge itself will be a pre-fabricated steel girder type with 49-feet of clear span, having a cast-in-place concrete deck. The bridge will have two 12-ft wide traffic lanes, and will be designed for AASHTO HL-93 loading, and as such will not require load posting. It is anticipated that the guardrails and barriers will be constructed of timbers and weathered steel to fit the look and feel of the park. The alignment of the bridge will be more perpendicular to the river than the existing structure. This will aid with river hydraulics and reduce scour.

Site utilities will be hung from the bridge to service the combo building on the north side of the river. This mirrors the current arrangement. Utilities consist of a 4" gravity sewer, a 4" water line, and a 3" electrical conduit. A small amount of trenching will occur outside of the bridge prism to tie into existing utilities, the deepest of which will be for the sewer, on the order of approximately 7-foot depth.

Upon completion of the proposed bridge, the existing bridge and abutments will be removed. All components will be removed including the underlying concrete slab as well as the adjacent retaining wall (upstream, south side). The area will be re-graded to a more natural condition and allowed to revegetate.

There is an area of slope failure approximately 150 feet downstream from the proposed bridge. The plans call for repairing the pavement and re-grading the slope. The slopes will be revegetated with native material. A large Douglas fir tree on the south side of the river will need to be removed to accommodate the new bridge approach. Approximately 30' of the tree trunk and the root wad will be salvaged and placed at the base of this slope to promote fish habitat. The root wad will be ballasted and confined with rip rap to prevent buoyancy and dislodging.

## Construction Methods

Total project duration is anticipated to take up to 5 months. Construction activities would occur during daylight hours during the driest time of year (June through October). Prior to construction commencing at the bridge site, the road into the park may need to be cleared of low hanging tree limbs.

It is anticipated that the river channel will be dewatered with a sandbag or bladder dam, and water then piped via gravity flow through the site and through the northern arch of the existing bridge. Construction staging areas are available on both sides of the bridge at campsites 20 and 21. Each site has a compacted and disturbed area of approximately 1,500 square feet, which is adequate for equipment and material storage. The north staging area is expected to be accessible via the existing temporary bridge. It is expected that brush clearing for the proposed bridge site will use chainsaws and other gas-powered hand tools. Salvaged large woody debris, primarily the large Douglas fir and root wad, will be moved into the river channel and anchored during the regrading of the failed slope on the north side. This is expected to be moved using a truck mounted crane and excavators. The proposed project would require the use of truck-mounted cranes for unloading bridge materials.

Excavation at the abutment foundations would be performed using excavators. Temporary retaining structures are likely needed for soil support at the excavations prior to concrete pouring and backfilling. Abutment foundations will require driving steel H-piles with steel tip protection (H-pile points), using diesel or hydraulic hammers. Pre-drilling, jetting, or vibrating piles will not be permissible for pile installation. The Piles will be driven until refusal is achieved,

and then cut or spliced depending on the elevation at which driving refusal occurs. According to the pile schedule, the deepest pile tip elevation is estimated to be minus-40 feet at abutment 1, approximately 60 feet from the bottom of the river channel. Splicing would require end welding of steel pieces together on site to increase the pile length as required. Once the piles are driven to the appropriate depth, the abutments can be formed. Power tools, pneumatic tools, and hand tools would be used for forming and falsework. Rebar cages for the abutments and footings would be assembled on site. Placement of concrete for the abutments will be done by concrete trucks. It is expected that the trucks will have access to both sides of the river by using the existing railcar bridge.

The prefabricated steel superstructure would likely be delivered to the site as preassembled modular units (including girders, secondary framing, and metal deck forms), transported on a truck flatbed and craned into position. To complete the assembly of the bridge and attachment of the bridge to the abutments, there would be bolting and potential welding that occurs on site. After the installation of the steel bridge, the deck reinforcement would be laid out on site, and the concrete deck would be cast in place. The timber guardrails would be bolted to the concrete deck, after the concrete deck has adequately cured.

Demolition of the existing bridge would take place after the proposed bridge is in service. Demolished materials would be placed in staging areas or loaded directly onto trucks and removed from the project site and disposed of properly.

## Best Management Practices

Best Management Practices (BMPs) will be utilized during construction to avoid or minimize any water quality impacts to the Little River and downstream to the Pacific Ocean. BMPs in this section reflect findings from natural and cultural resource surveys as well as input received from regulatory agencies.

The following BMPs shall be followed by Project personnel to promote pollution prevention and minimize the introduction of pollutants into coastal waters:

- During construction, heavy equipment shall be operated in accordance with standard BMPs. All equipment will be properly maintained such that no leaks of oil, fuel, or residues will take place. Provisions shall be in place to remediate any accidental spills. Materials shall be stored and equipment fueled at least 100 feet from water features, as feasible, or equipment will utilize secondary containment.
- Spill prevention and control measures shall be implemented to ensure the proper handling and storage of petroleum products and other construction materials including a designated fueling and vehicle maintenance area with appropriate berms and protection to prevent any spillage of gasoline or related petroleum products or contact with runoff.
- All food-related trash shall be disposed of in closed containers and removed from the Project Area each day during the construction period. Project personnel shall not feed or otherwise attract wildlife to the Project Area.
- A qualified biologist will regularly survey and inspect all work to ensure compliance with all BMPs. The biologist shall coordinate closely with the State Parks Senior Environmental Scientist regarding scheduling and findings.
- All work shall take place during daylight hours. Lighting of the site and water area is prohibited.

- Prevent the off-site tracking of loose construction and landscape materials by implementing street sweeping, vacuuming, and rumble plates, as appropriate.

- Prevent the discharge of silt or pollutants off of the site when working adjacent to jurisdictional waters. Install BMPs (e.g. silt barriers, sandbags, straw bales) as appropriate.

- Site washout areas shall be at least 100 feet from a storm drain, open ditch or surface water and ensure that runoff flows from such activities do not enter receiving water bodies.

- State Parks requires a Storm Water Soil Loss Prevention Plan (SWSLPP) when the area of surface disturbance is less than one acre. A SWSLPP may therefore be required for the Project.

- Contractors shall ensure that work crews are carefully briefed on the importance of appropriate precautions and reporting any accidental spills. Construction contracts shall contain appropriate penalty provisions, sufficient to offset the cost of retrieving or cleaning up improperly contained foreign materials.

- All erosion and sediment control measures shall be in place prior to the commencement of construction as well as at the end of each workday.

CALIFORNIA DEPARTMENT OF PARKS AND RECREATION
SONOMA-MENDOCINO COAST DISTRICT

# VAN DAMME STATE PARK
## LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

MENDOCINO COUNTY, CA




SONOMA-MENDOCINO
COAST DISTRICT OFFICE
12301 NORTH HWY 1
MENDOCINO, CA
95460


## SHEET INDEX


| | |
|---|---|
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| S1.2 | GENERAL NOTES |
| S2.0 | DEMOLITION PLAN |
| S2.1 | BRIDGE SITE PLAN |
| S2.2 | ABUTMENT PLANS |
| S3.1 | BRIDGE SECTIONS |
| S3.2 | BRIDGE ELEVATIONS |
| S5.1 | TYPICAL DETAILS |
| S5.2 | DETAILS |
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| 617-60 | TIMBER APPROACH GUARDRAIL DETAILS |
| 617-61 | TIMBER APPROACH GUARDRAIL DETAILS |
| L-1 | CIVIL LAYOUT |
| P-1 | CIVIL PROFILE |
| C-1 | CIVIL CONSTRUCTION DETAIL |
| C-2 | CIVIL CONSTRUCTION DETAIL |
| C-3 | CIVIL CONSTRUCTION DETAIL |
| C-4 | CIVIL CONSTRUCTION DETAIL |
| U-1 | UTILITY PLAN |
| SP-1 | SEWER PROFILE |
| WP-2 | WATER PROFILE |
| UD-1 | UTILITY DETAIL |
| SC-1 | STAGE CONSTRUCTION |
| S-1 | SIGNING PLAN |


## LOCATION MAP




NORTH

## VICINITY MAP




NORTH

## BRIDGE DESIGN LOAD

LIVE LOAD: AASHTO HL-93
PERMIT LOADS NOT ALLOWED

## SCOPE OF WORK

THE PROJECT CONSISTS OF THE DEMOLITION OF THE EXISTING BRIDGE AND ABUTMENTS; THE CONSTRUCTION OF A NEW REPLACEMENT BRIDGE IN A NEW LOCATION; SLOPE REPAIR AND ENTRY ROAD REALIGNMENT.

1. INSTALLATION OF DRILLED PILES AND CAST-IN-PLACE CONCRETE ABUTMENTS
2. INSTALLATION OF PRE-FABRICATED WEATHERED STEEL GIRDER BRIDGE
3. REALIGNMENT OF ROAD APPROACH TO NEW BRIDGE LOCATION
4. INSTALLATION OF APPROACH GUARDRAIL
5. REROUTING OF UTILITIES
6. SLOPE REPAIR AT SITE OF EXISTING BRIDGE AND AT AREAS OF SLOPE FAILURE
7. REMOVE THE EXISTING BRIDGE AND ABUTMENTS AFTER INSTALLING NEW BRIDGE

REGISTERED PROFESSIONAL ENGINEER
RYAN J. MILLER
No. 5556
STRUCTURAL
STATE OF CALIFORNIA

DPR ACCESS COMPLIANCE REVIEW
ACCESSIBILITY SECTION
**CERTIFICATION#**

Reviewed by **Date**

ACCESSIBILITY COMPLIANCE AND STATE FIRE MARSHAL SIGNED ORIGINALS ARE ON FILE AT THE DEPARTMENT OF PARKS AND RECREATION,NORTHERN SERVICE CENTER

| | |
|---|---|
| DESIGNED | ALB |
| DRAWN | ALB |
| CHECKED | RJM |
| DATE | 08/16/2024 |

REVISIONS

| No. | Description | Date |
|---|---|---|
| | | |

VAN DAMME STATE PARK
LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

TITLE SHEET

DRAWING NO.

SHEET NO.
S1.0
OF

**PROJECT MILESTONE:**
65% SUBMITTAL


BUEHLER
600 Q STREET, SUITE 200
SACRAMENTO, CA 95811
916 443 0303


c:\revit\2020-014710_Van Damme SP_R22_Central_abliss.buehler.rvt
8/16/2024 1:54:19 PM

# GENERAL NOTES

APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

## GENERAL NOTES
100SN001-1

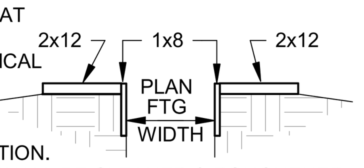
1. INTERPRETATION OF DRAWINGS & SPECIFICATIONS
   a. WHERE SPECIFICATIONS HAVE BEEN PREPARED FOR THIS PROJECT, THEY ARE ARRANGED IN SEVERAL SECTIONS, BUT SUCH SEPARATION SHALL NOT BE CONSIDERED AS THE LIMITS OF THE WORK REQUIRED OF ANY SEPARATE TRADE. THE TERMS AND CONDITIONS OF SUCH LIMITATIONS ARE WHOLLY BETWEEN THE CONTRACTOR AND HIS SUBCONTRACTORS.
   b. IN GENERAL, THE WORKING DETAILS WILL INDICATE DIMENSIONS, POSITION AND KIND OF CONSTRUCTION, AND THE SPECIFICATIONS, QUALITIES AND METHODS. ANY WORK INDICATED ON THE WORKING DETAILS AND NOT MENTIONED IN THE SPECIFICATIONS, OR VICE VERSA, SHALL BE FURNISHED AS THOUGH FULLY SET FORTH IN BOTH. WORK NOT PARTICULARLY DETAILED, MARKED OR SPECIFIED, SHALL BE IDENTICAL OR SIMILAR TO LIKE CASES OF CONSTRUCTION THAT ARE DETAILED, MARKED OR SPECIFIED. IF CONFLICTS OCCUR ON DRAWINGS AND/OR SPECIFICATIONS, THE MOST EXPENSIVE MATERIALS OR METHODS WILL PREVAIL.
   c. SHOULD AN ERROR APPEAR IN THE WORKING DETAILS OR SPECIFICATIONS OR IN WORK DONE BY OTHERS AFFECTING THIS WORK, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AT ONCE AND IN WRITING. IF THE CONTRACTOR PROCEEDS WITH THE WORK SO AFFECTED WITHOUT HAVING GIVEN SUCH WRITTEN NOTICE AND WITHOUT RECEIVING THE NECESSARY APPROVAL, DECISION OR INSTRUCTIONS IN WRITING FROM THE OWNER, THEN HE SHALL HAVE NO VALID CLAIM AGAINST THE OWNER, FOR THE COST OF SO PROCEEDING AND SHALL MAKE GOOD ANY RESULTING DAMAGE OR DEFECT. NO VERBAL APPROVAL, DECISION, OR INSTRUCTION SHALL BE VALID OR BE THE BASIS FOR ANY CLAIM AGAINST THE OWNER, ITS OFFICERS, EMPLOYEES OR AGENTS. THE FOREGOING INCLUDES TYPICAL ERRORS IN THE SPECIFICATIONS OR NOTATIONAL ERRORS IN THE WORKING DETAILS WHERE THE INTERPRETATION IS DOUBTFUL OR WHERE THE ERROR IS SUFFICIENTLY APPARENT AS TO PLACE A REASONABLY PRUDENT CONTRACTOR ON NOTICE THAT, SHOULD HE ELECT TO PROCEED, HE IS DOING SO AT HIS OWN RISK.
2. CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND REGULATIONS.
3. SHOP DRAWING NOTE:
   a. WHEN NOT ADDRESSED BY DIVISION 1 OF THE SPECIFICATIONS, PAPER FORMAT STRUCTURAL SHOP DRAWINGS SHALL BE SUBMITTED IN THE FORM OF THREE COPIES MINIMUM OF EACH SHEET. WHERE SUBMITTALS ARE ELECTRONIC, FORMAT SHALL BE PDF.
   b. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE STRUCTURAL ENGINEER THAT HE UNDERSTANDS THE DESIGN CONCEPT BY INDICATING WHICH MATERIAL HE INTENDS TO FURNISH AND INSTALL, AND BY DETAILING THE FABRICATION AND INSTALLATION METHODS HE INTENDS TO USE ON A STAND ALONE SET OF DOCUMENTS. DUPLICATION OF DESIGN DOCUMENTS FOR THE PURPOSE OF SHOP DRAWINGS IS NOT ACCEPTABLE.
   c. PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER. SHOP DRAWING SUBMITTALS SHALL INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, STRUCTURAL STEEL, REINFORCING STEEL, & GLUE-LAMINATED BEAMS.
   d. PRIOR TO SUBMISSION THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SHALL STAMP SUBMITTALS AS BEING "REVIEWED FOR CONFORMANCE".
   e. SHOP DRAWING SUBMITTALS PROCESSED BY THE STRUCTURAL ENGINEER ARE NOT CHANGE ORDERS.
   f. ANY DETAIL ON THE SHOP DRAWINGS THAT DEVIATES FROM THE CONTRACT DOCUMENTS SHALL CLEARLY BE MARKED WITH THE NOTE "THIS IS A CHANGE".
   g. SHOP DRAWINGS OR CALCULATIONS SUBMITTED FOR REVIEW THAT REQUIRE RESUBMITTAL FOR RE-REVIEW SHALL BE BILLED HOURLY FOR SUCH TIME TO THE GENERAL CONTRACTOR. RE-REVIEW WILL NOT PROCEED WITHOUT WRITTEN APPROVAL FROM THE GENERAL CONTRACTOR FOR ADDITIONAL ENGINEERING REVIEW SERVICES.
4. SAFETY NOTE:
   a. IT IS THE CONTRACTORS RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS, AS THEY APPLY TO THIS PROJECT, OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE STATE OF CALIFORNIA LATEST EDITION, AND ALL OSHA REQUIREMENTS.
   b. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMS AND SHORING REQUIRED. SHORING INDICATIONS (LOCATION, DIRECTION, DURATION, ETC.) ARE ONLY SHOWN ON THE STRUCTURAL DWGS WHEN REQUIRED TO IMPLEMENT THE DESIGN INTENT OF THE FINAL WORK PRODUCT. DETERMINATION WHETHER SHORING IS REQUIRED FOR TEMPORARY OR INTERMEDIATE CONDITIONS DURING CONSTRUCTION IS WHOLLY THE RESPONSIBILITY OF THE CONTRACTOR.
   c. THE OWNER AND THE STRUCTURAL ENGINEER DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THESE REQUIREMENTS.
5. THE CONTRACTOR SHALL NOTIFY THE STATE'S REPRESENTATIVE WHERE A CONFLICT OR DISCREPANCY OCCURS BETWEEN THE STRUCTURAL DRAWINGS AND ANY OTHER PORTION OF THE CONTRACT DOCUMENTS OR EXISTING FIELD CONDITIONS. SUCH NOTIFICATION SHALL BE GIVEN IN DUE TIME SO AS NOT TO AFFECT THE CONSTRUCTION SCHEDULE. IN CASE OF A CONFLICT BETWEEN STRUCTURAL DRAWINGS AND SPECIFICATIONS THE MORE RESTRICTIVE CONDITION SHALL TAKE PRECEDENCE UNLESS WRITTEN APPROVAL HAS BEEN GIVEN FOR THE LEAST RESTRICTIVE. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH ARCHITECTURAL PRIOR TO COMMENCING ANY WORK.
6. WHERE NO SPECIFIC DETAIL IS SHOWN, THE CONSTRUCTION SHALL BE IDENTICAL OR SIMILAR TO THAT INDICATED FOR LIKE CASES OF CONSTRUCTION ON THIS PROJECT. SHOULD THERE BE ANY QUESTION, CONTACT THE STATE'S REPRESENTATIVE PRIOR TO PROCEEDING.
7. ANY SUBSTITUTIONS FOR STRUCTURAL MEMBERS, HARDWARE OR DETAILS SHALL BE REVIEWED BY THE STATE'S REPRESENTATIVE. SUCH REVIEW WILL BE BILLED ON A TIME AND MATERIALS BASIS TO THE GENERAL CONTRACTOR WITH NO GUARANTEE THAT THE SUBSTITUTION WILL BE ALLOWED.
8. CONTRACTOR SHALL PROVIDE AN ALLOWANCE EQUAL TO 2% OF THE BID FOR STRUCTURAL STEEL, MISC. IRON AND REINFORCING STEEL TO BE USED AT THE DISCRETION OF THE STRUCTURAL ENGINEER. UNUSED AMOUNT TO REVERT TO THE OWNER UPON COMPLETION OF THE JOB.
9. ANY SUBSTITUTIONS FOR STRUCTURAL MEMBERS, HARDWARE OR DETAILS SHALL BE REVIEWED BY THE ARCHITECT AND STRUCTURAL ENGINEER. SUCH REVIEW WILL BE BILLED ON A TIME AND MATERIALS BASIS TO THE GENERAL CONTRACTOR WITH NO GUARANTEE THAT THE SUBSTITUTION WILL BE ALLOWED.
10. DO NOT SCALE DRAWINGS. CONTACT THE STATE'S REPRESENTATIVE FOR ANY DIMENSIONS NOT SHOWN.
11. THESE DRAWINGS ARE NOT COMPLETE UNTIL REVIEWED AND ACCEPTED BY THE STATE AND SIGNED BY THE STRUCTURAL ENGINEER.

## DESIGN CRITERIA
100SN002-19

1. CODES AND STANDARDS
   AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH ED. AND CALIFORNIA AMENDMENTS, PREFACE DATED APRIL 2019
   CALTRANS SEISMIC DESIGN CRITERIA (SDC), VERSION 2.0, DATED APRIL 2019
   CALTRANS SEISMIC DESIGN SPECIFICATIONS FOR STEEL BRIDGES, 2ND ED., DATED MAY 2016
2. VERTICAL LOADS
   BRIDGE LIVE LOAD = AASHTO HL-93
   PERMIT LOADS NOT ALLOWED.
   LIVE LOADS ARE REDUCED WHERE PERMITTED BY CODE.
3. DEEP FOUNDATION SYSTEM
   GRAVITY AND SEISMIC LOAD RESISTING SYSTEM: STEEL H-PILES
   NOMINAL VERTICAL RESISTANCE:
   REFER TO PILE DATA TABLE ON **S2.1**
   NOMINAL LATERAL RESISTANCE:
   30.8 K PER PILE (STRONG AXIS, FREE-HEAD)
   1/2" LATERAL DEFLECTION
   SCOUR:
   MINIMUM PILE CAP DEPTH = EL. +14.4 FT
   REFER TO SCOUR DATA TABLE ON **S2.1**
4. SEISMIC DATA
   SOIL PROFILE $V_{S30}$ = 804 FT/S
   PEAK GROUND ACCELERATION (PGA) = 0.68
   MEAN MOMENT MAGNITUDE = 7.61
5. WIND DATA
   DESIGN WIND SPEED V = 110 MPH
   EXPOSURE CATEGORY = C
6. TSUNAMI DATA
   BRIDGE IS LOCATED IN A TSUNAMI HAZARD ZONE; HOWEVER, EXPLICIT DESIGN FOR TSUNAMI MITIGATION IS NOT REQUIRED BY CODE. VOLUNTARY MITIGATION STRATEGY IS TO PROVIDE SLOPE PROTECTION AT THE ROADWAY APPROACHES AS A MEANS TO PROTECT THE STRUCTURE. DEEP FOUNDATIONS PROVIDE STABILITY UNDER TSUNAMI SCOUR CONDITIONS.

## FOUNDATIONS
200SN001

1. THE BASIS OF DESIGN AND ALLOWABLE CAPACITIES OF THE FOUNDATION SYSTEM HAVE BEEN PROPORTIONED IN ACCORDANCE WITH THE RECOMMENDATIONS OF GEOTECHNICAL REPORT # S1350-05-76 BY GEOCON CONSULTANTS INC. DATED AUGUST 22 2022 . THE CONTRACTOR SHALL OBTAIN THE GEOTECHNICAL REPORT FROM THE OWNER. THE STRUCTURAL ENGINEER IS NOT RESPONSIBLE FOR THE ACCURANCY OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL REPORT.
2. FOUNDATIONS SHALL BEAR ON SPREAD FOOTINGS AT ABUTMENTS OVER MODIFIED SOILS THAT HAVE UNDERGONE GROUT-COMPACTION GROUND IMPROVEMENT ACCORDING TO THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.
3. ALL FILLING, BACKFILLING AND COMPACTION SHALL BE DONE UNDER THE OBSERVATION OF A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER AND MUST BE COMPACTED TO THE MINIMUM DENSITY SPECIFIED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN THE GEOTECHNICAL REPORT.
4. BUILDING PAD CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE GEOTECHNICAL REPORT. THE EXTENT AND DEPTH OF OVEREXCAVATION AND PLACEMENT OF ENGINEERED FILL SHALL AT A MINIMUM BE AS SHOWN ON THE PLANS. FINAL DEPTH AND EXTENT OF EXCAVATION AND FILL SHALL BE DETERMINED AT TIME OF CONSTRUCTION BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER. FOUNDATION DEPTHS INDICATED ON PLANS ARE FOR ESTIMATING PURPOSES ONLY.
5. BOTTOMS OF ALL FOUNDATIONS SHALL BE LEVEL. CHANGES IN BOTTOM OF FOUNDATION ELEVATION SHALL BE MADE ACCORDING TO STEPPED FOOTING DETAIL ON THE TYPICAL DETAIL SHEET.
6. FOUNDATION CONCRETE MAY BE PLACED DIRECTLY INTO NEAT EXCAVATIONS PROVIDED THE EXCAVATIONS ARE STABLE (AS DETERMINED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER). OTHERWISE, FOUNDATIONS SHALL BE FULLY FORMED. USE MINIMUM PLANKING SHOWN TO PROTECT AGAINST SLOUGHING, AS REQUIRED. PLANKING DOES NOT REPLACE FORMWORK REQUIRED TO STABILIZE EXCAVATION.




7. THE SURFACE OF ALL HORIZONTAL CONSTRUCTION JOINTS SHALL BE CLEANED & ROUGHENED BY EXPOSING CLEAN AGGREGATE SOLIDLY EMBEDDED IN MORTAR MATRIX.
8. NOTIFY THE STRUCTURAL ENGINEER 48 HOURS BEFORE CASTING FOUNDATIONS.
9. A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHALL ADVISE THE BUILDING OFFICIAL IN WRITING THAT:
   A. THE BUILDING PAD WAS PREPARED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
   B. THE UTILITY TRENCHES HAVE BEEN PROPERLY BACKFILLED AND COMPACTED.
   C. THE FOUNDATION EXCAVATION DEPTH AND MATERIAL ARE ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY.
   D. FORMING COMPLIES WITH THE GEOTECHNICAL REPORT AND APPROVED PLAN.

## DEMOLITION NOTES
100N008-1

1. SAFETY NOTES:
   A. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS, AS THEY APPLY TO THIS PROJECT, OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE STATE OF CALIFORNIA LATEST EDITION AND ALL OSHA REQUIREMENTS.
   B. THE STATE AND STATE'S REPRESENTATIVE DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THESE REQUIREMENTS.
   C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMWORK, BRACING, AND SHORING REQUIRED.
2. SHORE BRIDGE COMPONENTS, ABUTMENTS, AND EXISTING FILL AS REQUIRED TO MAINTAIN THE STABLE INTEGRITY OF THE EXISTING STRUCTURE PRIOR TO DEMOLITION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DESIGN AND PROVIDE COMPETENT SHORING AND BRACING FOR ALL LOADS IMPOSED DURING AND AFTER DEMOLITION THROUGH COMPLETION OF NEW CONSTRUCTION. CONTRACTOR IS TO PROVIDE A DEMOLITION AND SHORING PLAN DEPICTING LOCATIONS AND METHOD OF SHORING AND DEMOLITION SEQUENCING.
3. ALL DIMENSIONS GIVEN TO EXISTING STRUCTURE ARE APPROXIMATE. VERIFY BY FIELD MEASUREMENTS THE DIMENSIONS OF THE EXISTING STRUCTURE. WHERE ACTUAL CONDITIONS DEVIATE FROM DETAILS SHOWN ON THE DRAWINGS, NOTIFY THE STATE'S REPRESENTATIVE FOR INSTRUCTIONS BEFORE PROCEEDING WITH WORK.
4. ANY CONFLICTING ITEMS NOT SPECIFICALLY SHOWN (SUCH AS UNDERGROUND PIPES, CONDUITS, ETC.) SHALL BE BROUGHT TO THE ATTENTION OF THE STATE'S REPRESENTATIVE PRIOR TO FURTHER DEMOLITION.
5. DEMOLITION AND REMOVAL OF EXISTING CONSTRUCTION SHALL BE MADE IN SUCH A MANNER AS TO MINIMIZE OR AVOID DAMAGE TO ADJACENT CONSTRUCTION.
6. A COMPLETE SET OF ORIGINAL DRAWINGS OF THE EXISTING STRUCTURE IS TO BE KEPT ON THE JOBSITE. CONTRACTOR SHALL OBTAIN THESE DRAWINGS FROM THE STATE.
7. EXTENT OF DEMOLITION IS TO BE AS INDICATED ON PLANS, SECTIONS AND DETAILS, VERIFY STORAGE AND REUSE OF EXISTING MATERIALS. DEMOLITION IS TO INCLUDE REMOVAL AND DISPOSAL OF DEMOLISHED CONSTRUCTION. SEE SPECIFICATIONS FOR ADDITIONAL DEMOLITION INSTRUCTIONS.
8. PROVIDE A 10% CONTINGENCY ALLOCATION FOR SUPPLEMENTAL STRUCTURAL FRAMING TO BE USED AS REQUIRED AT THE DISCRETION OF THE STATE'S REPRESENTATIVE, THIS ALLOCATION IS TO FUND CONSTRUCTION SHOWN ON "SUPPLEMENTAL INSTRUCTIONS" AS ISSUED BY THE STATE'S REPRESENTATIVE AND ONLY AFTER HIS REVIEW OF THE COST. ANY UNUSED PORTION OF THE ALLOCATION IS TO REVERT TO THE STATE AT THE COMPLETION OF THE PROJECT.
9. BRIDGE SHALL BE DECONSTRUCTED IN A MANNER ASSUMING THAT ALL MEMBERS ARE BEING REUSED IN THE FINAL CONDITION.
10. DEMOLITION SHALL BE PERFORMED IN A MANNER WHICH MINIMIZES IMPACT ON THE SURROUNDING ENVIRONMENT. CONTRACTOR TO SUBMIT A CONSTRUCTION ACTIVITY POLLUTION PREVENTION PLAN TO THE STATE FOR REVIEW.

## CONCRETE
300SN001

1. CONCRETE SHALL ATTAIN 28 DAY COMPRESSIVE STRENGTH AS REQUIRED IN NOTE #28. MAXIMUM SLUMP SHALL NOT EXCEED 4 INCHES.
2. CONCRETE MIX DESIGNS SHALL BE PREPARED ACCORDING TO ACI 318-14 CHAPTER 26.4 AND ACI 301-10 SECTION 4, REVIEWED BY OWNER'S TESTING LABORATORY AND SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.
3. CEMENTITIOUS MATERIALS:
   CEMENT SHALL CONFORM TO ASTM C-150 TYPE II OR V.
   FLY ASH SHALL CONFORM TO ASTM C-618. MAX. QUANTITY OF FLY ASH SHALL BE 25% OR AS GIVEN IN SPECS.
4. CONCRETE AGGREGATES SHALL CONFORM TO ASTM C-33 FOR NORMAL WEIGHT CONCRETE AND ASTM C-330 FOR LIGHTWEIGHT CONCRETE.
5. NON-SHRINK GROUT OR DRYPACK SHALL CONSIST OF A PREMIXED NONMETALLIC FORMULA.
6. REINFORCING STEEL SHALL BE EPOXY COATED AND CONFORM TO ASTM A-615 GRADE 60 UNO. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A-706 GRADE 60. CONTRACTOR SHALL SUBMIT REBAR MILL CERTIFICATES. REINFORCING STEEL IN SPECIAL REINFORCED SHEAR WALLS OR MOMENT FRAMES, EXCEPT TIES AND HOOPS, SHALL CONFORM TO ASTM A-706.
7. ALL PREHEATING AND WELDING OF REINFORCING BARS SHALL BE DONE IN ACCORDANCE WITH AWS D1.4 LATEST EDITION AND SHALL BE CONTINUOUSLY INSPECTED BY A QUALIFIED LABORATORY. CONTRACTOR SHALL FURNISH WPS FOR ALL REBAR WELDING TO THE LABORATORY.
8. REINFORCING STEEL SHALL BE FABRICATED ACCORDING TO "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION".
9. WIRE FABRIC SHALL CONFORM TO ASTM A1064.
10. DIMENSIONS SHOWN FOR LOCATION OF REINFORCING ARE TO THE FACE OF BARS LISTED AND DENOTE CLEAR COVERAGE. NON-PRESTRESSED, CAST-IN-PLACE CONCRETE COVERAGE SHALL BE AS FOLLOWS, UNO:
    CONCRETE DEPOSITED DIRECTLY AGAINST GROUND (EXCEPT SLABS)--------- 3"
    CONCRETE EXPOSED TO GROUND OR WEATHER BUT PLACED IN FORMS:
    #5 AND SMALLER---------- 1-1/2"
    #6 AND LARGER---------- 2"
    BEAMS & COLUMNS (TIES)---------- 1-1/2"
    BEAMS & COLUMNS (MAIN REINFORCING)---------- 2"
    CAST-IN-PLACE WALLS (EXTERIOR FACE & SOIL SIDE)---------- SEE ABOVE
    CAST-IN-PLACE WALLS (INTERIOR FACE-#11 & SMALLER)---------- 3/4"
    TILT-UP WALLS---------- SEE DETAILS
    SLABS (ON FORMS)---------- 3/4"
    SLABS (ON GROUND)---------- 2" CLEAR FROM TOP
11. SPLICES IN CONTINUOUS REINFORCEMENT SHALL BE LAPPED UNO, SEE SCHEDULE THIS SHEET. SPLICES IN ADJACENT BARS SHALL BE GREATER THAN 5'-0" APART. SPLICE CONTINUOUS BARS IN SOIL-BEARING GRADE BEAMS, STRUCTURAL SLABS ON GRADE AND MAT FOUNDATIONS AS FOLLOWS UNO: TOP BARS AT CENTERLINE OF SUPPORT; BOTTOM BARS AT MID-SPAN. SPLICE CONTINUOUS BARS IN ELEVATED SLABS AND BEAMS, ETC. AS FOLLOWS UNO: TOP BARS AT MID-SPAN; BOTTOM BARS AT CENTERLINE OF SUPPORT. ALL BARS SIZE #14 AND LARGER SHALL BE CONTINUOUS FOR FULL LENGTH SHOWN OR SPLICED WITH MECHANICAL COUPLERS AS NOTED IN DETAILS. SPLICES IN WWF SHALL BE 1-1/2 MESHES WIDE.
12. THE MINIMUM CLEAR SPACING BETWEEN PARALLEL BARS IN A LAYER SHALL NOT BE LESS THAN THE LARGER OF BAR DIAMETER, 1", OR 33% GREATER THAN THE MAXIMUM AGGREGATE SIZE (NOMINAL), WHICHEVER IS GREATEST. THIS REQUIREMENT ALSO APPLIES TO THE CLEAR SPACING BETWEEN DIFFERENT LAYERS OF PARALLEL BARS AND TO THE CLEAR DISTANCE BETWEEN A CONTACT LAP SPLICE AND ADJACENT SPLICES OR BARS.
13. ALL HOOKS SHALL BE STANDARD HOOKS UNLESS OTHERWISE SHOWN OR NOTED. AT WALLS, PROVIDE HOOKS AT ENDS OF ALL REINFORCING AT ENDS, CORNERS AND INTERSECTIONS, UNO.
14. CONSTRUCTION JOINTS SHALL BE MADE ROUGH AND ALL LAITANCE REMOVED FROM THE SURFACE. CONCRETE MAY BE ROUGHENED BY CHIPPING THE ENTIRE SURFACE, SAND BLASTING, OR RAKING THE SURFACE TO PROVIDE 1/4" DEEP DEFORMATIONS.
15. REMOVE ALL DEBRIS FROM FORMS BEFORE CASTING ANY CONCRETE.
16. REINFORCING, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC. TO BE EMBEDDED IN CONCRETE SHALL BE SECURELY POSITIONED BEFORE PLACING CONCRETE.
17. ANCHOR BOLTS (AB'S) CAST IN CONCRETE FOR WALL SILL AND LEDGER APPLICATIONS SHALL BE HEADED BOLTS WITH CUT THREADS CONFORMING TO ASTM F1554, UNO. REFER TO "WOOD" NOTES FOR ADDITIONAL REQUIREMENTS FOR BOLTS IN CONTACT WITH PRESSURE TREATED OR FIRE RETARDANT MATERIAL. REFER TO 'STRUCTURAL STEEL' NOTE FOR REQUIREMENTS FOR ANCHOR RODS (AR'S) CAST IN CONCRETE FOR COLUMN BASE PLATE AND STEEL EMBED APPLICATIONS.
18. WALLS SHALL BE CAST IN HORIZONTAL LAYERS OF 2'-0" MAXIMUM DEPTH.
19. CONCRETE IN WALLS, PIERS OR COLUMNS SHALL SET AT LEAST 2 HOURS BEFORE PLACING CONCRETE IN BEAMS, SPANDRELS, OR SLABS SUPPORTED THEREON.
20. HORIZONTAL WALL BARS IN MULTI-CURTAIN CAST IN PLACE WALLS SHALL BE STAGGERED.
21. DOWEL ALL VERTICAL REINFORCING IN WALLS AND COLUMNS FROM FOUNDATION WITH SAME SIZE BAR.
22. CONSOLIDATE CONCRETE PLACED IN FORMS BY MECHANICAL VIBRATING EQUIPMENT SUPPLEMENTED BY HAND-SPADING, RODDING OR TAMPING. USE EQUIPMENT AND PROCEDURES FOR CONSOLIDATION OF CONCRETE IN ACCORDANCE WITH THE RECOMMENDED PRACTICES OF ACI 309 TO SUIT THE TYPE OF CONCRETE AND PROJECT CONDITIONS. CONCRETE SHALL NOT BE DROPPED THROUGH REINFORCING STEEL (AS IN WALLS) SO AS TO CAUSE SEGREGATION OF AGGREGATES. IN SUCH CASES HOPPERS AND CHUTES OR TRUNKS OF VARIABLE LENGTHS SHALL BE USED SO THAT THE FREE UNCONFINED FALL OF CONCRETE SHALL NOT EXCEED 6 FEET.
23. NO WOOD SPREADERS ALLOWED. NO WOOD STAKES ALLOWED IN AREAS TO BE CONCRETED.
24. ADDITIONAL REINFORCING IN PRECAST OR TILT-UP PANELS REQUIRED FOR LIFTING STRESSES SHALL BE SUPPLIED BY CONTRACTOR.
25. PROVIDE #4x4'-0" DIAGONAL REINFORCING AT EACH REINFORCING LAYER OF SLAB AT ALL RE-ENTRANT CORNERS TYPICAL UNO. THIS APPLIES TO SLAB ON GRADE, CONCRETE OVER METAL DECK, AND ELEVATED STRUCTURAL SLAB CONDITIONS.
26. ALL SAW CUTTING SHALL BE DONE AFTER INITIAL SET HAS OCCURRED TO AVOID TEARING OR DAMAGE BY THE SAW BLADE, BUT BEFORE INITIAL SHRINKAGE HAS OCCURRED.
27. NOTIFY STRUCTURAL ENGINEER A MINIMUM OF 48 HOURS BEFORE PLACING ANY CONCRETE.
28. CONCRETE STRENGTHS & MIX PROPERTIES:

| ITEM | F'C @ 28 DAYS | MAX AGGR SIZE | WEIGHT | MAX W/CM* RATIO |
|---|---|---|---|---|
| A. FOUNDATIONS | 4000 PSI | 1-1/2" | NW | 0.50 |
| B. ABUTMENTS, WINGWALLS | 4000 PSI | 1" | NW | 0.50 |

NW CONC SLAB - BY BRIDGE MANUFACTURER
SITE & MISCELLANEOUS - SEE CIVIL OR ARCH DRAWINGS

* W/CM = WATER : CEMENTITIOUS MATERIAL RATIO

## LAP SPLICE LENGTHS FOR GRADE 60 REINFORCING BARS IN TENSION (Lst)
300SN002
ACI 318 CBC/IBC
(ALL LENGTHS SHOWN ARE IN INCHES)
f'c = 4000 PSI CONC

| SPLICE CLASS | REINF LOCATION | #3 | #4 | #5 | #6 | #7 | #8 | #9 | #10 | #11 |
|---|---|---|---|---|---|---|---|---|---|---|
| B | TOP | 25 | 33 | 41 | 49 | 71 | 81 | 91 | 102 | 114 |
| | OTHER | 19 | 25 | 31 | 37 | 54 | 62 | 70 | 79 | 87 |

DEFINITIONS:
$L_D$ = DEVELOPMENT LENGTH OF DEFORMED BARS IN TENSION
$L_{ST}$ = TENSION LAP SPLICE LENGTH
TOP = HORIZONTAL REINFORCEMENT LOCATED SUCH THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE.

NOTES:
1. SCHEDULE APPLIES TO NORMAL WEIGHT CONCRETE WITH UNCOATED, GRADE 60 REINFORCING STEEL FOR #3 BARS AND LARGER.
2. ROUND UP TO THE NEAREST WHOLE NUMBER FOR ALL LENGTH CALCULATIONS.
3. Lst SHALL BE 12 INCHES MINIMUM.
4. WHERE EPOXY-COATED BARS ARE USED, MULTIPLY LAP LENGTHS BY 1.2, BUT WHERE EPOXY-COATED BARS HAVE CLEAR COVER LESS THAN 3 BAR DIA. OR CLEAR SPACING LESS THAN 6 BAR DIA., MULTIPLY LAP LENGTHS BY 1.31 FOR TOP REBAR AND 1.5 FOR OTHER REBAR.
5. WHEN LIGHTWEIGHT CONCRETE IS USED, MULTIPLY LAP LENGTHS BY 1.33.
6. WHERE CLEAR SPACING OF BARS BEING SPLICED IS LESS THAN 2 BAR DIA. OR WHERE CLEAR COVER OF BARS BEING SPLICED IS LESS THAN 1 BAR DIA., MULTIPLY LAP LENGTHS BY 1.50, UNO.
7. WHERE CLASS A LAP SPLICE IS NOTED IN DETAIL, DIVIDE LENGTHS ABOVE BY 1.30.
8. DEVELOPMENT LENGTH OF DEFORMED BARS, Ld, SHALL BE CALCULATED BY DIVIDING THE LENGTH ABOVE BY 1.30. Ld SHALL BE 12 INCHES MINIMUM.
9. WHEN SPLICING DIFFERENT SIZE BARS, Lst SHALL BE THE GREATER OF Ld OF THE LARGER BAR AND Lst OF THE SMALLER BAR.
10. INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP. INCREASE LAP LENGTHS BY 20 PERCENT FOR A THREE-BAR BUNDLE AND 33 PERCENT FOR A FOUR-BAR BUNDLE
11. THE LENGTHS SHOWN IN THE SCHEDULE SHALL BE INCREASED BY ALL APPLICABLE MULTIPLIERS LISTED IN THE NOTES ABOVE.

## ABBREVIATIONS
100SN003

(A) - OCCURS ABOVE
AB - ANCHOR BOLT
ABV - ABOVE
ADDL - ADDITIONAL
AHU - AIR HANDLING UNIT
ALT - ALTERNATE
APPROX - APPROXIMATE
ARCH - ARCHITECTURAL
(B) - OCCURS BELOW
BLDG - BUILDING
BLKG - BLOCKING
BLW - BELOW
BM - BEAM
B.O. - BOTTOM OF
BOF - BOTTOM OF FOOTING
BOTT - BOTTOM
BRCG - BRACING
BRG - BEARING
BTWN - BETWEEN
BYND - BEYOND
CC - CENTER TO CENTER
CG - CENTER OF GRAVITY
CJ - CONSTRUCTION JOINT
CJP - COMPLETE JOINT PENETRATION
CL - CENTERLINE
CLG - CEILING
CLR - CLEAR
CMU - CONCRETE MASONRY UNIT
COL - COLUMN
CONC - CONCRETE
CONN - CONNECTION
CONT - CONTINUOUS
CONTR - CONTRACTOR
COORD - COORDINATE
CSK - COUNTERSINK
DBL - DOUBLE
DF - DOUGLAS FIR
DIAG - DIAGONAL
DL - DEAD LOAD
DWG - DRAWING
(E) - EXISTING
EA - EACH
EF - EACH FACE OR EDGE FASTENER
EJ - EXPANSION JOINT
ELEV - ELEVATION
EN - EDGE NAILING
EOS - EDGE OF SLAB
EQ - EQUAL
EW - EACH WAY
FB - FACE OF BLOCK/BRICK OR FLAT BAR
FC - FACE OF CONCRETE
FDN - FOUNDATION
FF - FINISH FLOOR
FRMG - FRAMING
FRT - FIRE RETARDANT TREATED
FS - FACE OF STUD OR FAR SIDE
FTG - FOOTING
GA - GAUGE OR GAGE
GALV - GALVANIZED
GLB - GLUED LAMINATED BEAM
GR - GRADE
GYP - GYPSUM
HD - HOLDOWN
HDR - HEADER
HGR - HANGER
HK - HOOK
HORIZ - HORIZONTAL
HSB - HIGH STRENGTH BOLT
HSS - HOLLOW STRUCTURAL SECTION
HT - HEIGHT
JH - JOIST HANGER
LL - LIVE LOAD
LLH - LONG LEG HORIZONTAL
LLV - LONG LEG VERTICAL
LONGIT - LONGITUDINAL
LS - LAG SCREW
LW - LIGHTWEIGHT
MECH - MECHANICAL
MFR - MANUFACTURER
MI - MALLEABLE IRON
× - MARK
MTL - METAL
(N) - NEW
NIC - NOT IN CONTRACT
NS - NEAR SIDE
NTS - NOT TO SCALE
NW - NORMAL WEIGHT
O/ - OVER
OH - OPPOSITE HAND
OPNG - OPENING
OSB - ORIENTED STRAND BOARD
PC - PIECE
PERP - PERPENDICULAR
PJP - PARTIAL JOINT PENETRATION
PL - PLATE
PT - PRESSURE TREATED
PW - PUDDLE WELD
REINF - REINFORCING OR REINFORCEMENT
REQD - REQUIRED
RWD - REDWOOD
SC - SLIP CRITICAL
SCH - SCHEDULE
SEOR - STRUCTURAL ENGINEER OF RECORD
SHTG - SHEATHING
SIM - SIMILAR
SJ - SLAB CONTROL JOINT
SOG - SLAB-ON-GRADE
SP - STRUCTURAL PANEL
SPCG - SPACING
SQ - SQUARE
STD - STANDARD
STFNR - STIFFENER
STGRD - STAGGERED
STL - STEEL
STRUCT - STRUCTURAL
T&B - TOP & BOTTOM
THRD - THREADED
TN - TOE NAIL
T.O. - TOP OF
TOC - TOP OF CONCRETE (SLAB UNO)
TOF - TOP OF FOOTING OR TOP OF FRAMING
TOS - TOP OF STEEL
TOW - TOP OF WALL
TRANS - TRANSVERSE
TYP - TYPICAL
UNO - UNLESS NOTED OTHERWISE
VERT - VERTICAL
VIF - VERIFY IN FIELD
WF - WIDE FLANGE
WHS - WELDED HEADED STUD
WP - WORK POINT
WS - WOOD SCREW
WWF - WELDED WIRE FABRIC
XS - EXTRA STRONG
XXS - DOUBLE EXTRA STRONG
Ø - ROUND OR DIAMETER

CALIFORNIA STATE PARKS SINCE 1864 ®


SONOMA-MENDOCINO
COAST DISTRICT OFFICE
12301 NORTH HWY 1
MENDOCINO, CA
95460


REGISTERED PROFESSIONAL ENGINEER
RYAN J. MILLER
No. 5556
STRUCTURAL
STATE OF CALIFORNIA

DPR ACCESS COMPLIANCE REVIEW
ACCESSIBILITY SECTION
**CERTIFICATION#**
Reviewed by **Date**
ACCESSIBILITY COMPLIANCE AND STATE FIRE MARSHAL SIGNED ORIGINALS ARE ON FILE AT THE DEPARTMENT OF PARKS AND RECREATION,NORTHERN SERVICE CENTER

| | |
|---|---|
| DESIGNED | ALB |
| DRAWN | ALB |
| CHECKED | RJM |
| DATE | 08/16/2024 |

REVISIONS

| No. | Description | Date |
|---|---|---|
| | | |

VAN DAMME STATE PARK
LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT
GENERAL NOTES

DRAWING NO.

SHEET NO.
S1.1
OF

**PROJECT MILESTONE:**
65% SUBMITTAL


BUEHLER
600 Q STREET, SUITE 200
SACRAMENTO, CA 95811
916 443 0303



c:\revit\2020-014710_Van Damme SP_R22_Central_abliss.buehler.rvt
8/16/2024 1:54:19 PM

# GENERAL NOTES

APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

STRUCTURAL STEEL
5005N001

1. FABRICATION, ERECTION AND MATERIALS SHALL CONFORM WITH THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, THE AISC SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS AND THE AISC CODE OF STANDARD PRACTICE, LATEST EDITIONS ADOPTED BY THE BUILDING CODE SPECIFIED IN THE DESIGN CRITERIA NOTES, UNO.
2. ALL HOT ROLLED STEEL SHAPES, PLATES AND BARS SHALL BE NEW STEEL CONFORMING TO ASTM A6, UNO IN THE STRUCTURAL DRAWINGS. STRUCTURAL STEEL SHALL BE AS FOLLOWS:
   A. WIDE FLANGE AND WT SHAPES: ASTM A992
   B. M- AND S- SHAPES: ASTM A36
   C. C- AND MC- SHAPES: ASTM A992
   D. L- SHAPES: ASTM A572 GRADE 50
   E. ROUND HSS: ASTM A500 GRADE C (Fy = 46 KSI)
   F. RECTANGULAR HSS: ASTM A500 GRADE C (Fy = 50 KSI)
   G. PIPE: ASTM A53, GRADE B (Fy = 35 KSI)
   H. BASE PLATES UP TO 4" THICK: ASTM A572 GRADE 50
   I. ALL OTHER PLATE MATERIAL: ASTM A572 GRADE 50, UNO
   J. BUILT UP COLUMNS: ASTM A572 GRADE 50
   K. PLATE GIRDERS: ASTM A572 GRADE 50
   L. CONNECTION MATERIAL
      a. COLUMN CONTINUITY PLATES AND DOUBLER PLATES: ASTM A572 GRADE 50
      b. BRACED FRAME GUSSET PLATES: ASTM A572 GRADE 50
3. ALL STRUCTURAL STEEL SHALL RECEIVE A MINIMUM OF ONE SHOP COAT OF RED PRIMER PAINT. DO NOT PAINT AREAS TO BE FIELD WELDED, FIREPROOFED, GALVANIZED, TO RECEIVE SLIP-CRITICAL HIGH STRENGTH BOLTS, OR TO BE EMBEDDED IN CONCRETE. PROVIDE ADDITIONAL PAINTING AS NOTED IN THE SPECIFICATIONS.
4. ALL STRUCTURAL STEEL SHALL BE ERECTED PLUMB AND TRUE TO LINE. TEMPORARY BRACING SHALL BE INSTALLED AND SHALL BE LEFT IN PLACE UNTIL OTHER MEANS ARE PROVIDED TO ADEQUATELY BRACE THE STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL BASE PLATE AND SUPPORT CONDITIONS DURING ERECTION AND BRACING AS REQUIRED. SEE AISC AND OSHA REQUIREMENTS.
5. GROUT BELOW BASE PLATES SHALL BE NON-METALLIC, NON-SHRINK GROUT WITH A MINIMUM COMPRESSIVE STRENGTH OF 8,000 PSI UNO. COLUMN BASE PLATES SHALL BE PROMPTLY GROUTED AFTER STEEL FRAME HAS BEEN PLUMBED AND PRIOR TO INSTALLATION OF METAL DECKING.
6. STRUCTURAL STEEL BELOW GRADE SHALL HAVE 3 INCHES MINIMUM OF CONCRETE COVER.
7. STRUCTURAL BOLTS AND THREADED FASTENERS
   A. BOLTED CONNECTIONS SHALL CONSIST OF UNFINISHED BOLTS CONFORMING TO ASTM F3125 GRADE A325 UNO.
   B. WHERE HIGH-STRENGTH BOLTS ARE SPECIFIED, BOLTS CONFORMING TO ASTM F3125 GRADE A325 OR GRADE A490 SHALL BE PROVIDED AS INDICATED. HIGH STRENGTH BOLTS IN SLIP-CRITICAL AND PRETENSION JOINTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F1852 FOR TWIST-OFF TYPE TENSION CONTROL BOLT PRETENSIONING OR BE PROVIDED WITH DIRECT TENSION INDICATOR WASHERS CONFORMING TO THE REQUIREMENTS OF ASTM F959.
   C. ANCHOR RODS CAST IN CONCRETE OR MASONRY SHALL BE HEADED BOLTS WITH CUT THREAD, FULL DIAMETER BODY STYLE CONFORMING TO ASTM F1554 GRADE 36, S5 (WELDABLE PER S1 SUPPLEMENTARY REQUIREMENTS), OR GRADE 105 AS INDICATED ON DRAWINGS. IN LIEU OF HEADED ANCHOR RODS, THREADED ROD CONFORMING TO THE ABOVE SPECIFICATIONS MAY BE USED WITH A SINGLE NUT WELDED TO THE ROD OR DOUBLE NUTS TIGHTENED TO PREVENT ROTATION. ANCHOR ROD PROJECTION ABOVE TOP OF FOUNDATION SHALL BE AS NOTED ON THE DRAWINGS.
   D. BOLTED CONNECTIONS SHALL HAVE WASHERS CONFORMING TO ASTM F436 UNO. WASHERS MAY BE OMITTED AT SNUG-TIGHTENED AND SLIP-CRITICAL CONNECTIONS, EXCEPT WHERE REQUIRED BY THE RCSC SPECIFICATION FOR STRUCTURAL JOINTS, LATEST EDITION.
   E. BASE PLATES SHALL HAVE NUTS AND WASHERS AT TOP AND BOTTOM OF PLATE. WASHERS FOR BASE PLATES SHALL BE A36 SQUARE OR CIRCULAR PLATE UNLESS ASTM F844 WASHERS ARE PERMITTED. SEE BASE PLATE DETAILS FOR PLATE WASHER SIZE AND PERMISSIBLE WASHER TYPE.
   F. THREADED RODS SHALL CONFORM TO ASTM A36 UNLESS NOTED OTHERWISE ON THE DRAWINGS.
   G. PINS: ALL PINS IN PIN CONNECTED MEMBERS SHALL CONFORM TO ASTM A36 OR ASTM A108 AS INDICATED ON THE DRAWINGS.
8. ADDITIONAL REQUIREMENTS FOR "SLIP-CRITICAL" BOLTED CONNECTIONS:
   A. "SLIP-CRITICAL" CONNECTIONS (A325-SC DESIGN VALUES WITH SPECIAL INSPECTION) ARE REQUIRED AT ALL MOMENT FRAME CONNECTIONS, BRACED FRAME CONNECTIONS, AT ALL CONNECTIONS ALONG CHORD LINES AND DRAG LINES (AS NOTED ON PLANS), AND UNO, AT ALL BOLTS IN OVERSIZED OR SLOTTED HOLES.
   B. THE SPECIAL INSPECTOR MUST BE PRESENT DURING THE INSTALLATION AND TIGHTENING OPERATION OF "SLIP-CRITICAL" CONNECTIONS.
9. PROVIDE 3/4" DIAMETER STITCH BOLTS AND RING FILLS, SPACED AT NOT MORE THAN 2'-0" ON CENTER FOR ALL DOUBLE ANGLE MEMBERS UNO.
10. AT WOOD TO STEEL PARALLEL CONTACT, BOLT WITH 1/2" DIAMETER BOLTS AT MAXIMUM 24"CC UNLESS NOTED OTHERWISE IN THE DRAWINGS.
11. BOLT HOLES SHALL BE AISC STANDARD HOLES UNLESS SPECIFIED OTHERWISE. USE STANDARD AISC GAGE AND PITCH FOR BOLTS EXCEPT AS NOTED OTHERWISE.
12. WELDING SHALL BE DONE BY THE ELECTRIC ARC PROCESS IN ACCORDANCE WITH AMERICAN WELDING SOCIETY STANDARDS, USING ONLY CERTIFIED WELDERS. ALL GROOVE WELDS SHALL HAVE COMPLETE PENETRATION UNLESS NOTED OTHERWISE. ALL ELECTRODES FOR WELDING SHALL COMPLY WITH AWS D1.1 AND D1.8 AS APPLICABLE, E70 SERIES MINIMUM.
13. WELD LENGTHS SPECIFIED ON PLANS ARE THE NET EFFECTIVE LENGTHS REQUIRED.
14. MINIMUM FILLET WELDS: (T = THICKNESS OF THINNER PART JOINED)
    3/16" @ T < 1/2"
    1/4" @ T < 3/4"
    5/16" @ T > 3/4"
15. WELDING PROCEDURE SPECIFICATIONS (WPS) FOR SHOP AND FIELD PREQUALIFIED WELD JOINTS AND WELD JOINTS QUALIFIED BY TEST SHALL BE SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER AND THE OWNER'S TESTING LABORATORY PRIOR TO FABRICATION. ALL WELDING PROCEDURE ITEMS SUCH AS BASE METALS, WELDING PROCESSES, FILLER METALS AND JOINT DETAILS THAT MEET THE REQUIREMENTS OF AWS D1.1 SECTION 3 SHALL BE CONSIDERED AS PREQUALIFIED. ANY CHANGE OR SUBSTITUTION THAT IS BEYOND THE RANGE OR TOLERANCE OR REQUIREMENTS FOR PREQUALIFICATION SHALL BE QUALIFIED BY TEST PER AWS D1.1 SECTION 4 PART B. SUBMIT TEST REPORTS SHOWING SUCCESSFUL PASSAGE OF QUALIFICATION TESTS FOR ALL NON-PREQUALIFIED WELDING PROCEDURE SPECIFICATIONS.

TYPICAL PREFABRICATED BRIDGE NOTES
5005N004-1

1. DESIGN AND FABRICATION SHALL CONFORM TO THE 2022 CALIFORNIA BUILDING CODE (CBC) AND TO THE CODES AND STANDARDS AS SPECIFIED IN THE DESIGN CRITERIA ON SHEET **S1.1**, AND THE LATEST EDITIONS OF AISC "SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL BUILDINGS"
   HANDRAILS AND GUARDRAILS: AASHTO, CRASH-TESTED.
2. STEEL SHAPES AND PLATES SHALL BE MILL FINISH ALUMINUM. FY MIN SHALL BE 50 KSI.
3. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS ACCORDING TO AWS D1.1 STANDARD USING E70 OR E80 ELECTRODES. FABRICATOR SHALL MAINTAIN FULL-TIME CERTIFIED WELDING INSPECTOR (CWI) FOR INSPECTION OF BRIDGE FABRICATION.
4. PROPOSED SUPPLIERS MUST HAVE AT LEAST FIVE (5) YEARS OF EXPERIENCE DESIGNING AND FABRICATING THESE TYPE OF STRUCTURES AND A MINIMUM OF FIVE (5) SUCCESSFUL BRIDGE PROJECTS, EACH OF WHICH HAS BEEN IN SERVICE FOR AT LEAST THREE (3) YEARS. FABRICATOR SHALL HAVE AISC SHOP CERTIFICATION.
5. DRAWINGS, CALCULATIONS AND ENGINEERING DATA ON STRUCTURAL SECTIONS FOR ALL COMPONENTS SHALL BE SUBMITTED TO THE STATE FOR REVIEW PRIOR TO FABRICATION.
6. CALCULATIONS SHALL BE SIGNED BY A CIVIL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
7. BRIDGE MANUFACTURER SHALL PROVIDE PLAN DRAWING SHOWING BEARING LOCATIONS AND ANCHOR BOLT LOCATIONS PRIOR TO FABRICATION. ANCHOR BOLT SIZE & LOCATIONS TO BE COORDINATED WITH DETAILS SHOWN ON THESE DRAWINGS.
8. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH CIVIL, STRUCTURAL, AND BRIDGE DRAWINGS PRIOR TO FOUNDATION CONSTRUCTION.
9. ALL HARDWARE REQUIRED FOR CONNECTING BRIDGE COMPONENTS SHALL BE DESIGNED, DETAILED AND PROVIDED BY BRIDGE MANUFACTURER.
10. CONTRACTOR SHALL PROVIDE TEMPORARY ERECTION BRACING AS REQUIRED.
11. BRIDGE DESIGNER TO ACCOUNT FOR WEIGHT AND SUPPORT OF ANY UTILITY PIPING.
12. FOUNDATION DESIGN IS BASED ON PRELIMINARY BRIDGE REACTIONS. FINAL BRIDGE REACTIONS ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR VALIDATION OF FOUNDATIONS PRIOR TO CONSTRUCTION.

PRELIMINARY BRIDGE DESIGN LOADS [1]

| | DL | LL[2] | SEISMIC[3] | WIND[3] | △THERMAL EXPANSION |
|---|---|---|---|---|---|
| VEHICLE BRIDGE | 210 K | 85 K | - | - | 1 1/2 IN |

NOTES:
1. VERIFY LOADING INFORMATION WITH BRIDGE SUPPLIER PRIOR TO FABRICATION.
2. LIVE LOAD SHOWN ACCOUNTS FOR UNIFORM LIVE LOAD ONLY. DESIGNER SHALL ALSO ACCOUNT FOR VEHICLE LOADING PER AASHTO HL-93.
3. LOAD TO BE DETERMINED BY BRIDGE MFR ACCORDING TO DESIGN CRITERIA ON **S1.1**

# STRUCTURAL SPECIAL INSPECTIONS AND TESTING

APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE

STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS AND TESTING
1105N001

1. SPECIAL INSPECTIONS AND TESTING SHALL BE PROVIDED BY A TESTING AND INSPECTION AGENCY, EMPLOYED BY THE STATE'S REPRESENTATIVE, AND APPROVED BY THE STATE TO PROVIDE SPECIAL INSPECTIONS AND TESTING FOR THE PARTICULAR TYPE OF CONSTRUCTION.
2. TABLES OF SPECIAL INSPECTIONS AND TESTING ARE DERIVED FROM THE STRUCTURAL PROVISIONS OF THE CBC AND REFERENCED STANDARDS AND ARE FOR REFERENCE ONLY. THE INCLUDED TABLES ARE PROVIDED FOR THE CONVENIENCE OF THE STATE, TESTING AGENCY AND CONTRACTOR IN DEVELOPING THE SCOPE OF WORK FOR REQUIRED TESTING AND INSPECTION OF STRUCTURAL MATERIALS AND COMPONENTS. FINAL DEFINITION OF THIS SCOPE OF WORK IS TO BE DETERMINED BY THE TESTING AGENCY AND THE STATE'S REPRESENTATIVE.
3. FREQUENCY OF SPECIAL INSPECTIONS AND TESTING SHALL BE, AT A MINIMUM, AS NOTED FOR THE INDIVIDUAL ELEMENTS WITHIN THE TABLES BELOW. THE CONTRACTOR SHALL COORDINATE TIMING OF SPECIAL INSPECTIONS AND TESTING WITH THE SPECIAL INSPECTION AND TESTING AGENCY.
4. PRIOR TO THE START OF CONSTRUCTION, THE TESTING AND INSPECTION AGENCY SHALL PROVIDE DOCUMENTATION TO THE STATE DEMONSTRATING COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING OF THE SPECIAL INSPECTORS WHO WILL PERFORM THE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION, IN ACCORDANCE WITH CBC SECTION 1704.2.1.
5. THE TESTING AND INSPECTION AGENCY SHALL SUBMIT REPORTS OF SPECIAL INSPECTIONS AND TESTS TO THE BUILDING OFFICIAL, STRUCTURAL ENGINEER OF RECORD AND THE CONTRACTOR, PER CBC SECTION 1704.2.4. THE REPORTS SHALL INDICATE WHETHER WORK INSPECTED OR TESTED CONFORMED TO THE APPROVED CONSTRUCTION DOCUMENTS. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF DISCREPANCIES ARE NOT CORRECTED, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE STRUCTURAL ENGINEER OF RECORD.
6. SPECIAL INSPECTION AND TESTING RECORDS SHALL BE RETAINED BY THE CONTRACTOR ON SITE UNTIL COMPLETION OF CONSTRUCTION.
7. THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT TO THE STATE ACKNOWLEDGING RESPONSIBILITY FOR CONSTRUCTION OF THE MAIN LATERAL-FORCE RESISTING SYSTEM PRIOR TO COMMENCEMENT OF THAT WORK AS REQUIRED BY CBC SECTION 1704.4.
8. THE STATE'S REPRESENTATIVE SHALL SUBMIT TO THE STATE, A FINAL REPORT DOCUMENTING SPECIAL INSPECTIONS AND TESTS PER CBC SECTION 1704.2.4, AND REPORTS AND CERTIFICATES PER CBC SECTION 1704.5.
9. ALL SOILS AND FOUNDATION EXCAVATION INSPECTIONS SHALL BE BY THE GEOTECHNICAL ENGINEER OF RECORD, OR A GEOTECHNICAL FIRM HIRED BY THE OWNER PER CBC SECTION 1705.6.
10. SPECIAL INSPECTION IS REQUIRED FOR ALL SHOP FABRICATED MEMBERS OR ASSEMBLIES UNLESS WAIVED PER THE EXCEPTIONS IN CBC SECTION 1704.2.5.
11. DEFINITIONS:
    a. CONTINUOUS - SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS CONTINUOUSLY PRESENT WHEN AND WHERE THE WORK TO BE INSPECTED IS BEING PERFORMED.
    b. PERIODIC - SPECIAL INSPECTION BY THE SPECIAL INSPECTOR WHO IS INTERMITTENTLY PRESENT WHERE THE WORK TO BE INSPECTED HAS BEEN OR IS BEING PERFORMED.
    c. QUALITY ASSURANCE (QA) - MONITORING AND INSPECTION TASKS PERFORMED BY AN AGENCY OR FIRM OTHER THAN THE FABRICATOR OR ERECTOR TO ENSURE THAT THE MATERIAL PROVIDED AND WORK PERFORMED BY THE FABRICATOR AND ERECTOR MEET THE REQUIREMENTS OF THE APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS. QUALITY ASSURANCE INCLUDES THOSE TASKS DESIGNATED 'SPECIAL INSPECTION' BY THE APPLICABLE CODE.
    d. QUALITY CONTROL (QC) - CONTROLS AND INSPECTIONS IMPLEMENTED BY THE FABRICATOR OR ERECTOR, AS APPLICABLE, TO ENSURE THAT THE MATERIAL PROVIDED AND WORK PERFORMED MEET THE REQUIREMENTS OF THE APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS.
    e. OBSERVE (O) - OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
    f. PERFORM (P) - PERFORM THOSE TASKS PRIOR TO FINAL ACCEPTANCE FOR EACH ITEM OR ELEMENT.
    g. DOCUMENT (D) - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THAT THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORT NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UP, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION REPORT.
12. SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED DURING CONSTRUCTION ON THE WORK SHOWN IN THE CONSTRUCTION DOCUMENTS AS REQUIRED BY CBC CHAPTER 17, THE TABLES LISTED BELOW, AND THE JURISDICTION'S SPECIAL INSPECTION AND TESTING FORM. IF DISCREPANCIES ARE NOTED, CONTACT THE SEOR. ALL EXCEPTIONS INCLUDED IN CBC CHAPTER 17 ARE PERMITTED TO BE USED.
    - SOILS
    - CONCRETE CONSTRUCTION

SOILS - REQUIRED SPECIAL INSPECTIONS AND TESTS
CBC TABLE 1705.6
1105N201

| TYPE | CONTINUOUS | PERIODIC |
|---|---|---|
| 1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY. | - | X |
| 2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL. | - | X |
| 3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS. | - | X |
| 4. DURING FILL PLACEMENT, VERIFY USE OF PROPER MATERIALS AND PROCEDURES IN ACCORDANCE WITH THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT. VERIFY DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL. | X | - |
| 5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY. | - | X |

CONCRETE CONSTRUCTION - REQUIRED SPECIAL INSPECTIONS AND TESTS
CBC TABLE 1705.3
1105N301

| TYPE | CONTINUOUS | PERIODIC | REFERENCED STANDARD [a] |
|---|---|---|---|
| 1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT. | - | X | ACI 318 CH. 20, 25.2, 25.3, 26.6.1-26.6.3 |
| 2. REINFORCING BAR WELDING: | | | AWS D1.4 ACI 318: 26.6.4 |
| A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706 | - | X | |
| B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16" | - | X | |
| C. INSPECT ALL OTHER WELDS | X | - | |
| 3. INSPECT ANCHORS CAST IN CONCRETE. | - | X | ACI 318: 17.8.2 |
| 4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. [b] | | | ACI 318: 17.8.2.4, 17.8.2 |
| A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. | x | - | |
| B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A. | - | X | |
| 5. VERIFY USE OF REQUIRED DESIGN MIX. | - | X | ACI 318: CH. 19, 26.4.3, 26.4.4 |
| 6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE. | X | - | ASTM C172 ASTM C31 ACI 318: 26.5, 26.12 |
| 7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES. | X | - | ACI 318: 26.5 |
| 8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES. | - | X | ACI 318: 26.5.3-26.5.5 |
| 9. INSPECT PRESTRESSED CONCRETE FOR: | | | ACI 318: 26.10 |
| A. APPLICATION OF PRESTRESSING FORCES | X | - | |
| B. GROUTING OF BONDED PRESTRESSING TENDONS. | X | - | |
| 10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS. | - | X | ACI 318: CH. 26.9 |
| 11. FOR PRECAST CONCRETE DIAPHRAGM CONNECTIONS OR REINFORCEMENT AT JOINTS CLASSIFIED AS MODERATE OR HIGH DEFORMABILITY ELEMENTS (MDE OR HDE) IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F, INSPECT SUCH CONNECTIONS AND REINFORCEMENT IN THE FIELD FOR: | | | ACI 318: 26.13.1.3 ACI 550.5 |
| A. INSTALLATION OF THE EMBEDDED PARTS. | X | - | |
| B. COMPLETION OF THE CONTINUITY OF REINFORCEMENT ACROSS JOINTS. | X | - | |
| C. COMPLETION OF CONNECTIONS IN THE FIELD. | X | - | |
| 12. INSPECT INSTALLATION TOLERANCES OF PRECAST CONCRETE DIAPHRAGM CONNECTIONS FOR COMPLIANCE WITH ACI 550.5. | - | X | ACI 318: 26.13.1.3 |
| 13. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS. | - | X | ACI 318: 26.11.2 |
| 14. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED. | - | X | ACI 318: 26.11.1.2(b) |

A. WHERE APPLICABLE, SEE SECTION 1705.13.

B. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO COMMENCEMENT OF THE WORK.


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REGISTERED PROFESSIONAL ENGINEER
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No. 5556
STRUCTURAL
STATE OF CALIFORNIA

DPR ACCESS COMPLIANCE REVIEW
ACCESSIBILITY SECTION
**CERTIFICATION#**

Reviewed by **Date**

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VAN DAMME STATE PARK
LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

# GENERAL NOTES

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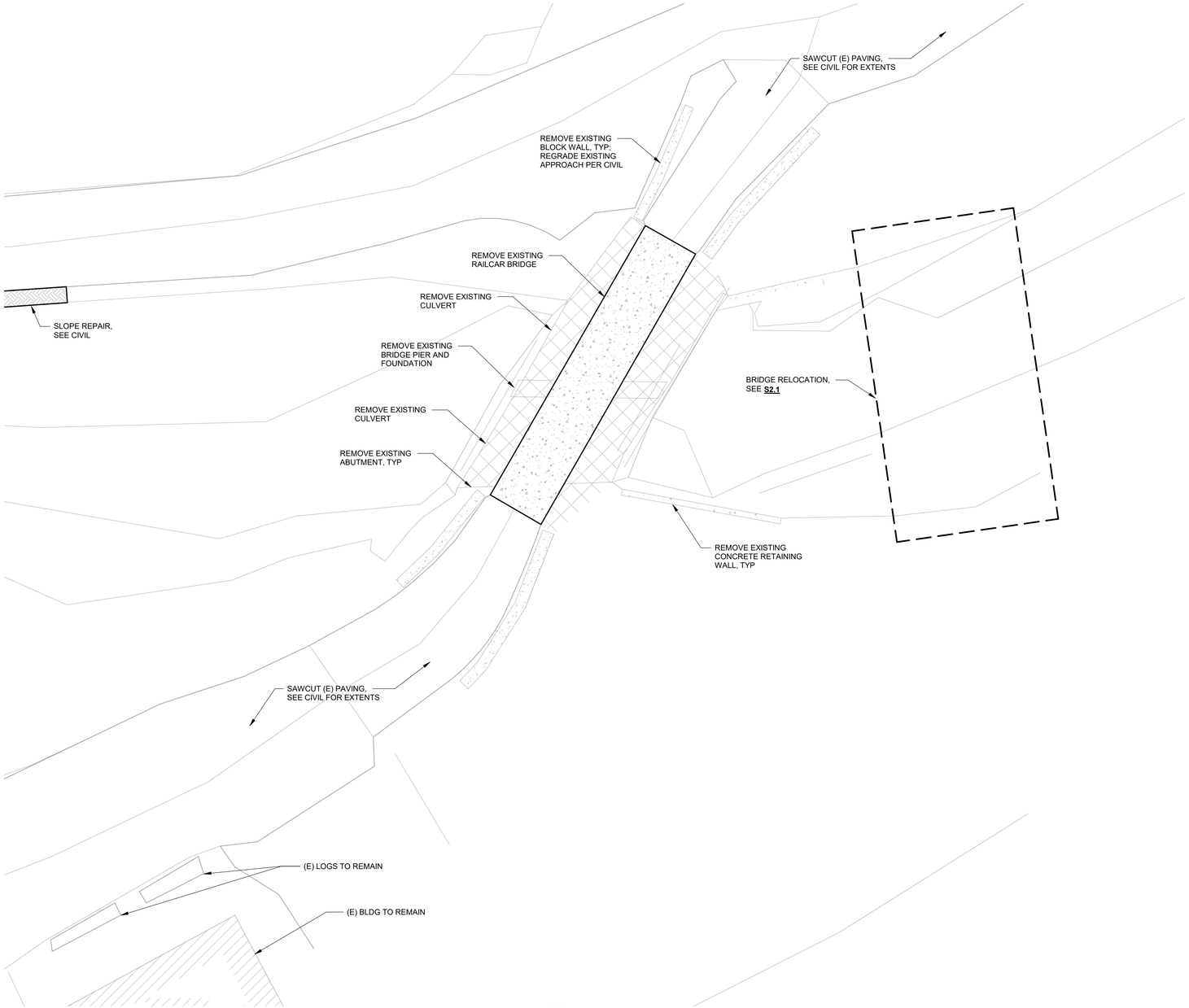
SHEET NO.
S1.2
OF

**PROJECT MILESTONE:**
65% SUBMITTAL


BUEHLER
600 Q STREET, SUITE 200
SACRAMENTO, CA 95811
916 443 0303



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DEMOLITION PLAN 1" = 10'-0"

NOTES:

1. REFER TO CIVIL PLANS FOR ADDITIONAL INFORMATION.
2. EXISTING BRIDGE IS TO REMAIN IN PLACE UNTIL AFTER CONSTRUCTION OF NEW BRIDGE TO PROVIDE SITE ACCESS. WHERE ZONE OF CONFLICT OCCURS DUE TO EXCAVATION AND/OR PLACEMENT OF FOUNDATIONS OR WING WALLS, CONTRACTOR TO PROVIDE SHORING AND OTHER SUPPORT AS REQUIRED FOR THE EXISTING BRIDGE AND APPROACHES. CONTRACTOR TO SUBMIT PHASING PLAN FOR REVIEW. REFER TO SITE PLAN **S2.1** FOR EXPECTED LOCATION OF ZONE OF CONLFICT.
3. REFER TO CIVIL UTILITY PLANS FOR COMPLETE UTILITY INFORMATION.
4. EXISTING BUILDING TO THE SOUTH OF THE BRIDGE SITE IS TO REMAIN AND BE PROTECTED AS REQUIRED.
5. REMOVE ALL ULITIES HANGING FROM EXISTING BRIDGE. FOR REALIGNMENT AND REPLACEMENT OF THESE UTILITIES, SEE UTILITY PLANS ON CIVIL DRAWINGS.
6. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL MEASURES AS DICTATED BY FIELD CONDITIONS TO CONTROL EROSION AND SEDIMENTATION.
7. CONTRACTOR IS RESPONSIBLE FOR ADDRESSING ALL ENVIRONMETNAL CONCERNS, INCLUDING PERMITTING, RELATED TO STREAM DISTURBANCE FROM WORK BEING PERFORMED IN AND PROXIMATE TO THE STREAM.
8. CONTRACTOR TO SUBMIT DEMOLITION SEQUENCING PLAN ALONG WITH TEMPORARY SITE GRADING MITIGATIONS AND STREAM PROTECTION DURING ACCESS AND REMOVAL OPERATIONS.
9. ALL ITEMS NOTED FOR REMOVAL, INCLUDING EXCESS EARTHWORK MATERIALS, SHALL BE OFFERED TO THE DISTRICT ON FIRST RIGHT OF REFUSAL BASIS.
10. TREES AND STUMPS REMOVED SHALL BE CHIPPED AND USED ONSITE FOR EROSION CONTROL, UNO. CONTRACTOR TO COORDINATE EXACT LOCATIONS WITH THE DISTRICT.
11. REFER TO CIVIL PLANS FOR REGRADING OF BANK SLOPE AND OF STREAM AFTER REMOVAL OF EXISTING BRIDGE, INCLUDING BACKFILL OF HOLES AT EXISTING PIER AND ABUTMENTS.
12. REFER TO CIVIL PLANS FOR TREES TO BE REMOVED.


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# DEMOLITION PLAN

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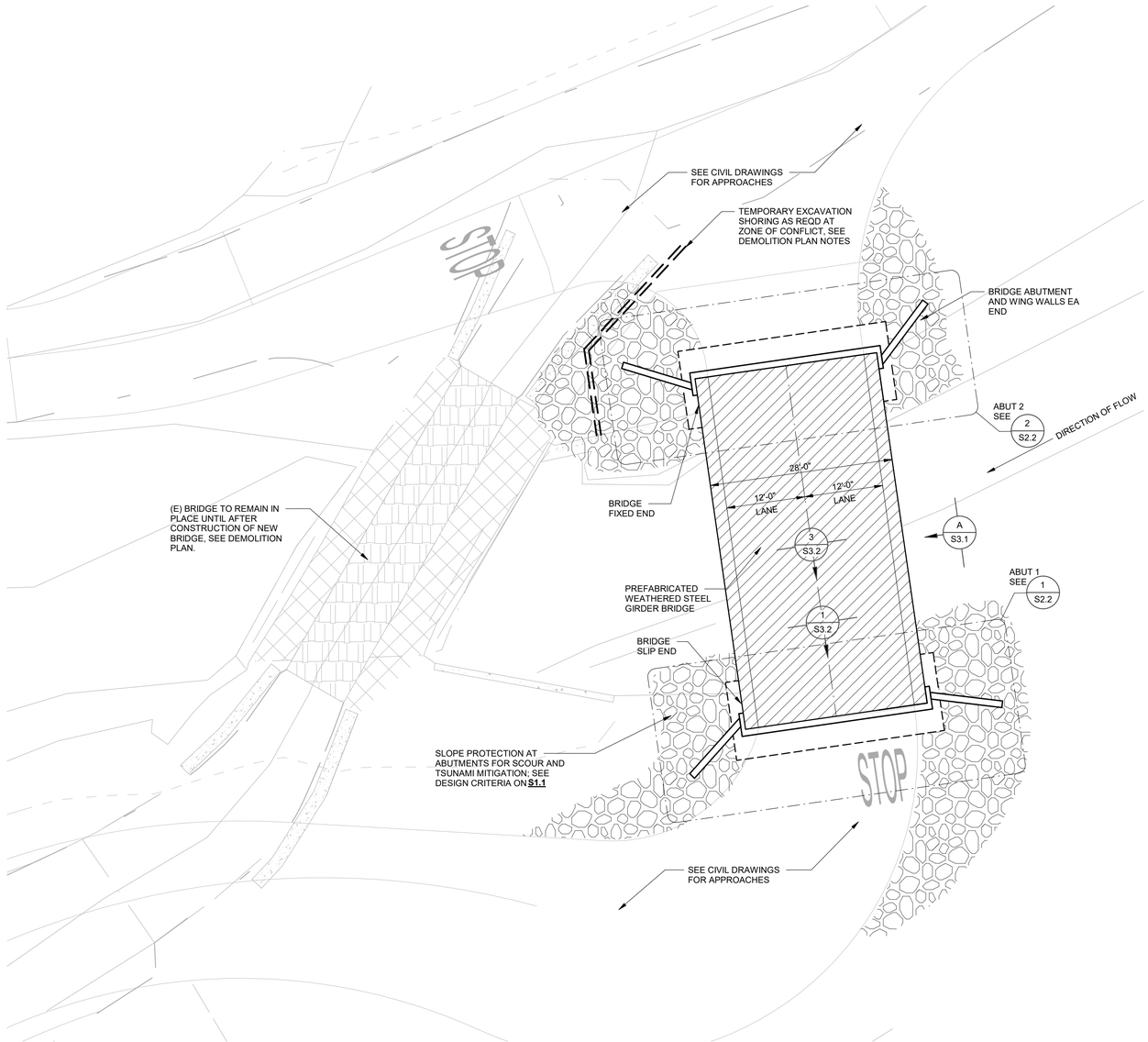
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SITE PLAN 1" = 10'-0"

PLAN NOTES:

1. FOR ABUTMENT PILE CAPS, SEE ABUTMENT PLAN SHEET **S2.2**
2. CONTRACTOR SHALL IMPLEMENT ADEQUATE AND AGENCY APPROVED DE-WATERING PROCEDURES AS NEEDED TO ALLOW FOUNDATION EXCAVATION AND PLACEMENT OF CONCRETE.
3. SEE CIVIL FOR FINAL GRADING PROFILES.

A S2.1 PILE DATA TABLE

| SUPPORT NO. | PILE TYPE | NOMINAL RESISTANCE (KIPS) | | DESIGN TIP ELEVATION (FT)[1] | SPECIFIED TIP ELEVATION (FT)[2] | REQUIRED NOMINAL DRIVING RESISTANCE (KIPS) |
|---|---|---|---|---|---|---|
| | | COMPRESSION | TENSION | | | |
| ABUTMENT 1 | HP14x117[4] | 300 | N/A | -40 (a)<br>N/A (b)<br>-30 (c)<br>-20 (d) | -40 | 300 |
| ABUTMENT 2 | HP14x117[4] | 300 | N/A | -20 (a)<br>N/A (b)<br>-10 (c)<br>-20 (d) | -20 | 300 |

TABLE NOTES:
1. DESIGN TIP ELEVATIONS ARE CONTROLLED BY: (a) COMPRESSION, (b) TENSION, (c) SETTLEMENT, (d) LATERAL LOAD.
2. THE SPECIFIED TYP ELEVATION SHALL NOT BE RAISED ABOVE THE DESIGN TIP ELEVATIONS FOR TENSION LOAD, LATERAL LOAD, AND TOLERABLE SETTLEMENT.
3. DEPTH TO BEDROCK AND ASSOCIATED DESIGN AND SPECIFIED TIP ELEVATIONS MAY VARY BASED ON LOCATION OF SUBSURFACE INVESTIGATION RELATIVE TO ALIGNMENT OF BRIDGE. TIP ELEVATIONS TO BE FIELD VERIFIED AND ACCEPTED BY GEOR UPON DRIVING REFUSAL.
4. FOR ADDITIONAL PILE INFORMATION, SEE **7/S5.1**.

B S2.1 SCOUR DATA TABLE

| SUPPORT NO. | LONG TERM (DEGRADATION & CONTRACTION) SCOUR ELEVATION (FT) | SHORT TERM (LOCAL) SCOUR DEPTH (FT) |
|---|---|---|
| ABUTMENT 1[1] | 14.4 | 1.4 |
| ABUTMENT 2[1] | 14.4 | 1.4 |

TABLE NOTES:
1. SCOUR AT SUPPORT LOCATION; NOT AT ABUTMENT EMBANKMENT TOE.


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VAN DAMME STATE PARK
LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

# BRIDGE SITE PLAN

DRAWING NO.

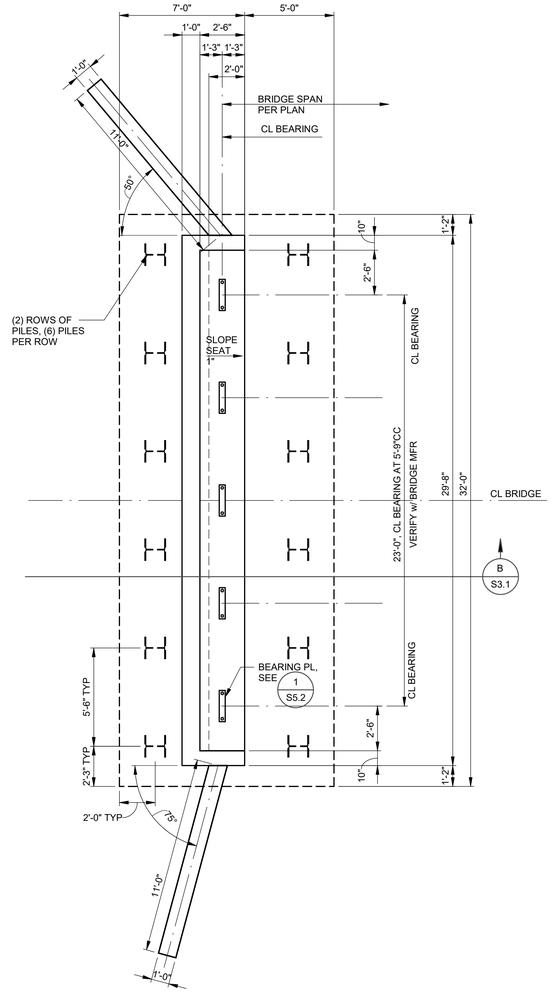
SHEET NO.
S2.1
OF

**PROJECT MILESTONE:**
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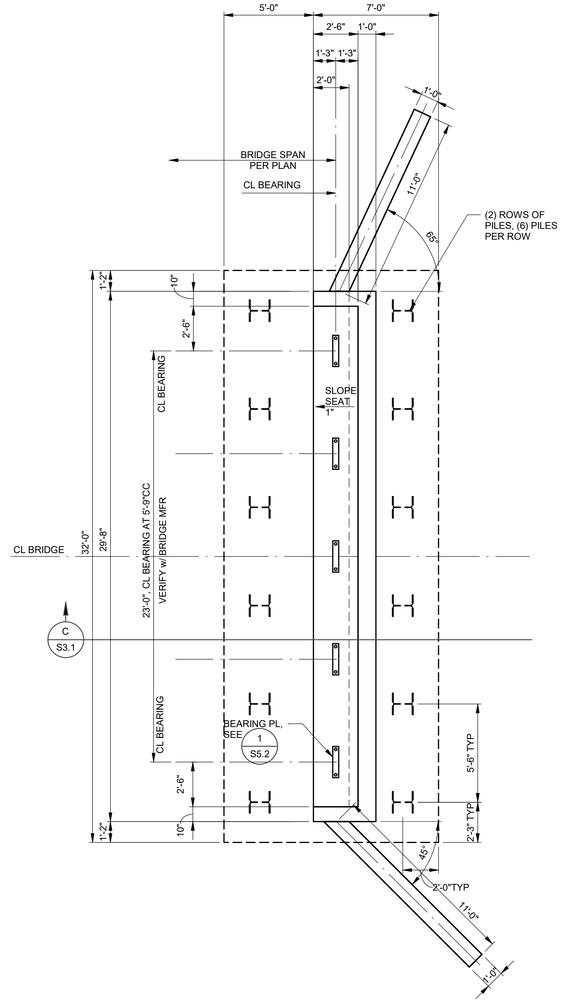

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ABUTMENT 1 PLAN 1/S2.2 1/4" = 1'-0"




ABUTMENT 2 PLAN 2/S2.2 1/4" = 1'-0"


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# ABUTMENT PLANS

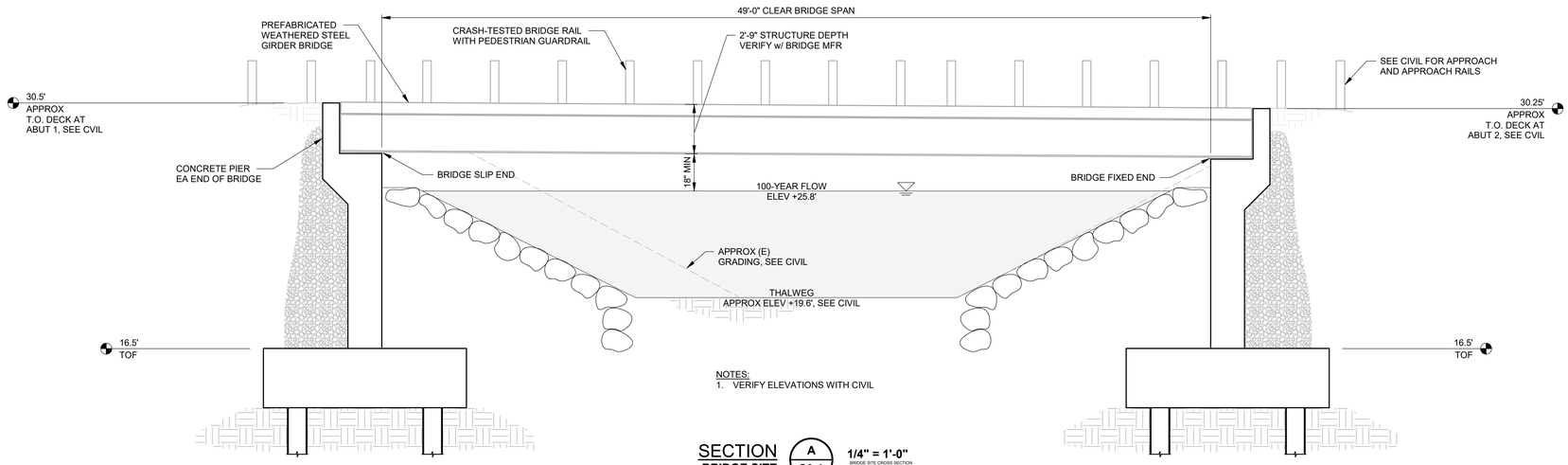
DRAWING NO.

SHEET NO.
S2.2
OF

**PROJECT MILESTONE:**
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NOTES:
1. VERIFY ELEVATIONS WITH CIVIL

SECTION **BRIDGE SITE CROSS SECTION** (A / S3.1) **1/4" = 1'-0"** BRIDGE SITE CROSS SECTION




DETAIL **ABUTMENT 1 SECTION** (B / S3.1) **1/2" = 1'-0"** ABUTMENT 1 SECTION




SECTION **ABUTMENT 2 SECTION** (C / S3.1) **1/2" = 1'-0"** ABUTMENT 2 SECTION

**PROJECT MILESTONE:**
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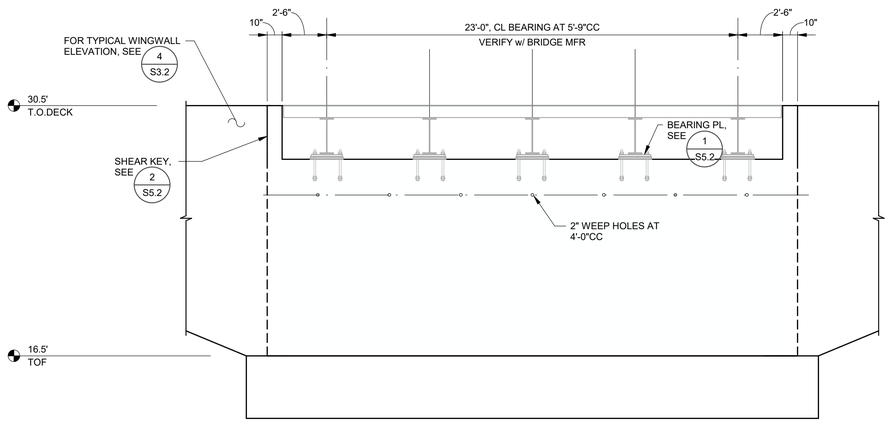
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# BRIDGE SECTIONS

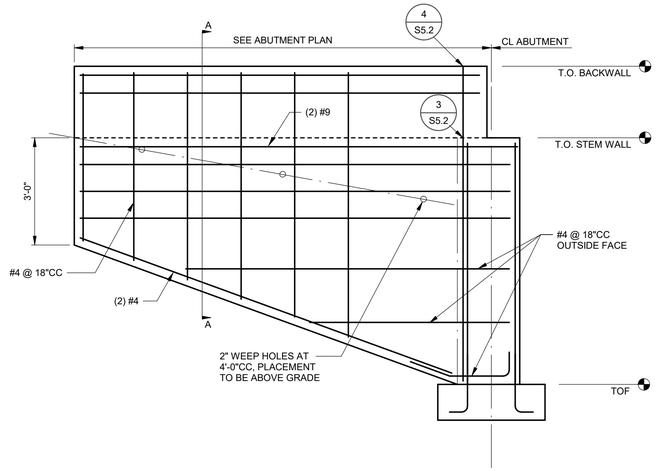
DRAWING NO.

SHEET NO.
S3.1
OF

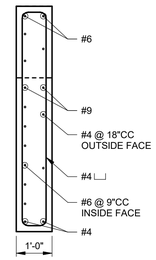

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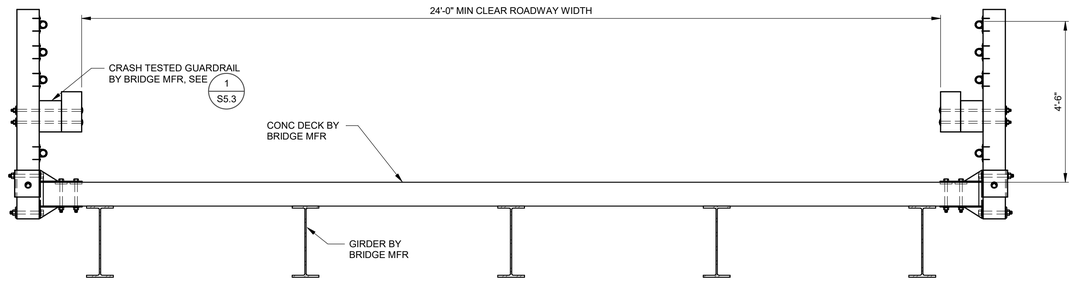

ELEVATION 1 S3.2 **1/4" = 1'-0"**
**ABUTMENT ELEVATION** ABUTMENT 1 ELEVATION




DETAIL 4 S3.2 **1/2" = 1'-0"**
**TYPICAL WINGWALL ELEVATION** WINGWALL ELEVATION_W/ BACKWALL1




SECTION A-A




DETAIL 3 S3.2 **1/2" = 1'-0"**
**BRIDGE PROFILE** SECTION CUT BRIDGE


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VAN DAMME STATE PARK
LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT
# BRIDGE ELEVATIONS

DRAWING NO.

SHEET NO.
S3.2
OF

**PROJECT MILESTONE:**
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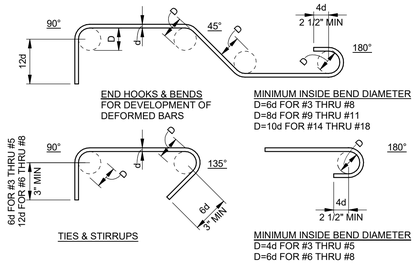

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916 443 0303



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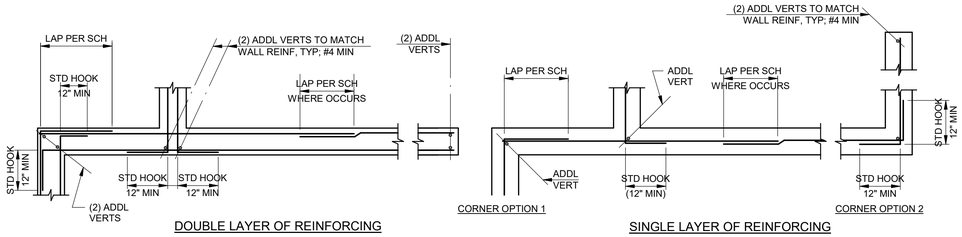
# TYPICAL DETAILS

APPLICABLE TO ALL DRAWINGS UNLESS NOTED OR SHOWN OTHERWISE




NOTE:
ALL HOOKS SHALL BE 90° OR 180° STANDARD HOOKS UNLESS OTHERWISE SHOWN OR NOTED.

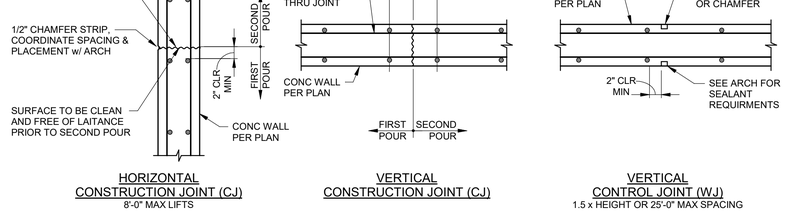
DETAIL 1 / S5.1 — NO SCALE
**STANDARD REBAR HOOKS & BENDS**
30050001




NOTES:
1. FOR ADDL REQUIREMENTS, SEE CONCRETE NOTES ON GENERAL NOTES SHEET.
2. AT CONTRACTOR'S OPTION, CORNER BARS MAY BE USED IN LIEU OF HOOKED HORIZ BARS.

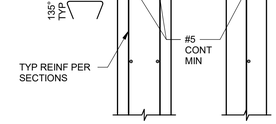



DETAIL 2 / S5.1 — 3/8" = 1'-0"
**INTERSECTION & CORNER REINF AT WALLS**
30050002 - Concrete Wall Corner Reinforcing




NOTES:
1. LOCATE HORIZONTAL CONSTRUCTION JOINTS AS SHOWN ON PLANS AND SECTIONS. ALL ADDITIONAL HORIZONTAL CONSTRUCTION JOINTS REQD BY THE CONTRACTOR SHALL BE SUBMITTED FOR APPROVAL.
2. CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS & DETAIL OF CONTROL JOINTS & CONSTRUCTION JOINTS TO ARCHITECT & STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL PRIOR TO POURING CONCRETE.

DETAIL 3 / S5.1 — NO SCALE
**CONCRETE WALL JOINTS**
30050003




DETAIL 5 / S5.1 — NO SCALE
**REINFORCING AT TOP OF WALL**
30050001




DETAIL 6 / S5.1 — NO SCALE
**ABUTMENT BACKFILL & DRAINAGE**
27050001_REV-BRIDGE




NOTE: CENTERLINES OF PILE SECTION ABOVE AND BELOW SPLICE SHALL ALIGN.

DETAIL 8 / S5.1 — NO SCALE
**HP PILE SPLICE**
51150001_REV




DETAIL 7 / S5.1 — NO SCALE
**STEEL DRIVEN PILE**
PILE_05


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VAN DAMME STATE PARK
LITTLE RIVER RESTORATION AND
BRIDGE REPLACEMENT
TYPICAL DETAILS

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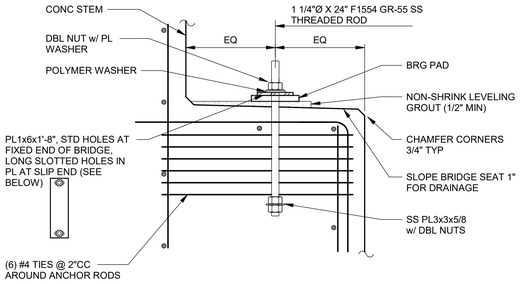
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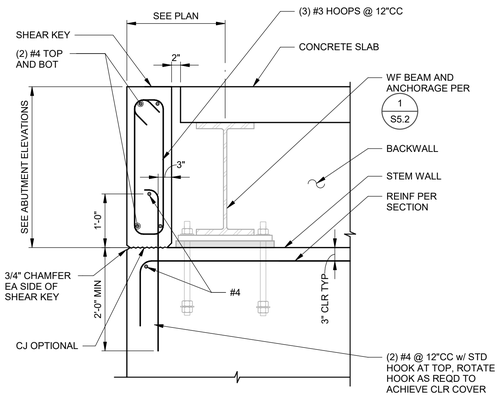


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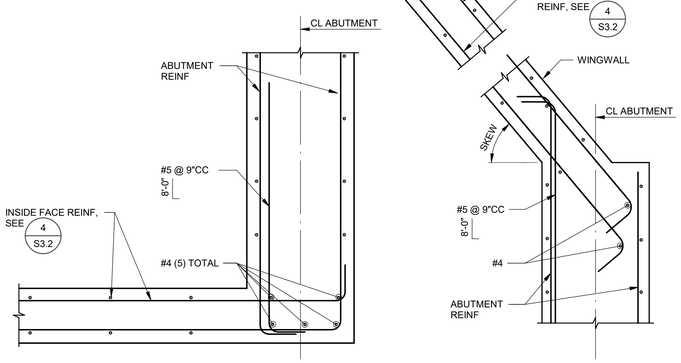

NOTES:
1. CONTRACTOR TO CONFIRM LAYOUT WITH BRIDGE MFR.
2. WELD WASHERS TO BASE PL AT FIXED END.
3. ALL HARDWARE ACCESSORIES USED WITH ANCHOR BOLTS TO BE STAINLESS STEEL.

DETAIL **BRIDGE ANCHORAGE** 1 / S5.2 NO SCALE BRIDGE ANCHORAGE




NOTES:
1. PREFABRICATED BRIDGE, ANCHORAGE, AND ABUTMENT REINF NOT SHOWN FOR CLARITY.

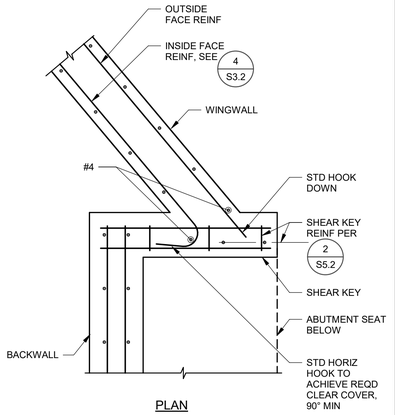
DETAIL **SHEAR KEY** 2 / S5.2 **3/4" = 1'-0"** TRANSVERSE SHEAR KEY




FOR SKEW 20° AND LESS

FOR SKEW OVER 20°

DETAIL **WINGWALL TO STEM WALL** 3 / S5.2 NO SCALE WINGWALL_TO_STEM WALL




PLAN

DETAIL **WINGWALL TO BACKWALL** 4 / S5.2 NO SCALE WINGWALL_TO_BACKWALL




DETAIL **BRIDGE END JOINT** 5 / S5.2 **1" = 1'-0"** BRIDGE-ABUT JOINT


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VAN DAMME STATE PARK
LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

# DETAILS

DRAWING NO.

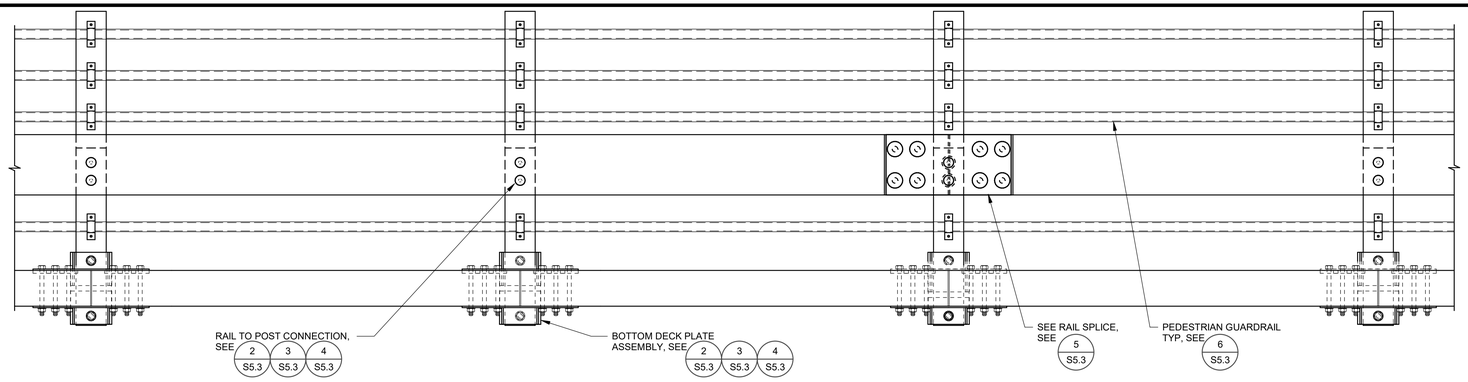
SHEET NO.
S5.2
OF

**PROJECT MILESTONE:**
65% SUBMITTAL


BUEHLER
600 Q STREET, SUITE 200
SACRAMENTO, CA 95811
916 443 0303

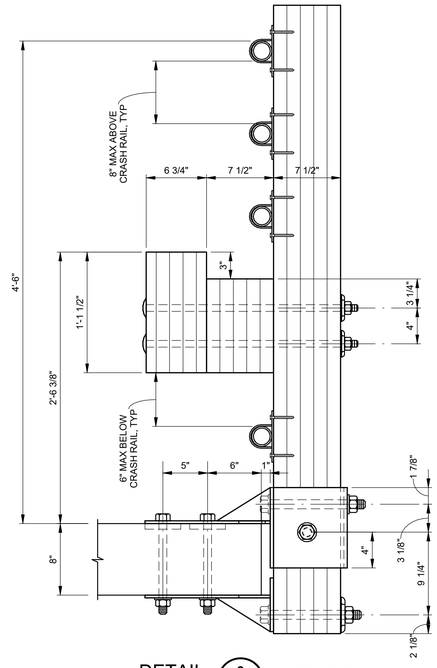


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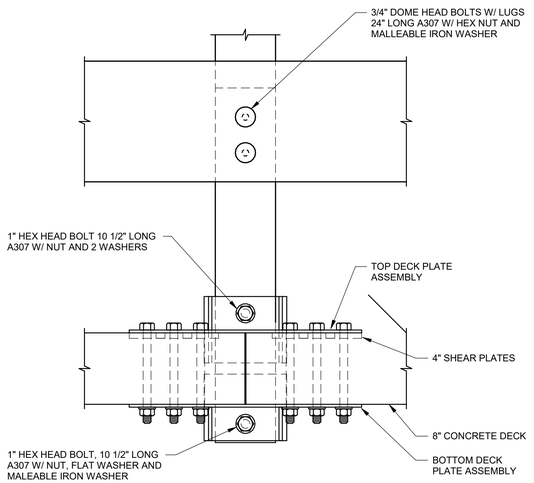



NOTES:
1. THE BASIS OF DESIGN FOR THIS BRIDGE RAIL IS THE "TL-2 GLULAM TIMBER BRIDGE RAILING," DEVELOPED BY THE MIDWEST ROADSIDE SAFETY FACILITY (MwRSF). TESTING OF RAIL WAS PERFORMED ACCORDING TO NCHRP-350 TEST LEVEL (TL) 2. THE FOLLOWING DESIGNATIONS APPLY TO THE BASIS OF DESIGN RAIL:
   A. MwRSF REPORT NUMBER: TRP-03-125-03; TEST NUMBER: WRBP-1
   B. FHWA ELIGIBILITY LETTER: B-138
   C. TASK FORCE 13 (TF-13) DESIGNATION: SBD01B.
2. THE DETAILING ON THIS SHEET REPRESENTS MODIFICATIONS TO THE BASIS OF DESIGN IN ORDER TO ACCOMODATE THE FOLLOWING:
   A. INCORPORATION OF A 4'-6" RAIL PEDESTRIAN RAIL.
   B. COMPATABILITY WITH ANCHORAGE TO THE CAST-IN-PLACE CONCRETE DECK.
3. FOR ALL INFORMATION, DIMENSIONS, AND DETAILING NOT SHOWN, CONTRACTOR TO CONTACT MwRSF TO OBTAIN DETAILING AND ANY FURTHER REQUIREMENTS.

DETAIL BRIDGE RAIL 1 S5.3 — 3/4" = 1'-0"
AB_BRIDGE RAIL 01

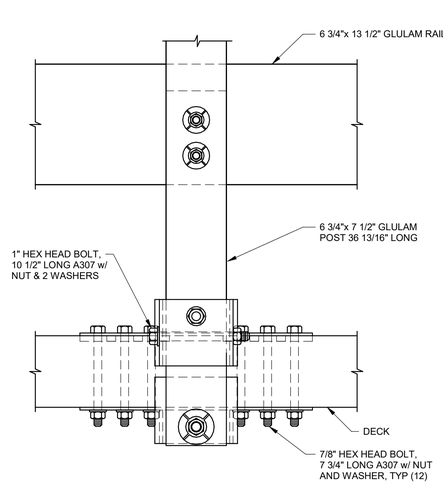



DETAIL BRIDGE RAIL 2 S5.3 — 1 1/2" = 1'-0"
AB_BRIDGE RAIL 02



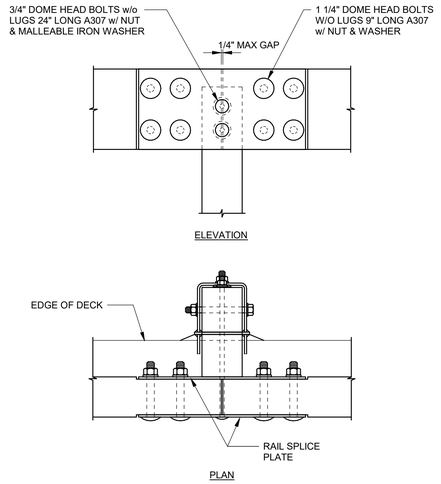

NOTES:
1. PEDESTRIAN GUARDRAIL AND PIPE CLAMPS NOT SHOWN FOR CLARITY

DETAIL BRIDGE RAIL 3 S5.3 — 1 1/2" = 1'-0"
AB_BRIDGE RAIL 03

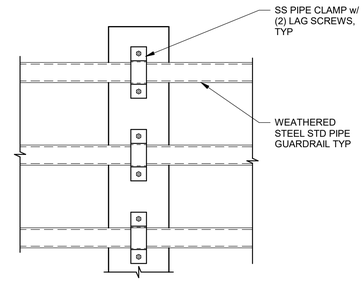



NOTES:
1. PEDESTRIAN GUARDRAIL AND PIPE CLAMPS NOT SHOWN FOR CLARITY

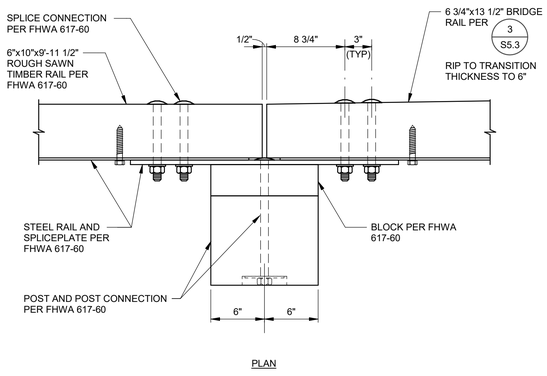
DETAIL BRIDGE RAIL 4 S5.3 — 1 1/2" = 1'-0"
AB_BRIDGE RAIL 04



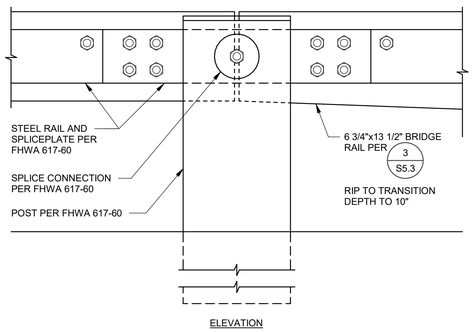

DETAIL BRIDGE RAIL SPLICE 5 S5.3 — 1" = 1'-0"
AB_BRIDGE RAIL_05




DETAIL BRIDGE GUARDRAIL 6 S5.3 — 1 1/2" = 1'-0"
AB_BRIDGE RAIL 06




PLAN




ELEVATION

DETAIL APPROACH TRANSITION SPLICE 7 S5.3 — 1 1/2" = 1'-0"
Drafting 7

**PROJECT MILESTONE:**
65% SUBMITTAL


SONOMA-MENDOCINO
COAST DISTRICT OFFICE
12301 NORTH HWY 1
MENDOCINO, CA
95460

BUEHLER
600 Q STREET, SUITE 200
SACRAMENTO, CA 95811
916 443 0303


REGISTERED PROFESSIONAL ENGINEER
RYAN J. MILLER
No. 5556
STRUCTURAL
STATE OF CALIFORNIA

DPR ACCESS COMPLIANCE REVIEW
ACCESSIBILITY SECTION
**CERTIFICATION#**

Reviewed by **Date**

ACCESSIBILITY COMPLIANCE AND STATE FIRE MARSHAL SIGNED ORIGINALS ARE ON FILE AT THE DEPARTMENT OF PARKS AND RECREATION,NORTHERN SERVICE CENTER

| | |
|---|---|
| DESIGNED | ALB |
| DRAWN | ALB |
| CHECKED | RJM |
| DATE | 08/16/2024 |

REVISIONS

| No. | Description | Date |
|---|---|---|
| | | |

VAN DAMME STATE PARK
LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

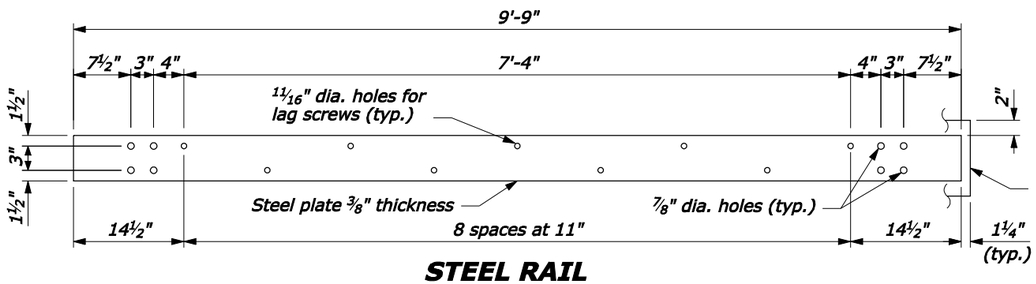
# BRIDGE RAIL DETAILS

DRAWING NO.

SHEET NO.
S5.3
OF

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| STATE | PROJECT | SHEET NUMBER |
|---|---|---|
| | | |



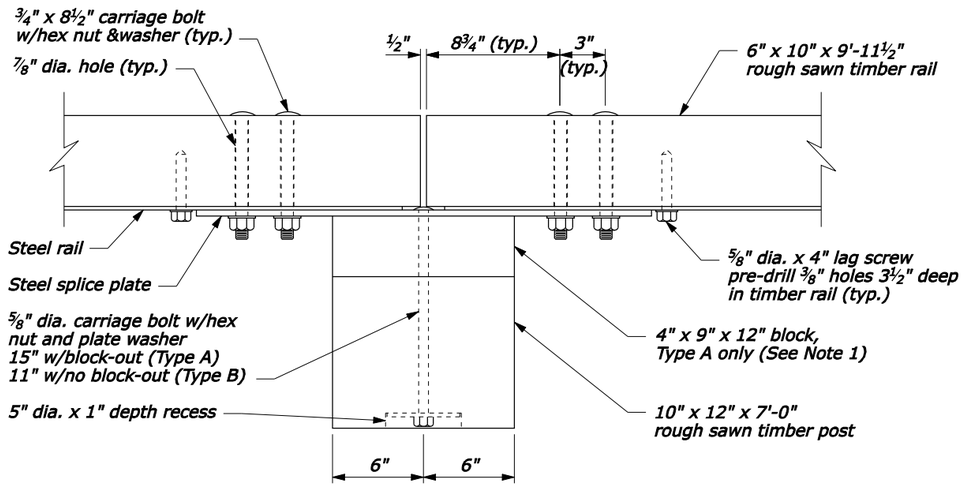

## STEEL RAIL



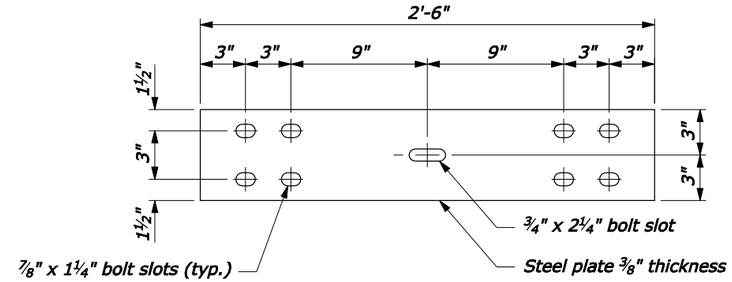

## PLATE WASHER

### NOTE:

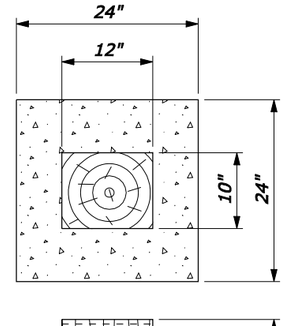
1. Use the Type A, blocked-out, system or the Type B, non-blocked-out, system as specified in the plans.
2. Use weathering steel for all structural steel and fastener hardware as specified.
3. Place a terminal section (See Standards 617-61 and 617-62) on both approach and trailing ends of barrier installations.

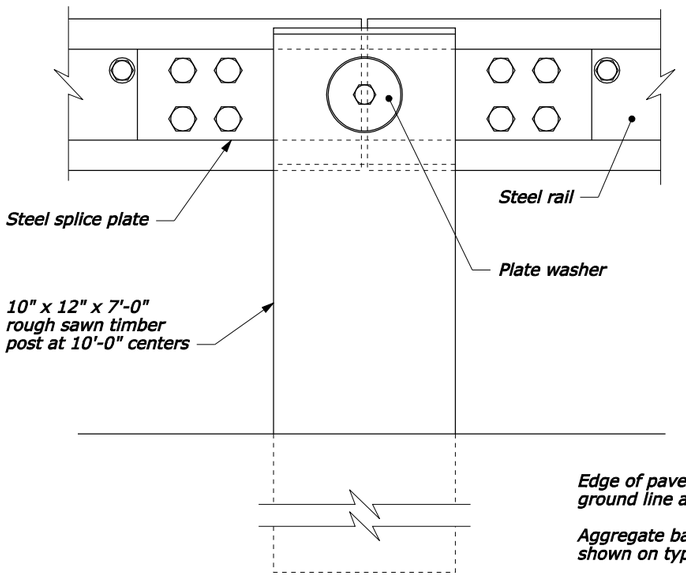



PLAN



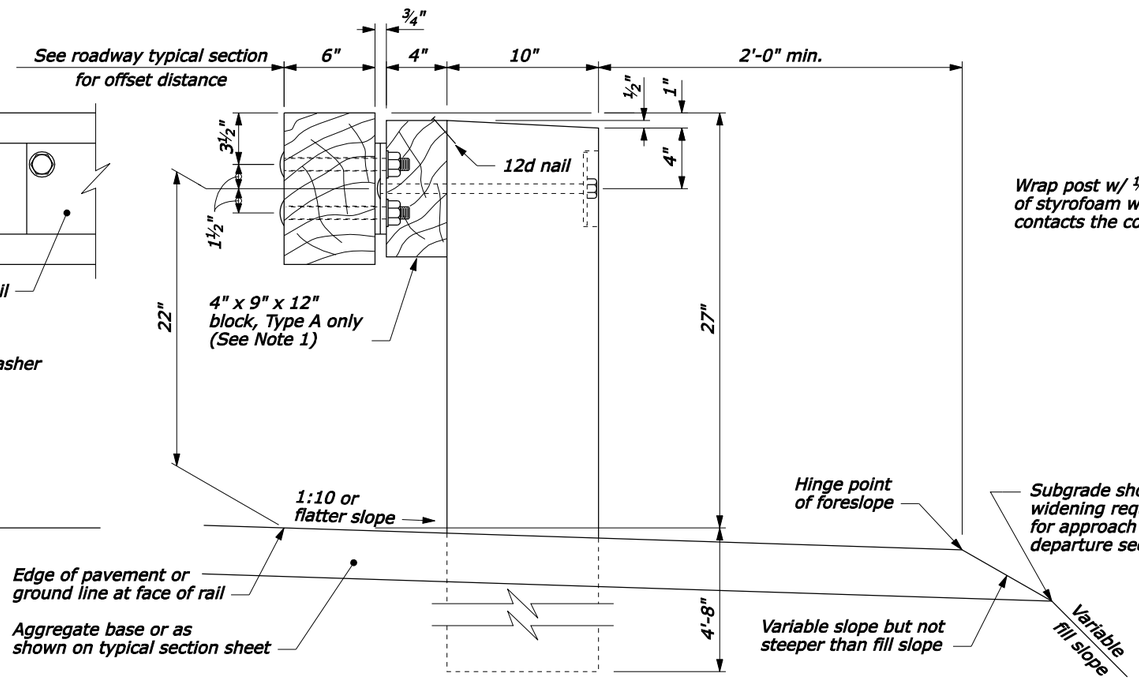

## STEEL SPLICE PLATE



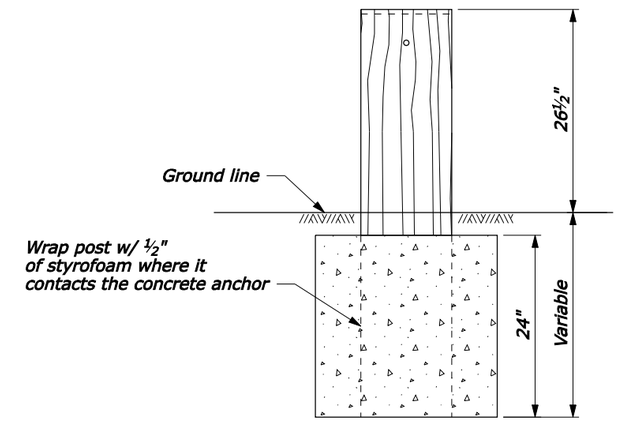




ELEVATION

## POST CONNECTION




## TYPICAL GUARDRAIL CROSS SECTION




24" dia. round anchor is an acceptable alternative.
Reduced size acceptable in solid rock.

## CONCRETE ANCHOR FOR SHORT GUARDRAIL POST

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

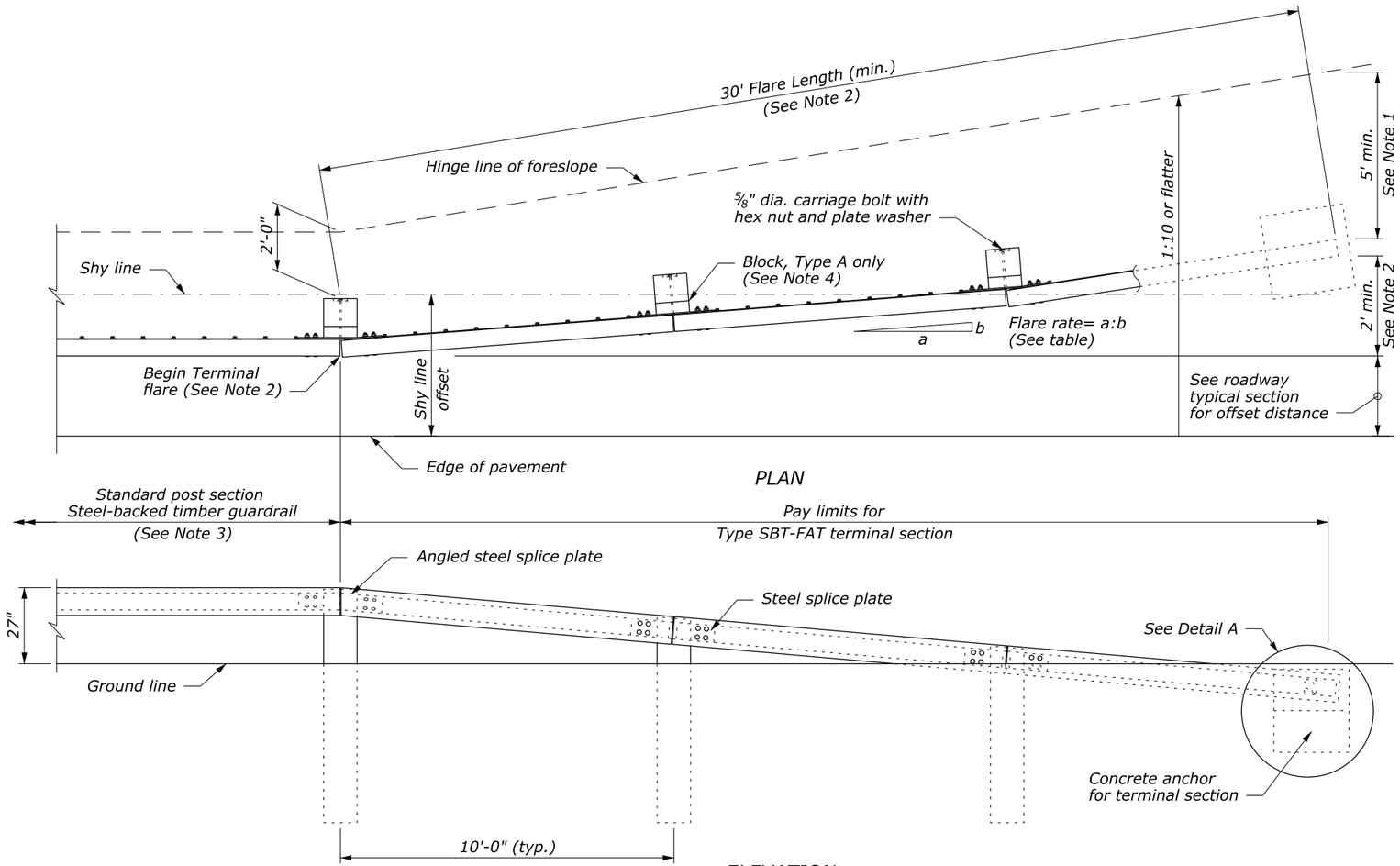
# STEEL-BACKED TIMBER GUARDRAIL TYPE A & TYPE B

| STANDARD APPROVED FOR USE 3/1990 | STANDARD |
|---|---|
| REVISED: 4/1994 6/2005 | 617-60 |

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| STATE | PROJECT | SHEET NUMBER |
|---|---|---|
| | | |

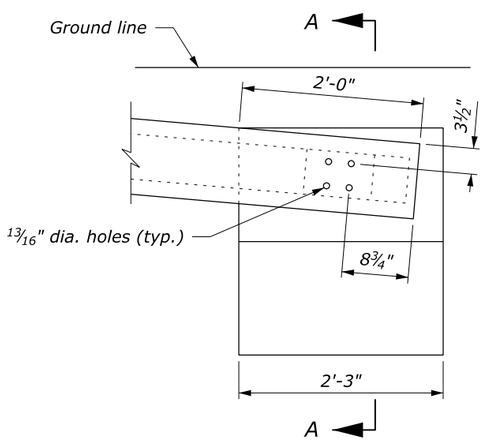



## APPROACH & DEPARTURE FLARE WITH FLARED ANCHOR TERMINAL (FAT)

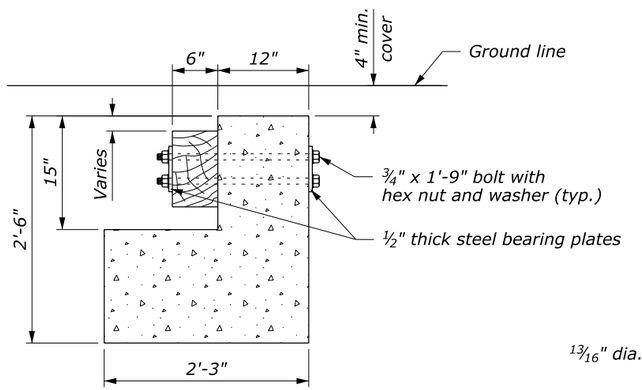
### NOTE:

1. *Extend the fill widening a minimum of 5 feet behind the guardrail, unless otherwise directed by the CO.*
2. *The guardrail flare shown in the plan view is the minimum length and rate required. As directed by the CO, flare the guardrail so that the terminal section is outside the clear zone. If the terminal section cannot be located outside the clear zone, it should be flared as far as practical from the road at the maximum rate indicated on the Guardrail Flare Rates table.*
3. *See Standard 617-60, Steel-Backed Timber Guardrail, Type SBTA and SBTB, for timber, structural steel, and hardware details.*
4. *On the Type A, blocked-out guardrail, include the blocks in terminal section, except on the concrete anchor. For the Type B, non-blocked-out guardrail, no blocks are included.*

| GUARDRAIL FLARE RATE TABLE | | | |
|---|---|---|---|
| Design Speed (mph) | Shy line offset (ft) | Flare rate inside shy line (a:b) | Flare rate outside shy line (a:b) |
| 60 | 8.0 | 26:1 | 14:1 |
| 50 | 6.5 | 21:1 | 11:1 |
| 40 | 5.0 | 16:1 | 8:1 |
| 30 and less | 3.5 | 13:1 | 7:1 |

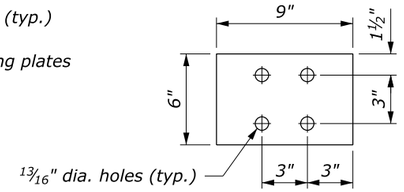



DETAIL A

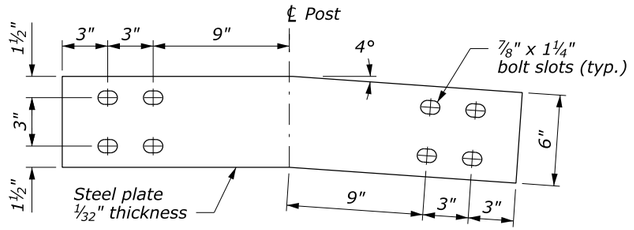



SECTION A-A

### CONCRETE ANCHOR




### STEEL BEARING PLATE




### ANGLED STEEL SPLICE PLATE

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
FEDERAL LANDS HIGHWAY

U.S. CUSTOMARY STANDARD

# STEEL-BACKED TIMBER GUARDRAIL TERMINAL SECTION TYPE SBT-FAT

STANDARD APPROVED FOR USE 1/1990
REVISED: 4/1994 6/2005
DRAFT: 12/2013

STANDARD 617-61

24 December 2013 6:54 AM c:\mvfiles\pw_production\dms67487\Standard_617-61.DRAFT.dgn [USC]

## NOTES:

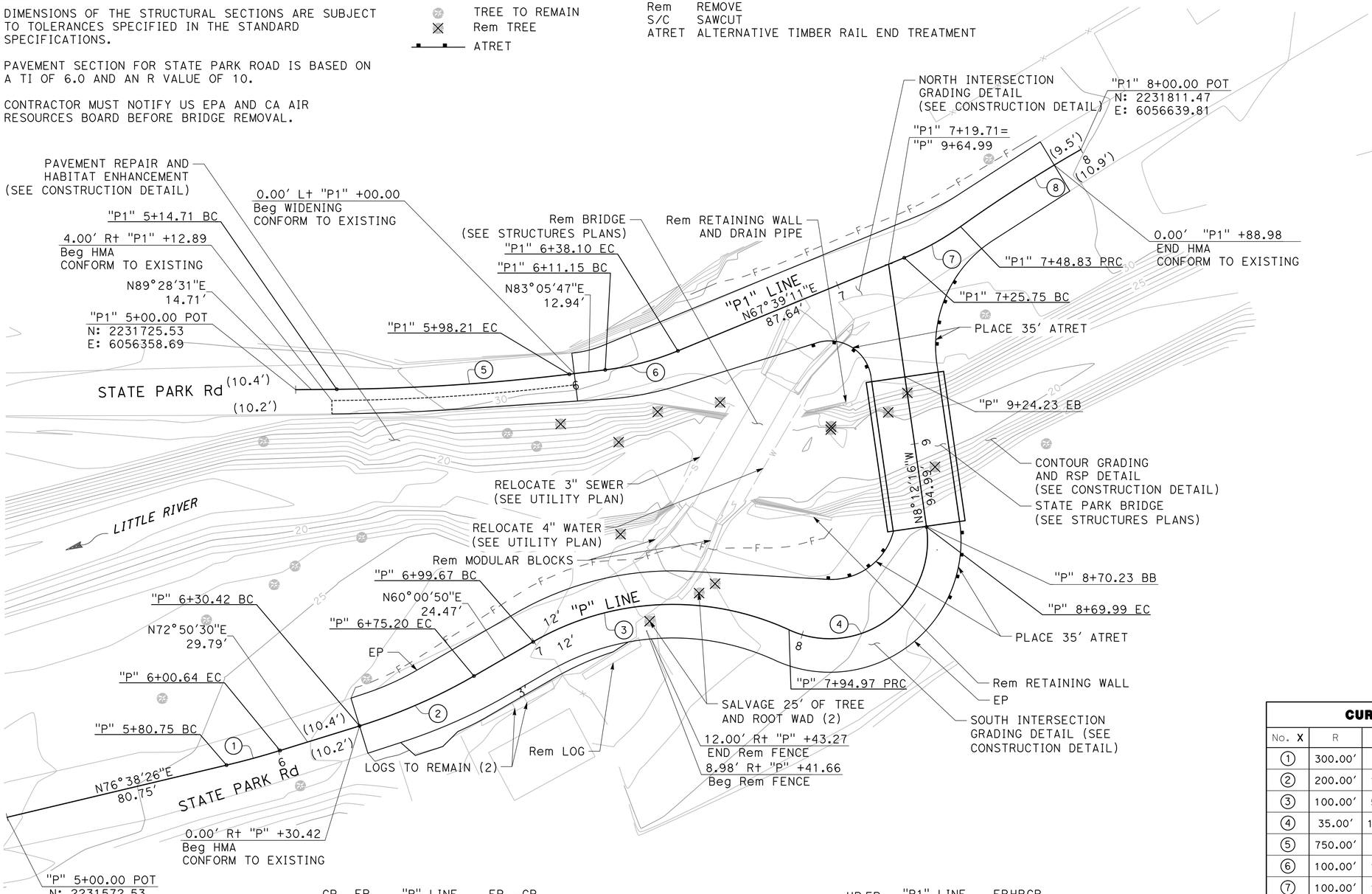
1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. PAVEMENT SECTION FOR STATE PARK ROAD IS BASED ON A TI OF 6.0 AND AN R VALUE OF 10.
3. CONTRACTOR MUST NOTIFY US EPA AND CA AIR RESOURCES BOARD BEFORE BRIDGE REMOVAL.

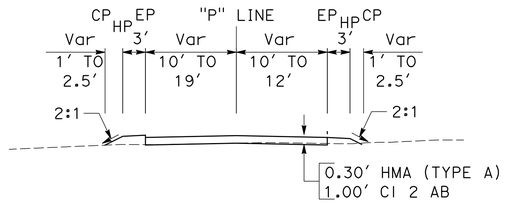
## LEGEND:

- TREE TO REMAIN
- Rem TREE
- ATRET

## ABBREVIATIONS:

| | |
|---|---|
| Rem | REMOVE |
| S/C | SAWCUT |
| ATRET | ALTERNATIVE TIMBER RAIL END TREATMENT |

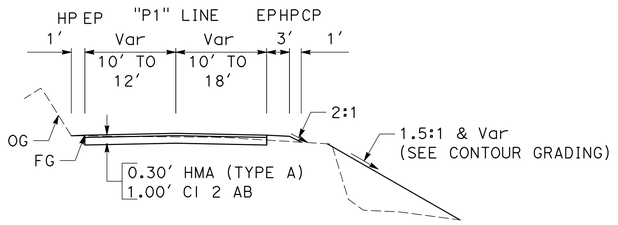



## STATE PARK Rd

"P" 6+30.42 TO 8+70.23 BB

SCALE: 1" = 5'




## STATE PARK Rd

"P1" 5+99.94 TO 7+88.98

SCALE: 1" = 5'

**65% SUBMITTAL**

SCALE: 1" = 20'

### CURVE TABLE

| No. X | R | Δ | T | L |
|---|---|---|---|---|
| ① | 300.00' | 3°47'56" | 9.95' | 19.89' |
| ② | 200.00' | 12°49'40" | 22.48' | 44.78' |
| ③ | 100.00' | 54°36'08" | 51.62' | 95.30' |
| ④ | 35.00' | 122°49'14" | 64.22' | 75.03' |
| ⑤ | 750.00' | 6°22'44" | 41.79' | 83.50' |
| ⑥ | 100.00' | 15°26'35" | 13.56' | 26.95' |
| ⑦ | 100.00' | 13°13'29" | 11.59' | 23.08' |
| ⑧ | 500.00' | 5°51'49" | 25.61' | 51.17' |

CALIFORNIA STATE PARKS SINCE 1864

SONOMA-MENDOCINO COAST DISTRICT OFFICE
12301 NORTH HWY 1
MENDOCINO, CA
95460

REGISTERED PROFESSIONAL ENGINEER
JAKE W. WEIR
No. 72382
Exp. 6/30/26
CIVIL
STATE OF CALIFORNIA

CALIFORNIA STATE FIRE MARSHAL- APPROVED

Approval of this plan does not authorize or approve any omission of deviation from applicable regulations. Final approval is subject to field inspection. One set of approved plans shall be available on the project site at all times.

Reviewed by Date

DPR ACCESS COMPLIANCE REVIEW ACCESSIBILITY SECTION

CERTIFICATION #

Reviewed by Date

ACCESSIBILITY COMPLIANCE AND STATE FIRE MARSHAL SIGNED ORIGINALS ARE ON FILE AT THE DEPARTMENT OF PARKS AND RECREATION, NORTHERN SERVICE CENTER

DESIGNED: JW
DRAWN: JY
CHECKED:
DATE: 8/16/2024

REVISIONS

| | DATE |
|---|---|
| | |
| | |

VAN DAMME STATE PARK

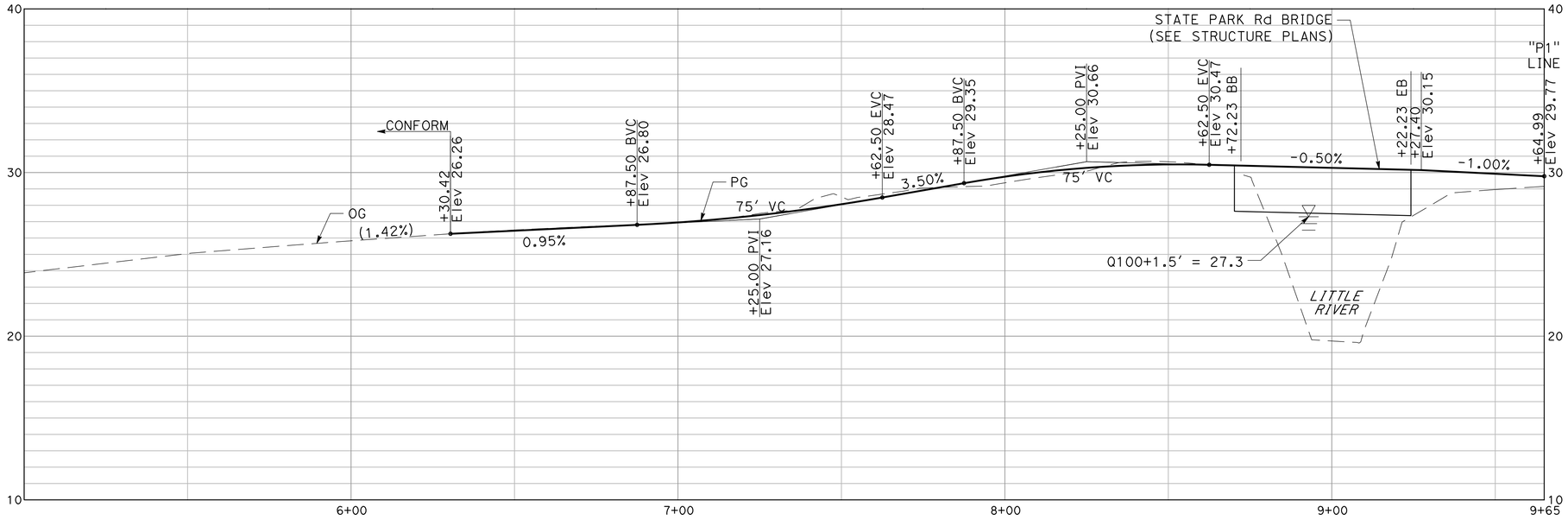
# LAYOUT

LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

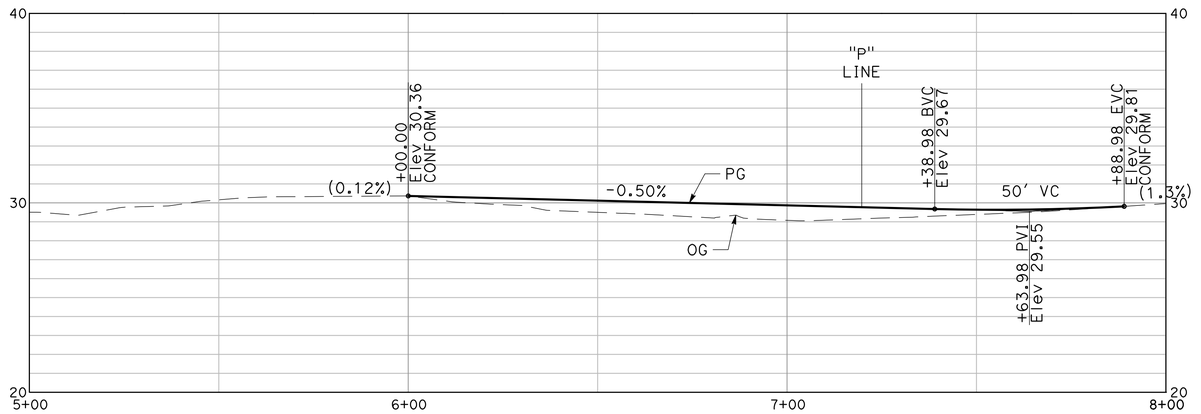
CSFM NO. XX-XX-XX-XXXX
CONTRACT NO. CXXXXXXX

DRAWING NO.
X

SHEET NO.
**L-1**




## STATE PARK Rd
"P" LINE




## STATE PARK Rd
"P1" LINE

**65% SUBMITTAL**

Horiz SCALE: 1" = 20'
Vert SCALE: 1" = 4'


SONOMA-MENDOCINO
COAST DISTRICT
OFFICE
12301 NORTH HWY 1
MENDOCINO, CA
95460


REGISTERED PROFESSIONAL ENGINEER
JAKE W. WEIR
No. 72382
Exp. 6/30/26
CIVIL
STATE OF CALIFORNIA

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DPR ACCESS COMPLIANCE REVIEW
ACCESSIBILITY SECTION

CERTIFICATION #

Reviewed by Date

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DESIGNED: JW
DRAWN: JY
CHECKED:
DATE: 8/16/2024

REVISIONS

| | DATE |
|---|---|
| | |
| | |

VAN DAMME STATE PARK

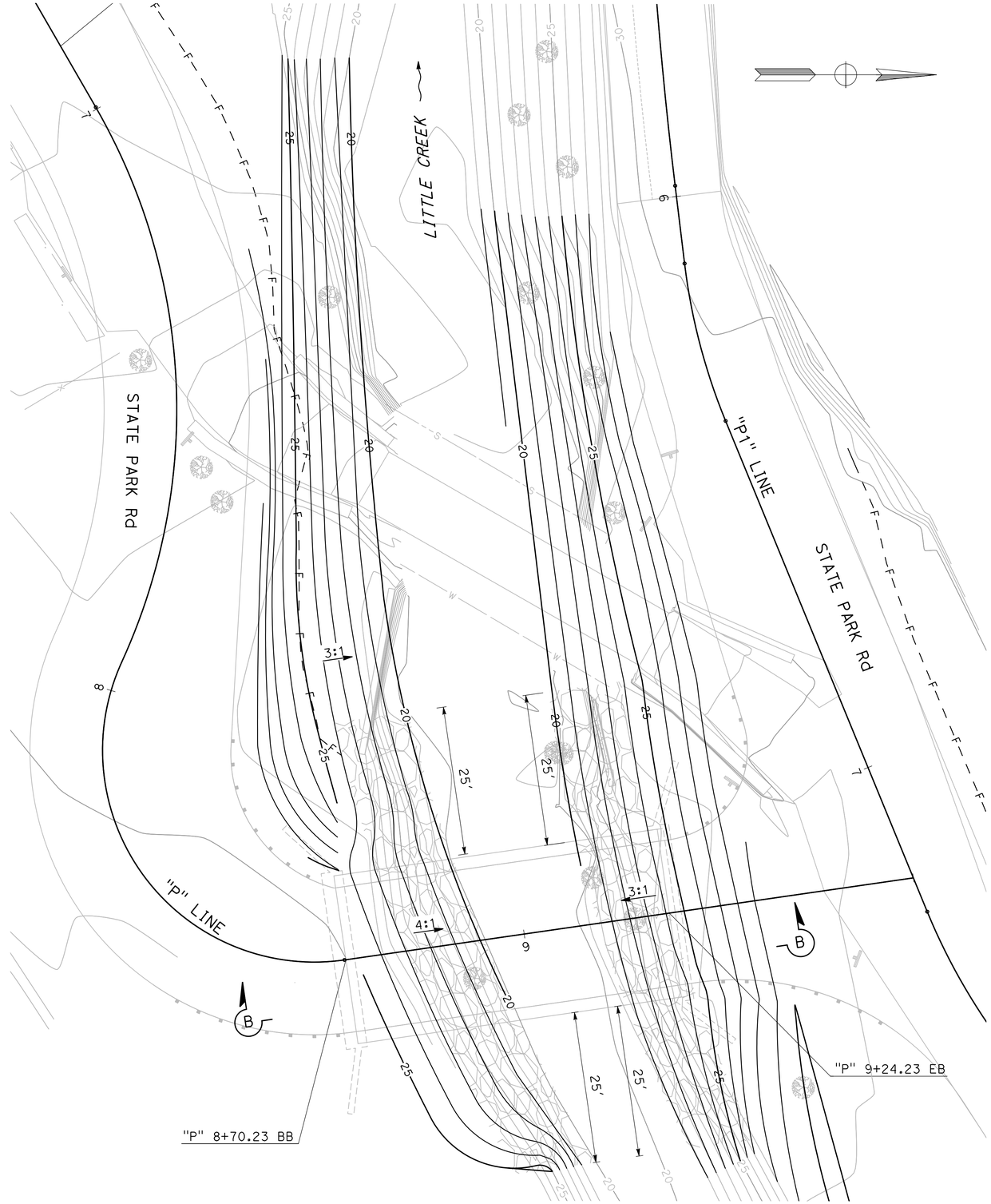
# PROFILE

LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

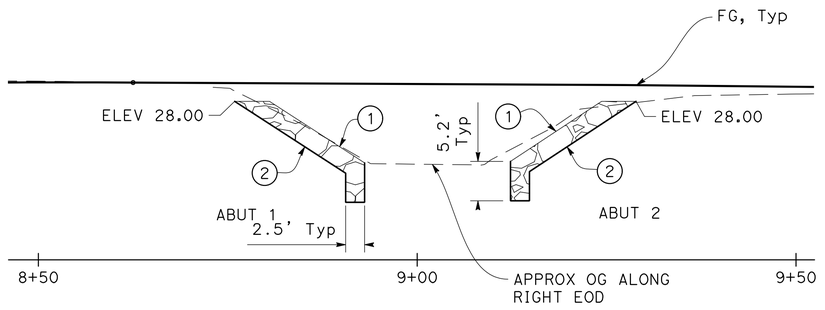
CSFM NO. XX-XX-XX-XXXX
CONTRACT NO. CXXXXXXX

DRAWING NO.
X

SHEET NO.
**P-1**




## CONTOUR GRADING AND RSP DETAIL
SCALE: 1" = 10'




## SECTION B-B
NO SCALE

LEGEND:

(1) ROCK SLOPE PROTECTION (300LB, CLASS IV, METHOD B)

(2) ROCK SLOPE PROTECTION, FABRIC TYPE 8

**65% SUBMITTAL** SCALE: AS SHOWN


SONOMA-MENDOCINO COAST DISTRICT OFFICE
12301 NORTH HWY 1
MENDOCINO, CA
95460


REGISTERED PROFESSIONAL ENGINEER
JAKE W. WEIR
No. 72382
Exp. 6/30/26
CIVIL
STATE OF CALIFORNIA

CALIFORNIA STATE FIRE MARSHAL- APPROVED

Approval of this plan does not authorize or approve any omission of deviation from applicable regulations. Final approval is subject to field inspection. One set of approved plans shall be available on the project site at all times.

Reviewed by Date

DPR ACCESS COMPLIANCE REVIEW
ACCESSIBILITY SECTION

CERTIFICATION #

Reviewed by Date

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DESIGNED: JW
DRAWN: JY
CHECKED:
DATE: 8/16/2024

REVISIONS

| | DATE |
|---|---|
| | |
| | |

VAN DAMME STATE PARK

# CONSTRUCTION DETAIL

LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

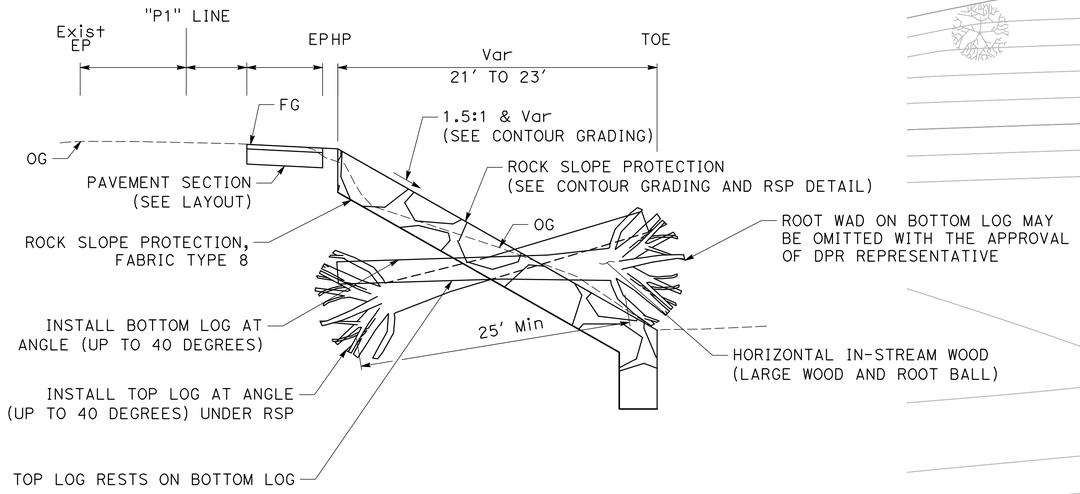
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CONTRACT NO. CXXXXXXX

DRAWING NO.
X

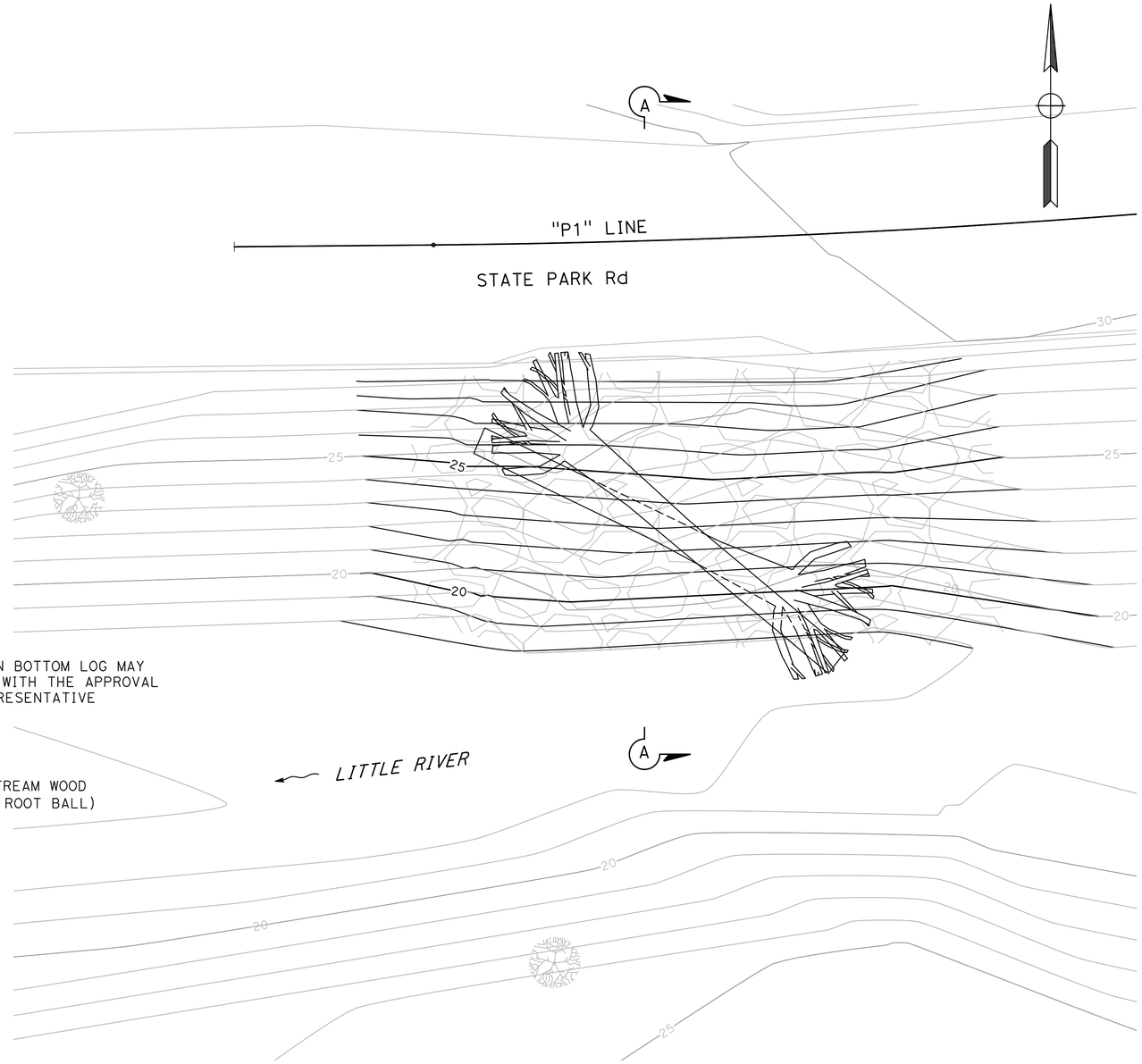
SHEET NO.
C-1

NOTES:

1. THE LOCATION FOR THE PROPOSED HABITAT ENHANCEMENT FEATURES SHOWN ON THIS SHEET ARE APPROXIMATE. THERE WILL BE SOME VARIATION TO THE LAYOUT OF THE HABITAT ENHANCEMENT FEATURES FROM THE DRAWINGS ON THIS SHEET TO MATCH SPECIFIC SITE CONDITIONS AT THE TIME OF CONSTRUCTION. THE DPR REPRESENTATIVE WILL IDENTIFY PRECISE LOCATIONS FOR PROJECT FEATURES IN THE FIELD TO OVERHANG A PORTION OF THE ROOT WAD OVER THE EXISTING LOW WATER CHANNEL AT THE TIME OF CONSTRUCTION.
2. TREES MUST BE PROTECTED FROM DAMAGE RESULTING FROM CONSTRUCTION ACTIVITIES. SOME DOWNED BUT STILL LIVING TREES WILL NEED TO BE CUT AND MOVED TO ALLOW CONSTRUCTION. ANY TREE TO BE REMOVED, INCLUDING DOWNED TREES, MUST BE MARKED BY THE CONTRACTOR AND APPROVED BY THE DPR REPRESENTATIVE PRIOR TO CUTTING AND REMOVAL. ALL TREE BRANCHES TO BE PRUNED MUST BE MARKED BY THE CONTRACTOR AND APPROVED BY THE DPR REPRESENTATIVE PRIOR TO PRUNING.
3. PRESERVATION FENCING MUST BE INSTALLED BY THE CONTRACTOR AND APPROVED BY THE DPR REPRESENTATIVE PRIOR TO STOCKPILING CONSTRUCTION MATERIALS OR BEGINNING CONSTRUCTION OF THE HABITAT ENHANCEMENT FEATURES.
4. IN STREAM WOOD MUST BE DOUGLAS FIR, OR APPROVED EQUAL. IN STREAM WOOD TO BE 25 FEET IN LENGTH WITH ROOT WAD AND HAVE A MINIMUM DIAMETER OF 2 FEET.
5. EMBED 2 PIECES OF IN-STREAM WOOD IN BANK ADJACENT TO LOW WATER CHANNEL.
6. PLACE 1 PIECE OF IN-STREAM WOOD AT 35 DEGREE ANGLE TOWARDS BANK WITH ROOT WAD EXTENDING OVER BANK. BRACE OTHER END AGAINST EMBEDDED IN-STREAM WOOD TO CREATE A STABLE SYSTEM.




**SECTION A-A**
SCALE: 1" = 5'




**PAVEMENT REPAIR AND HABITAT ENHANCEMENT DETAIL**
SCALE: 1" = 5'

**65% SUBMITTAL**

SCALE: AS SHOWN


SONOMA-MENDOCINO COAST DISTRICT OFFICE
12301 NORTH HWY 1
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95460


REGISTERED PROFESSIONAL ENGINEER
JAKE W. WEIR
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CIVIL
STATE OF CALIFORNIA

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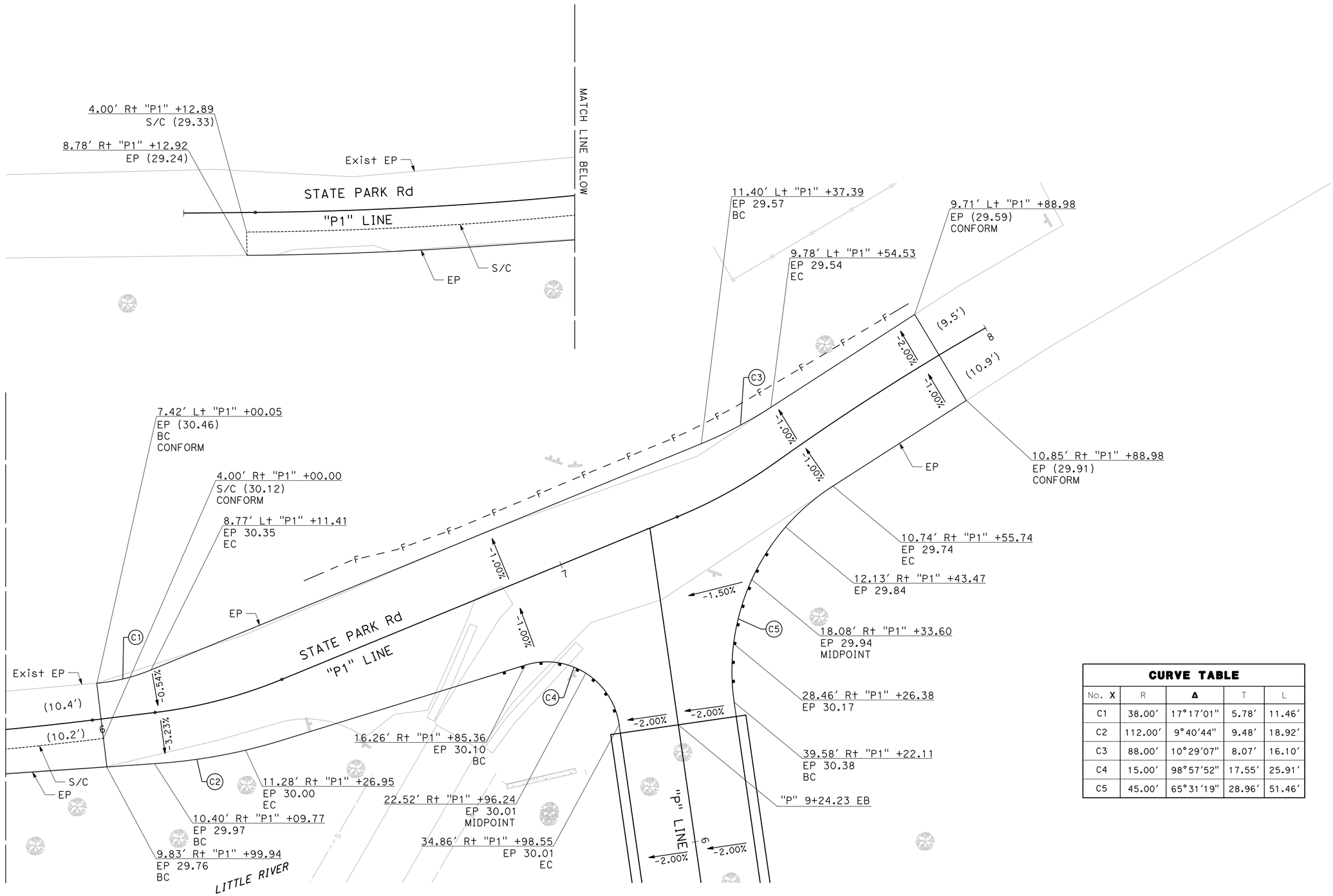
# CONSTRUCTION DETAIL

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CONTRACT NO. CXXXXXXX

DRAWING NO.
X

SHEET NO.
**C-2**




## NORTH INTERSECTION GRADING DETAIL

SCALE: 1" = 10′

| CURVE TABLE | | | | |
|---|---|---|---|---|
| No. X | R | Δ | T | L |
| C1 | 38.00′ | 17°17′01" | 5.78′ | 11.46′ |
| C2 | 112.00′ | 9°40′44" | 9.48′ | 18.92′ |
| C3 | 88.00′ | 10°29′07" | 8.07′ | 16.10′ |
| C4 | 15.00′ | 98°57′52" | 17.55′ | 25.91′ |
| C5 | 45.00′ | 65°31′19" | 28.96′ | 51.46′ |

**65% SUBMITTAL** SCALE: 1" = 10′


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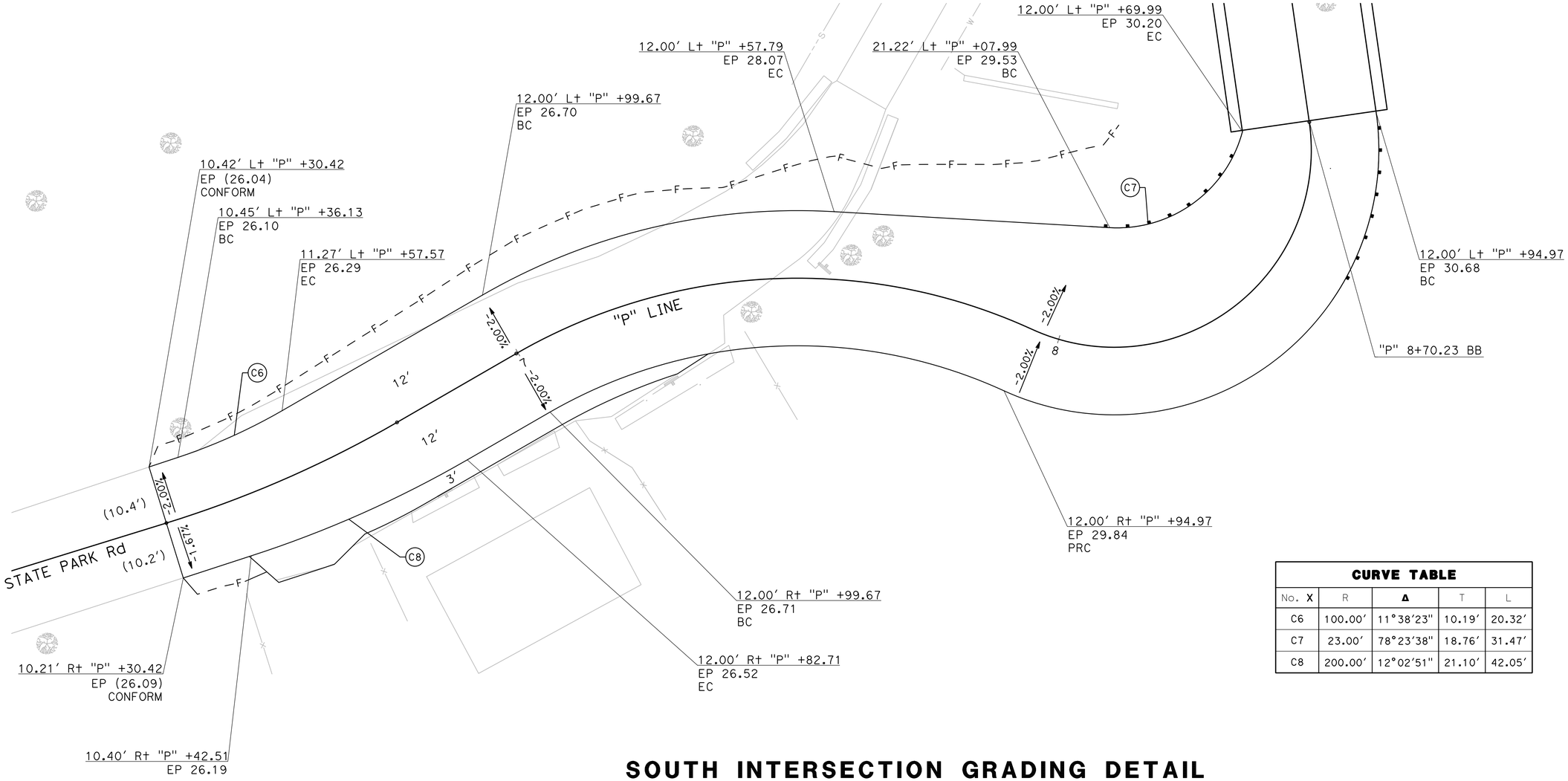
# CONSTRUCTION DETAIL

LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

CSFM NO. XX-XX-XX-XXXX
CONTRACT NO. CXXXXXXX

DRAWING NO.
X

SHEET NO.
C-3




| CURVE TABLE | | | | |
|---|---|---|---|---|
| No. X | R | Δ | T | L |
| C6 | 100.00′ | 11°38′23" | 10.19′ | 20.32′ |
| C7 | 23.00′ | 78°23′38" | 18.76′ | 31.47′ |
| C8 | 200.00′ | 12°02′51" | 21.10′ | 42.05′ |

## SOUTH INTERSECTION GRADING DETAIL

SCALE: 1" = 10′

**65% SUBMITTAL**

SCALE: 1" = 10′

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# CONSTRUCTION DETAIL

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CONTRACT NO. CXXXXXXX

DRAWING NO.
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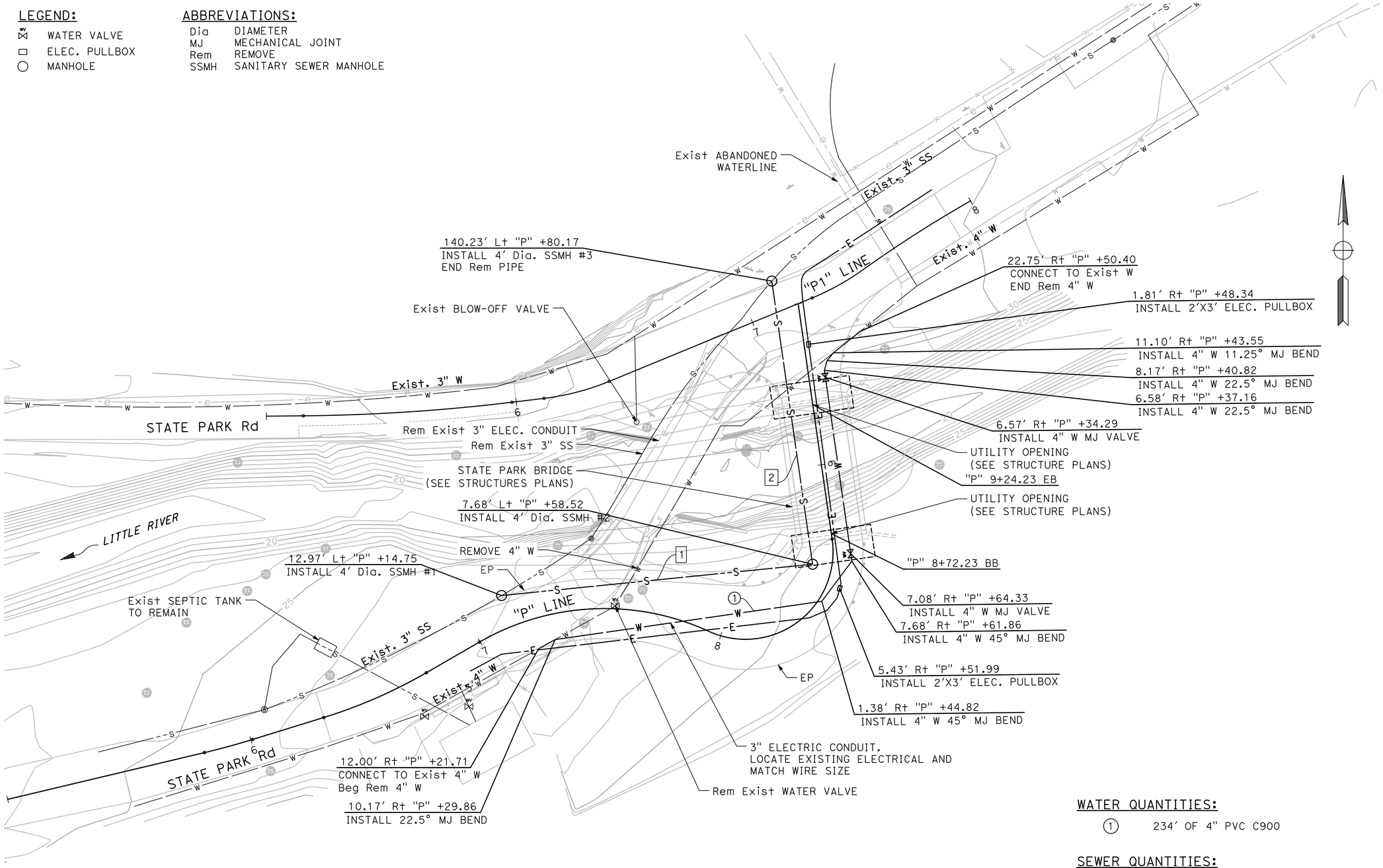
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C-4

**LEGEND:**

- WV — WATER VALVE
- ELEC. PULLBOX
- MANHOLE

**ABBREVIATIONS:**

| | |
|---|---|
| Dia | DIAMETER |
| MJ | MECHANICAL JOINT |
| Rem | REMOVE |
| SSMH | SANITARY SEWER MANHOLE |




**WATER QUANTITIES:**

| | |
|---|---|
| (1) | 234' OF 4" PVC C900 |

**SEWER QUANTITIES:**

| | |
|---|---|
| [1] | 125' OF 4" PVC SDR26 |
| [2] | 115' OF 4" PVC SDR26 |

**65% SUBMITTAL**

SCALE: 1" = 20'


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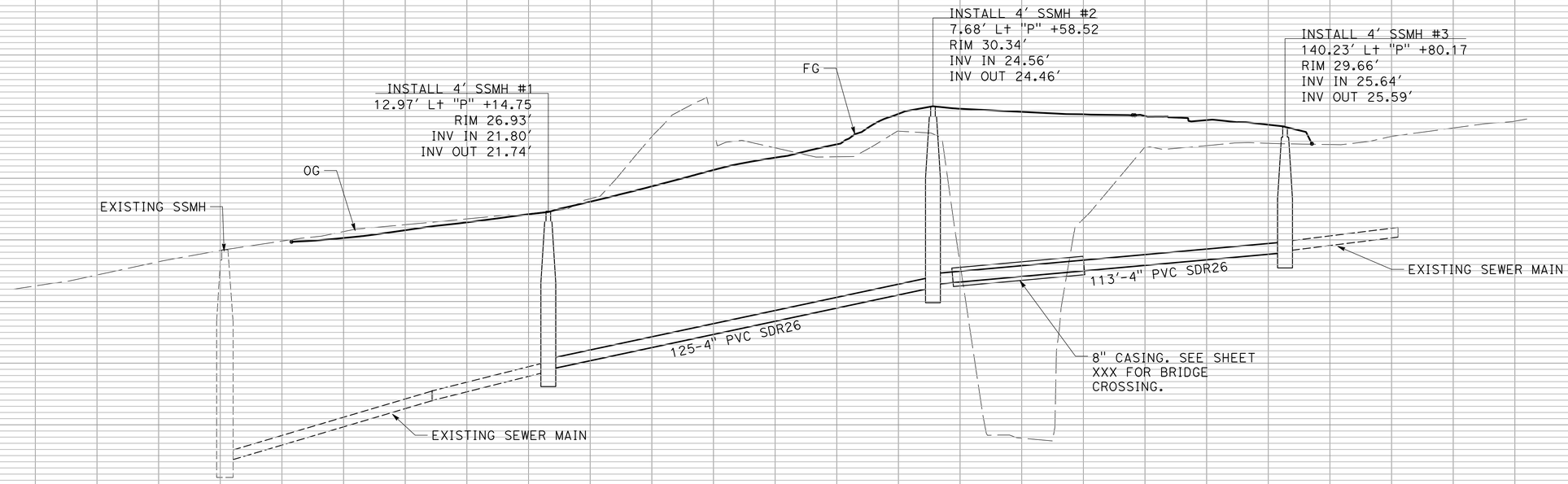
# UTILITY PLAN

LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

CSFM NO. XX-XX-XX-XXXX
CONTRACT NO. CXXXXXXX

DRAWING NO.
X

SHEET NO.
**U-1**




40
30
20
10

**65% SUBMITTAL**

HORIZONTAL SCALE 1" = 20'
VERTICAL SCALE 1" = 2'

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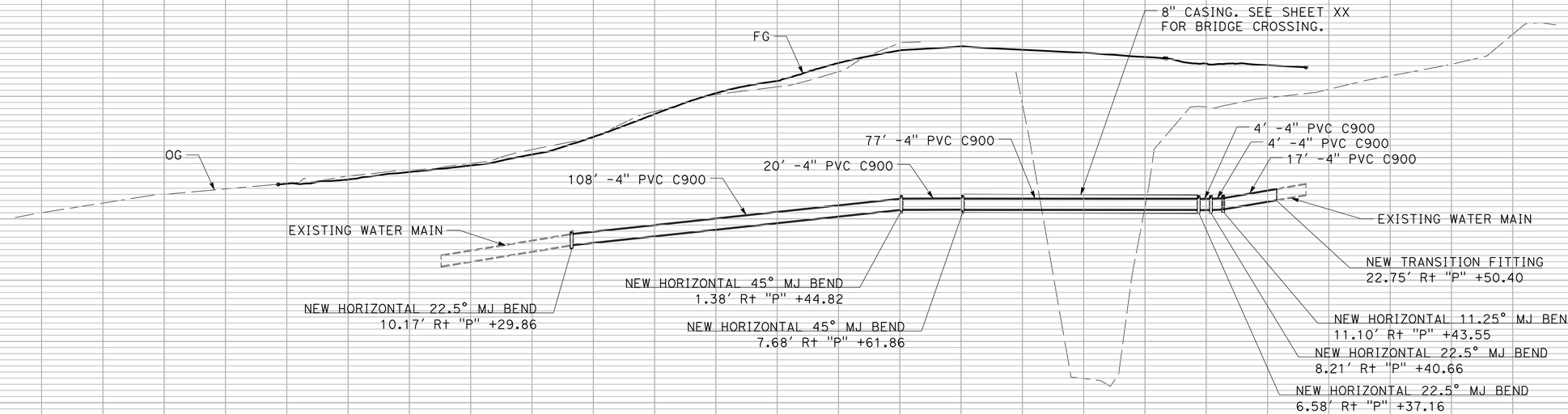
# SEWER PROFILE

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X

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**SP-1**




**65% SUBMITTAL**

HORIZONTAL SCALE 1" = 20′
VERTICAL SCALE 1" = 2′

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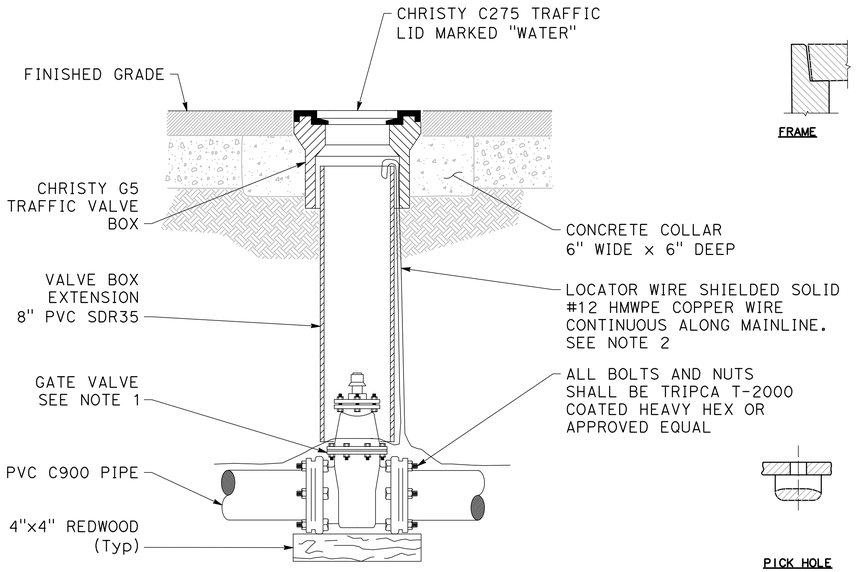
# WATER PROFILE

LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

CSFM NO. XX-XX-XX-XXXX
CONTRACT NO. CXXXXXXX

DRAWING NO.
X

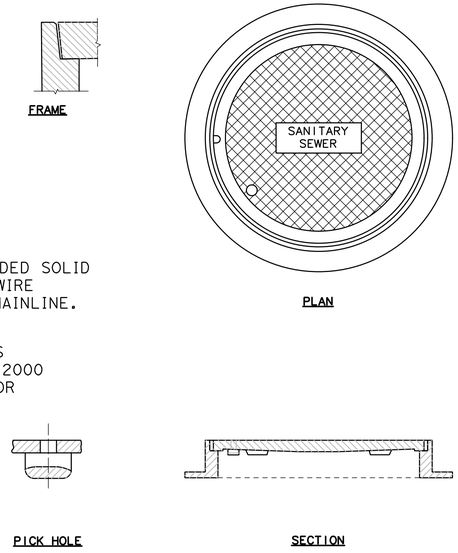
SHEET NO.
**WP-2**




NOTES

1. ALL VALVE HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
2. FOR CONNECTING NEW WIRE TO EXISTING LOCATOR WIRE, SPLICE MUST BE 3M DIRECT BURY SPLICE DBR/Y-6 WITH POLYGUARD CA-14 MASTIC COATING.
3. COAT ALL FERROUS METAL WITH BITUMASTIC TYPE MATERIAL.

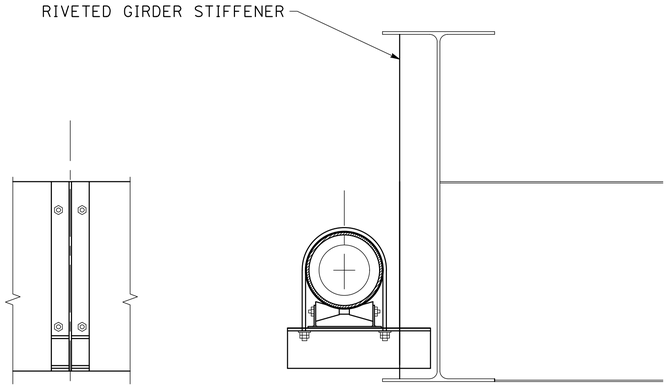
## BURIED VALVE ASSEMBLY



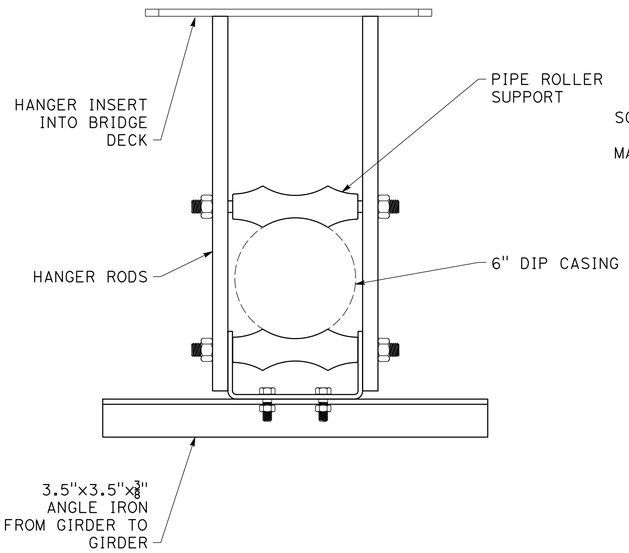

NOTES:

1. WHEN THERE IS A NEED TO RAISE MANHOLE COVER TO MEET GRADE, ONLY ONE (1) ADDITIONAL MANHOLE RING MAY BE ADDED, UNLESS OTHERWISE DIRECTED BY THE DISTRICT ENGINEER
2. FRAME & COVER SHALL BE PHOENIX IRON WORKS #P-1090, OR APPROVED EQUAL
3. COVER TO BE MACHINED FOR PERFECT, NO-ROCK FIT

## SSMH FRAME & COVER



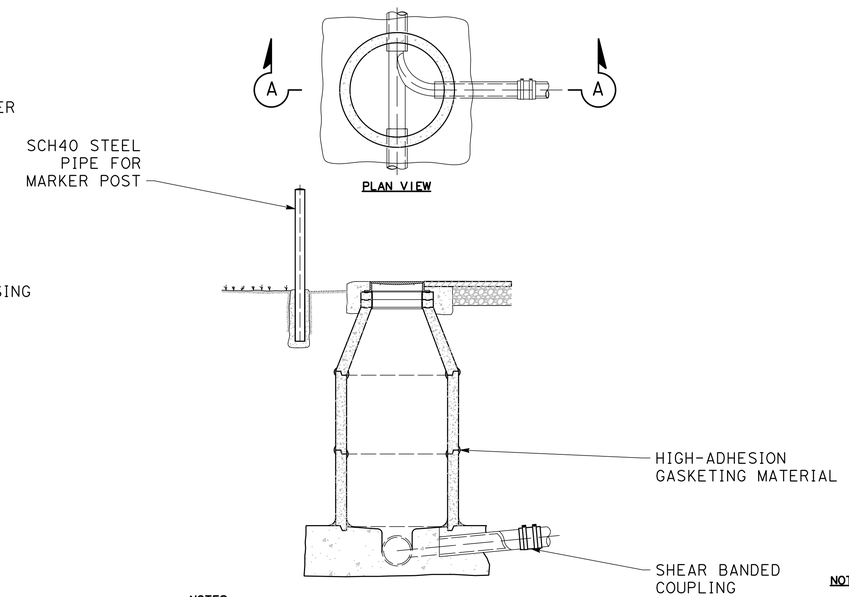

## SUPPORT OUTSIDE STEEL GIRDER




## PIPE HANGER SUPPORT

NOTES

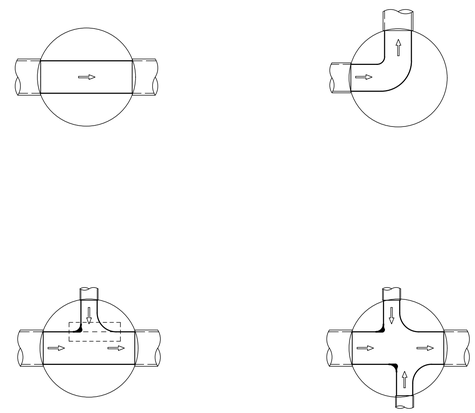
1. ANGLE IRON STRUT SHALL BE PLACED AT EVERY OTHER GIRDER, NEAR PIERS, AND AT ANY EXPANSION JOINT.
2. ALL HANGER RODS AND HARDWARE TO BE GALVANIZED.




NOTES:

1. MANHOLES TO BE 4' DIAMETER CONCENTRIC PRECAST CONCRETE.
2. COUPLING BAND SHALL BE MISSION BANDED STAINLESS STEEL "ARC SHIELD", FERNCO STAINLESS STEEL "SHEAR RING", OR APPROVED EQUAL. COUPLING BAND IS REQUIRED FOR ALL CONNECTIONS TO THE MANHOLE.
3. ALL CONCRETE TO BE SIX (6) SACK.
4. ALL GROUT SHALL CONTAIN "HYDROPEL".

## SANITARY SEWER MANHOLE



NOTES:

1. CHANNELS TO BE FORMED TO APPROXIMATE WIDTH, SIZE, & SHAPE OF PIPE AND FINISHED WITH GROUT
2. THICKNESS OF GROUT TO BE APPROXIMATELY HALF AN INCH (1/2")
3. TROWEL SMOOTH CURVES TO FIT, TYP

## SSMH CHANNELS

## 65% SUBMITTAL

SCALE: NO SCALE

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REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

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VAN DAMME STATE PARK

# UTILITY DETAIL

LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

CSFM NO. XX-XX-XX-XXXX
CONTRACT NO. CXXXXXXX

DRAWING NO.
X

SHEET NO.
UD-1

## NOTES:

1. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE, EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

## CONSTRUCTION NOTES:

1. INSTALL WATER VALVE
2. INSTALL Temp SHORING, CONSTRUCT BRIDGE FOUNDATIONS, AND INSTALL PREFABRICATED BRIDGE

## TRAFFIC HANDLING NOTES:

1. MAINTAIN ACCESS TO STATE PARK ROAD AT ALL TIMES.

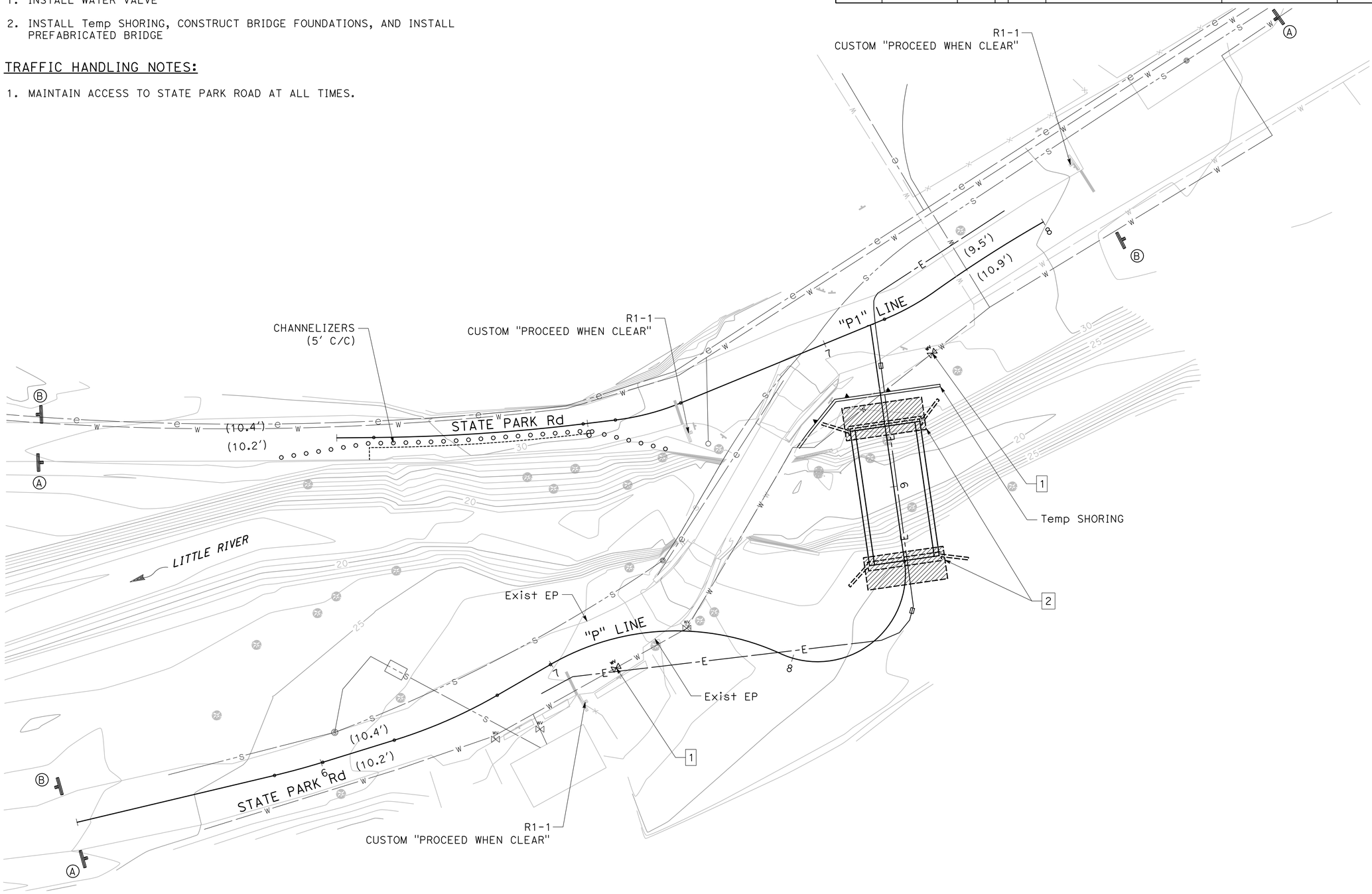
## LEGEND:

CONSTRUCTION AREA SIGN (1 POST)

CHANNELIZER

# STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

| SIGN No. | SIGN CODE | PANEL SIZE (INCHES) L | × | D | SIGN MESSAGE | NUMBER OF POSTS AND SIZE | QUANTITY |
|---|---|---|---|---|---|---|---|
| Ⓐ | W20-1 | 36 | × | 36 | ROAD WORK AHEAD | 1 - 4" x 4" | 3 |
| Ⓑ | G20-2 | 36 | × | 18 | END ROAD WORK | 1 - 4" x 4" | 3 |




**65% SUBMITTAL**

SCALE: 1" = 20'

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# STAGE CONSTRUCTION

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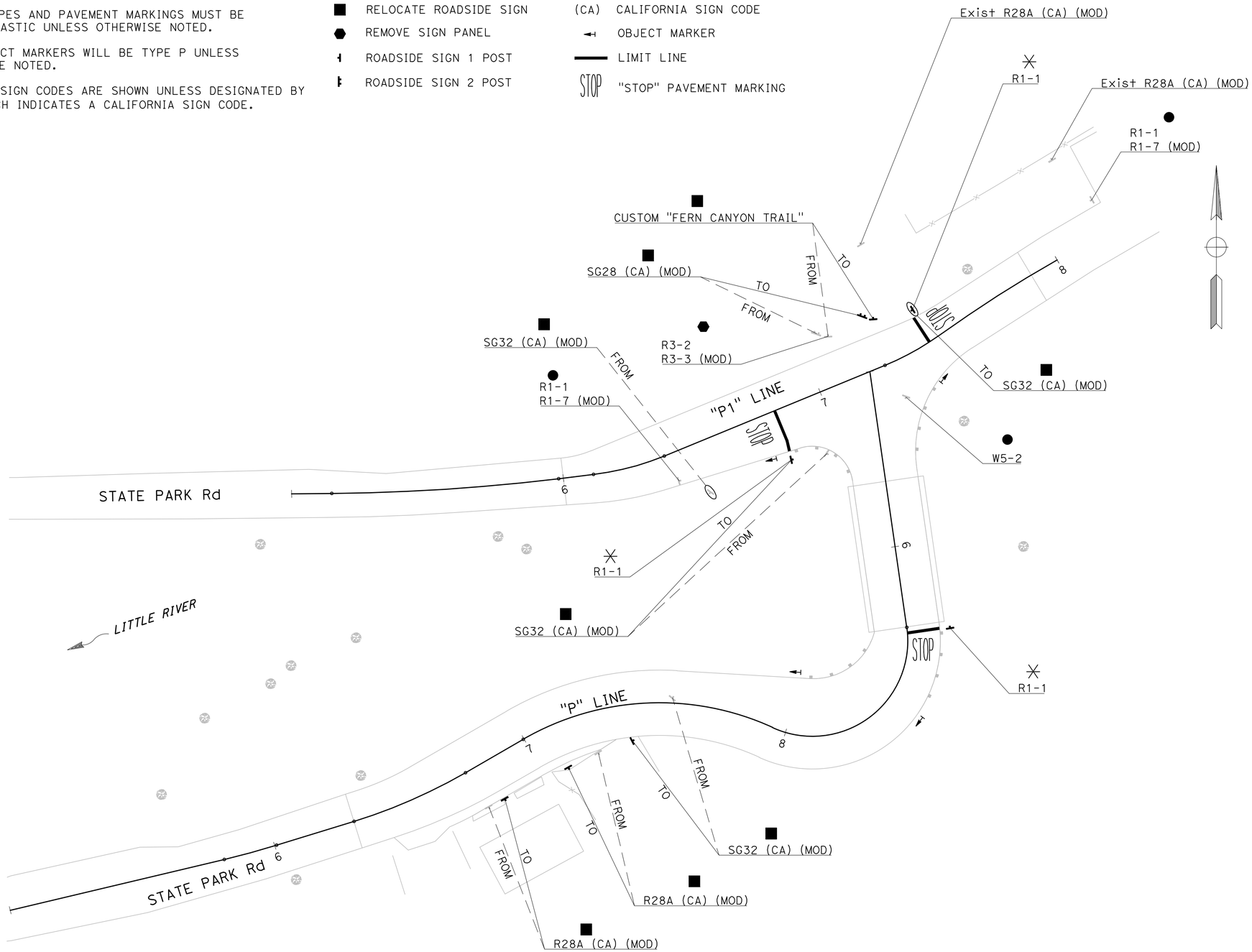
SHEET NO.
**SC-1**

## NOTES:

1. LOCATION OF SIGNS ARE APPROXIMATE. EXACT LOCATION AND POSITION OF ROADSIDE SIGNS SHALL BE DETERMINED BY THE ENGINEER.
2. ALL STRIPES AND PAVEMENT MARKINGS MUST BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
3. ALL OBJECT MARKERS WILL BE TYPE P UNLESS OTHERWISE NOTED.
4. FEDERAL SIGN CODES ARE SHOWN UNLESS DESIGNATED BY (CA) WHICH INDICATES A CALIFORNIA SIGN CODE.

## LEGEND:

- INSTALL ROADSIDE SIGN
- REMOVE ROADSIDE SIGN
- RELOCATE ROADSIDE SIGN
- REMOVE SIGN PANEL
- ROADSIDE SIGN 1 POST
- ROADSIDE SIGN 2 POST
- EXISTING ROADSIDE SIGN
- EXISTING SIGN 2 POST
- (CA) CALIFORNIA SIGN CODE
- OBJECT MARKER
- LIMIT LINE
- STOP "STOP" PAVEMENT MARKING




**65% SUBMITTAL**

SCALE: 1" = 20'

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VAN DAMME STATE PARK

# SIGNING PLAN

LITTLE RIVER RESTORATION AND BRIDGE REPLACEMENT

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CONTRACT NO. CXXXXXXX

DRAWING NO.
X

SHEET NO.
**S-1**

# Little River
# Restoration and Bridge Replacement Project



# Biological Resources Assessment

Van Damme State Park

Mendocino County

Project ID No. 379000000074540

**June 2025**

# Biological Resources Assessment

# Little River Restoration and Bridge Replacement Project

Van Damme State Park

Mendocino County

Project ID No. 379000000074540

**February 2025**

STATE OF CALIFORNIA

Department of Parks and Recreation

Northern Service Center

Prepared By: Lisa Paterson, Senior Environmental Scientist
Northern Service Center
Lisa.Paterson@parks.ca.gov

Jeff Tkach, Senior Environmental Scientist
Northern Service Center
Jeff.Tkach@parks.ca.gov

Devin Jokerst, Senior Environmental Scientist
Northern Service Center

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# Acronyms List

| | |
|---|---|
| ACOE | U. S. Army Corps of Engineers |
| BSA | Biological Study Area |
| CDFW | California Department of Fish and Wildlife |
| State Parks | California Department of Parks and Recreation |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| CNDDB | California Natural Diversity Database |
| CNPS | California Native Plant Society |
| CRPR | California Rare Plant Rank |
| EFH | Essential Fish Habitat |
| ESA | Federal Endangered Species Act |
| ESHA | Environmentally Sensitive Habitat Area |
| HREA | Habitat Restoration and Enhancement Act |
| IPaC | Information for Planning and Consultation |
| NMFS | National Marine Fisheries Service |
| NOAA Fisheries | NOAA's National Marine Fisheries Service |
| OHWM | Ordinary High Water Mark |
| RWQCB | Regional Water Quality Control Board |
| USDA | United States Department of Agriculture |
| USFWS | U. S. Fish and Wildlife Service |
| USGS | U. S. Geological Survey |

# Summary

This Biological Resources Assessment has been prepared for the Little River Restoration and Bridge Replacement Project within Van Damme State Park. The purpose of this Biological Resources Assessment is to describe biological resources at and near the project site to determine regulatory compliance requirements for potential impacts to these resources. The focus of this analysis is special status habitats, plants, and animals protected by federal, state, and local regulations. This Biological Resources Assessment includes a general description of the project and environmental setting and a description of special status habitats, plants, and animals which may be found at or near the project site. Finally, this Biological Resources Assessment summarizes expected regulatory requirements for potential impacts on biological resources.

Van Damme State Park is located along the Mendocino County coastal landscape and covers approximately 2,170 acres. Little River bisects the park with its mouth at Van Damme Beach. It is the home for spawning steelhead and coho salmon during the winter months. A bridge over Little River provides access to the campground and the Fern Canyon Scenic Trail. The original bridge was built in 1951, and after years of scour undermined the bridge foundations, it ultimately failed in 2018. A single-lane temporary rail car bridge was put in place for traffic access over Little River.

The objective of the Little River Restoration and Bridge Replacement Project (project) is to replace the failed bridge and restore anadromous fish passage during low flows. The project includes construction of a new bridge and removal of the old bridge. Site preparation will involve dewatering the area and the removal of 12 trees. The old bridge location will be recontoured, planted with plants salvaged from the new bridge location, and willow and red alder cuttings as feasible. Furthermore, the new bridge will be more perpendicularly orientated with the stream compared to the old bridge, which will improve stream flows and reduce scouring. As a result, the project will result in no-net-loss of aquatic resources.

The project site meets the Mendocino County Local Coastal Programs definition of an Environmentally Sensitive Habitat Area (ESHA) because it includes riparian habitat, Essential Fish Habitat (EFH), and Critical Habitat for listed fish species. Measures will be implemented to minimize impacts on ESHAs, and a restoration plan will be developed to ensure the recovery of native riparian vegetation after construction.

An Aquatic Resources Delineation was completed for the project site in 2024. In total, 0.280 acres of Little River were delineated in the Project Area that is expected to be under the jurisdiction Army Corp of Engineers (ACOE) and Regional Water Quality Control Board regulations. Work conducted within jurisdictional waters of the State and waters of the U.S. will include the removal of the existing bridge and the use of a coffer dam to dewater the project site. The footings for the new bridge will be installed above the ordinary high water mark of Little River and rip rap will be installed around the footings above the ordinary high water mark. California State Parks (State Parks) will be pursuing coverage under the Habitat Restoration and Enhancement Act (HREA) to obtain approval pursuant to Section 1602 of the California Fish and Game Code (Lake or Streambed Alteration Agreements) and Section 401 of the Clean Water Act (Water Quality Certifications). State Parks will be applying for the most applicable Nationwide Permit from the ACOE pursuant to Section 404 of the Clean Water Act.

Potential habitat is present in the project site for one plant species [Monterey clover *(Trifolium trichocalyx)*], and three fish species [Chinook salmon - California coastal – ESU *(Oncorhynchus tshawytscha)*; Coho salmon – central California coast ESU (*Oncorhynchus kisutch pop. 4)*; and Steelhead – northern California DPS winter run *(Oncorhynchus mykiss irideus pop. 49)*] listed as threatened or endangered under the federal Endangered Species Act (ESA). The project site is also EFH for California Central Coast coho salmon, California Coastal chinook salmon, and groundfish and designated Critical Habitat for Northern California steelhead and California Central Coast coho salmon.

State Parks has completed a Biological Assessment which describes potential impacts on these federally listed species, Critical Habitats, and EFH from the Little River Restoration and Bridge Replacement Project. This Biological Assessment was prepared by California State Parks (State Parks) for the ACOE to facilitate consultation under Section 7 of the ESA and the Magnuson–Stevens Fishery Conservation and Management Act (MSA). This Biological Assessment will be submitted to the ACOE as part of the Nationwide Permit application for this project. State Parks plans to complete Consultation for potential effects on listed fish, EFH, and Critical Habitat regulated by the National Marine Fisheries Service (NMFS) through the *NOAA Restoration Center's Programmatic Approach to ESA/EFH Consultation Streamlining for Fisheries Habitat Restoration Projects* (NOAA Restoration 2017). Although there is a small potential for the Monterey clover to occur within the project site, the project will not result in impacts on this species regulated by the federal ESA because the project site is on State property.

The project may result in impacts to one animal species listed under the California Endangered Species Act (CESA), Coho salmon – central California coast ESU *(Oncorhynchus kisutch pop. 4)*. In addition, suitable habitat for one plant species, Monterey clover, listed under CESA is present at the project site. State Parks will be pursuing project coverage under the HREA to fulfill CESA requirements.

In addition to those animal species listed under the California or federal Endangered Species Acts, the project area was determined to be potential habitat for six California Species of Special Concern that are not also listed under the ESA or CESA including one bat, one bird, and four amphibians. Avoidance and minimization measures will be implemented to ensure the project does not result in significant impacts on these species. Additional avoidance and minimization measures will be implemented to ensure this project does not result in take of birds, nest, or eggs protected by the Migratory Bird Treaty Act.

Surveys for special status plants have not yet been conducted and are planned for the spring of 2025. Twelve special status plants were identified that have a moderate or high potential to occurring in the project area. If any special status plants are discovered in the project area during surveys, impacts on these plants will be minimized through the implementation of avoidance and minimization measures.

# Chapter 1. Introduction

The Little River Restoration and Bridge Replacement project site is within Van Damme State Park which is located three miles south of Mendocino on Highway 1 in Mendocino County (Figure 1).

## 1.1. Project Purpose and Need

The Little River bisects the park, and within the park, the bridge over the river provides access to the campground and the Fern Canyon Scenic Trail. The original bridge, which was built in 1951, consisted of a two-span corrugated metal arch on concrete abutments. Years of scour undermined the bridge foundations, and it ultimately failed in 2018. A single lane, temporary rail car bridge is in place (on top of the failed bridge structure) and carries traffic over the river. The single lane, temporary bridge needs replacement. The underlying arch culverts are sagging, and the concrete abutments extend into the river causing both fish passage impediments as well as downstream erosion.

The objective of the Little River Bridge Replacement Project (Project) is to replace the failed bridge and restore anadromous fish passage during low flows at Little River in Van Damme State Park. New construction will be above the ordinary high water mark of Little River and the old bridge location will be recontoured. Furthermore, the new bridge will be more perpendicularly orientated to the stream compared to the old bridge, which will improve stream flows and reduce scouring. As a result, the Project will result in no net loss of aquatic resources.

## 1.2. Project Description

Maintaining continued access to the campground during construction make it necessary to leave the temporary bridge in place while the new bridge is constructed. Construction of the new bridge will require an extension of the roadway on the south side of the river. Pavement conforms will be necessary on the north side of the river. The abutments for the bridge will be placed on a steel pile foundation. Class IV rock slope protection will be necessary around the abutments to minimize scouring. The project is located within a Tsunami hazard area. Approximately 0.02 acres of RSP will be placed along the Southside slope and 0.01 acres of RSP will be placed along the Northside slope (Plan Sheet: C-1).

The bridge itself will be a prefabricated steel girder type with 49 feet of clear span, having a cast-in-place concrete deck. The bridge will have two 12-foot wide traffic lanes. It is anticipated that the guardrails and barriers will be constructed of timbers and weathered steel to fit the look and feel of the park. The alignment of the bridge will be more perpendicular to the river than the existing structure. This will aid with river hydraulics and reduce scour.

Site utilities will be hung from the bridge to service the combo building on the north side of the river. This mirrors the current arrangement. A small amount of trenching will occur outside of the bridge prism to tie into existing utilities, the deepest of which will be for the sewer, on the order of approximately 7-foot depth. Upon completion of the proposed bridge, the existing bridge and abutments will be removed. All components will be removed including the underlying concrete slab as well as the adjacent retaining wall (upstream). The area will be re-graded to a more natural condition and allowed to revegetate.

There is an area of slope failure approximately 150 feet downstream from the proposed bridge. The plans call for repairing the pavement and re-grading the slope. This area will be revegetated with native material.

Tree removals will be necessary to accommodate the proposed bridge and roadway. Site preparation will include the removal of 12 trees, predominantly red alder *(Alnus rubra)* and one grand fir *(Abies grandis)* with a diameter at breast height of approximately 47 inches, to accommodate building the proposed bridge and roadway. If practical, the material from those trees will be re-used to aid with revegetation.

Site preparation will involve dewatering of the area.

The construction window for the project should avoid steelhead spawning and therefore will be from June 15 through October 31.

### 1.2.1. Construction Methods

Total project duration is anticipated to take up to 5 months. Construction activities would occur during daylight hours during the driest time of year (June 15 through October). Prior to construction commencing at the bridge site, the road into the park may need to be cleared of low hanging tree limbs.

It is anticipated that the river channel will be dewatered with a sandbag or bladder dam, and water then piped via gravity flow through the site and through the northern arch of the existing bridge. Construction staging areas are available on both sides of the bridge at campsites 20 and 21. Each site has a compacted and disturbed area of approximately 1,500 square feet, which is adequate for equipment and material storage. The north staging area is expected to be accessible via the existing temporary bridge. It is expected that brush clearing for the proposed bridge site will use chainsaws and other gas-powered hand tools. Salvaged large woody debris will be moved into the river channel and anchored during the regrading of the failed slope on the north side. This is expected to be moved using a truck mounted crane and excavators. The proposed project would also require the use of truck-mounted cranes for unloading bridge materials.

Excavation at the abutment foundations would be performed using excavators. Temporary retaining structures are likely needed for soil support at the excavations prior to concrete pouring and backfilling. Abutment foundations will require driving steel H-piles with steel tip protection (H-pile points), using diesel or hydraulic hammers. Pre-drilling, jetting, or vibrating piles will not be permissible for pile installation. The Piles will be driven until refusal is achieved and then cut or spliced depending on the elevation at which driving refusal occurs. According to the pile schedule, the deepest pile tip elevation is estimated to be minus 40 feet at abutment 1, approximately 60 feet from the bottom of the river channel. Splicing would require end welding of steel pieces together on site to increase the pile length as required. Once the piles are driven to the appropriate depth, the abutments can be formed. Power tools, pneumatic tools, and hand tools would be used for forming and falsework. Rebar cages for the abutments and footings would be assembled on site. Placement of concrete for the abutments will be done by concrete trucks. It is expected that the trucks will have access to both sides of the river by using the existing railcar bridge.

The prefabricated steel superstructure would likely be delivered to the site as preassembled modular units (including girders, secondary framing, and metal deck forms), transported on a truck flatbed and craned into position. To complete the assembly of the bridge and attachment of the bridge to the abutments, there would be bolting and potential welding that occurs on site. After the installation of the steel bridge, the deck reinforcement would be laid out on site, and the concrete deck would be cast in place. The timber guardrails would be bolted to the concrete deck, after the concrete deck has adequately cured.

Demolition of the existing bridge would take place after the proposed bridge is in service. Demolished materials would be placed in staging areas or loaded directly onto trucks and removed from the project site and disposed of properly.

# Chapter 2. Study Methods

## 2.1. Studies Required

This section describes literature reviews and field surveys conducted to provide information for this Biological Resources Assessment. Based on the analysis conducted for this Biological Resources Assessment, additional field surveys or monitoring may be recommended or required prior to the start of the project. These additional surveys are described in the Avoidance and Minimization Measures Sections in Chapter 4 (Sections 4.1.4, 4.2.4, and 4.3.4).

### 2.1.1. Literature Search

A literature search of the following sources was conducted to identify special status plants, animals, and natural communities that could potentially occur at or near the project site and determine if field surveys are necessary:

- A United States Fish and Wildlife Service (USFWS) Species List was obtained from Information for Planning and Consultation (IPaC) on February 18, 2025 (USFWS 2025). The IPaC list is included in Appendix B.
- Research was conducted to develop a list of species and habitats regulated by National Oceanic and Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries) which potentially occur within the region. The NOAA Fisheries Essential Fish Habitat Mapper (NOAA 2024a) and the NOAA Fisheries West Coast Region Species and Habitat App were reviewed for the Biological Study Area (BSA) (NOAA 2024b), and a list was generated for the Mendicino USGS 7.5” quadrangle (quad) using the NOAA Fisheries West Coast California Species List Tool (NOAA 2022). The list obtained from the California Species List Tool is included in Appendix C.
- A California Natural Diversity Database (CNDDB) search of the Mendicino quad, and the five surrounding quads (Fort Bragg, Noyo Hill, Mathison Peak, Albion, and Elk) was conducted to develop a list of special status plants, animals, and natural communities with the potential to occur in the BSA. Only these six quads were searched instead of the standard nine quad search because of the location of the study area at the coast.
- Information on the soils present in the BSA was obtained from the United States Department of Agriculture (USDA) Natural Resources Conservation Service, Web Soil Survey (NRCS 2024).
- Research was conducted to identify potential wetlands, other waters, and tidal waters at or near the BSA. The National Wetlands Inventory (NWI; USFWS 2024a, USFWS 2024b) was mapped in relation to the project site.
- Research was conducted to develop a list of special status plant species with the potential to occur at or near the BSA. CNDDB and California Native Plant Society (CNPS) rare plant occurrences within the Mendicino quad and six surrounding quads (Fort Bragg, Noyo Hill, Mathison Peak, Albion, and Elk) were used to generate lists of special status plant species with the potential to occur in the BSA (CNPS 2024a, CNDDB 2024a). CNDDB and Calflora occurrences were reviewed to determine the proximity of reported occurrences of rare plants

to the BSA (CNDDB 2024b and Calflora 2024). The CNPS list of rare plants for these quads is included as Appendix D.

- The following sources were searched to obtain information on the distribution of Natural Communities of Special Concern at and near the BSA: California Vegetation Classification and Mapping Program (VegCAMP) data was reviewed on the BIOS viewer, the description of natural communities included in the Van Damme State Park General Plan was reviewed, and CNDDB data was reviewed (CNDDB 2024b).

### 2.1.2. Reconnaissance Survey

State Parks Senior Environmental Scientist, Jeffrey Tkach, visited the site on November 24, 2024. A pedestrian reconnaissance level field survey was conducted along both the north and south banks of Little River.

### 2.1.3. Aquatic Resources Delineation

State Parks Senior Environmental Scientist Jeffrey Tkach visited the site to conduct field work necessary to complete an aquatic resources delineation on February 7, 2024. State Parks field staff mapped Little River using an iPad with an EOS Arrow Antennae capable of sub-meter accuracy and photographs representative of the field conditions were taken. The field delineated data was processed on ArcGIS Pro to generate the delineation map. State Parks field staff followed protocol field methods described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) supplemented by the guidance and indicators in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) (U.S. Army Corps of Engineers 2010), and *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States* (Mersel and Lichvar 2014).

### 2.1.4. Agency Coordination and Professional Contacts

**Joe Pecharich, Fish Biologist/Habitat Specialist with the National Marine Fisheries Service**

Little River supports both steelhead trout and coho salmon and will require consultation under the ESA with NMFS. Parks staff coordinated with Joe Pecharich of NMFS regarding the use of NMFS' Programmatic Biological Opinion. Mr. Pecharich confirmed that instream barrier modification for fish passage improvements, such as those proposed for this project, fall under the Programmatic Biological Opinion.

**Nicholas Van Vleet, Environmental Scientist, with the California Department of Fish and Wildlife**

Parks staff spoke with Mr. Van Vleet to discuss the Habitat Restoration and Enhancement Act (HREA) and the expedited approval process for small-scale habitat restoration projects. Parks was advised to utilize section 1653 of HREA for California Department of Fish and Wildlife (CDFW) approval. Parks was also advised that a Notice of Applicability under the 401 General Water Quality Certification for Small Habitat Restoration would be required from the Waterboard.

**Jacob Shannon, Senior Environmental Scientist (Restoration Coordination Specialist) with the State Water Resources Control Board**

Parks staff spoke with Mr. Shannon to discuss a pathway for project approval under the State Water Resources Control Board's Order for Clean Water Act Section 401 General Water Quality Certification for Small Habitat Restoration. Mr. Shannon informed Parks staff that this project meets the requirements for approval and advised parks to pursue approval.

**CDFW, Cutting the Green Tape's Statutory Exemption for Restoration Projects Team (Brad Henderson, Cutting the Green Tape Program Manager)**

Parks staff met with Cutting the Green Tape team to present the proposed Van Damme State Park Habitat Restoration and Bridge Replacement project. The CDFW team determined the project qualified for California Environmental Quality Act (CEQA) categorical exemption 15333 for small habitat restoration projects. The CDFW team advised Parks to pursue approval under section 1653 of HREA.

### 2.1.5. Limitations That May Influence Results

Site visits were conducted outside the blooming period for most special status plant species.

# Chapter 3. Environmental Setting

## 3.1. Description of the Existing Physical and Biological Conditions

### 3.1.1. Study Area

The project site is located along the Mendocino County coast in Van Damme State Park which covers approximately 2,170 acres including 20 acres of marine environment (Figure 1). The park extends about three miles inland, encompassing nearly 55% of the Little River watershed, from Gordon Lane and Comptche Ukiah Road in the north, to Little River Airport Road to the south.

Little River runs through the park with its mouth at Van Damme Beach. It is the home for spawning steelhead and coho salmon during the winter months. The park includes two other parcels, located north of the beach and west of the highway, which are mostly open grassland terrace. The park also includes a separate 80-acre parcel, 2.5 miles south of the entrance and east of State Highway 1 at Dark Gulch.

Total ocean frontage in Van Damme State Park is 1,700 feet. Along most of the Mendocino Coast, the mountains meet the sea in an abrupt coastline and the ocean is cold and often rough. Van Damme Beach is a protected cove with a small sandy beach at the mouth of Little River. This fern-laden park is split-level with a canyon campground area and an upper meadow campground. Hiking trails in moderate to steep terrain wind up the Fern Canyon to the Pygmy Forest. The trail system includes paved and unpaved roads and natural trails for backpackers, bicycles, and trail campers.

The project site is within the steep-walled Fern Canyon of the Little River watershed. The Little River bisects the park, and within the park, the bridge over the river provides access to the campground and the Fern Canyon Scenic Trail.

The BSA is approximately 0.4 miles east of State Highway 1, and approximately 0.5 miles northeast of the Vanne Damme State Marine Conservation Area (Figure 2) and includes the temporary bridge, the failed bridge along Little River, the road on either side of the bridge, the location of the road extension to the new bridge, and the small bank stabilization area.

Land use in and around the Project Area includes the Van Damme State Park trails and campgrounds, Highway 1, privately-owned open space, Little River Golf Course, rural residential areas, a regional airport, and the town of Little River.

### 3.1.2. Physical Conditions

#### 3.1.2.1. CLIMATE

Climate data for the Project Area was sourced from the Fort Bragg 5N COOP Weather Station (ID: 043161), which averages 42.83 inches of annual precipitation (Western Regional Climate Center 2024). Van Damme State Park has cool, wet winters and mild, foggy summers. The mean maximum annual air temperature is 60.2 Fahrenheit (°F), and the mean minimum annual temperature is 44.6°F (Western Regional Climate Center 2024). The coolest temperatures occur in December and January, and the warmest months are July and August.

#### 3.1.2.2. TOPOGRAPHY

The BSA occurs in the outer Coast Range foothills within an incised ravine containing Little River known as Fern Canyon. The average elevation within the BSA is approximately 130 feet above mean sea level (Figure 2).

#### 3.1.2.3. SOILS

The soil survey reports three soil map units in and around the BSA (NRCS 2024), which are depicted in Figure 3. Summary information on the characteristics of each map unit is provided in Table 1. The soil map units were not classified as hydric, but Tropaquepts, 0 to 15 percent slopes were reported to have unnamed hydric soil components.

#### 3.1.2.4. HYDROLOGY

The Project Area centers around Little River which is fed by precipitation and the water table. Beal Creek converges with Little River downstream of the BSA before it drains to the Pacific Ocean.

The National Wetland Inventory (NWI) provides aerial views of America's aquatic resources. The resource incorporates digital map data with other resource information to depict the extent, characteristic, and function of wetland, riparian, and deepwater habitats. The NWI maps were produced by analyzing high-altitude imagery for discernable patterns of vegetation, hydrology, and geography. The NWI offers useful reconnaissance information on the broad types of wetland and riparian vegetation communities that could occur in the BSA.

NWI classified Little River and Beal Creek as intermittent riverine features that have temporarily flooded streambeds (R4SBA); near their convergence, NWI reported broad-leaved deciduous scrub-shrub wetlands that are irregularly flooded, estuarine, and intertidal (E2SS1P) (USFWS 2024b). (Figure 4)

### 3.1.3. Biological Conditions

The Project Area is in the North Coast subregion of the California Floristic Province (Jepson Flora Project 2025). Little River flows through a red alder (*Alnus rubra*) riparian forest. The banks are dominated by an understory of ferns and vines, including the following dominant species: sword fern (*Polystichum munitum*), California blackberry (*Rubus ursinus*), cow parsnip (*Heracleum maximum*), thimbleberry (*Rubus parviflorus*), western lady fern (*Athyrium filix-femina*), elk clover (*Aralia californica*), and a variety of herbaceous species not in bloom at the time of the field visits.

### 3.1.4. Habitat Connectivity

Little River provides access to spawning habitat for northern California winter run steelhead *(Oncorhynchus mykiss irideus pop. 49)* and northern California coast Coho salmon *(Oncorhynchus kisutch pop. 4)*. Years of scour have undermined the bridge foundations, and it ultimately failed in 2018. The underlying arch culverts are sagging, and the concrete abutments extend into the riverbed which impedes anadromous passage during low flow events and contributes to erosion downstream.

The old bridge location will be recontoured, planted with plants salvaged from the new bridge location as well as willow and red alder cuttings as feasible. There will be no net loss of aquatic

resources, and the new bridge alignment will be more perpendicular to the stream which should improve stream flows and reduce scour. The culmination of this project will improve the overall habitat connectivity of anadromous species during low flow events and reduce the amount of scour and habitat loss due to erosion. The project is not expected to result in other impacts on dispersal or migration corridors.

### 3.1.5. Regional Species and Habitats and Natural Communities of Concern

Special status plants, animals, and habitats, and natural communities of special concern that are known to or could potentially occur in the BSA are described in Chapter 4. Table 2 includes a description of the special status animals expected to occur in the region, and Table 3 includes a list of special status plants which are expected to occur in the region. Habitats and natural communities of special concern known to occur near the BSA are listed in Section 4.1.1. These lists were compiled as described in Chapter 2.

The definitions of habitats and natural communities of special concern, special status plants, and special status animals used for this report are included in Chapter 4.

# Chapter 4. Sensitive Biological Resources

## 4.1. Habitats and Natural Communities of Special Concern

For the purposes of this report, the following are considered habitats or natural communities of special concern:

- Natural Communities with state rarity ranks of S1-S3. These communities are considered Sensitive Natural Communities by the CDFW Vegetation Classification and Mapping Program (VegCAMP) (CDFW 2024b).
- Wetlands and other waters identified during a desktop review of the NWI or as part of an aquatic resources delineation or other site surveys.
- Other sensitive natural communities such as riverine or riparian habitat and areas essential for habitat connectivity (fish or wildlife corridors).
- Areas designated as Environmentally Sensitive Habitat Areas (ESHA) by the Mendocino County Local Coastal Program.

### 4.1.1. Discussion of Regional Natural Communities of Special Concern

This section includes an overview of the habitats and natural communities of special concern that are found in the region surrounding the BSA including Van Damme State Park and areas adjacent to the park.

#### 4.1.1.1. SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities within the region include natural communities that occur on nutrient-poor (oligotrophic) soils. Although VegCAMP has not yet completed a vegetation map for all of Mendocino County, a map delineating natural communities that are restricted to, or characteristic of oligotrophic soils of the outer coast of Mendocino and adjacent Sonoma Counties has been completed to support local planning, management, and conservation efforts (CDFW 2018a). This map includes, but is not limited to, vegetation characterized by the Mendocino or pygmy cypress *(Hesperocyparis pygmaea).*

The General Plan for Van Damme State Park also describes sensitive natural communities which occur within the park (State Parks 1995). The Van Damme State Park General Plan was completed in 1995, after the first draft of the Mendocino County General Plan Coastal Element was adopted, but before the state ranking of Sensitive Natural Communities was widely adopted. The Van Damme State Park General Plan divides the park into Ecological Units. Sensitive Natural Communities identified in the Van Damme State Park General Plan are listed below by Ecological Unit. Current State Rarity Rankings are also provided based on habitat description included in the General Plan (CNPS 2024b).

Coastal Beach Ecological Unit

- Dune mat State Rarity: S3
  (*Abronia latifolia* - *Ambrosia chamissonis* Herbaceous Alliance)

Costal Bluff Ecological Unit

- Seaside woolly-sunflower - seaside daisy - buckwheat patches State Rarity: S3
  (*Eriophyllum staechadifolium* - *Erigeron glaucus* - *Eriogonum latifolium* Herbaceous Alliance)

Bishop Pine Forest Ecological Unit

- Bishop Pine Forest State Rarity: S3
  (*Pinus muricata* - *Pinus radiata* Forest & Woodland Alliance)

Pygmy Forest Ecological Unit

- Mendocino cypress woodland State Rarity: S1
  (*Hesperocyparis pygmaea* Alliance)

Redwood Forest Ecological Unit

- Redwood forest and woodland State Rarity: S3
  *(Sequoia sempervirens* Forest & Woodland Alliance)

The following additional Sensitive Natural Communities were identified in the region during the CNDDB search:

- Grand Fir Forest State Rarity: S2
  (*Abies grandis* Forest Alliance)
- Coastal and Valley Freshwater Marsh State Rarity: S1*
- Coastal Brackish Marsh State Rarity: S2*
- Northern Coastal Salt Marsh State Rarity: S3*
- Sphagnum Bog State Rarity: S1*

*State rarity ranks are based on those included in the CNDDB. The CNDDB does not include the information necessary to determine the VegCAMP alliance name or to verify the current State Rarity Rank using the Manual of California Vegetation Online (CNPS 2024b).

#### 4.1.1.2. WETLANDS, RIPARIAN AREAS, AND OTHER WATERS

In addition, to the sensitive natural communities described above, several additional wetland and riparian communities occur within Van Damme State Park including riparian communities found adjacent to Little River and its tributaries. The Little River enters the Van Damme cove by flowing over the sandy beach. During the summer, a lagoon forms behind the beach. Estuarine wetlands also occur near the convergence of Little River and Beal Creek within the park.

#### 4.1.1.3. ENVIRONMENTALLY SENSITIVE HABITAT AREAS

The Mendocino County Local Coastal Program defines Environmentally Sensitive Habitat Areas (ESHAs) as follows:

> Any areas in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. (Mendocino County 2021)
>
> In Mendocino County, Environmentally Sensitive Habitat Areas include:
>
> - Anadromous fish streams,
> - Sand dunes,
> - Rookeries,
> - Marine mammal haul-out areas,
> - Wetlands,
> - Riparian areas,
> - Pygmy vegetation containing species of rare or endangered plants,
> - Habitats of rare and endangered plants and animals.
>
> In addition, several state agencies and private environmental groups and Local Citizens Advisory Committees have identified certain resource areas which require protection including Van Damme State Park. (Mendocino County 2021)

### 4.1.2. Survey Results

This section describes natural communities of special concern at and adjacent to the BSA that were identified during the literature review and field surveys.

#### 4.1.2.1. SENSITIVE NATURAL COMMUNITIES

No sensitive natural communities (State Rarity Rank of S1 through S3) were identified within the BSA during the literature search or field studies. Sensitive natural communities included in the CNDDB and the VegCAMP map delineating natural communities that are restricted to, or characteristic of oligotrophic soils of the outer coast of Mendocino and adjacent Sonoma Counties are shown in Figure 5.

While sensitive natural communities restricted to oligotrophic soils such as the Mendocino Cypress Woodland are found within Van Damme State Park approximately 2.7 miles southeast of the BSA, and outside the park approximately 0.6-mile northeast and 1.1 miles southeast of the BSA, these communities were not identified within the BSA.

The CNDDB includes occurrences of Coastal Salt Marsh, Coastal Brackish Marsh, Grand Fir Forest, and Coastal and Valley Freshwater Marsh along Big River between 1.5 and 3.6 miles north to northeast of the BSA and includes occurrences of Pygmy Cypress Forest and Mendocino Pygmy Cypress Forest in similar areas as shown on the VegCAMP map of sensitive

natural communities restricted to oligotrophic soils but does not include occurrences of these communities within the BSA.

Although natural communities were not mapped within the BSA as part of field surveys, one natural community, red alder forest, was identified within the BSA during the aquatic resources delineation. Red alder forest has a state rank of S4 and is not considered a sensitive natural community.

#### 4.1.2.2. WETLANDS, RIPAIRAN AREAS, AND OTHER WATERS

The BSA is vegetated by red alder riparian forest. Although red alder forest has a state rarity rank of S4, and is not considered a sensitive natural community, this community is considered a natural community of special concern as a riparian community.

In addition, an aquatic resources delineation of the BSA was conducted in 2024. In total, 0.280 acres of Little River was delineated in the BSA that is that is expected to be jurisdictional waters of the US and waters of the state regulated by the ACOE and Regional Water Quality Control Board (RWQCB) (Figure 6). The Ordinary High-Water Mark (OHWM) indicators used to delineate Litte River consisted of shelving, litter removal, and wrack. Abutted by roads, Little River is incised in the BSA. As a result, Little River does not have access to a traditional floodplain. The results of the delineation concur with the NWI's classification of Little River as R4SB, an intermittent riverine feature with a streambed (USFWS 2024b).

#### 4.1.2.3. ENVIRONMENTALLY SENSITIVE HABITAT AREAS

In addition to being riparian habitat, the BSA is also EFH for California Central Coast coho salmon, California Coastal chinook salmon, and groundfish and designated Critical Habitat for Northern California steelhead and California Central Coast coho salmon (Section 4.3).

The BSA meets the Mendocino County Local Coastal Programs definition of an Environmentally Sensitive Habitat Areas because it includes riparian habitat, EFH, and Critical Habitat for listed fish species.

### 4.1.3. Project Impacts

Overall, the project is expected to have a beneficial impact on habitats and natural communities of special concern. The project goals include improving fish passage for coho salmon and steelhead by removing the old bridge which includes concrete slabs in the riverbed. The project will also reduce scouring on the banks of Little River near the project site because the new bridge will be installed perpendicular to the river instead of the current alignment which is diagonal to the river.

To meet this goal of improving fish passage, some long term and temporary impacts on riparian vegetation are unavoidable. Project impacts on habitats and natural communities of special concern which are also considered ESHAs include the removal of 12 trees, predominantly red alder and one grand fir (*Abies grandis)* with a diameter at breast height of approximately 47 inches. Tree removal is necessary to accommodate the new bridge and roadway alignment. The installation of rock slope protection will also be necessary around the abutments to minimize scouring. Temporary disturbance to riparian habitat including soil disturbances and impacts to understory vegetation will also occur during the installation of the new bridge, removal of the old bridge, and the construction of the new road alignment.

### 4.1.4. Avoidance and Minimization Efforts

The following measures will be implemented to minimize impacts on habitats and natural communities of special concern:

- The footprint of the project will be minimized to the maximum extent possible during construction.
- Staging and storage areas will only be permitted in areas approved by a State Parks Environmental Scientist. Staging and storage will be confined to disturbed areas such as existing campsites, roads, parking lots, and pull outs or within areas of existing disturbance whenever possible.

The following conditions will ensure that impacts from potential invasive species would remain at a less than significant level.

**Sudden Oak Death**: All on site construction personnel will use the following Best Management Practices (BMPs) to limit transmission of SOD outside of the work area.

- Unauthorized movement of plant material is prohibited.
- Utilize paved and graveled roads to the fullest extent possible.
- Before entering the Project Area, all equipment will be clean.
- Before leaving the Project Area, remove or wash-off accumulations of plant debris, soil, and mud from shoes, boots, vehicles, and heavy equipment, etc.

**Non-native Plant Species**: All construction equipment used on this project shall be clean and free of soil and plant material before arrival at the project site and before leaving the park in order to prevent invasive plant seed dispersal.

Some ground disturbing work may occur within the root health zone (5 times the diameter at breast height (dbh)) of mature, native trees. Therefore, project activities will be subject to the following conditions in order to preserve the health and vigor of trees and protect sensitive habitat.

- The contractor will identify and mark limits of construction activities (e.g. flagging, orange construction fencing or similar). No ground disturbing activities will be allowed outside of delineated work areas unless authorized in advance by a State Parks Environmental Scientist or equivalent.
- Project Activities will avoid severing roots greater than 2 inches in diameter, unless authorized by District Resource Staff, a State Parks Environmental Scientist or a State Parks-approved biologist.
- Staging of construction equipment will occur on paved surfaces or previously hardened surfaces to minimize soil and duff compaction of native habitat

A restoration plan has been drafted for this project that includes the following measures:

- Restore anadromous fish passage through removing the old bridge, including the concrete slab in the riverbed. aRestore contours of the location where the old bridge was removed and the road slope failure location. Slash from tree removal will be used to stabilize gentle slopes and coconut fiber will be used on steeper slopes.

- Native herbaceous species (e.g., ferns) and shrubs (e.g., elk clover and thimble berry) will be salvaged at locations proposed for ground disturbance. The excavated specimens will be stored in a shady location and transplanted to the old bridge location and road slope failure location after the location's contours have been restored. Local willows (Salix spp.) and alders (Alnus rubra) will be planted at the location of the old bridge and road slope failure location if possible. Invasive species with a California Invasive Plant Council rating of Moderate or High will be removed within 100 feet of project activities. The grand fir will be successfully incorporated into the stream for large woody debris augmentation.

## 4.2. Special Status Plant Species

Special Status Plants are defined as species or subspecies that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under the federal ESA
- Listed or candidates for listing as threatened or endangered under CESA
- Listed as rare or endangered under the California Native Plant Protection Act
- Meeting the definition of endangered, rare, or threatened species under CEQA Guidelines which may include:
    - Plants tracked by the CNDDB as California Rare Plant Rank (CRPR) 1 or 2; and
    - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This includes plants tracked by the CNDDB as CRPR 3 or 4.
- Species considered locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region.

A list of special status plant species documented within the vicinity of the Study Area was generated using available sources (Section 2.1.1). Species included on this list were then assessed based on associated vegetation communities, soil affinity, associated species, topographic position, shade tolerance, disturbance tolerance, elevation, and population distribution to determine the potential for these species to occur in the BSA (Table 3).

### 4.2.1. Discussion of Special Status Plant Species with Moderate or High Potential to Occur in the BSA

All special status plant species that were identified during the literature review are described in Table 3. This description includes an assessment of the likelihood that each species occurs within the BSA and a rationale for this determination.

The determinations of the likelihood of an individual special status plant species occurring at or near the BSA are based on the professional judgement of the Environmental Scientists who prepared this report. In general, species were considered of high potential to occur in the BSA if adequate habitat for the species was present at or adjacent to the BSA and there were known occurrences within one mile of the BSA; species were considered of moderate potential to occur

in the BSA if adequate habitat for the species was present in or adjacent to the BSA and there are recent known occurrences within one to five miles of the BSA; species were considered of low potential if the closest known occurrences were five to 10 miles from the BSA or habitat was determined to be marginal for the species based on environmental conditions.

The 12 special status plant species with a moderate or high potential of occurring at or adjacent to the BSA are described below. All information included in the following species accounts is from the Jepson eFlora (Jepson Flora Project 2024) and the CNPS Rare Plant Inventory (CNPS 2024a) unless otherwise noted.

**Bolander's reed grass *(Calamagrostis bolanderi)*** **CRPR 4.2**

Bolander's reed grass has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Bolander's reed grass is a perennial grass (Poaceae) that spreads by rhizomes. It reaches 20 to 60 inches in height. Its flowers grow in open groups (inflorescences) with branches that are spreading to ascending.

Bolander's reed grass is endemic to California and occurs in coastal areas in Humboldt, Mendocino, and Sonoma Counties. This species occurs in a variety of wetland and forest communities including bogs and fens, broadleafed upland forest, closed-cone coniferous forest, coastal scrub, and north coast coniferous forest at elevations up to 1,495 feet. There are historic (1899) records of this species from the Little River Area, and it is reported on a State Parks plant species list for Mendocino Headlands State Park. There is a total of nine Calflora occurrences within five miles of the BSA.

**Coastal bluff morning-glory *(Calystegia purpurata* ssp. *saxicola)*** **CRPR 1B.2**

Coastal bluff morning-glory has a CRPR of 1B.2. This rank describes plants that are rare, threatened, or endangered in California and elsewhere and moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Coastal bluff morning-glory is a perennial vine in the morning glory family (Convolvuaceae). It is trailing to weakly climbing; vines reach less than one meter in length. As with other species in the genus *Calystegia,* leaf-like bracts are found just below the flowers. In coastal bluff morning-glory, these bracts are more than one millimeter (mm) below the flowers and usually have small lobes. Coastal bluff morning-glory is distinguished from other subspecies of *Calystegia purpurata* by its leaf shape. The leaves of coastal bluff morning-glory are ovate-triangular to reniform; the leaf tip is generally rounded or notched.

Coastal bluff morning-glory is a California endemic that occurs in Contra Costa, Marin, Sonoma, and Mendocino Counties. It occurs in coastal bluff scrub, coastal dunes, coastal scrub, and north coast coniferous forest at elevations below 345 feet. The nearest CNDDB occurrence is at Chapman Point on the Mendocino Bay approximately five miles north of the BSA.

This species is observed blooming between April and September and occasionally as early as March.

**Pacific golden saxifrage *(Chrysosplenium glechomifolium)*** **CRPR 4.3**

Pacific golden saxifrage has a CRPR of 4.3. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.3 includes plants which are not very threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Pacific golden saxifrage is a perennial herb in the saxifrage family (Saxifragaceae) that has underground stems (caudices) or rhizomes. It has stems that grow along the ground or are ascending and forms roots from stem nodes. It has opposite leaves that are round or ovate and have rounded teeth. It has small inconspicuous flowers that grow in the axils of leaves.

This species occurs in California, Oregon and Washington. In California it is found in Del Norte, Humboldt and Mendocino Counties. It occurs in north coast coniferous forest and riparian forest. It can be found on roadsides, seeps and streambanks. There are three Calflora records within five miles of the BSA, of which one is 0.15 miles southeast of the BSA.

This species most frequently is found in bloom in March through May but can also be found in bloom as early as February and in the fall (September through November).

**Oregon goldthread *(Coptis laciniata)*** **CRPR 4.2**

Oregon goldthread has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Oregon goldthread is a perennial herb in the buttercup family (Ranunculaceae) that has rhizomes or underground stems. It is scapose, meaning flowers occur at the end of long leafless stems. It has compound leaves that are composed of leaflets that are often toothed. It has stalked fruits with papery, more or less translucent walls. These fruits form in small clusters (umbels).

This species occurs in California, Oregon, and Washington. In California, it is found in Del Norte, Humboldt, and Mendocino Counties. It occurs in meadows and seeps and on streambanks in north coast coniferous forest. The CNPS rare plant inventory reports this species in the Mendocino, Mathison Peak, and Elk Quadrangles but details regarding these occurrences are not provided. There is a 2023 Calflora occurrence of this species approximately 5.5 miles north of the BSA.

This species is most frequently observed blooming in the spring and summer between March and July but is occasionally found in flower as early as February and in September through November.

**Swamp harebell *(Eastwoodiella californica)*** **CRPR 1B.2**

Swamp harebell has a CRPR of 1B.2. This rank describes plants that are rare, threatened, or endangered in California and elsewhere and moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act. This species is currently referred to by the scientific name *Campanula californica* in the Jepson eFlora.

Swamp harebell is a small perennial herb in the Bellflower Family (Campanulaceae). It reaches four to 12 inches in height and does not have hairs. It has leaves that are less than an inch long and ovate with rounded teeth. It has bell-shaped flowers that have pale blue petals.

This species occurs in coastal areas in Santa Cruz, Marin, Sonoma and Mendocino Counties. It occurs in mesic areas within several habitats including bogs and fens, closed-cone coniferous forest, coastal prairie, marshes and swamps (freshwater), meadows and seeps, and north coast coniferous forest. There are four CNDDB occurrences within five miles of the BSA. The nearest CNDDB occurrence is approximately 0.6 miles southeast of the BSA.

Swamp harebell is found blooming from June to October.

**Harlequin lotus *(Hosackia gracilis)*** **CRPR 4.2**

Harlequin lotus has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

The harlequin lotus is a perennial herb in the pea family (Fabaceae) that grows by stolons or rhizomes. The plants do not have thorns, and they are not obviously gland dotted. This species has fragile triangular stipules (appendages at the base of the leaf stem), and its leaves are made of three to seven leaflets. It has showy flowers with yellow banner petals, and wing petals that are pink to purple fading to white.

Within the US, this species occurs in California, Oregon and Washington. In California it is found from Del Norte County south to San Luis Obispo County at elevations up to 2,295 feet. It occurs in several habitats including broadleafed upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, meadows and seeps, north coast coniferous forest, and valley and foothill grassland. It often is found on roadsides or in wetlands. There are many Calflora occurrences of this species along the coast of Mendocino County. This species is included on the 2005 plant list for Van Damme State Park compiled by botanist Teresa Sholars.

It is found blooming in March through July

**Coast lily *(Lilium maritimum)*** **CRPR 1B.1**

Coast lily has a CRPR of 1B.1. This rank describes plants that are rare, threatened, or endangered in California and elsewhere and seriously threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Coast lily is in the Lily Family (Liliaceae) and grows from spreading, scaly, elongated bulbs often exceed one meter in height. The showy bell-shaped flowers have red or red-orange petals that are reflexed 20-50%.

This species is found in Marin, Sonoma, and Mendocino Counties at elevations ranging from 15 to 1560 ft. It occurs in broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes and swamps (freshwater), and north coast coniferous forest. In these habitats it is sometimes found on roadsides. There are six CNDDB occurrences within five miles of the BSA. The nearest CNDDB occurrences are two locations, one of which is two miles northeast of the BSA and the second which is 1.4 miles southeast of the BSA.

It is found blooming between April and August but is most frequently observed in bloom in April and May.

**Heart-leaved twayblade *(Listera cordata)*** **CRPR 4.2**

Heart-leaved twayblade has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Heart-leaved twayblade is a perennial herb in the Orchid Family (Orchidaceae). It typically has two leaves that are attached to the stems and lobed at the base or heart shaped. It has green petals, its lower petal (lip) is deeply lobed.

It occurs throughout the western US and in the northeast. In California, this species occurs in Del Norte, Humboldt, Trinity, and Mendocino Counties at elevations from 15 to 4,495 feet. It is found in bogs and fens, lower montane coniferous forest, and north coast coniferous forest. There are two Calflora occurrences within five miles of the BSA. This species is included on the 2005 plant list for Van Damme State Park compiled by botanist Teresa Sholars.

It is most often found in bloom in March through June but is occasionally found in bloom in February and July.

**Leafy-stemmed mitrewort *(Mitellastra caulescens)*** **CRPR 4.2**

Leafy-stemmed miterwort has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Leafy-stemmed miterwort is a perennial herb in the Saxifrage Family (Saxifragaceae) that has scaly rhizomes. It has basal leaves and one to few leaves along the stem. It has yellow-green petals that are distinctly lobed forming a feather-like shape.

It occurs in bogs and fens, lower montane coniferous forest, and north coast coniferous forest at elevations ranging from 15 to 4495 feet. There are two Calflora occurrences within five miles of the BSA. The CNDDB includes a 1957 record of this species occurring along the banks of Little River which overlaps with the BSA. This species is also included on the 2005 plant list for Van Damme State Park compiled by botanist Teresa Sholars.

It is found blooming between February and July and has been most often observed in bloom in May through July.

**California pinefoot *(Pityopus californicus)*** **CRPR 4.2**

California pinefoot has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

California pinefoot is a perennial herb in the Heath Family (Ericaceae) that lacks chlorophyll and receives nutrition from an external source. The above ground portion of this plant consists of the flower stem with its cream to yellow flowers and leaf-like bracts.

In the United States, this species occurs in California, Oregon, and Washington. In northern California, it is found in Del Norte, Humboldt, Mendocino, Siskiyou, and Trinity Counties, and it is also found in Fresno, Madera, Tulare Counties to the south. It is found in mesic communities within broadleafed upland forest, lower montane coniferous forest, north coast coniferous forest, and upper montane coniferous forest habitats at elevations ranging from 50 to 7,300 feet. There are five Calflora occurrences of this species within five miles of the BSA. Calflora cites historic (1949-1956) herbarium collections of this species near the BSA along Little River, in the Mendocino Headlands State Park, and near the Albion River, and a recent occurrence of this species at Jug Handle State Park approximately 14 miles north of the BSA.

It is found in bloom in May through August and also occasionally in March and April.

**Nodding semaphore grass *(Pleuropogon refractus)*** **CRPR 4.2**

Nodding semaphore grass has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Nodding semaphore is a perennial grass (Poaceae) that grows by rhizomes. It grows to 27 to 60 inches in height. Groups of flowers (spikelets) are attached to the main stem (in a raceme) and are reflexed as they mature. The common name of this plant “semaphore grass” comes from the flag like appears of these spikelets.

It is found in mesic areas in lower montane coniferous forest, meadows and seeps, north coast coniferous forest, and riparian forest habitats at elevation up to 5,250 feet. In the United States, this species occurs in California, Oregon, and Washington, and in California it occurs in Del Norte, Humboldt, Mendocino, Sonoma, and Marin Counties. Calflora contains several occurrences of this species in Russian Gluch State Park approximately 5 miles north of the Project Area.

It is found in bloom in April through August and also occasionally in February and March.

**Fringed false hellebore *(Veratrum fimbriatum)*** **CRPR 4.3**

Fringed false hellebore has a CRPR of 4.3. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.3 includes plants which are not very threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Fringed false hellebore is a perennial herb in the false-hellebore Family (Melanthiaceae). It grows to 3 to 6 feet in height and has many leaves that are widely ovate with coarse parallel veins. The petals are white, green, or red-brown and fringed.

Fringed false hellebore occurs in Mendocino and Sonoma Counties in California and is found in mesic microhabitats within bogs and fens, coastal scrub, meadows and seeps, and north coast coniferous forest. It is found at elevations ranging from 10 to 985 feet. There are seven Calflora records within five miles of BSA, of which four are within the park and two are within 0.15 mile of the BSA.

It is found in bloom from July to September.

### 4.2.2. Discussion of Listed Plant Species

Listed plant species include those species listed as threatened or endangered under the ESA or CESA, those species proposed for listing under the ESA or candidates for listing under the CESA, and plants listed as rare under the Native Plant Protection Act.

A total of eight listed plant species were identified in the Mendicino quad and the five surrounding quads (Fort Bragg, Noyo Hill, Mathison Peak, Albion, and Elk) during the literature review. Six of these are listed as endangered under the ESA. No plant species listed as threatened or proposed for listing under the ESA were identified.

Six species are listed under the CESA or the California Native Plant Protection Act. Four species are listed under both the ESA and CESA, and two additional species are listed only under the CESA or the Native Plant Protection Act. These eight species are listed below:

- Humboldt County milk-vetch *(Astragalus agnicidus)*
  CESA Endangered, CRPR 1B.
- Point Reyes blennosperma *(Blennosperma nanum* var. *robustum)*
  Rare California Native Plant Protection Act, CRPR 1B.1
- Howell's spineflower (*Chorizanthe howellii*)
  ESA Endangered, CESA Threatened, CRPR 1B.2
- Menzies' wallflower *(Erysimum menziesii)*
  ESA Endangered, CESA Endangered, CRPR 1B.1
- Burke’s goldfields (*Lasthenia burkei*)
  ESA Endangered, CESA Endangered, CRPR 1B.1
- Contra Costa goldfields (*Lasthenia conjugens)*
  ESA Endangered, CRPR 1B.1
- Two-fork clover (*Trifolium amoenum*)
  ESA Endangered, CRPR 1B.1
- Monterey clover (*Trifolium trichocalyx*)
  ESA Endangered, CESA Endangered, CRPR 1B.1

Of these eight species, there was a low quality potential for one of these species, the Monterey Clover *(Trifolium trichocalyx)* to occur within the BSA. Suitable habitat is not present for the remaining seven species within the BSA.

**Monterey Clover *(Trifolium trichocalyx)***
**Federally Endangered/California Endangered/CRPR 1B.1**

Monterey clover is endangered under both the ESA and CESA; Critical Habitat has not been designated for the species. This species has a CRPR of 1B.1. This rank describes plants that are rare, threatened, or endangered in California and elsewhere and seriously threatened in California. Monterey clover is an annual in the Pea family (Fabaceae).

Historically, Monterey clover was only known to occur in 206 acres of land owned by the Del Monte Forest Conservancy and Pebble Beach Company in Monterey County (USFWS 2020). In 2011, a timber harvest plan survey identified the species in Mendocino County, expanding its known distribution. Mendocino County is now known to support the greatest abundance of Monterey clover, spanning 2,560 acres near the North Fork Garcia River and two additional populations just east of Mendocino Woodlands State Park. In Monterey County, the clover has been found in Monterey pine forests (*Pinus radiata*), whereas, the species was observed in mixed conifer forests of coast redwood (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga menziesii*), and tan oak (*Notholithocarpus densiflorus*) in Mendocino County. In both counties, Monterey clover occurs in recently disturbed areas with low canopy cover (e.g., locations with a more frequent fire regime in Monterey County and areas used for logging roads and construction in Mendocino County.

In Monterey County, Monterey clover has been found on poorly drained Narlon loamy fine sand and well-drained Sheridan coarse loamy sand, both supporting a thin or loamy sand upper surface underlain by highly compacted sandy clay (USFWS 2020). In Mendocino County, Monterey clover has been found on Dehaven-Hotel complex, Irmulco-Tramway complex, Ornbaun-Zeni complex, and Vandamme-Irmulco-Tramway complex soils, which consist of well-drained loam to gravelly loam; however, the logging road association presumably results in the species occurring on altered soil profiles. In Mendocino County, Monterey clover typically occurs off of roads with north-facing aspects that are flat to gently sloping compared to the steep slopes typical of the soil complexes; specifically, the clover has been found in higher abundances in shallow, mesic depressions.

The BSA is approximately 11 miles southwest of the closest CNDDB occurrence (No. 6) of Monterey clover, which occurs off of roads upslope of East Branch Little North Fork stream (CDFW 2024). The BSA contains one of the soil map units the Monterey clover has been documented in Mendocino County (e.g., the Vandamme-Irmulco-Tramway complex). Furthermore, the land adjacent to the routinely managed access roads could experience a disturbance regime that would be suitable for the Monterey clover. As a result, the BSA supports potential habitat for the Monterey clover. However, the Park's frequent visitation, including by botanists, reduces the likelihood of Monterey clover going undetected (e.g., a number of local special-status plant species, with CRPR of 4, have been documented in the Park). State Parks will conduct appropriately timed botanical surveys of the BSA to ensure impacts on special-status plant species are minimized.

### 4.2.3. Survey Results

Surveys for special status plants have not yet been conducted but are planned for the spring of 2025.

The CNDDB, CNPS Rare Plant Inventory, and Calflora were carefully reviewed to develop a list of species with potential to occur within the BSA. Based on this review 12 species have a moderate to high potential of occurring in the BSA. Records of two special plant species were found at or adjacent to the BSA. The CNDDB contains one special status plant occurrence that overlaps with BSA. This is a 1957 occurrence of leafy-stemmed miterwort. There are also several Calflora occurrences of fringed false hellebore near the BSA.

Additional rare plant surveys will be conducted in the spring and summer prior to construction and the avoidance and minimization measures described below in section 4.2.4 will be implemented.

### 4.2.4. Project Impacts

Project impacts on special status plant species will be minimized through the implementation of the avoidance measures described below.

If special status plant species are found within the BSA, they are expected to be infrequent. Although the BSA is easily accessible by the public and visited by local botanists, there are few recent CNDDB and Calflora occurrences of special status plants within the BSA. In addition, the BSA is relatively small (approximately 1.1 acres). Although there is a potential that individual special status plants may be impacted by this project, any potential impacts are not expected to be significant because of the small size of the project footprint.

### 4.2.5. Avoidance and Minimization Efforts

The following special status plant avoidance and minimization measures will be implemented for this project:

**Preconstruction Special-Status Plant Surveys:** Prior to construction, a State Parks Environmental Scientist will conduct special-status plant survey(s) of the Project Area and proximity coinciding with the identifiable period of the special status plants reported on in the CNPS Rare Plant Inventory and the Jepson eFlora. All special-status plant occurrences within and adjacent to the Project Area will be recorded on project maps.

**Special-Status Plant Impact Avoidance and Minimization:** Where possible, special-status plant occurrences will be avoided and protected from construction activities. Locations where special status plants can't be avoided will be subject to the following conditions as approved by a State Parks Environmental Scientist:

<u>Perennial Species</u>

- Prior to construction, plants will be carefully excavated and transplanted to nearby suitable habitat. All transplant work will be conducted under the direction of District Resource Staff, a State Parks Environmental Scientist, or a State Parks-approved biologist.
- If possible, transplanting should occur during the dormant growing season (i.e. late fall) when the plants are least disturbed and can receive winter precipitation.

<u>Annual Species</u>

- Seeds from annual special status plant species will be collected during the appropriate season and properly stored prior to ground disturbing activities. Seeds

will be sown during the appropriate season in suitable locations identified by the District Resource Staff, a State Parks Environmental Scientist or a State Parks-approved biologist.

## 4.3. Special Status Animal Species

Wildlife are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status animals occurring on site. Occurrences of 26 special status wildlife species are reported in the CDFW CNDDB, the USFWS IPaC online system for the Mendicino (3912337) quadrangle and the five surrounding quadrangles: Fort Bragg (3912337), Noyo Hill (3912346), Mathison Peak (3912336), Albion (3912327), and Elk (3912326), the NOAA Fisheries Essential Fish Habitat Mapper (NOAA 2024a), the NOAA Fisheries West Coast Region Species and Habitat App California Species List Tool (NOAA 2024b), and the National Marine Fisheries Service (NMFS) West Coast California Species List Tool (NOAA 2022) were also consulted.

The following species are not included in Table 2 because they are restricted to the marine environment and are therefore not expected to occur within the BSA or to be impacted by this project:

- Eastern Pacific green turtle *(Chelonia mydas)* FT
- Olive Ridley sea turtle *(Lepidochelys olivacea)* FE (Mexico's Pacific coast breeding population), FT (all other populations)
- Leatherback sea turtle *(Dermochelys coriacea)* FE
- Blue whale *(Balaenoptera musculus)* FE
- Fin whale *(Balaenoptera physalus)* FE
- Humpback whale *(Megaptera novaeangliae)* FE
- Southern resident killer whale *(Orcinus orca)* FE
- Northern Pacific right whale *(Eubalaena japonica*) FE
- Sei whale *(Balaenoptera borealis)* FE
- Sperm whale *(Physeter macrocephalus)* FE
- Guadalupe fur seal *(Arctocephalus townsendii)* FT

The project is expected to have No Effect on these marine species because suitable habitat for them is not found within the Project location, and project impacts will not extend to the marine environment.

### 4.3.1. Discussion of Animal Species

All special status animal species that were identified during the literature review are described in Table 2. Table 2 includes an assessment of the likelihood that each species occurs within the BSA and a rationale for this determination. Of the species included in Table 2, potential habitat is present at or adjacent to the BSA for nine special status animal species including one bat,

one bird, three fish, three amphibians and one invertebrate. Those special status animals for which the BSA includes potential habitat are described in more detail below.

**Townsend's big-eared bat *(Corynorhinus townsendii)***
**California Species of Special Concern**

Townsend's big-eared bat is found throughout California and can be found in all habitats within California except for alpine and subalpine habitats. This species may be found during any season throughout its range. Once considered common, Townsend's big-eared bats are now considered uncommon in California, mainly residing in mesic habitats. This species is extremely sensitive to disturbance of roosting sites; a single visit may result in abandonment of the roost or hibernacula.

An essential component to Townsend's big-eared bats occupancy is the existence of caves, mines, tunnels, buildings, or other human-made structures for both day roosts as well as maternity roosts, and may use separate sites for either day roosts, hibernaculum, or maternity roosts. Available roosting sites are the limiting resource in the determination of the presence of Townsend's big-eared bat.

Townsend's big-eared bats will hibernate in open spaces such as caves, mines, and abandoned buildings, they have also been known to hibernate in clusters depending on environmental conditions. Sites for hibernation roosts tend to be cold, but not below freezing and with enough space for Individuals to move within the hibernaculum to find suitable temperatures.

Townsend's big-eared bat maternity roosts are warm and typically found in open cavern-like structures such as caves, abandoned mines, concrete bunkers, attics, barns and large rock cavities. The females are active and alert during maternity season and are very sensitive to light and movement, so they prefer open spaces that are dark and warm with stable temperatures.

Townsend's big-eared bats are medium-sized with very large ears, which measure about half their body length and are connected at the base. There are two prominent lumps on either side of the nostrils which may function as sexual scent glands. Their wingspan ranges from 12 to 13 inches, and they weigh one-third to one-half ounce, about the weight of one to two large marshmallows. Their wings are large and wide relative to their body size, which provides them with the ability to fly at low speeds, to hover and to maneuver more readily in cluttered environments.

Townsend's big-eared bats are insectivorous with small moths being the principal food, while beetles and a variety of soft-bodied insects also are taken. Townsend's big-eared bats capture their prey in flight using echolocation, or by gleaning from foliage. Flight is slow and maneuverable, and they are capable of hovering due to their relatively large size of their wings.

Most mating occurs from November-February, but many females are inseminated before hibernation begins. Females have the capability to store sperm until ovulation occurs in spring. Gestation lasts 56-100 days, depending on temperature and the size of the hibernating cluster in conjunction with time in hibernation. Births occur in May and June with the peak in late May with a single litter of 1 pup produced annually. Young are weaned in 6 weeks and fly in 2.5-3 weeks after birth and the growth rate of the pup mainly depending on temperature. The maternity group begins to break up in August with about half of young females returning to their birth site after their first hibernation.

**Purple martin *(Progne subis)***
**California Species of Special Concern**

Purple martin are local summertime residents in a variety of wooded, low-elevation habitats throughout California preferring valley foothill and montane hardwood conifer, and riparian habitats. Specific coniferous habitats include closed-cone pine-cypress, ponderosa pine, Douglas-fir, and redwood forests, and within these specific forest habitats they tend to frequent old-growth multi-layered, open forest and woodlands with snags for nesting. This lends well to the purple martin nesting in old woodpecker cavities and nests are often located in tall, old, isolated trees or snags in open forest woodland. In addition to these natural structures, they have been found to nest in man-made structures such as birdhouses, nesting boxes and even under bridges or culverts.

The purple martin is the biggest swallow in North America at approximately 7 to 8.5 inches (125 to 22 cm), about the size of an American robin. The purple martins coloration is black, blue, gray, purple with a white underbelly. It has long angular wings and a notched square-tipped or forked tail which allows the purple martin to hawk insects on long, gliding flights, 100 to 200 feet (30-60 m) above the ground. The purple martin mainly forages over riparian areas, forests, and woodlands with recorded occurrences of foraging over urban areas.

Purple martin spend the winter in South America and tend to arrive in California breeding habitat in late March and will depart by late September. They will start nesting in April, with the peak nesting activity occurring in June, and concluding into August. Depending on nest site availability in the area, pairs of nesting purple martins will either nest colonially or singly. The typical clutch size is 3 to 8 eggs with an average of 4 to 5 eggs, and pairs have been known to rear two broods within one nesting season. Young chicks are altricial (born helpless and requiring significant parental care) and are cared for by both parents. Chicks will typically fledge at 24 to 31 days after hatching.

**Chinook salmon – California coastal (CC) – ESU *(Oncorhynchus tshawytscha)***
**Federally Endangered**

The CC Chinook ESU includes salmon that spawn in coastal watersheds from Redwood Creek (Humboldt County) to the Russian River (Sonoma County). In general, small coastal streams within this range can support CC Chinook salmon as long as they have open estuaries during peak migration times (fall through spring).

CC Chinook salmon can be distinguished from other salmon species by heavy spotting on their tails and black coloration inside their lower jaw and at the base of their teeth. CC Chinook salmon are nearly identical in appearance to other Chinook salmon and are separated from other Chinook based on their geographic distribution and genetic differences.

CC Chinook typically return to their natal rivers after spending two or three years at sea between September and early November, often following large early winter storms, but some do stray and wind up in a different stream close to their natal stream. Spawning in the larger basin’s peaks between late October and December, and eggs hatch after 40 to 60 days. The majority of CC Chinook salmon juveniles emerge from the gravel in the late winter or spring and migrate downstream within a few months. Smolts use food-rich tidal or flooded habitats with overhanging cover or undercut banks to forage before migrating to sea.

When a female digs a redd the area cleaned measures between approximately 21 and 108 $ft^2$ (2 and 10 $m^2$). Low silt content is necessary in the course substrate the eggs are buried in. To ensure adequate flow around the developing embryo, which is essential for successful spawning, the fine sediments are mobilized as the gravel is loosened. In addition, redd sites are chosen in areas with good subsurface flow to ensure the constant delivery of oxygen containing water. Ideal water temperatures for maximum embryo survival are between 5 and 13°C with oxygen levels close to saturation.

Each female produces somewhere in the range of 2,000 to 17,000 eggs with the number of eggs produced having some correlation with the female body size. Spawning males include large adults that have returned from the ocean in addition to mature 1-year olds that have never gone to sea. More than 90 percent of the eggs are thought to be fertilized.

After approximately 40 to 60 days, embryos hatch and are now referred to as alevins and remain in gravel for 4 to 6 weeks until their yolk sac is fully absorbed. After leaving the gravel, the juvenile chinook are referred to as fry and are usually washed downstream into areas with low velocities, dense cover, and an abundance of small food items. As the fry grow larger and stronger, they move into deeper and faster water.

The time that juvenile chinook spend in fresh water before entering the ocean varies greatly depending on the run of chinook they are part of, and the conditions of the river. This rearing time can be anywhere in the range of three months to over a year. While in freshwater juvenile chinook salmon eat a wide variety of terrestrial and aquatic insects.

Once in the ocean juvenile chinook tend to stay along the California coast, although a general northern movement of fish may occur. Juvenile chinook salmon off the coast of California take advantage of the food rich waters caused by the upwelling generated by the California Current. When the California Current does not flow as strongly, and upwelling decreases, declines in ocean survival of salmon has also been recorded, which highlights the importance of ocean productivity. When juvenile chinook enter the ocean, they become predators of small fish and crustaceans. Smaller juveniles feed on invertebrates such as crab larvae and amphipods. When they grow larger fish become dominant in their diet which leads to rapid growth in size. Their ocean stage of life lasts 1 to 5 years.

**Coho salmon – central California coast ESU *(Oncorhynchus kisutch pop. 4)***
**Federally Endangered, California State Endangered**

A medium to large salmon, with spawning adults typically measuring 22 to 28 inches (55 to 70 cm) fork length and weighing from 6.6 to 13.2 lbs. (3 to 6 kg) (Moyle 2002). Spawning males are characteristically dark red on the sides, with the head and back dark green and the belly gray to black. Females are less colorful than males and often appear dull in comparison, with dark pink on the sides.

Most spawning males are characterized by a hooked jaw and slightly humped backs. The jaw is less hooked in jacks (2-year-olds) and only very slightly hooked in females. Both sexes have small black spots on the dorsal (back) fin and upper lobe of the caudal (tail) fin, with no spots on the lower lobe of the caudal fin. The gums of the lower jaw are usually gray, except for the upper area at the base of the teeth, which is white. Coho salmon typically inhabit small coastal streams, as well as larger rivers, such as the Klamath River system, where they are currently found as far upstream as Iron Gate Dam and the Shasta River. Coho Salmon in northern

California coastal streams are typically associated with low gradient reaches of tributary streams, which provide suitable spawning areas and good juvenile rearing habitat.

Coho salmon move upstream after heavy rains open the sand bars that can form at the mouths of many California coastal streams but may enter larger rivers earlier, coho salmon tend to spawn in smaller streams than do Chinook salmon. Females usually choose spawning sites near the head of a riffle with medium to small gravel substrates. Females dig redds (nests) by turning partly on their side. Using powerful, rapid movements of the tail, gravels are dislodged and transported a short distance downstream by the current. Repeating this action creates an oval-to-round depression at least as deep and as long as the fish. Eggs and milt (sperm) are released into the redd, where, because of the hydrodynamics of the redd, they tend to remain until they are buried.

Typical rearing areas used by juvenile coho salmon include low-gradient coastal streams, sloughs, side channels, alcoves, estuaries, low-gradient tributaries, large rivers, beaver ponds, and large slack waters. The most productive juvenile habitats are found in smaller streams with low-gradient alluvial channels containing abundant pools formed by large woody debris. Adequate winter rearing habitat is important to successful completion of coho salmon life history.

After one year in fresh water, coho salmon smolts begin migrating downstream to the ocean dependent on fish size, flow conditions, water temperature, dissolved oxygen levels, day length, and food availability. Low stream productivity due to low nutrient levels or cold-water temperatures can contribute to slow growth, potentially causing coho salmon to postpone emigration. Upon entry into the ocean, immature coho salmon remain in inshore waters, congregating in schools as they move north along the continental shelf. Most remain in the ocean for two years; however, some return to spawn after the first year, when they are referred to as grilse or jacks. Data on ocean distribution of California coho salmon are sparse, but it is believed that the coho salmon scatter and join schools from Oregon and possibly Washington.

Historically, coho salmon were widely distributed and abundant in many coastal watersheds of central and northern California, ranging from the Smith River near the Oregon border to the San Lorenzo River, Santa Cruz County, on the central California coast. However, over recent years the distribution and abundance of Coho Salmon populations in California have been considerably reduced. Although Coho Salmon are still found in most major river systems in the northern portion of the state, many spawning runs have declined substantially in size and were eliminated from many tributaries, including some streams in the Klamath and Eel River basins.

**Steelhead – northern California DPS winter run (*Oncorhynchus mykiss irideus pop. 49*)**
**Federally Threatened, California Species of Special Concern**

The northern California steelhead DPS includes all naturally spawning populations in California coastal river basins from Redwood Creek (Humboldt County) to the Gualala River (Mendocino County). This distribution includes the Eel River, the third largest watershed in California, with its four forks (North, Middle, South, and Van Duzen) and their extensive tributaries. Northern California steelhead are present today wherever streams are accessible to the ocean and sufficient flows and cool water exist.

Northern California steelhead are larger, on average, than steelhead from other watersheds in California. in general, coastal steelhead in smaller, slower coastal rivers are deeper-bodied,

longer, and more robust than steelhead from larger inland rivers. The northern California steelhead populations show some genetic influence from Klamath Mountains Province (KMP) steelhead. Within the Eel River watershed, there are significant genetic differences between resident Rainbow trout upstream of natural barriers in headwater tributaries and steelhead downstream.

Northern California winter steelhead generally enter estuaries and rivers between September and March, with spawning peaking between December and early April. These steelhead are sexually mature when they arrive at spawning areas, usually after spending two years in freshwater and one year growing at sea. In relatively small coastal watersheds in Mendocino County, many steelhead enjoy a high likelihood of repeat spawning potential due to their relatively short migrations. Most that live to spawn many times are females, and they may account for a significant proportion of returning adults in a given year, depending on the stream. Females can lay between 200 and 12,000 eggs, depending on their size and condition, before migrating back to the ocean by May. Newly emerged steelhead school together and seek shallow waters with gentle currents to grow, while older juveniles maintain territories in faster water and in pool habitats. Juveniles smolt in early spring and migrate to estuaries or the ocean between March and June. Some juvenile steelhead rely on estuaries for rich feeding and growth opportunities, increasing their chances of survival at sea.

**Foothill yellow-legged frog – north coast DPS *(Rana boylii)***
**California Species of Special Concern**

In California, the foothill yellow-legged frog occurs in the Coast Ranges from the Oregon border south to the Transverse Mountains in Los Angeles County, in most of northern California west of the Cascade crest, and along the western flank of the Sierra south to Kern County. The foothill yellow-legged frog is found in or near rocky streams in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types. Unlike most other ranid frogs in California, this species is rarely encountered (even on rainy nights) far from permanent water.

Foothill yellow-legged frogs are medium-sized frog with a slim waist, long legs, and webbing on the hind feet. The skin is grainy rather than smooth and the ridges on the sides (dorsolateral folds) are not distinct with the coloring being gray, brownish, or olive, sometimes red, tending to match the background of its habitat. Foothill yellow-legged frogs may also appear to be plain or mottled with dark spotting and occasionally heavily mottled. There is no mask through the eyes and a light-colored band runs across the top of the head. The undersides of the rear legs and lower abdomen are yellow with a whitish venter with dark spotting on the throat and chest.

Adult foothill yellow-legged frogs eat both aquatic and terrestrial invertebrates appearing to favor adult insects; however, snails, and pieces of molted skin have also been found in stomach samples. Adults often bask on exposed rock surfaces near streams and are primarily diurnal and seem to be active all year. When disturbed, they dive into the water and take refuge under submerged rocks or sediments, using their skin coloring and texture as camouflage. During periods of inactivity, especially during cold weather, individuals seek cover under rocks in the streams or on shore within a few meters of water.

Breeding and egg laying usually await the end of spring flooding and may commence any time from mid-March to May, depending on local water conditions. The breeding season at any

locality is usually about two weeks for most populations with the females depositing eggs in clusters of 200 to 300 (range 100 to 1000) attached to gravel or rocks in moving water near stream margins. The egg masses are grapelike clusters of eggs and are laid on the downstream side of rocks in shallow slow-moving water where they are attached to submerged rocks and pebbles and occasionally vegetation. They hatch in about five days, and the tadpoles will graze on algae and diatoms along the rocky stream bottom. Tadpoles require water for at least three to four months while completing their aquatic development and can reach maximum sizes of approximately 2.2 inches (50 to 55 mm) before transforming into metamorphs. Foothill yellow-legged frog usually reach adulthood and sexual maturity in one to two years.

**Northern red-legged frog *(Rana aurora)***
**California Species of Special Concern**

Northern red-legged frog occur along the Coast Range from Del Norte County to Mendocino County, usually below 3936 feet (1200m). Typically, they are pond frogs, diurnal, and found near water; however, they can be wide-ranging and highly terrestrial, sometime inhabiting damp places far from water. They are considered highly aquatic with preferences for shorelines with extensive vegetative cover. They can be found in humid forest, woodland, grassland and along streamside habitats. They are most commonly found in lowlands or foothills as well as in woods adjacent to streams. Northern red-legged frog may require rains for dispersal, but individuals have been found considerable distances from breeding sites on rainy nights.

The northern red-legged frog is a medium-sized frog with adults reaching up to 1.75 to 3 inches (4.4 to 7.6 cm) long from snout to vent, with a slim waist, long legs and smooth skin with webbing on the hind feet. They possess prominent ridges (dorsolateral folds) that run along their sides with their eyes oriented outwards.

Their coloring is reddish-brown or brown, gray, or olive, with small flecks and spots on the back and sides with dark banding on the legs with dark blotches marking the back which typically do not have light coloring in the center. They have a dark mask on the head and stripe extending from the shoulder to the front of the upper jaw. The hind legs and lower belly are red underneath, giving the frog its name; with the groin having a mottled yellowish-green and black coloring. The chest and throat are creamy and marbled with dark grey and with older frogs the red coloring extends onto the belly and sides.

Breeding habitat is in permanent water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. A highly aquatic species with little movement away from streamside habitats. Although, individuals are sometimes found along roads on rainy nights.

Their diet is highly variable, adults take aquatic and terrestrial insects and crustaceans and snails as well as worms, fish, tadpoles, smaller frogs, and small mammals. Aquatic larvae are mostly herbivorous in addition to a wide variety of invertebrates. Typically, prey is located by sight and using their large sticky tongues to catch their prey and bring them to the mouth.

Northern red-legged frog tend to breed from March to July with females laying between 750 to 4000 eggs in large gelatinous clusters of up to 10 inches across. Eggs are deposited in permanent pools and are attached to emergent vegetation approximately 7 to 15 cm (2 to 6 inches) below the surface of the water. Egg clusters are dispersed and not laid together in a communal mass with the egg masses eventually floating to the surface. Eggs will hatch in four weeks with the tadpoles metamorph process taking place within a span of three to five months.

**Pacific tailed frog *(Ascaphus truei)*California Species of Special Concern**

In California, the Pacific tailed frog is known to occur only in Del Norte, Siskiyou, Humboldt, Trinity, Shasta, Tehama, and Mendocino Counties, but the southern limit of their distribution may range as far south as central Sonoma County. Primarily nocturnal, Pacific tailed frogs are known to be active during the day, with the highest activity during or just after rains at night, even moving away from the stream. During the day, adults seek cover under submerged rocks and logs in the stream or occasionally under similar surface objects close to the stream. Individuals have also been found in crevices in spray-drenched cliff walls near waterfalls. During winter individuals are less active, especially inland, and appear to retreat beneath large logs and boulders. Adults forage primarily terrestrially along stream banks but also occasionally feed underwater on a wide variety of food items, including both aquatic and terrestrial larval and adult insects, other arthropods (especially spiders), and snails.

Pacific tailed frogs occur in permanent streams of low temperatures in conifer-dominated habitats including redwood, Douglas fir, Klamath mixed-conifer, and ponderosa pine habitats, but also in montane hardwood-conifer habitats. Coastal tailed frogs occur more frequently in mature or late-successional stands than in younger stands at elevations ranging from near sea level to 1980 m (6500 ft). Pacific tailed frogs are restricted to perennial streams of low temperature in steep-walled valleys with dense vegetation with intermittent streams considered unsuitable. They tend to occur in areas that receive more than 40 inches (100 cm) of rainfall annually in addition to high nighttime relative humidity, which results in the formation of dew on creekside vegetation that may facilitate nocturnal foraging by adults.

Breeding normally occurs in early fall (late August and September), but pairs may be found clasped together at any time of the year. Mating occurs underwater and the females retains viable sperm in the lower portion of the oviduct for several months, and fertilized eggs are laid during the summer after mating. Eggs are laid several months later in globular masses attached to the underside of submerged rocks and can tolerate water temperature between 5°-18°C. Clutch sizes range from 33 to 98 eggs per clutch and usually hatch in about a month.

Tadpoles require cool streams (15° C or less) with smooth-surfaced stones with a minimum diameter of 2.25 inches (55 mm) and prefer rocks in turbulent water to ones in smooth, swiftly flowing water. Tadpoles probably spend most of their time attached to such rocks by a large oral sucker and actively avoid water temperatures above 22° C and die at temperatures exceeding 30°C. Tadpoles primarily feed on diatoms, which are scraped off the surface of submerged rocks in stream bottoms and consume small quantities of filamentous green algae and desmids. Permanent water is critical because the aquatic larvae require 2 to 3 years to transform with metamorphosis normally occurring in early fall.

**Southern torrent salamander *(Rhyacotriton variegatus)***
**California Species of Special Concern**

Southern torrent salamander can be found in coastal forests of northwestern California south to Point Arena in Mendocino County. It is found primarily in cold, well-shaded permanent streams and spring seepages in redwood, Douglas fir, mixed conifer, montane riparian and montane hardwood-conifer habitats at elevations extending from near sea level to approximately 1200 m (3900 feet). Permanent cold streams and seepages are required throughout the year, and they are normally found among the pebbles and rocks within streams and seepage areas. On land

the southern torrent salamander is generally found only within the splash zone or on moss-covered rock rubble with trickling water.

The southern torrent salamander is a medium-sized salamander with a slim body, a short tail, and a small head with large protuberant eyes. Coloring is olive to brown dorsally with dark and light speckling, flecked with metallic gold and a yellowish, and similarly speckled ventral surface. Primarily aquatic, but also capable of terrestrial activity, with highly reduced lungs, this species relies on its skin surfaces to take in oxygen, making it very intolerant of desiccation. Adults are active even at very low temperatures, as cold as 41 - 50 degrees F (5 -10 degrees C), and are extremely moisture dependent. Their diet consists primarily of aquatic and semi-aquatic invertebrates, including amphipods, and springtails as well as small insects and spiders.

Reproduction is aquatic, breeding may occur throughout the year, but the peak oviposition period is in August and September, with a peak egg-laying period probably in spring or early summer. Clutch size ranges from 2-16 eggs and are laid communally, and are attached underneath rocks, small boulders, or cobble in streams with gravel substrates. The eggs take an extended period of time to develop with hatching occurring 210-290 days after being laid, with peak hatching occurring in spring. Larvae feed for an additional 70-85 days on the remaining large stores of yolk and may take 2 to 2 ½ years to metamorphose. Sexual maturity is reached at 1 to 1 ½ years after metamorphosis, a total of 4 ½ to 5 years.

### 4.3.2. Survey Results

Surveys for specific special status species have not yet been conducted. A pedestrian reconnaissance level field survey was conducted along both north and south banks of Little River on November 24, 2024, by State Parks Senior Environmental Scientist Jeffrey Tkach.

The CNDDB, IPaC and NOAA Fisheries databases reviewed to develop a list of special status species with the potential to occur within the BSA. Based on the review, nine special status species with a moderate to high potential of occurring in the BSA were uncovered. The CNDDB contains three special status species occurrences that overlap with the BSA. CNDDB listed Occurrence No. 71 for steelhead – northern California DPS winter run *(Oncorhynchus mykiss irideus pop. 49)* dated 2014. CNDDB Occurrence No. 71 for southern torrent salamander *(Rhyacotriton variegatus)* dated 2016. Finally, CNDDB Occurrence No. 139 for western bumble bee *(Bombus occidentalis)* dated 1950. Additionally, records of two special status species were found at or adjacent to the BSA; foothill yellow-legged frog *(Rana boylii)* and Pacific tailed frog *(Ascaphus truei)*.

Additional special status species surveys will be conducted prior to any construction activities and the avoidance and minimization measures described in section 4.3.4 will be implemented.

### 4.3.3. Project Impacts

**Townsend's big-eared bat *(Corynorhinus townsendii)***
**California Species of Special Concern**

There are no recorded occurrences of Townsend's big-eared bat within the BSA with the closest CNDDB recorded occurrence located approximately 0.5 miles to the north along Highway 1. In addition, the BSA lacks the appropriate structures to support maternity and hibernation roosts of

Townsend's big-eared bats. Because of these factors, there are expected to be no impacts on Townsend's big-eared bats.

**Purple martin *(Progne subis)***
**California Species of Special Concern**

There are no recorded occurrences of nesting purple martins within the BSA; however, the BSA does contain suitable foraging and nesting habitat for this species. The closest CNDDB occurrence is approximately two miles to the north of the BSA along Highway 1 which crosses over the mouth of Big River. Although the likelihood of nesting purple martins occurring at or near the BSA is low because of the limited recorded occurrences of this species near the project site, avoidance measures will be implemented to ensure direct impacts on nesting birds including purple martins are avoided. Noise from the project may disturb or deter birds from entering the project site, but direct impacts on purple martin are not expected as a result of this project. Because of this, any potential impacts on purple martin that may occur as a result of this project will be less than significant.

**Chinook salmon – California coastal (CC) – ESU *(Oncorhynchus tshawytscha)***
**Federally Endangered**

In 2005, NOAA Fisheries created a map showing the distribution of CC chinook salmon to assist with developing the Critical Habitat designation for this species (NOAA Fisheries 2005). This layer is currently referenced by CalFish as the CC chinook salmon distribution (CalFish 2025) and is available for viewing on CDFW Biogeographic Information and Observation System (BIOS). This layer shows the distribution of chinook salmon to include Big River 2.2 miles north of the BSA and the Albion River 4.5 miles south of the BSA, but not Little River itself. In addition, the CNDDB does not include any occurrences of the chinook salmon within Little River. The chinook salmon Critical Habitat designation includes both Big River and Albion River, but not Little River.

Although there are no records of chinook salmon within the BSA, the Little River does represent suitable habitat for this species. While unlikely, chinook salmon may be found within the BSA during construction. Because of this, impacts on chinook salmon may occur during dewatering, and the project may impact the CC chinook salmon; however, because of the project timeline, limited size of the project, and the amount of actual in-water work, the impacts are expected to be less than significant. The project will also result in beneficial effects on the CC chinook salmon because the project includes removal of an existing barrier to fish passage in the form of a failed bridge and fords.

**Coho salmon – central California coast ESU *(Oncorhynchus kisutch pop. 4)***
**Federally Endangered, California State Endangered**

Coho salmon are expected to occur in the BSA. CNDDB Distribution Observations published in 2022 listed Little River as an observed coho salmon occupancy occurrence (NOAA Fisheries, Coho Distribution ds326). Coho salmon may be impacted during dewatering of the project site; however, because of the project timeline, limited size of the project, and the amount of actual in-water work, the impacts are expected to be less than significant. Alternatively, the project will also result in beneficial effects on the Northern California steelhead because the project included removal of an existing barrier to fish passage in the form of a failed bridge and fords.

**Steelhead – northern California DPS winter run (*Oncorhynchus mykiss irideus pop. 49*)**
**Federally Threatened, California Species of Special Concern**

Northern California steelhead are expected to occur within the BSA. The CNDDB documents a recorded population occurrence of northern California steelhead DPS winter run within the BSA. It is listed as Occurrence No. 77 and dated in 2014. Northern California steelhead may be impacted during dewatering of the project site. With that being said, because of the project timeline, limited size of the project, and the amount of actual in-water work, the impacts are expected to be less than significant. The project will also result in beneficial effects on the Northern California steelhead because the project included removal of an existing barrier to fish passage in the form of a failed bridge and fords.

**Foothill yellow-legged frog – north coast DPS *(Rana boylii)***
**California Species of Special Concern**

There are no recorded occurrences of foothill yellow-legged frog within the BSA; however, there is a CNDDB recorded occurrence approximately 500 feet upstream of the BSA. This would suggest that possible habitat exists within the BSA. These factors would suggest that any in-water work may result in impacts on the foothill yellow-legged frog. With that being said, because of the project timeline, limited size of the project, limited recorded occurrences, and the amount of actual in-water work, the impacts are expected to be less than significant.

**Northern red-legged frog *(Rana aurora)***
**California Species of Special Concern**

There are several CNDDB recorded occurrences of northern red-legged frog within five miles of the BSA; there is one in Little River approximately 3 miles upstream of the BSA (Occurrence No. 38) dated 2007. There are several CNDDB occurrences of the northern red-legged frog in or near Big River between 1.75 and 5 miles north to northeast of the BSA. There are also several CNDDB occurrences of the northern red-legged frog in or near and unnamed stream between 3 and 5 miles south to southeast of the BSA. There is appropriate habitat to support this species in and around the BSA concluding the in-water work may impact northern red-legged frog. With that being said, because of the project timeline, limited size of the project, limited recorded occurrences, and the amount of actual in-water work, the impacts are expected to be less than significant.

**Pacific tailed frog *(Ascaphus truei)***
**California Species of Special Concern**

There are no recorded occurrences of Pacific tailed frog within the BSA; however, there is a CNDDB recorded occurrence approximately 500 feet upstream of the BSA. This would suggest that there is possible habitat to support Pacific tailed frog within the BSA. These factors would suggest that in-water work may impact the Pacific tailed frog. With that being said, because of the project timeline, limited size of the project, limited recorded occurrences, and the amount of actual in-water work, the impacts are expected to be less than significant.

**Southern torrent salamander *(Rhyacotriton variegatus)***
**California Species of Special Concern**

Southern torrent salamanders are expected to occur within the BSA. There is a recorded CDDDB occurrence (Occurrence No. 71) within the BSA, from 2016. In conjunction with suitable habitat to support southern torrent salamander, it is expected that any in-water work would impact southern torrent salamander. With that being said, because of the project timeline, limited size of the project, and the amount of actual in-water work, the impacts are expected to be less than significant.

**National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat (EFH) and Critical Habitat:**

The BSA overlaps with critical habitat and NOAA EFH for several anadromous salmonids, northern California steelhead, central coast chinook, and coho salmon.

### 4.3.4. Avoidance and Minimization Efforts

Project impacts on special status wildlife species will be minimized through implementation of the avoidance and minimization measures described below:

- A CDFW approved aquatic invasive species decontamination protocol will be implemented.
- Worker environmental awareness training program (Worker Environmental Awareness Program [WEAP]) materials will be developed to train all personnel involved in project construction, including field consultants and construction workers, of the work area's environmentally sensitive resources. The WEAP materials will detail protocols for avoidance of environmentally sensitive biological resources, applicable regulations, and consequences of violating State laws and regulations.

**Birds:**

- To the extent possible, tree removal and pruning should occur during the non-breeding season for birds, September 1 – February 28.
- During the breeding season of March 1 to August 31, a State Parks–approved biologist will conduct nesting bird surveys prior to activities which could potentially cause take of nesting migratory birds or raptors as determined by a State Parks–approved biologist including vegetation trimming and removal, construction, and demolition. A State Parks representative will be notified no less than seven days prior to the start of any work activities to conduct surveys for possible nesting birds within and adjacent to the BSA.
- Surveys will cover a minimum of a 0.5-mile radius of the BSA. Between March 1 and August 31, if active migratory birds' nests are located, no construction will occur within a 150-foot radius of the nest tree, and if active raptor nests are located, no construction activities will occur within a 250-foot radius if the nest tree; unless a qualified biologist determines that smaller buffers would be sufficient to avoid impacts to nesting raptors.

- Factors to be considered for determining buffer size will include: the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; and baseline levels of noise and human activity.
- Buffers will be maintained until a State Parks-approved biologist has determined that young have fledged and are no longer reliant upon the nest or parental care for survival.

**Fish (Chinook salmon – California coastal (CC) – ESU, Coho salmon – central California coast ESU, Steelhead – northern California DPS winter run:**

- The general construction season shall be from June 15 to October 31. Restoration, construction, fish relocation and dewatering activities within any wetted or flowing stream channel shall occur only within this period.
  - Revegetation activities, including soil preparation, may extend beyond October 31, if necessary, to better ensure successful plant establishment during the onset of winter precipitation.
- If precipitation sufficient to produce runoff is forecast to occur while construction is underway, work will cease, and erosion control measures will be put in place sufficient to prevent significant sediment runoff from occurring.
- In-channel construction activities which could affect Pacific anadromous salmonids will be limited to daylight hours during weekdays, leaving a nighttime and weekend period of passage for Pacific anadromous salmonid species.
- NMFS personnel will have access to construction sites during construction and following completion in order to evaluate species presence and condition and/or habitat conditions.
- The project site will be dewatered prior to any in channel demolition or construction work. A dewatering plan will be submitted to NMFS, ACOE and the RWQCB prior to the start of the project.
- All applicable measures included Section 2.4.1 (Requirements for Fish Relocation and Dewatering Activities) of the NOAA Restoration Center's Programmatic Approach to ESA/EFH Consultation Streamlining for Fisheries Habitat Restoration Projects (NOAA Restoration 2017) will be implemented during dewatering activities.
  - A qualified fisheries biologist will monitor all in channel work and shall perform any seining or fish relocation activities.
- A restoration plan (described in Section 4.1.4) including measures to ensure the recovery of native riparian vegetation will be submitted to the RWQCB.

**Amphibians (foothill yellow-legged frog, Pacific tailed frog, southern torrent salamander):**

- In channel work will only be conducted after June 15 and before October 31.
- The CDFW-approved biologist will relocate any foothill yellow-legged frog, Pacific tailed frog, southern torrent salamander, or northern red-legged frog adults or larvae identified during dewatering or fish relocation activities to a safe location within the channel.
- In the unlikely event eggs are encountered a Qualified Biologist, to the extent feasible, should relocate the egg mass(es) to a suitable habitat at least 250 feet from the BSA.

# Chapter 5. Regulatory Compliance Summary

This Chapter summarizes expected regulatory requirements for potential impacts on biological resources described in Chapter 4 of this document and is not intended to include all environmental regulatory requirements.

## Clean Water Act

An Aquatic Resources Delineation was completed for the project site in 2024. In total, 0.280 acres of Little River were delineated in the Project Area that are expected to be under the jurisdiction ACOE and Regional Water Quality Control Board regulations. Work conducted within jurisdictional waters of the State and waters of the U.S. will include the removal of the existing bridge and the use of a coffer dam to dewater the project site. The footings for the new bridge will be installed above the ordinary high water mark of Little River and rip rap will be installed around the footings above the ordinary high water mark. State Parks will be pursuing coverage under the Habitat Restoration and Enhancement Act (HREA) to obtain approval pursuant to Section 1602 of the California Fish and Game Code (Lake or Streambed Alteration Agreements) and Section 401 of the Clean Water Act (Water Quality Certification). State Parks will be applying for the most applicable Nationwide Permit from the ACOE pursuant to Section 404 of the Clean Water Act and will submit the Aquatic Resources Delineation conducted for this project to the ACOE for verification as part of the Nationwide Permit application.

## Rivers and Harbors Act

Little River is not a navigable water subject to the Rivers and Harbors Act.

## National Wild and Scenic Rivers Act

Little River is not designated as a Wild and Scenic River and is not protected under the National Wild and Scenic Rivers Act.

## Porter-Cologne Water Quality Control Act

State Parks will be pursuing project coverage under the HREA to acquire permits pursuant to Section 401 of the Clean Water Act.

## California Lake and Streambed Alteration Program

State Parks will be pursuing project coverage under the HREA to acquire permits pursuant to Section 1602 of the California Fish and Game Code (Lake and Streambed Alteration Agreements).

## Migratory Bird Treaty Act

Avoidance measures will be implemented to ensure the project does not impact birds, nests, or eggs protected by the Migratory Bird Treaty Act.

## Magnuson-Stevens Fishery Conservation and Management Act and Essential Fish Habitat Consultation

The BSA is EFH for groundfish, chinook salmon, and coho salmon. Consultation for potential effects on Essential Fish Habitat regulated by NMFS will be completed through the NOAA Restoration Center's Programmatic Approach to ESA/EFH Consultation Streamlining for Fisheries Habitat Restoration Projects (NOAA Restoration 2017).

## Marine Mammal Protection Act

The project is expected to have no effect on species or habitats protected by the Marine Mammal Protection Act.

## Federal Endangered Species Act Consultation

State Parks has completed a Biological Assessment which describes potential impacts on federally listed species, Critical Habitat, and EFH from the Little River Restoration and Bridge Replacement Project. This Biological Assessment was prepared by California State Parks (State Parks) for the ACOE to facilitate consultation under Section 7 of the ESA and the Magnuson–Stevens Fishery Conservation and Management Act (MSA) and will be submitted to the ACOE as part of the Nationwide Permit application for this project.

The literature search identified 18 federally listed species with the potential to occur in the region surrounding the BSA including six plants, three invertebrates, four birds, and five fish. Species known to occur only in the marine environment were excluded from this analysis because the project is not located in marine habitat and is not expected to result in any impacts on the marine environment.

Of these 18 species, potential habitat is present in the BSA for one plant species, the Monterey clover *(Trifolium trichocalyx)*, and three listed fish species: Chinook salmon - California coastal – ESU *(Oncorhynchus tshawytscha)*; Coho salmon – central California coast ESU *(Oncorhynchus kisutch pop. 4)*; and Steelhead – northern California DPS winter run *(Oncorhynchus mykiss irideus pop. 49)*. The project site is also Critical Habitat for Northern California steelhead and California Central Coast coho salmon.

California State Parks has determined that the proposed project will have No Effect on the following species because no suitable habitat is present for these species within or adjacent to the BSA:

- Marbled murrelet
- Northern spotted owl
- Western snowy plover
- Yellow-billed cuckoo
- Behren's silverspot butterfly
- Lotis blue butterfly
- Monarch Butterfly

- Green sturgeon
- Tidewater goby
- Howell's spineflower
- Burke's goldfields
- Contra Costa goldfields
- Menzies' wallflower
- Two-fork clover

Although there is a small potential for the Monterey clover to occur within the project site, the project will not result in impacts on this species regulated by the federal ESA because the project site is on State property.

The project May Adversely Affect the following species:

- Chinook salmon
- Steelhead
- Coho salmon

Consultation for potential impacts on the following species, Critical Habitats, and Essential Fish Habitats will be completed through the NOAA Programmatic Approach for restoration projects (NOAA Restoration Center 2017).

- Chinook salmon - California coastal ESU
- Coho salmon – central California coast ESU
- Northern California DPS winter-run steelhead
- Coho salmon – central California coast ESU Critical Habitat
- Northern California DPS winter-run steelhead Critical Habitat
- Chinook salmon Essential Fish Habitat
- Coho salmon Essential Fish Habitat
- Groundfish Essential Fish Habitat.

### California Endangered Species Act Consultation Summary

The project may result in impacts to one animal species listed under CESA, Coho salmon – central California coast ESU *(Oncorhynchus kisutch pop. 4)*. In addition, the project site is suitable habitat for one plant species listed under CESA, the Monterey clover *(Trifolium trichocalyx)*. Although there are no known occurrences of Monterey clover at or adjacent to the project site, suitable habitat for this species is present in the project site. State Parks will be pursuing project coverage under the HREA to fulfill CESA requirements.

Three additional animal species and five additional plant species which occur in the region and are listed under CESA or the Native Plant Protection Act were identified during the literature review. Those additional species are the northern spotted owl *(Strix occidentalis caurina),* marbled murrelet *(Brachyramphus marmoratus),* Yellow-billed cuckoo *(Coccyzus americanus)*. Humboldt County milk-vetch *(Astragalus agnicidus)*, Point Reyes blennosperma *(Blennosperma nanum* var. *robustum)*, Howell's spineflower *(Chorizanthe howellii)*, Menzies' wallflower *(Erysimum menziesii)*, and Burke's goldfields *(Lasthenia burkei)*. No suitable habitat is present for these species at or near the project site, and therefore the project is not expected to result in take of these species.

### Mendocino County Local Coastal Program Environmentally Sensitive Habitat Areas

The project site meets the Mendocino County Local Coastal Program's definition of an Environmentally Sensitive Habitat Area (ESHA) because it includes riparian habitat, Essential Fish Habitat (EFH), and Critical Habitat for listed fish species. A restoration plan will be implemented to ensure successful recovery of the riparian habitat at the project site.

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# Figures

**Figure 1. Project Location.**

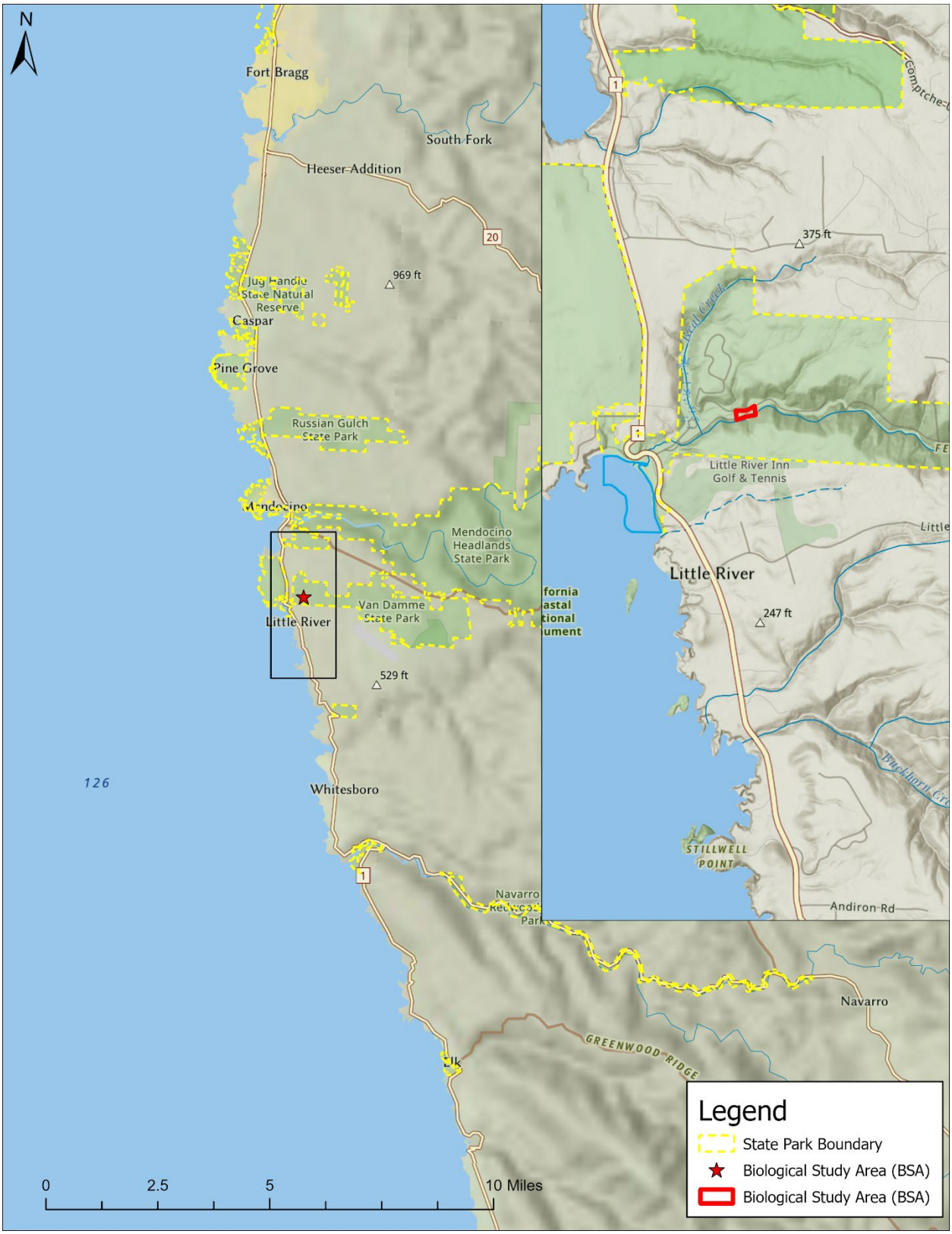


**Figure 2. Biological Study Area.**



**Figure 3. Soil Map**

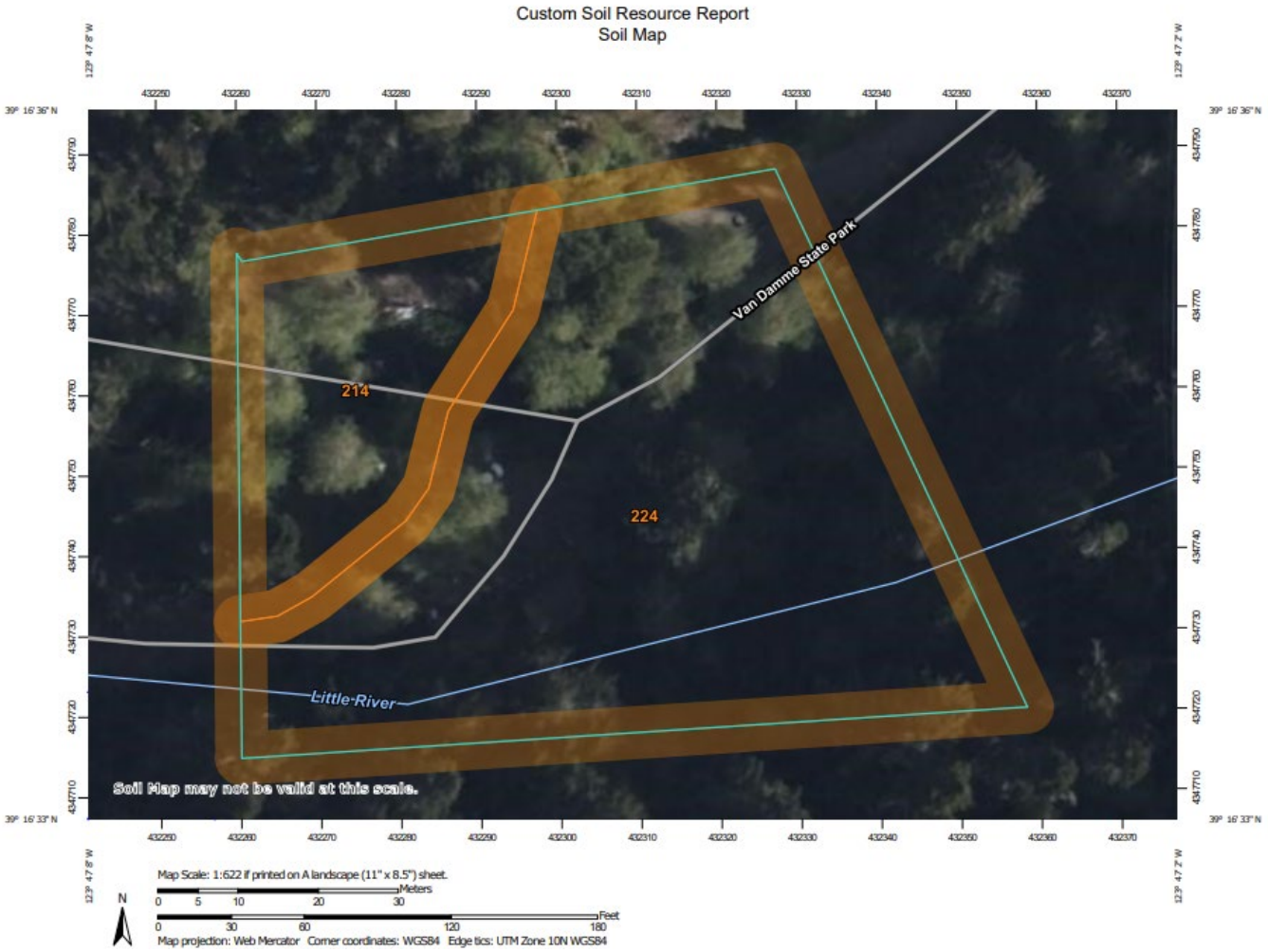


**Figure 4. National Wetlands Inventory (NWI) data for the BSA and surrounding area (USFWS 2024b).**

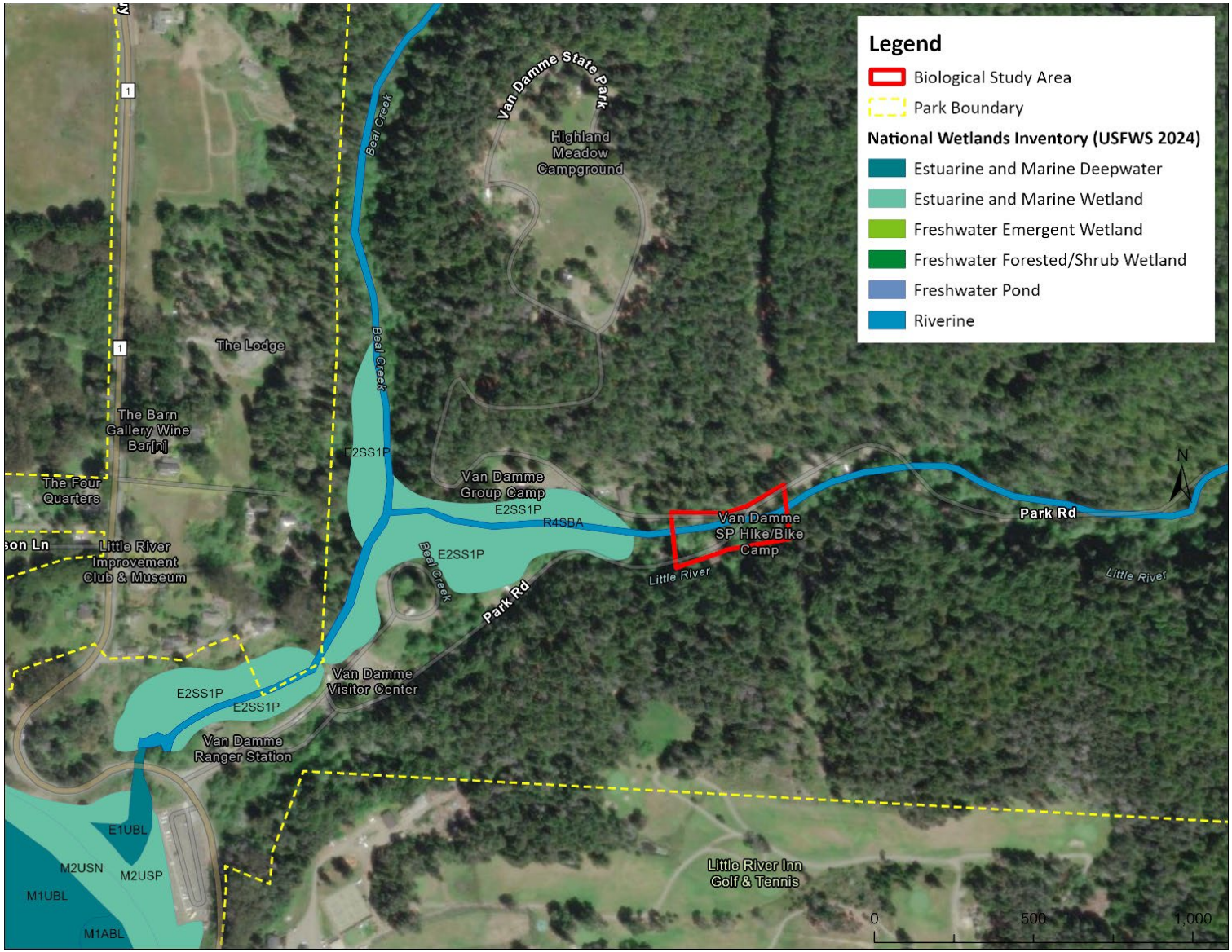


**Figure 5. Mendocino Cypress and related vegetation layer (CDFW 2018a) and CNDDB sensitive natural communities at and adjacent to the BSA (CNDDB 2024b).**

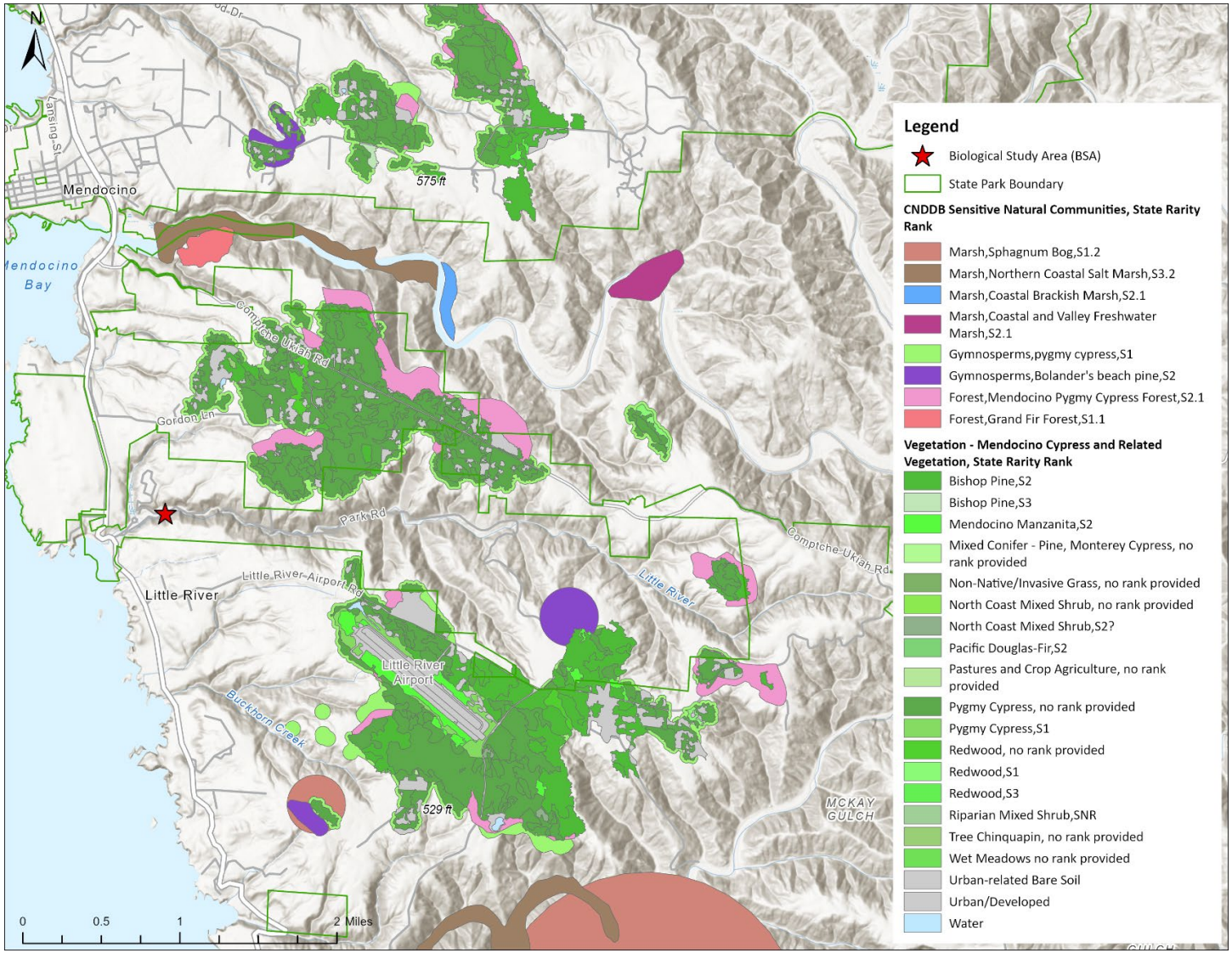
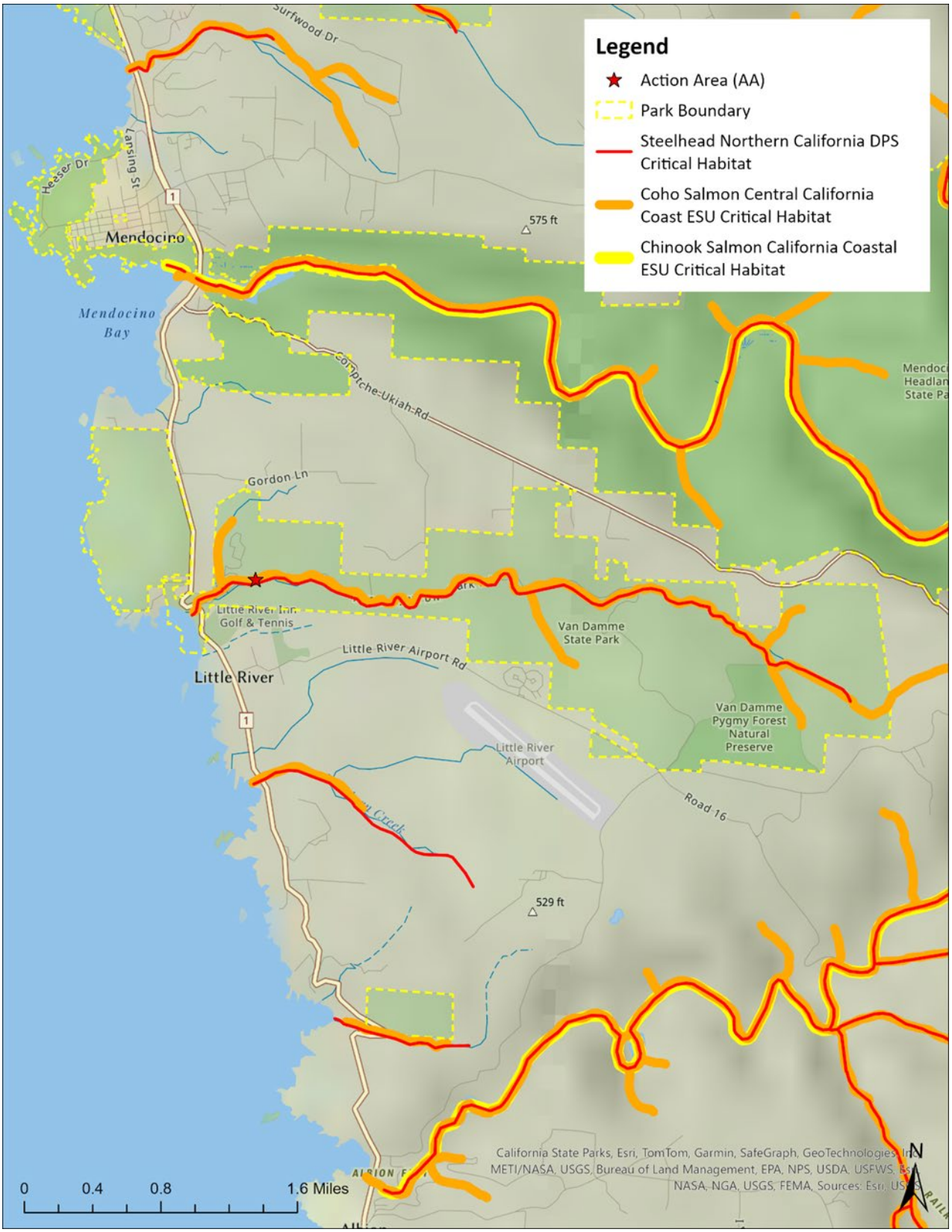


**Figure 6. Aquatic resources delineation results.**



**Figure 7. NOAA Critical Habitat at and near the BSA.**



# Tables

## Table 1. Soil Map Units in And the Immediate Vicinity of the Project Area

| Soil Map Unit | Map Symbol | Drainage Class | Landform | Hydric Component (C) or Minor Component (M) | Hydric Criteria[a] |
|---|---|---|---|---|---|
| Dystropepts, 30 to 75 percent slopes | 139 | Well drained | Marine terraces | Rock outcrop (M)<br>Vizcaino (M)<br>Abalobadiah (M) | –<br>–<br>– |
| Tropaquepts, 0 to 15 percent slopes | 214 | Poorly drained | Marine terraces | Tregoning (C)<br>Shinglemill (C)<br>Aborigine (C)<br>Blacklock (C) | 2<br>2<br>2<br>2 |
| Vandamme-Irmulco-Tramway complex, 50 to 75 percent slopes | 224 | Well drained | Hills | Dehaven (M)<br>Hotel (M)<br>Unnamed, gentler or steeper slopes (M)<br>Unnamed, disturbed (M) | –<br>–<br>–<br>– |

[a] Hydric Criteria:

2. Map unit components in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic, or Vitrandic subgroups that:
   a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
   b. Show evidence that the soil meets the definition of a hydric soil.

Source: Natural Resources Conservation Service 2024.

## Table 2: Special status animals

| Common Name (*Scientific name*) | Status* | General Habitat | HA/HP** | Rationale |
|---|---|---|---|---|
| **Invertebrates** | | | | |
| Western bumble bee *(Bombus occidentalis)* | SCE | Nest in a variety of habitats and ecosystems, including agricultural and urban landscapes as well as in alpine, dune, forested, forest edge, and grassland ecosystems. Grasslands, agricultural lands, and forests as the most common habitats. Nests can be found in abandoned rodent burrows or in cavities above ground such as on logs and railroad ties. | HA | There is possible suitable habitat within the BSA; however, the only known occurrence of this species at or near the BSA has a low accuracy and was recorded over 70 years ago. In addition, although the site is within the historic range of the western bumble bee, CDFW reports the current range of the western bumble bee to be to the east of the BSA (CDFW 2023). |
| Behren's silverspot butterfly *(Speyeria zerene behrensii)* | FE | Coastal terrace, prairie habitat west of the Coast range in southern Mendocino County and northern Sonoma County. Mild temperatures, moderate rainfall, and frequent summer fog. | HA | The BSA does not contain Coastal terrace prairie habitat. The closest CNDDB occurrence is over 1 mile north of the BSA and was recorded in 1961 (Occurrence No. 14). |
| *Lotis blue butterfly (Plebejus anna lotis)* | FE | Wet meadows or poorly drained sphagnum-willow bogs, where soils are waterlogged and highly acidic. | HA | The BSA does not fall within appropriate habitat; not considered to be a wet meadow but rather riparian habitat with fast flowing water and hydrological drainage. The nearest CNDDB occurrence of this species is over 6 miles north of the BSA (Occurrence No. 1). |

| Common Name (*Scientific name*) | Status* | General Habitat | HA/HP** | Rationale |
|---|---|---|---|---|
| Monarch Butterfly *(Danaus plexippus)* | PT | Caterpillars use milkweeds as host plants, which provide toxins to protect them from predation. Adults feed on nectar from a variety of flowers. Monarchs Generally, monarchs migrate from Mexico to Canada, breeding in the United States and southern Canada during summer and overwintering in Mexico. A population breeds west of the Rockies and overwinters on the coast of California. This population mostly migrates to sites on the California coast to overwinter, and roost in trees such as gum, pine, cypress and sycamore, often near bodies of water. | HA | The AA does not fall within appropriate habitat for monarch butterfly; the AA does not support the preferred food source for the monarch butterfly; milkweed. The AA also does not support overwintering/roosting habitat for the monarch butterfly mainly consisting of red alder riparian with banks dominated by an assemblage of fern, vines, and blackberry. Instead of preferred trees for roosting. |
| **Fish** | | | | |
| Chinook salmon - California coastal - ESU *(Oncorhynchus tshawytscha)* | FT | Early years in freshwater streams, estuaries, and wetlands, which provide clean, cool, oxygenated water with low sediment levels. They then move to the open ocean, where they eat a variety of organisms and grow rapidly. Adult Chinook salmon return to their birthplace to spawn. The female digs a nesting hole, called a redd, where she deposits thousands of eggs. The ideal water temperature for embryo survival is between 5 and 13°C, with oxygen levels close to saturation. | HP | The BSA contains suitable habitat to support this species. Consultation will be completed through the NOAA Restoration Center's Programmatic Approach to ESA/EFA Consultation Streamlining for Fisheries Habitat Restoration Projects. |

| Common Name (*Scientific name*) | Status* | General Habitat | HA/HP** | Rationale |
|---|---|---|---|---|
| Coho salmon – central California coast ESU (*Oncorhynchus kisutch* pop. 4) | FE/SE | Typically inhabit small coastal streams, as well as larger rivers. Associated with cold water, low gradient reaches of tributary streams, which provide suitable spawning areas and good juvenile habitat. Tend to migrate upstream after heavy rains. | HP | The BSA contains suitable habitat to support this species. Consultation will be completed through the NOAA Restoration Center's Programmatic Approach to ESA/EFA Consultation Streamlining for Fisheries Habitat Restoration Projects. |
| Green sturgeon – southern DPS (*Acipenser medirostris)* | FT | Spawn and juvenile rearing in rivers; Sacramento, Feather, and Yuba Rivers, followed by migrating to saltwater to feed, grow, and mature before returning to freshwater to spawn. After rearing in the delta and estuary for a few years, they move to the ocean. Adult green sturgeon migrate seasonally along the West Coast. Congregate in bays and estuaries in WA, OR, and CA during summer and fall. | HA | Spend most of their lives in marine waters, the BSA is around 0.5 miles upstream from the Pacific Ocean. While spawning and in early development they prefer deep swift moving water. The Sacramento-San Joaquin Delta is designated critical habitat for the Southern DPS. All of these factors would conclude that the BSA is not suitable habitat for green sturgeon. |
| Steelhead – northern California DPS winter-run (*Oncorhynchus mykiss irideus* pop. 49) | FT | California coastal river basins from Redwood Creek (Humboldt County) to the Gualala River (Mendocino County). Distribution includes the Eel River and are present wherever streams are accessible to the ocean and sufficient flows and cool water exists. | HP | The BSA contains suitable habitat to support this species. Consultation will be completed through the NOAA Restoration Center's Programmatic Approach to ESA/EFA Consultation Streamlining for Fisheries Habitat Restoration Projects. |

| Common Name (*Scientific name*) | Status* | General Habitat | HA/HP** | Rationale |
|---|---|---|---|---|
| Northern coastal roach *(Hesperoleucus venustus navarroensis)* | SSC | Found in the Russian River Basin and Navarro River Basin, including the main river where there is cover to provide refugia from predators. Most abundant in tributaries with clear, well oxygenated water with the dominant substrate being cobble and boulder. Prefer shallow depths with pools up to 1m deep. | HA | The BSA does not lie within the distribution range, which are the Navarro River Basin or the Eel River basin. CNDDB does not show any occurrences within 10 miles of the BSA. |
| Tidewater goby (*Eucyclogobius newberryi*) | FE | Inhabit lagoons, estuaries, marshes, and freshwater tributaries. These habitats are shallow, still, but not stagnant water. Freshwater or brackish, with a varying mixture of fresh and saltwater. High flows and tidal environments can have a negative effect, favorable habitat includes shallow open water with emergent vegetation. Which is important for protection and feeding, while open water is important to breeding. Gobies are found in the greatest population densities within emergent or submerged vegetation. | HA | The BSA does not contain appropriate hydrological conditions for suitable habitat. The BSA contains a stream flowing within it and does not form a lagoon, marsh or estuary and is not directly affected by tidal influences. The closest recorded occurrence within CNDDB is over 13 miles to the north within Pudding Creek (Occurrence No. 10). |
| **Amphibians** | | | | |
| Pacific tailed frog *(Ascaphus truei)* | SSC | Restricted to perennial streams with low temperature in steep-walled valleys with dense vegetation. Intermittent streams are unsuitable. Mating occurs underwater and eggs are laid in globular masses attached to undersides of submerged rocks. Prefer rocks in turbulent water to ones in smooth swiftly flowing water. | HP | The CNDDB includes an occurrence of a Pacific tailed frog tadpoles which was captured in a migrant fish trap in Little River approximately 500 feet upstream of the BSA in 2002 (Occurrence No. 163). The CNDDB includes two 2006 occurrences of Pacific tailed frog in Buckthorn Creek approximately 1.5 miles south of the BSA. |

| Common Name (*Scientific name*) | Status* | General Habitat | HA/HP** | Rationale |
|---|---|---|---|---|
| Northern red-legged frog *(Rana aurora)* | SSC | Inhabits quiet pools of streams, marshes, and occasionally ponds, can be found in humid forests, woodlands, grasslands, and streamside's with plant cover. Found in woods adjacent to streams. Occurs along the Coast Ranges from Del Norte County to Mendocino County. Prefers shorelines with extensive vegetation. Usually escapes to water 1 m (3 ft) deep or more, at the bottom of pools. Requires permanent or nearly permanent pools for larval development, intermittent streams must retain surface water in pools year-round for frog survival. Egg masses are deposited in permanent pools attached to emergent vegetation. | HP | The BSA contains habitat that is suitable for northern red-legged frog. The BSA falls within a steep walled, vegetative stream within a humid forested environment. There is one 2007 CNDDB occurrence of northern red-legged frog in Little River approximately 3 miles upstream of the BSA (Occurrence No. 38). There are several CNDDB occurrences of the northern red-legged frog in or near Big River between 1.75 and 5 miles north to northeast of the BSA. There are also several CNDDB occurrences of the northern red-legged frog in or near and unnamed stream between 3 and 5 miles south to southeast of the BSA. |
| Foothill yellow-legged frog - north coast DPS *(Rana boylii* pop. 1) | SSC | In or near clear, rocky streams, springs, or seeps in a variety of habitats, including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types. Adults often bask on exposed rock surfaces near streams, when disturbed, they dive into the water and take refuge under submerged rocks or sediments. Rarely found far from permanent water. | HP | There is a 2004 CNDDB occurrence of foothill yellow-legged frog in Little River approximately 500 feet upstream of the BSA (Occurrence No. 890). This occurrence reports a yellow-legged caught in traps during fish surveys. |

| Common Name (*Scientific name*) | Status* | General Habitat | HA/HP** | Rationale |
|---|---|---|---|---|
| Southern torrent salamander *(Rhyacotriton variegatus)* | SSC | Found primarily among the pebbles and rocks within cold, well-shaded permanent streams and spring seepages in redwood, Douglas fir, mixed conifer, montane riparian and montane hardwood-conifer habitats. On land it normally occurs only within the splash zone or on moss-covered rock rubble with trickling water<br><br>. | HP | The CNDDB includes a 2016 record of the south torrent salamander in Little River at the BSA (Occurrence No. 71). |
| Red-bellied newt *(Taricha rivularis)* | SSC | Migrates to rapid-flowing permanent streams with rocky substrate during fall and winter rains in primarily redwood forest, streams in proximity to redwood forests are required. Aestivation in terrestrial habitat, root channels, takes place during the summer months. | HA | The CNDDB includes the 1985 report of a red-bellied newt on Comptche Road approximately 2.75 miles northeast of the BSA (Occurrence No. 25) |
| **Birds** | | | | |
| American goshawk *(Accipiter atricapillus)* | SSC | American Goshawks nest in mature and old-growth forests with more than 60% closed canopy. Build nests in conifers, such as Douglas-fir, white fir, California red fir, ponderosa pine, western larch, and western hemlock, along with deciduous trees including aspens. Nests near breaks in the canopy, such as a forest trail, jeep road, or opening created by a downed tree, and prefer sites with a creek, pond, or lake nearby. | HA | The BSA does not contain suitable habitat. The BSA is a forested riparian habitat as opposed to old growth with dense canopy cover as well as lack of compatible tree species which are chosen for nest building. |

| Common Name (*Scientific name*) | Status* | General Habitat | HA/HP** | Rationale |
|---|---|---|---|---|
| Ashy storm-petrel *(Hydrobates homochroa)* | SSC | Occurs year-round in offshore waters of the continental slope (200-2,000 m deep) from Cape Mendocino to northern Baja California, Mexico, coming to land only to reproduce. Nests in natural cavities and sea caves, prefers offshore islands with talus slopes and also prominent peninsulas. | HA | The BSA is located along a forested riparian corridor with herbaceous understory rather than off-shore islands with natural cavities and sea caves preferred for nesting habitats. |
| Marbled murrelet *(Brachyramphus marmoratus)* | FT, SE | Will generally nest in old-growth forests characterized by large trees, multiple canopy layers and moderate to high canopy closure. | HA | The BSA is not composed of old growth coniferous forest and has a rather open canopy cover. The closest CNDDB occurrence is approximately 3.5 miles north of the BSA and was recorded in 1999 (Occurrence No. 44). |
| Northern spotted owl *(Strix occidentalis caurina)* | FT, ST | Mature forests with dense canopies. Expansive, mature coniferous forest stands with large trees and a complex array of vegetation types and sizes. | HA | The BSA is not composed of dense mature canopy and has a rather open canopy as well as an open understory which is not compatible with suitable habitat. The CNDDB spotted owl viewer does not include any spotted owl occurrences or activity centers at or near the BSA. |
| Purple martin *(Progne subis)* | SSC | An uncommon to rare, local summer resident in a variety of wooded, low-elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine provide cover. Often nests in tall, old trees near a body of water. Also nests occasionally in residential areas. | HP | The BSA is a forested riparian habitat which includes coniferous and hardwood tree species which may provide snags for suitable nesting cavities. The closest CNDDB recorded occurrence dated 2015 is approximately 2 miles to the north of the BSA along Highway 1 (Occurrence No. 68). |

| Common Name (*Scientific name*) | Status* | General Habitat | HA/HP** | Rationale |
|---|---|---|---|---|
| Tufted puffin *(Fratercula cirrhata)* | SSC | Requires islands free from human disturbance, with soil suitable for digging burrows, or with natural rock cavities. Also requires large schools of pelagic fish, such as smelt or herring. Perches on rocky outcroppings on islands, not necessarily near the nest. Nests in burrows on island cliffs or on grassy island slopes, or cavities in loose rock. | HA | The BSA is located along a forested riparian corridor with herbaceous understory rather than oceanic islands with cliffs or loose soil preferred for nesting habitats. |
| Western snowy plover *(Charadrius nivosus nivosus)* | FT, SSC | Open sandy areas, adjacent to water. Including oceans beaches and barrier islands as well as barren shores of saline lakes inland. Also, wastewater ponds, reservoir margins, dredge spoils, gravel, and sand bars in rivers. | HA | The BSA does not fall within appropriate habitat; there are no open sandy beaches. Rather, the BSA is a forested area with asphalt roads and trails. |
| Yellow-billed cuckoo *(Coccyzus americanus)* | FT, SE | An uncommon to rare summer resident of valley foothill and desert riparian habitats in scattered locations in California. Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, and which abut on slow-moving watercourses, backwaters, or seeps. Willow species are almost always a dominant component of the vegetation. | HA | The BSA is considered riparian habitat and there are willows present; however, the BSA is located along the California coast with fast moving water riparian habitat as opposed to a favorable habitat regions with slow moving water; and the dominant tree species are hardwoods and conifers. The habitat within the BSA would be considered low quality habitat at best. |

| Common Name (*Scientific name*) | Status* | General Habitat | HA/HP** | Rationale |
|---|---|---|---|---|
| **Mammals** | | | | |
| Sonoma tree vole *(Arborimus pomo)* | SSC | Old-growth and other forests, mainly Douglas-fir, redwood, and evergreen conifer habitats, more or less restricted to the fog belt. Males nest most frequently in a tree nest constructed of fir needles, or in shallow burrows at the base of fir trees, beneath litter. Females spend most of their lives in trees, in large, domed nursery nests of Douglas-fir needles. | HA | The BSA does not contain suitable habitat. The BSA is located in a forested riparian habitat as opposed to an old growth redwood or Douglas-fir forest. The closest recorded occurrence on CNDDB dated in 1996 is approximately 1.75 miles to the south of the BSA (Occurrence No. 118). |
| Townsend's big-eared bat *(Corynorhinus townsendii)* | SSC | Caves, mines, tunnels, buildings, or other human-made structures for roosting. May use separate sites for night, day, hibernation, or maternity roosts. Hibernation sites are cold, but not below freezing. Maternity roosts are warm found in caves, tunnels, mines, and buildings. Clusters or groups (usually fewer than 100 individuals) of females and young form the maternity colony. | HP | The BSA contains possible roosting location in the form of a collapsed vehicle bridge as well as a temporary vehicle bridge. An occurrence in 2016 is recorded on CNDDB (Occurrence No. 641) approximately 0.5 miles to the north along State Highway 1. |

*Status: Federal Endangered (FE), Federal Threatened (FT), Candidate (CAN), Proposed threatened (PT), State Endangered (SE); State Threatened (ST); State Candidate Endangered (SCE); State Fully Protected (FP) State Species of Special Concern (SSC).
**Habitat Absent (HA), Habitat Present (HP).

Nesting Raptors and Migratory Birds – Protection for avian species is provided under provisions of the Federal Migratory Bird Treaty Act, which establishes a federal prohibition to pursue, capture, kill, possess, sell, or purchase, transport, or export any migratory bird of any part, nest, or egg of any such bird (16 U.S.C 703). State protection of avian species is provided in the California Environmental Quality Act and Sections of the Fish and Game Code, including Section 3503.5, which states, “It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except otherwise provided by this code or any regulation made pursuant thereto”.

**Table 3: This table includes a list of the special status plant species identified in the Mendicino (3912337) quadrangle and the five surrounding quadrangles [Fort Bragg (3912337), Noyo Hill (3912346), Mathison Peak (3912336), Albion (3912327), and Elk (3912326)] with a general description of habitat requirements and an assessment of the potential for these species to occur at the BSA.**

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Pink sand-verbena (*Abronia umbellata var. breviflora*) | None/None/1B.1 | Coastal dunes; blooms Jun-Oct; at elevations ranging from 0 to 35 ft | None. Suitable habitat does not occur in Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |
| Blasdale's bent grass (*Agrostis blasdalei*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes, Coastal prairie; blooms May-Jul; at elevations ranging from 0 to 490 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 2 CNDDB occurrences within 5 miles of Project. |
| Sea-watch (*Angelica lucida*) | None/None/4.2 | Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt); blooms Apr-Sep; at elevations ranging from 0 to 490 ft | None. Suitable habitat does not occur in Project Area. 3 CalFlora records within 5 miles of Project Area. |
| Pygmy manzanita (*Arctostaphylos nummularia* ssp. *mendocinoensis*) | None/None/1B.2 | Closed-cone coniferous forest (acidic sandy clay); blooms Jan; at elevations ranging from 295 to 655 ft | None. Suitable habitat does not occur in Project Area. 3 CNDDB occurrences within 5 miles of Project Area. |
| Humboldt County milk-vetch *(Astragalus agnicidus)* | None/SE/1B.1 | Broadleafed upland forest, North Coast coniferous forest, Disturbed areas, Openings, Roadsides (sometimes); blooms (Mar)Apr-Sep; at elevation ranging from 395-2625 ft. | None. The Project area occurs at lower elevations than the known elevation range of this species. The nearest CNDDB occurrence is over 13 miles northeast of the Project Area. |
| Point Reyes blennosperma *(Blennosperma nanum* var. *robustum)* | None/CR/1B.2 | Coastal prairie, Coastal scrub; On open coastal hills in sandy soil; blooms Feb-Apr; at elevation ranging from 35 to 475 ft. | Low. Grassland habitat in Project Area is managed and contains low quality habitat. The nearest CNDDB occurrence is over 19 miles north of the Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Bolander's reed grass (*Calamagrostis bolanderi*) | None/None/4.2 | Bogs and fens, Broadleafed upland forest, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps (freshwater), Meadows and seeps (mesic), North Coast coniferous forest; Mesic microhabitats; blooms May-Aug; at elevations ranging from 0 to 1495 ft | High. Suitable habitat occurs in Project Area. 9 CalFlora records within 5 miles of Project Area. Historic occurrence approximately 0.16 mile east of Project Area. |
| Thurber's reed grass (*Calamagrostis crassiglumis*) | None/None/2B.1 | Coastal scrub (mesic), Marshes and swamps (freshwater); blooms May-Aug; at elevations ranging from 35 to 195 ft | None. Suitable habitat does not occur in Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |
| Coastal bluff morning-glory (*Calystegia purpurata* ssp. *saxicola*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes, Coastal scrub, North Coast coniferous forest; blooms (Mar)Apr-Sep; at elevations ranging from 0 to 345 ft | Moderate. Suitable habitat occurs in Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |
| California sedge (*Carex californica*) | None/None/2B.2 | Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Marshes and swamps (margins), Meadows and seeps; blooms May-Aug; at elevations ranging from 295 to 1100 ft | None. Species occurs at elevation that exceeds Project Area. 10 CNDDB occurrences within 5 miles of Project Area. |
| Lagoon sedge *(Carex lenticularis* var. *limnophila)* | None/None/2B.2 | Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools (margins); Bogs and fens, marshes and swamps, north coast coniferous forest;<br>Reported from lakeshores and beaches, often in gravelly substrates; blooms Jun-Aug; at elevations from 0 to 20 ft. | None. Species is known from elevations lower than the Project Area. The nearest CNDDB record of this species is a 1938 occurrence from over 15 miles northeast of the Project Area. |
| Livid sedge (*Carex livida*) | None/None/2A | Bogs and fens; blooms Jun; occurs at 0 ft | None. Suitable habitat does not occur in Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Lyngbye's sedge (*Carex lyngbyei*) | None/None/2B.2 | Marshes and swamps (brackish, freshwater); blooms Apr-Aug; at elevations ranging from 0 to 35 ft | None. Suitable habitat does not occur in Project Area. 2 CNDDB occurrences within 5 miles of Project Area. |
| Deceiving sedge (*Carex saliniformis*) | None/None/1B.2 | Coastal prairie, Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps; Mesic microhabitats; blooms (May)Jun(Jul); at elevations ranging from 10 to 755 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 1 CNDDB occurrence within 5 miles of Project Area. |
| Johnny-nip *(Castilleja ambigua* var. *ambigua)* | None/None/4.2 | Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools (margins); blooms Mar-Aug; at elevations from 0 to 1425 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. Occurs on the species checklist for Van Damme State Park created by botanist Teresa Sholars |
| Humboldt Bay owl's-clover (*Castilleja ambigua* var. *humboldtiensis*) | None/None/1B.2 | Marshes and swamps (coastal salt); blooms Apr-Aug; at elevations ranging from 0 to 10 ft | None. Project Area does not contain suitable habitat. 2 CNDDB occurrences within 5 miles of Project Area. |
| Oregon coast paintbrush (*Castilleja litoralis*) | None/None/2B.2 | Coastal bluff scrub, Coastal dunes, Coastal scrub; Sandy microhabitats; blooms Jun; at elevations ranging from 50 to 330 ft | None; Project Area does not contain suitable habitat. 3 CalFlora records within 5 miles of Project Area. |
| Mendocino Coast paintbrush (*Castilleja mendocinensis*) | None/None/1B.2 | Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub; blooms Apr-Aug; at elevations ranging from 0 to 525 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 8 CNDDB occurrences within 5 miles of Project Area. |
| Glory brush (*Ceanothus gloriosus* var. *exaltatus*) | None/None/4.3 | Chaparral; blooms Mar-Jun(Aug); at elevations ranging from 100 to 2000 ft | None. Project Area does not contain suitable habitat. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Point Reyes ceanothus (*Ceanothus gloriosus* var. *gloriosus*) | None/None/4.3 | Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal scrub; Sandy microhabitats; blooms Mar-May; at elevations ranging from 15 to 1705 ft | None. Project Area does not contain suitable habitat. 7 CalFlora occurrences within 5 miles of Project Area. |
| Howell's spineflower (*Chorizanthe howellii*) | FE/ST/1B.2 | Coastal dunes; blooms May-Jul; at elevations ranging from 0 to 150 ft | None. Species is restricted to the Ten Mile Dunes. There are no CNDDB occurrences within 5 miles of Project Area. |
| Pacific golden saxifrage (*Chrysosplenium glechomifolium*) | None/None/4.3 | North Coast coniferous forest, Riparian forest; microhabitats of Roadsides (sometimes), Seeps (sometimes), and Streambanks; blooms Feb-Jun; at elevations ranging from 35 to 1770 ft | High. Project Area contains suitable habitat. 3 CalFlora records within 5 miles of Project Area, of which one is 0.15 miles southeast of Project. |
| Whitney's farewell-to-spring *(Clarkia amoena* ssp. *whitneyi)* | None/None/1B.1 | Coastal bluff scrub, Coastal scrub; blooms Jun-Aug; at elevations ranging from 35 to 330 ft | None. Project Area does not contain suitable habitat. The nearest CNDDB occurrence is a 1914 occurrence over 13 miles N of the Project Area that is reported as extirpated. |
| Round-headed collinsia *(Collinsia corymbosa)* | None/None/1B.2 | Coastal dunes; blooms Apr-Jun; at elevations ranging from 0 to 65 ft | None. Project Area does not contain suitable habitat. The species occurs at elevations lower than the Project Area. The nearest CNDDB occurrences are over 15 miles north of the Project Area. |
| Oregon goldthread (*Coptis laciniata*) | None/None/4.2 | Meadows and seeps, North Coast coniferous forest (streambanks); Mesic microhabitats; blooms (Feb)Mar-May(Sep-Nov); at elevations ranging from 0 to 3280 ft | High. Project Area contains suitable habitat. 4 CalFlora records within 5 miles of Project Area. |
| Bunchberry (*Cornus unalaschkensis*) | None/None/2B.2 | Bogs and fens, Meadows and seeps, North Coast coniferous forest; blooms May-Jul; at elevations ranging from 195 to 6300 ft | None. Species occurs at elevation that exceeds Project Area. 4 CalFlora records within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Mendocino dodder (*Cuscuta pacifica* var. *papillata*) | None/None/1B.2 | Coastal dunes (interdune depressions); blooms (Jun)Jul-Oct; at elevations ranging from 0 to 165 ft | None. Project Area does not contain suitable habitat. No CNDDB records within 5 miles of Project Area. |
| California pitcherplant (*Darlingtonia californica*) | None/None/4.2 | Bogs and fens, Meadows and seeps; Mesic, Serpentine (usually) microhabitats; blooms Apr-Aug; at elevations ranging from 0 to 8480 ft | None. Project Area does not contain suitable habitat; 2 CalFlora records within 5 miles of Project Area. |
| Swamp harebell (*Eastwoodiella californica*) | None/None/1B.2 | Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Marshes and swamps (freshwater), Meadows and seeps, North Coast coniferous forest; Mesic microhabitats; blooms Jun-Oct; at elevations ranging from 5 to 1330 ft | High. Project Area contains suitable habitat. 4 CNDDB records within 5 miles of Project Area including one . |
| Supple daisy (*Erigeron supplex*) | None/None/1B.2 | Coastal bluff scrub, Coastal prairie; blooms May-Jul; at elevations ranging from 35 to 165 ft | None. Project Area does not contain suitable habitat. 3 CNDDB records within 5 miles of Project. |
| Bluff wallflower (*Erysimum concinnum*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes, Coastal prairie; blooms Feb-Jul; at elevations ranging from 0 to 605 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 4 CNDDB records within 5 miles of Project Area. |
| Menzies' wallflower *(Erysimum menziesii)* | FE/SE /1B.1 | Coastal Dunes; Localized on dunes and coastal strand.; blooms Mar-Sep; at elevations ranging from 0 to 115 ft | None. Project Area does not contain suitable habitat. The species occurs at elevations lower than the Project Area. The nearest CNDDB occurrences are over 15 miles north of the Project Area. |
| Pacific gilia (*Gilia capitata* ssp. *pacifica*) | None/None/1B.2 | Chaparral (openings), Coastal bluff scrub, Coastal prairie, Valley and foothill grassland; blooms Apr-Aug; at elevations ranging from 15 to 5465 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 1 CNDDB record within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Woolly-headed gilia (*Gilia capitata* ssp. *tomentosa*) | None/None/1B.1 | Coastal bluff scrub, Valley and foothill grassland; Rocky, serpentine outcrops microhabitats; blooms May-Jul; at elevations ranging from 35 to 720 ft | Low. Grassland offers low quality habitat, but does not contain serpentine. 0 CNDDB records within 5 miles of Project Area. |
| Dark-eyed gilia (*Gilia millefoliata*) | None/None/1B.2 | Coastal dunes; blooms Apr-Jul; at elevations ranging from 5 to 100 ft | None. Project Area does not contain suitable habitat. 1 CNDDB record within 1 mile of Project Area. |
| American glehnia *(Glehnia littoralis* ssp. *leiocarpa)* | None/None/4.2 | Coastal dunes; blooms May-Aug; at elevations ranging from 0 to 65 feet | None. Project Area does not contain suitable habitat. The species occurs at elevations lower than the Project Area. The nearest Calflora occurrences are approximately 16 miles north of the Project Area. |
| Congested-headed hayfield tarplant *(Hemizonia congesta* ssp. *congesta)* | None/None/1B.2 | Valley and foothill grassland; Grassy valleys and hills, often in fallow fields, sometimes along roadsides; blooms Apr-Nov; at elevations ranging from 65 to 1835 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. The CNDDB and Calflora include is a 1938 occurrence of this species approximately 15 miles northeast of the Project Area. |
| Tracy's tarplant | None/None/4.3 | Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest; Openings, Serpentine (sometimes); blooms (Mar-Apr)May-Oct; at elevation ranging from 395 to 3935 ft | Low because of the distance to verified occurrences. The CNPS rare plant inventory reports this species within the Noyo Hill quad, but details on this observation are not provided. Calflora includes occurrences over 30 miles northeast of the Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*) | None/None/1B.2 | Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie; blooms Mar-Jun; at elevations ranging from 0 to 705 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 3 CNDDB records within 5 miles of Project Area. |
| Pygmy cypress (*Hesperocyparis pygmaea*) | None/None/1B.2 | Closed-cone coniferous forest (usually podzol-like soil); at elevations ranging from 100 to 1970 ft | None. Project Area does not contain suitable habitat. 8 CNDDB occurrences within 5 miles of Project. |
| Point Reyes horkelia *(Horkelia marinensis)* | None/None/1B.2 | Coastal dunes, Coastal prairie, Coastal scrub; On sandy soil; blooms May-Sep; at elevations ranging from 15 to 2475 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. The nearest CNDDB occurrence is approximately 13 miles north of the BSA. A recent herbarium specimen was also collected from Russian Gulch State Park approximately 5 miles north of the Project Area. |
| Harlequin lotus (*Hosackia gracilis*) | None/None/4.2 | Broadleafed upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland; often roadside wetlands; blooms Mar-Jul; at elevations ranging from 0 to 2295 ft | High. Project Area contains suitable habitat. 12 CalFlora records within 5 miles of Project Area. |
| Hair-leaved rush (*Juncus supiniformis*) | None/None/2B.2 | Bogs and fens, Marshes and swamps (freshwater); near coast microhabitats; blooms Apr-May(Jun-Jul); at elevations ranging from 65 to 330 ft | None. Project Area does not contain suitable habitat. 1 CNDDB record within 5 miles of Project Area. |
| Small groundcone (*Kopsiopsis hookeri*) | None/None/2B.3 | Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest; blooms Apr-Aug; at elevations ranging from 295 to 2905 ft | None. Species occurs at elevation that exceeds Project Area. 1 CalFlora record within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Burke's goldfields (*Lasthenia burkei*) | FE/SE/1B.1 | Vernal pools and wet meadows; blooms April-June, at elevations 50 to 1970 feet | None. Suitable habitat does not occur in Project Area. No CNDDB occurrences within 5 miles of Project Area. |
| Baker's goldfields (*Lasthenia californica* ssp. *bakeri*) | None/None/1B.2 | Closed-cone coniferous forest (openings), Coastal scrub, Marshes and swamps, Meadows and seeps; blooms Apr-Oct; at elevations ranging from 195 to 1705 ft | None. Species occurs at elevation that exceeds Project Area. 1 CNDDB record within 5 miles of Project Area. |
| Perennial goldfields (*Lasthenia californica* ssp. *macrantha*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes, Coastal scrub; blooms Jan-Nov; at elevations ranging from 15 to 1705 ft | None. Project Area does not contain suitable habitat. 2 CNDDB records within 5 miles of Project Area. |
| Contra Costa goldfields (*Lasthenia conjugens*) | FE/None/1B.1 | Alkaline or saline vernal pools and swales; blooms March-June; below 700 feet; | None. Project Area does not contain suitable habitat. No CNDDB occurrences within 5 miles of Project Area. |
| Marsh pea (*Lathyrus palustris*) | None/None/2B.2 | Bogs and fens, Coastal prairie, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest; Mesic microhabitats; blooms Mar-Aug; at elevations ranging from 5 to 330 ft | Low. Project contains suitable habitat. 1 CNDDB record within 5 miles of Project Area. |
| Broad-lobed leptosiphon *(Leptosiphon latisectus)* | None/None/4.3 | Broadleafed upland forest, Cismontane woodland; blooms Apr-Jun; at elevations ranging from 560 to 4920 ft | None. This species occurs at elevations that are higher than the Project Area. |
| Coast lily (*Lilium maritimum*) | None/None/1B.1 | Broadleafed upland forest, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Marshes and swamps (freshwater), North Coast coniferous forest; Roadside (sometimes) microhabitats; blooms May-Aug; at elevations ranging from 15 to 1560 ft | Moderate. Project contains suitable habitat. 6 CNDDB records within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Redwood lily *(Lilium rubescens)* | None/None/4.2 | Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest; Sometimes found on roadside or serpentine; blooms (Mar)Apr-Aug(Sep); at elevations ranging from 100 to 6265 ft | Low because of the distance to verified occurrences. The nearest Calflora occurrence of this species is approximately 12 miles east of the Project Area |
| Heart-leaved twayblade (*Listera cordata*) | None/None/4.2 | Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest; blooms Feb-Jul; at elevations ranging from 15 to 4495 ft | Moderate. Project contains suitable habitat. Project Area contains suitable habitat. 2 CalFlora records within 5 miles of Project Area. |
| Running-pine (*Lycopodium clavatum*) | None/None/4.1 | Lower montane coniferous forest (mesic), Marshes and swamps, North Coast coniferous forest (mesic); Edges (often), Openings, and Roadside microhabitats; blooms Jun-Aug(Sep); at elevations ranging from 150 to 4020 ft | Low. Potential habitat in Project Area. No CalFlora records within 5 miles of Project Area. |
| Northern microseris (*Microseris borealis*) | None/None/2B.1 | Bogs and fens, Lower montane coniferous forest, Meadows and seeps; Mesic microhabitats; blooms Jun-Sep; at elevations ranging from 3280 to 6560 ft | None. Species occurs at elevation that exceeds Project Area. 1 CNDDB record within 5 miles of the Project Area. |
| Leafy-stemmed mitrewort (*Mitellastra caulescens*) | None/None/4.2 | Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest; Mesic and sometimes roadside microhabitats; blooms (Mar)Apr-Oct; at elevations ranging from 15 to 5580 ft | High. Potential habitat in Project Area. 1 CNDDB record within 5 miles of the Project Area. 13 CalFlora records within 5 miles of Project Area (one approximately 0.15 mile east of Project Area), |
| Seacoast ragwort (*Packera bolanderi* var. *bolanderi*) | None/None/2B.2 | Coastal scrub, North Coast coniferous forest; Roadsides(sometimes) microhabitats; blooms (Jan-Apr)May-Jul(Aug); at elevations ranging from 100 to 2135 ft | Low. Potential habitat occurs in Project Area. 2 CNDDB records within 5 miles of Project Area. |
| North Coast phacelia (*Phacelia insularis* var. *continentis*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes; Rocky (sometimes), Sandy microhabitats; blooms Mar-May; at elevations ranging from 35 to 560 ft | None. Project area does not contain suitable habitat. No CNDDB occurrences within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Bolander's beach pine (*Pinus contorta* ssp. *bolanderi*) | None/None/1B.2 | Closed-cone coniferous forest (podzol-like soil); at elevations ranging from 245 to 820 ft | None. Project area does not contain suitable habitat. 11 CNDDB occurrences within 5 miles of Project Area. |
| White-flowered rein orchid (*Piperia candida*) | None/None/1B.2 | Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest; serpentine (sometimes); blooms (Mar-Apr)May-Sep; at elevations ranging from 100 to 4300 ft | Low. Potential habitat in Project Area, but serpentine soils are not present. No CNDDB record within 5 miles of Project Area. |
| California pinefoot (*Pityopus californicus*) | None/None/4.2 | Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest; Mesic microhabitats; blooms (Mar-Apr)May-Aug; at elevations ranging from 50 to 7300 ft | High. Suitable habitat occurs in Project Area. 5 CalFlora records within 5 miles of Project Area, the closest of which is an historic occurrence is 0.15 mile is of Project. |
| Nodding semaphore grass *(Pleuropogon refractus)* | None/None/4.2 | Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest; occurs in mesic areas; blooms (Feb-Mar)Apr-Aug; at elevations ranging from 0 to 5250 ft | Moderate. Project Area contains suitable habitat. Calflora contains several occurrences of this species in Russian Gluch State Park approximately 5 miles north of the Project Area. |
| Dwarf alkali grass *(Puccinellia pumila)* | None/None/2B.2 | Marshes and swamps (coastal salt); found in mineral spring meadows and coastal salt marshes; blooms Jul; at elevations ranging from 5 to 35 ft | None. Species occurs at elevations that are lower than the Project Area. Project Area does not contain suitable habitat. The nearest CNDDB and Calflora occurrence is approximately 13 miles north of the Project Area. |
| Angel's hair lichen (*Ramalina thrausta*) | None/None/2B.1 | North Coast coniferous forest on dead twigs and other lichens; at elevations ranging from 245 to 1410 ft | None. Species occurs at elevation that exceeds Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| White beaked-rush (*Rhynchospora alba*) | None/None/2B.2 | Bogs and fens, Marshes and swamps (freshwater), Meadows and seeps; blooms Jun-Aug; at elevations ranging from 195 to 6695 ft | None. Project Area does not contain suitable habitat. 1 CNDDB occurrence within 5 miles of Project Area. |
| Great burnet (*Sanguisorba officinalis*) | None/None/2B.2 | Bogs and fens, Broadleafed upland forest, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Riparian forest; often serpentine microhabitats; blooms Jul-Oct; at elevations ranging from 195 to 4595 ft | None. Species occurs at elevation that exceeds Project Area, which lacks serpentine soils. 2 CNDDB records within 5 miles of Project Area. |
| Point Reyes checkerbloom (*Sidalcea calycosa* ssp. *rhizomata*) | None/None/1B.2 | Marshes and swamps (freshwater, near coast); blooms Apr-Sep; at elevations ranging from 10 to 245 ft | None. Project Area does not contain suitable habitat. 2 CNDDB occurrences within 5 miles of Project Area. |
| Maple-leaved checkerbloom (*Sidalcea malachroides*) | None/None/4.2 | Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland; often disturbed areas; blooms (Mar)Apr-Aug; at elevations ranging from 0 to 2395 ft | Low. Project Area contains suitable habitat. No occurrences within 5 miles of Project Area. |
| Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) | None/None/1B.2 | Coastal bluff scrub, Coastal prairie, North Coast coniferous forest; often roadside and roadcut microhabitats; blooms (Mar-Apr)May-Aug; at elevations ranging from 50 to 4035 ft | Low. Project Area contains suitable habitat. 1 occurrence within 5 miles of Project Area. |
| Purple-stemmed checkerbloom (*Sidalcea malviflora* ssp. *purpurea*) | None/None/1B.2 | Broadleafed upland forest, Coastal prairie; blooms May-Jun; at elevations ranging from 50 to 280 ft | Low. Potential habitat in Project Area. No CNDDB occurrences within 5 miles of Project. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Trifoliate laceflower *(Tiarella trifoliata* var. *trifoliata)* | None/None/3.2 | Lower montane coniferous forest, North Coast coniferous forest; moist shady banks; blooms (May)Jun-Aug; at elevations ranging from 560 to 4920 feet | None. This species is found at elevations that are higher than the Project Area. Calflora reports this species in Jug Handle State Park approximately 9 miles north of the Project Area, and also from an occurrence 8 miles east of the Project Area. |
| Showy Indian clover (*Trifolium amoenum*) | FE/None/1B.1 | Low elevation grasslands, including swales and disturbed areas; blooms April–June | None. Low quality habitat occurs in managed grassland. The closest extant CNDDB occurrence is approximately 83 miles south of the BSA. |
| Santa Cruz clover (*Trifolium buckwestiorum*) | None/None/1B.1 | Broadleafed upland forest, Cismontane woodland, Coastal prairie; Gravelly margins microhabitats; blooms Apr-Oct; at elevations ranging from 115 to 2000 ft | Low. Grassland offers low quality habitat. No CNDDB occurrences within 5 miles of Project. |
| Monterey clover (*Trifolium trichocalyx*) | FE/SE/1B.1 | In Monterey County found in closed-cone coniferous forest (burned areas, openings, sandy); In Mendocino County, found in coniferous forest dominated by redwood *(Sequoia sempervirens)*, Douglas fir *(Pseudotsuga menziesii)* and tanoak *(Notholithocarpus densiflorus)* at elevations ranging from 100 to 1000 feet; Generally, germinates in response to fire and other disturbance; blooms Apr-Jun; at elevations ranging from 100 to 1000 ft | Low. Project Area contains low quality habitat. No CNDDB occurrences within 5 miles of Project. The nearest CNDDB occurrence is 11.5 miles northeast of the BSA (Occurrence No. 6). |
| Coastal triquetrella *(Triquetrella californica)* | None/None/1B.2 | Coastal bluff scrub, Coastal scrub; Grows within 30m from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops; Bryophyte (moss); at elevations ranging from 0 to 490 ft | None because the lack of suitable habitat and the distance to known occurrences. Calfora reports two 1968 herbarium collections from MacKerricher State Park over 20 miles north of the Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Methuselah's beard lichen (*Usnea longissima*) | None/None/4.2 | Broadleafed upland forest, North Coast coniferous forest; on tree branches of old growth hardwoods and conifers; at elevations ranging from 165 to 4790 ft | Low. Project Area contains few old growth trees. Species known to occur in quadrangle containing the Project Area. |
| Fringed false-hellebore (*Veratrum fimbriatum*) | None/None/4.3 | Bogs and fens, Coastal scrub, Meadows and seeps, North Coast coniferous forest; Mesic microhabitats; blooms Jul-Sep; at elevations ranging from 10 to 985 ft | High. Suitable habitat occurs in Project Area. 7 CalFlora records within 5 miles of Project Area, of which four are within the Park and two are within 0.15 mile. |
| Alpine marsh violet *(Viola palustris)* | None/None/2B.2 | Bogs and fens (coastal), Coastal scrub (mesic); blooms Mar-Aug; Swampy; shrubby places in coastal scrub or coastal bogs; at elevations ranging from 0 to 490 ft | None. Suitable habitat is not found within the Project Area. Calfora reports a 1946 herbarium collection from MacKerricher State Park over 20 miles north of the Project Area. |

Notes:
FE = listed as Endangered under federal Endangered Species Act
SE = listed as Endangered under California Endangered Species Act
ST = listed as Threatened under California Endangered Species Act

California Rare Plant Ranks (CRPR): 1A = presumed extinct in California and rare or extinct elsewhere; 1B = rare, threatened, or endangered in California and elsewhere; 2A = presumed extirpated in California but common elsewhere; 2B = rare, threatened, or endangered in California but more common elsewhere; 3 = need more information; 4 = Watch List: plants of limited distribution. Threat code extensions are: .1 = seriously threatened in California; .2 = moderately threatened in California; and .3 not very threatened in California. Species with CRPR 3 or 4 ratings are not included on CNDDB unless they were formerly ranked with a 1 or 2.

# Appendix A
# Photographs

Photograph 1:

Looking southwest is a downstream view of the bridge.





Photograph 2:

Looking northeast is an upstream view of the bridge. Note the concrete abutment is a fish barrier during low flows.

a

Photograph 3:

From the bridge is a view downstream





Photograph 4:

View from bridge looking upstream. The replacement bridge will be placed just upstream of the existing bridge.

Photograph 5:

View of south riverbank.





Photograph 6:

View of south riverbank (just upstream of Photograph 5's vantage) where the new bridge will be constructed.

Photograph 7:

View looking northeast towards where the new bridge will connect on the north bank.



# Appendix B

# United States Fish and Wildlife (USFWS) Information for Planning and Consultation (IPaC) List

# Appendix C

# NOAA Fisheries List for the Mendocino Quadrangle

Quad Name **Mendocino**

Quad Number **39123-C7**

**ESA Anadromous Fish**

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

**ESA Anadromous Fish Critical Habitat**

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

**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) - **X**
Olive Ridley Sea Turtle (T/E) - **X**
Leatherback Sea Turtle (E) - **X**
North Pacific Loggerhead Sea Turtle (E) -

**ESA Whales**

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

**ESA Pinnipeds**

Guadalupe Fur Seal (T) - **X**

**Essential Fish Habitat**

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

**MMPA Species (See list at left)**

**ESA and MMPA Cetaceans/Pinnipeds**

**See list at left and consult Monica DeAngelis**
**monica.deangelis@noaa.gov**
**562-980-3232**

MMPA Cetaceans - **X**
MMPA Pinnipeds - **X**

# Appendix D

## CNPS List of Special Status Plant Species Present on the Mendicino quad and six surrounding quads (Fort Bragg, Noyo Hill, Mathison Peak, Albion, and Elk) Quads

# Little River Restoration and Bridge Replacement Project

# Special Status Plant Survey Report

Van Damme State Park

Mendocino County



**July 2025**

STATE OF CALIFORNIA

Department of Parks and Recreation

Northern Service Center

Prepared By:
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Northern Service Center
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# Summary

This report describes desktop research and field surveys conducted to identify special status plants that may be impacted by the Little River Restoration and Bridge Replacement Project. Field surveys were conducted on April 15 and May 28, 2025. One individual of one special status plant species, fringed false hellebore *(Veratrum fimbriatum),* was observed within the study area during these surveys. The fringed false hellebore was observed on the south bank of Little River near the location of the new bridge (Figure 2). Fringed false hellebore has a California Rare Plant Rank of 4.3. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.3 includes plants which are not very threatened in California. No other special status plants were observed within the study area during field surveys.

# Chapter 1. Introduction

The purpose of this report is to describe pre-construction special status plant surveys conducted for the Little River Restoration and Bridge Replacement Project. A detailed description of the project and the existing environment within the study area is included in the *Little River Restoration and Bridge Replacement Project Biological Resources Assessment* (State Parks 2025).

## 1.1. Background

The Little River Restoration and Bridge Replacement project site is within Van Damme State Park which is located three miles south of Mendocino on Highway 1 in Mendocino County (Figure 1). The Little River bisects the park, and within the park, the bridge over the river provides access to the campground and the Fern Canyon Scenic Trail. The original bridge, which was built in 1951, consisted of a two-span corrugated metal arch on concrete abutments. Years of scour undermined the bridge foundations, and it ultimately failed in 2018. A single lane, temporary rail car bridge is in place (on top of the failed bridge structure) and carries traffic over the river. The single lane, temporary bridge needs replacement. The underlying arch culverts are sagging, and the concrete abutments extend into the river causing both fish passage impediments as well as downstream erosion.

The objective of the Little River Bridge Replacement Project (Project) is to replace the failed bridge and restore anadromous fish passage during low flows at Little River in Van Damme State Park. New construction will be above the ordinary high water mark of Little River and the old bridge location will be recontoured. Furthermore, the new bridge will be more perpendicularly orientated to the stream compared to the old bridge, which will improve stream flows and reduce scouring. As a result, the Project will result in no net loss of aquatic resources.

## 1.2. Survey Area

The boundaries of the botanical study area (study area) were established to include all areas where vegetation may be impacted as a result of the Little River Restoration and Bridge Replacement Project. The survey area is approximately 0.4 miles east of State Highway 1, and 0.5 miles northeast of the Van Damme State Marine Conservation Area (Figure 2). The 1.58 acre survey area includes the location of the existing temporary bridge and failed bridge along Little River, the road on either side of the bridge, the location of the road extension to the new bridge, the small bank stabilization area, and potential staging areas (Figure 2).

## 1.3. Special Status Plant Species Definition

Special Status Plants are defined as species or subspecies that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under the federal ESA
- Listed or candidates for listing as threatened or endangered under CESA
- Listed as rare or endangered under the California Native Plant Protection Act

- Meeting the definition of endangered, rare, or threatened species under CEQA Guidelines which may include:
    - Plants tracked by the California Native Plant Society (CNPS) and the California Natural Diversity Database (CNDDB) as California Rare Plant Rank (CRPR) 1 or 2; and
    - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This includes plants tracked by the CNPS and CNDDB as CRPR 3 or 4.
- Locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region.

# Chapter 2. Methods

## 2.1. Literature Review

A list of special status plant species documented within the vicinity of the study area was generated using the available sources listed below.

- A United States Fish and Wildlife Service (USFWS) Species List was obtained from Information for Planning and Consultation (IPaC) website on February 18, 2025 (USFWS 2025). The IPaC list is included in the Biological Resources Assessment (State Parks 2025).
- A CNDDB search of the Mendicino 7.5 minute quadrangle (quad), and the five surrounding quads (Fort Bragg, Noyo Hill, Mathison Peak, Albion, and Elk). Only these six quads were searched instead of the standard nine quad search because of the location of the study area at the coast.
- CNPS Rare Plant Inventory occurrences within the Mendicino quad and five surrounding quads (CNPS 2024a, CNDDB 2024a).
- CNDDB and Calflora occurrences were reviewed to determine the proximity of reported occurrences of rare plants to the study area (CNDDB 2024b and Calflora 2024).

All special status plant species that were identified during the literature review are described in Table 1. This description includes an assessment of the likelihood that each species occurs within the study area and a rationale for this determination.

The determinations of the likelihood of an individual special status plant species occurring at or near the study area are based on the professional judgement of the Environmental Scientists who prepared this report. In general, species were considered of high potential to occur in the study area if adequate habitat for the species was present at or adjacent to the study area and there were known occurrences within one mile of the study area; species were considered of moderate potential to occur in the study area if adequate habitat for the species was present in or adjacent to the study area and there are recent known occurrences within one to five miles of the study area; species were considered of low potential if the closest known occurrences were five to 10 miles from the study area or habitat was determined to be marginal for the species based on environmental conditions.

## 2.2. Survey Methodology

Special status plant surveys were conducted following California Department of Fish and Wildlife *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018) and the California Native Plant Society *Botanical Survey Guidelines* (CNPS 2001). Calfora (Calflora 2024), the Jepson eFlora (Jepson 2024), and CNDDB observations (CNDDB 2024a) were used to access phenology and observe morphology of target species. Reference populations of the following species were also visited: coastal bluff morning-glory *(Calystegia purpurata* ssp. *saxicola)*, harlequin lotus *(Hosackia gracilis),* leafy-stemmed mitrewort *(Mitellastra caulescens)*, nodding semaphore grass *(Pleuropogon refractus)*, and fringed false hellebore *(Veratrum fimbriatum)*.

Field Surveys were conducted by State Parks Senior Environmental Specialist, Lisa Paterson, on April 15 and May 28, 2025. These surveys were conducted when the special status plants described below in Section 3.1 were expected to be in bloom or identifiable based on vegetative characteristics. Surveys included walking meandering transects throughout the entire study area and identifying all plant species observed. A list of plant species observed is included in Table 2.

# Chapter 3. Results

## 3.1. Literature Review

All special status plant species identified during the literature review are listed in Table 1. Twelve special status plant species were identified during the literature review that have a moderate or high potential of occurring at or adjacent to the study area. These species are described below. All information included in the following species accounts is from the Jepson eFlora (Jepson Flora Project 2024) and the CNPS Rare Plant Inventory (CNPS 2024a) unless otherwise noted.

**Bolander's reed grass *(Calamagrostis bolanderi)*** **CRPR 4.2**

Bolander’s reed grass has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Bolander’s reed grass is a perennial grass (Poaceae) that spreads by rhizomes. It reaches 20 to 60 inches in height. Its flowers grow in open groups (inflorescences) with branches that are spreading to ascending.

Bolander’s reed grass is endemic to California and occurs in coastal areas in Humboldt, Mendocino, and Sonoma Counties. This species occurs in a variety of wetland and forest communities including bogs and fens, broadleafed upland forest, closed-cone coniferous forest, coastal scrub, and North Coast coniferous forest at elevations up to 1,495 feet. There are historic (1899) records of this species from the Little River Area, and it is reported on a State Parks plant species list for Mendocino Headlands State Park. There is a total of nine Calflora occurrences within five miles of the study area.

**Coastal bluff morning-glory *(Calystegia purpurata* ssp. *saxicola)*** **CRPR 1B.2**

Coastal bluff morning-glory has a CRPR of 1B.2. This rank describes plants that are rare, threatened, or endangered in California and elsewhere and moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Coastal bluff morning-glory is a perennial vine in the morning glory family (Convolvuaceae). It is trailing to weakly climbing; vines reach less than one meter in length. As with other species in the genus *Calystegia,* leaf-like bracts are found just below the flowers. In coastal bluff morning-glory, these bracts are more than one millimeter (mm) below the flowers and usually have small lobes. Coastal bluff morning-glory is distinguished from other subspecies of *Calystegia purpurata* by its leaf shape. The leaves of coastal bluff morning-glory are ovate-triangular to reniform; the leaf tip is generally rounded or notched.

Coastal bluff morning-glory is a California endemic that occurs in Contra Costa, Marin, Sonoma, and Mendocino Counties. It occurs in coastal bluff scrub, coastal dunes, coastal scrub, and North Coast coniferous forest at elevations below 345 feet. The nearest CNDDB occurrence is at Chapman Point on the Mendocino Bay approximately five miles north of the study area.

This species is observed blooming between April and September and occasionally as early as March.

**Pacific golden saxifrage *(Chrysosplenium glechomifolium)*** **CRPR 4.3**

Pacific golden saxifrage has a CRPR of 4.3. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.3 includes plants which are not very threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Pacific golden saxifrage is a perennial herb in the saxifrage family (Saxifragaceae) that has underground stems (caudices) or rhizomes. It has stems that grow along the ground or are ascending and forms roots from stem nodes. It has opposite leaves that are round or ovate and have rounded teeth. It has small inconspicuous flowers that grow in the axils of leaves.

This species occurs in California, Oregon and Washington. In California it is found in Del Norte, Humboldt and Mendocino Counties. It occurs in North Coast coniferous forest and riparian forest. It can be found on roadsides, seeps and streambanks. There are three Calflora records within five miles of the study area, of which one is 0.15 miles southeast of the study area.

This species most frequently is found in bloom in March through May but can also be found in bloom as early as February and in the fall (September through November).

**Oregon goldthread *(Coptis laciniata)*** **CRPR 4.2**

Oregon goldthread has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Oregon goldthread is a perennial herb in the buttercup family (Ranunculaceae) that has rhizomes or underground stems. It is scapose, meaning flowers occur at the end of long leafless stems. It has compound leaves that are composed of leaflets that are often toothed. It has stalked fruits with papery, more or less translucent walls. These fruits form in small clusters (umbels).

This species occurs in California, Oregon, and Washington. In California, it is found in Del Norte, Humboldt, and Mendocino Counties. It occurs in meadows and seeps and on streambanks in North Coast coniferous forest. The CNPS rare plant inventory reports this species in the Mendocino, Mathison Peak, and Elk Quadrangles but details regarding these occurrences are not provided. There is a 2023 Calflora occurrence of this species approximately 5.5 miles north of the study area.

This species is most frequently observed blooming in the spring and summer between March and July but is occasionally found in flower as early as February and in September through November.

**Swamp harebell *(Eastwoodiella californica)*** **CRPR 1B.2**

Swamp harebell has a CRPR of 1B.2. This rank describes plants that are rare, threatened, or endangered in California and elsewhere and moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Swamp harebell is a small perennial herb in the Bellflower Family (Campanulaceae). It reaches four to 12 inches in height and does not have hairs. It has leaves that are less than an inch long and ovate with rounded teeth. It has bell-shaped flowers that have pale blue petals.

This species occurs in coastal areas in Santa Cruz, Marin, Sonoma and Mendocino Counties. It occurs in mesic areas within several habitats including bogs and fens, closed-cone coniferous forest, coastal prairie, marshes and swamps (freshwater), meadows and seeps, and North Coast coniferous forest. There are four CNDDB occurrences within five miles of the study area. The nearest CNDDB occurrence is approximately 0.6 miles southeast of the study area.

Swamp harebell is found blooming from June to October.

**Harlequin lotus *(Hosackia gracilis)*** **CRPR 4.2**

Harlequin lotus has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

The harlequin lotus is a perennial herb in the pea family (Fabaceae) that grows by stolons or rhizomes. The plants do not have thorns, and they are not obviously gland dotted. This species has fragile triangular stipules (appendages at the base of the leaf stem), and its leaves are made of three to seven leaflets. It has showy flowers with yellow banner petals, and wing petals that are pink to purple fading to white.

Within the US, this species occurs in California, Oregon and Washington. In California it is found from Del Norte County south to San Luis Obispo County at elevations up to 2,295 feet. It occurs in several habitats including broadleafed upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, meadows and seeps, North Coast coniferous forest, and valley and foothill grassland. It often is found on roadsides or in wetlands. There are many Calflora occurrences of this species along the coast of Mendocino County. This species is included on the 2005 plant list for Van Damme State Park compiled by botanist Teresa Sholars.

It is found blooming in March through July

**Coast lily *(Lilium maritimum)*** **CRPR 1B.1**

Coast lily has a CRPR of 1B.1. This rank describes plants that are rare, threatened, or endangered in California and elsewhere and seriously threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Coast lily is in the Lily Family (Liliaceae) and grows from spreading, scaly, elongated bulbs often exceed one meter in height. The showy bell-shaped flowers have red or red-orange petals that are reflexed 20-50%.

This species is found in Marin, Sonoma, and Mendocino Counties at elevations ranging from 15 to 1560 ft. It occurs in broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes and swamps (freshwater), and North Coast coniferous forest. In these habitats it is sometimes found on roadsides. There are six CNDDB occurrences within five miles of the study area. The nearest CNDDB occurrences are two locations, one of which is two miles northeast of the study area and the second which is 1.4 miles southeast of the study area.

It is found blooming between April and August but is most frequently observed in bloom in April and May.

**Heart-leaved twayblade *(Listera cordata)*** **CRPR 4.2**

Heart-leaved twayblade has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Heart-leaved twayblade is a perennial herb in the Orchid Family (Orchidaceae). It typically has two leaves that are attached to the stems and lobed at the base or heart shaped. It has green petals, its lower petal (lip) is deeply lobed.

It occurs throughout the western US and in the northeast. In California, this species occurs in Del Norte, Humboldt, Trinity, and Mendocino Counties at elevations from 15 to 4,495 feet. It is found in bogs and fens, lower montane coniferous forest, and North Coast coniferous forest. There are two Calflora occurrences within five miles of the study area. This species is included on the 2005 plant list for Van Damme State Park compiled by botanist Teresa Sholars.

It is most often found in bloom in March through June but is occasionally found in bloom in February and July.

**Leafy-stemmed mitrewort *(Mitellastra caulescens)*** **CRPR 4.2**

Leafy-stemmed miterwort has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Leafy-stemmed miterwort is a perennial herb in the Saxifrage Family (Saxifragaceae) that has scaly rhizomes. It has basal leaves and one to few leaves along the stem. It has yellow-green petals that are distinctly lobed forming a feather-like shape.

It occurs in bogs and fens, lower montane coniferous forest, and North Coast coniferous forest at elevations ranging from 15 to 4495 feet. There are two Calflora occurrences within five miles

of the study area. The CNDDB includes a 1957 record of this species occurring along the banks of Little River which overlaps with the study area. This species is also included on the 2005 plant list for Van Damme State Park compiled by botanist Teresa Sholars.

It is found blooming between February and July and has been most often observed in bloom in May through July.

**California pinefoot *(Pityopus californicus)*** **CRPR 4.2**

California pinefoot has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

California pinefoot is a perennial herb in the Heath Family (Ericaceae) that lacks chlorophyll and receives nutrition from an external source. The above ground portion of this plant consists of the flower stem with its cream to yellow flowers and leaf-like bracts.

In the United States, this species occurs in California, Oregon, and Washington. In northern California, it is found in Del Norte, Humboldt, Mendocino, Siskiyou, and Trinity Counties, and it is also found in Fresno, Madera, Tulare Counties to the south. It is found in mesic communities within broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest, and upper montane coniferous forest habitats at elevations ranging from 50 to 7,300 feet. There are five Calflora occurrences of this species within five miles of the study area. Calflora cites historic (1949-1956) herbarium collections of this species near the study area along Little River, in the Mendocino Headlands State Park, and near the Albion River, and a recent occurrence of this species at Jug Handle State Park approximately 14 miles north of the study area.

It is found in bloom in May through August and also occasionally in March and April.

**Nodding semaphore grass *(Pleuropogon refractus)*** **CRPR 4.2**

Nodding semaphore grass has a CRPR of 4.2. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.2 includes plants which are moderately threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Nodding semaphore is a perennial grass (Poaceae) that grows by rhizomes. It grows to 27 to 60 inches in height. Groups of flowers (spikelets) are attached to the main stem (in a raceme) and are reflexed as they mature. The common name of this plant “semaphore grass” comes from the flag like appears of these spikelets.

It is found in mesic areas in lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, and riparian forest habitats at elevation up to 5,250 feet. In the United States, this species occurs in California, Oregon, and Washington, and in California it occurs in Del Norte, Humboldt, Mendocino, Sonoma, and Marin Counties. Calflora contains several occurrences of this species in Russian Gluch State Park approximately 5 miles north of the Project Area.

It is found in bloom in April through August and also occasionally in February and March.

**Fringed false hellebore *(Veratrum fimbriatum)*** **CRPR 4.3**

Fringed false hellebore has a CRPR of 4.3. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.3 includes plants which are not very threatened in California. This species is not listed under CESA, ESA, or the California Native Plant Protection Act.

Fringed false hellebore is a perennial herb in the false-hellebore Family (Melanthiaceae). It grows to 3 to 6 feet in height and has many leaves that are widely ovate with coarse parallel veins. The petals are white, green, or red-brown and fringed.

Fringed false hellebore occurs in Mendocino and Sonoma Counties in California and is found in mesic microhabitats within bogs and fens, coastal scrub, meadows and seeps, and North Coast coniferous forest. It is found at elevations ranging from 10 to 985 feet. There are seven Calflora records within five miles of study area, of which four are within the park and two are within 0.15 miles of the study area.

It is found in bloom from July to September.

## 3.2. Survey Results

*Special Status Plants*

One occurrence of one special status plant species, fringed false hellebore *(Veratrum fimbriatum)*, was observed during field surveys. One fringed false hellebore was found on the south bank of Little River near the location of the new bridge (Figure 2). A list of all plant species observed during field surveys is included in Table 2.

*Natural Communities*

Natural Communities of special concern that occur within the region and at the project site are described in the Biological Resources Assessment for this project (State Parks 2025). A general description of the natural communities observed during field surveys is included below.

The project site is within Fern Canyon. The lowest portion of the study area is the gravel streambed. The streambed is largely unvegetated, but some herbaceous emergent vegetation was observed on gravel bars and at the edges of the channel. Dominant species in the streambed community included the following native and non-native herbaceous perennials creeping buttercup *(Ranunculus repens),* tall manna grass *(Glyceria elata)*, and western coltsfoot *(Petasites frigidus* var. *palmatus).*

The streambanks are steep and incised. Riparian vegetation occurs on and adjacent to the banks of Little River. The riparian community has a sparse overstory of red alder *(Alnus rubra)* and a mid-level overstory of red elderberry *(Sambucus racemosa* var. *racemosa).* There is a very dense understory of small shrubs and herbaceous perennials in the riparian community. Dominant understory species include western sword fern *(Polystichum munitum),* California blackberry *(Rubus ursinus),* broadleaf forget-me-not *(Myosotis latifolia),* and western lady fern *(Athyrium filix-femina var. cyclosorum).*

There is a narrow level floodplain above the streambanks. In this area, riparian vegetation is adjacent to developed roads and campsites in some locations. The campsites and roadsides are regularly mowed and support a combination of native and non-native herbaceous species.

Outside of these developed areas the riparian vegetation transitions to coniferous forest. Beyond the narrow floodplain steep hillsides occur on both sides of Little River forming Fern Canyon.

Overstory species in the adjacent coniferous forest include grand fir *(Abies grandis),* Douglas fir *(Pseudotsuga menziesii* var. *menziesii),* and red alder. There is a mid-level overstory layer dominated by red elderberry and tanoak *(Notholithocarpus densiflorus)* and a very dense understory dominated by western sword fern and thimbleberry *(Rubus parviflorus).*

Photographs of the study area are included in Appendix A.

## 3.3. Project Impacts

The project is expected to result in impacts on one individual of, fringed false hellebore *(Veratrum fimbriatum)*. This species is not listed under the federal or California Endangered Species Acts and has a CRPR of 4.3. CRPR 4 is a watch list; it includes plants of limited distribution. The threat rank of 0.3 includes plants which are not very threatened in California. Although this species is included on the California Native Plant Society watch list, it is not considered rare or endangered. This plant will be collected prior to construction and transplanted. Impacts to this individual plant are not expected to result in impacts on the population of fringed false hellebore within Van Damme State Park because this species was also observed in several locations along Little River outside of the project footprint.

## 3.4. Avoidance and Minimization Efforts

Due to year-to-year variations in the occurrence of rare plants, the area will be surveyed for the occurrence of rare plants within 30 days prior to construction.

The following special status plant avoidance and minimization measures will be implemented for this project:

> **Special-Status Plant Impact Avoidance and Minimization:** Where possible, special-status plant occurrences will be avoided and protected from construction activities. Locations where special status plants can't be avoided will be subject to the following conditions as approved by a State Parks Environmental Scientist:
>
> Perennial Species
>
> - Prior to construction, plants will be carefully excavated and transplanted to nearby suitable habitat. All transplant work will be conducted under the direction of District Resource Staff, a State Parks Environmental Scientist, or a State Parks-approved biologist.
> - If possible, transplanting should occur during the dormant growing season (i.e. late fall) when the plants are least disturbed and can receive winter precipitation.

# Chapter 4. References

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# Figures

**Figure 1. Project location.**

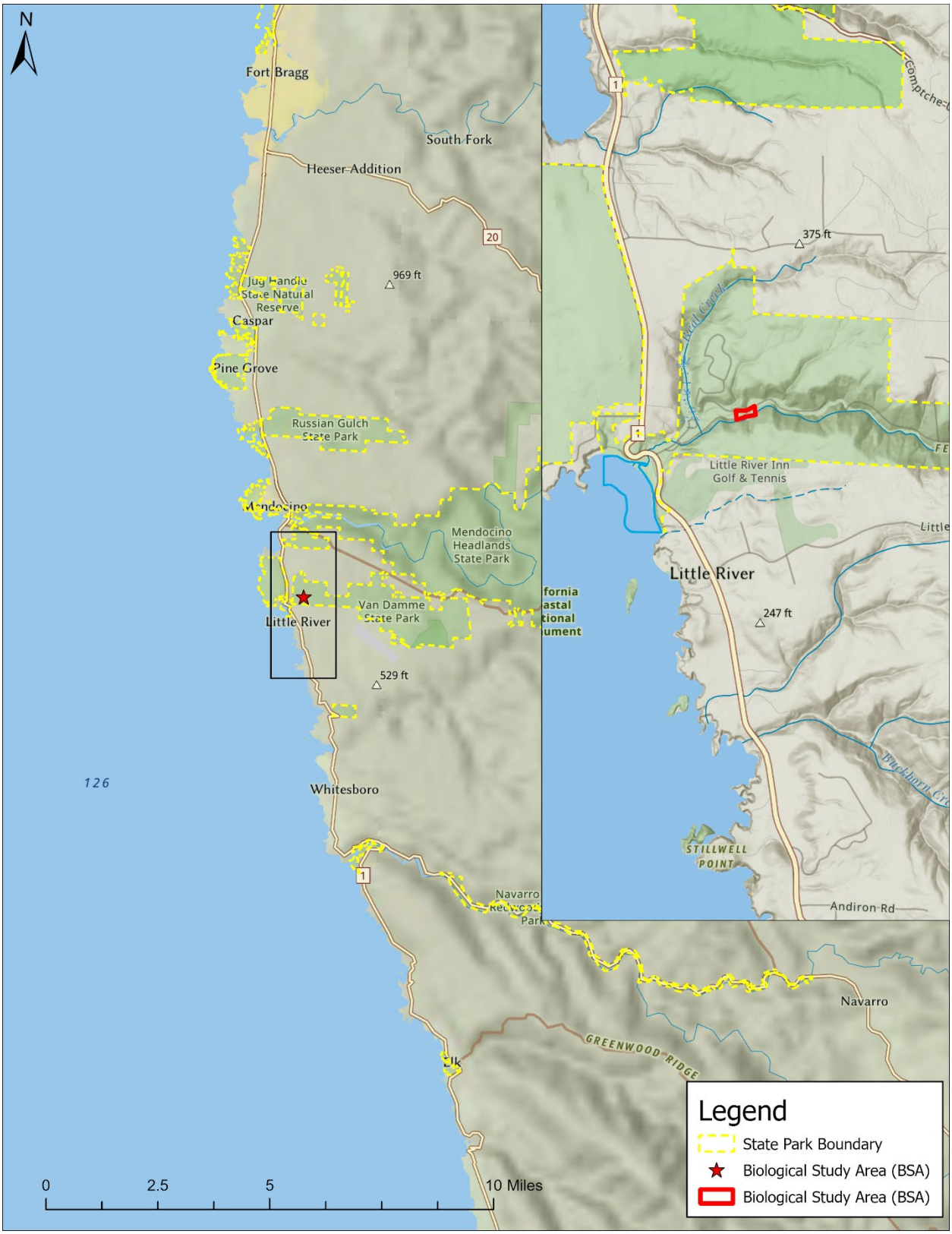


**Figure 2. Study area with location of fringed false hellebore observed during field surveys.**



# Tables

**Table 1. Special status plant species identified during the literature review and assessments of the potential for these species to occur in the study area.**

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Pink sand-verbena (*Abronia umbellata var. breviflora*) | None/None/1B.1 | Coastal dunes; blooms Jun-Oct; at elevations ranging from 0 to 35 ft | None. Suitable habitat does not occur in Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |
| Blasdale's bent grass (*Agrostis blasdalei*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes, Coastal prairie; blooms May-Jul; at elevations ranging from 0 to 490 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 2 CNDDB occurrences within 5 miles of Project. |
| Sea-watch (*Angelica lucida*) | None/None/4.2 | Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt); blooms Apr-Sep; at elevations ranging from 0 to 490 ft | None. Suitable habitat does not occur in Project Area. 3 Calflora records within 5 miles of Project Area. |
| Pygmy manzanita (*Arctostaphylos nummularia* ssp. *mendocinoensis*) | None/None/1B.2 | Closed-cone coniferous forest (acidic sandy clay); blooms Jan; at elevations ranging from 295 to 655 ft | None. Suitable habitat does not occur in Project Area. 3 CNDDB occurrences within 5 miles of Project Area. |
| Humboldt County milk-vetch *(Astragalus agnicidus)* | None/SE/1B.1 | Broadleafed upland forest, North Coast coniferous forest, Disturbed areas, Openings, Roadsides (sometimes); blooms (Mar)Apr-Sep; at elevation ranging from 395-2625 ft. | None. The Project area occurs at lower elevations than the known elevation range of this species. The nearest CNDDB occurrence is over 13 miles northeast of the Project Area. |
| Point Reyes blennosperma *(Blennosperma nanum* var. *robustum)* | None/CR/1B.2 | Coastal prairie, Coastal scrub; On open coastal hills in sandy soil; blooms Feb-Apr; at elevation ranging from 35 to 475 ft. | Low. Grassland habitat in Project Area is managed and contains low quality habitat. The nearest CNDDB occurrence is over 19 miles north of the Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Bolander's reed grass (*Calamagrostis bolanderi*) | None/None/4.2 | Bogs and fens, Broadleafed upland forest, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps (freshwater), Meadows and seeps (mesic), North Coast coniferous forest; Mesic microhabitats; blooms May-Aug; at elevations ranging from 0 to 1495 ft | High. Suitable habitat occurs in Project Area. 9 Calflora records within 5 miles of Project Area. Historic occurrence approximately 0.16 miles east of Project Area. |
| Thurber's reed grass (*Calamagrostis crassiglumis*) | None/None/2B.1 | Coastal scrub (mesic), Marshes and swamps (freshwater); blooms May-Aug; at elevations ranging from 35 to 195 ft | None. Suitable habitat does not occur in Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |
| Coastal bluff morning-glory (*Calystegia purpurata* ssp. *saxicola*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes, Coastal scrub, North Coast coniferous forest; blooms (Mar)Apr-Sep; at elevations ranging from 0 to 345 ft | Moderate. Suitable habitat occurs in Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |
| California sedge (*Carex californica*) | None/None/2B.2 | Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Marshes and swamps (margins), Meadows and seeps; blooms May-Aug; at elevations ranging from 295 to 1100 ft | None. Species occurs at elevation that exceeds Project Area. 10 CNDDB occurrences within 5 miles of Project Area. |
| Lagoon sedge *(Carex lenticularis* var. *limnophila)* | None/None/2B.2 | Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools (margins); Bogs and fens, marshes and swamps, North Coast coniferous forest; Reported from lakeshores and beaches, often in gravelly substrates; blooms Jun-Aug; at elevations from 0 to 20 ft. | None. Species is known from elevations lower than the Project Area. The nearest CNDDB record of this species is a 1938 occurrence from over 15 miles northeast of the Project Area. |
| Livid sedge (*Carex livida*) | None/None/2A | Bogs and fens; blooms Jun; occurs at 0 ft | None. Suitable habitat does not occur in Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Lyngbye's sedge (*Carex lyngbyei*) | None/None/2B.2 | Marshes and swamps (brackish, freshwater); blooms Apr-Aug; at elevations ranging from 0 to 35 ft | None. Suitable habitat does not occur in Project Area. 2 CNDDB occurrences within 5 miles of Project Area. |
| Deceiving sedge (*Carex saliniformis*) | None/None/1B.2 | Coastal prairie, Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps; Mesic microhabitats; blooms (May)Jun(Jul); at elevations ranging from 10 to 755 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 1 CNDDB occurrence within 5 miles of Project Area. |
| Johnny-nip *(Castilleja ambigua* var. *ambigua)* | None/None/4.2 | Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools (margins); blooms Mar-Aug; at elevations from 0 to 1425 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. Occurs on the species checklist for Van Damme State Park created by botanist Teresa Sholars |
| Humboldt Bay owl's-clover (*Castilleja ambigua* var. *humboldtiensis*) | None/None/1B.2 | Marshes and swamps (coastal salt); blooms Apr-Aug; at elevations ranging from 0 to 10 ft | None. Project Area does not contain suitable habitat. 2 CNDDB occurrences within 5 miles of Project Area. |
| Oregon coast paintbrush (*Castilleja litoralis*) | None/None/2B.2 | Coastal bluff scrub, Coastal dunes, Coastal scrub; Sandy microhabitats; blooms Jun; at elevations ranging from 50 to 330 ft | None; Project Area does not contain suitable habitat. 3 Calflora records within 5 miles of Project Area. |
| Mendocino Coast paintbrush (*Castilleja mendocinensis*) | None/None/1B.2 | Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub; blooms Apr-Aug; at elevations ranging from 0 to 525 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 8 CNDDB occurrences within 5 miles of Project Area. |
| Glory brush (*Ceanothus gloriosus* var. *exaltatus*) | None/None/4.3 | Chaparral; blooms Mar-Jun(Aug); at elevations ranging from 100 to 2000 ft | None. Project Area does not contain suitable habitat. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Point Reyes ceanothus (*Ceanothus gloriosus* var. *gloriosus*) | None/None/4.3 | Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal scrub; Sandy microhabitats; blooms Mar-May; at elevations ranging from 15 to 1705 ft | None. Project Area does not contain suitable habitat. 7 Calflora occurrences within 5 miles of Project Area. |
| Howell's spineflower (*Chorizanthe howellii*) | FE/ST/1B.2 | Coastal dunes; blooms May-Jul; at elevations ranging from 0 to 150 ft | None. Species is restricted to the Ten Mile Dunes. There are no CNDDB occurrences within 5 miles of Project Area. |
| Pacific golden saxifrage (*Chrysosplenium glechomifolium*) | None/None/4.3 | North Coast coniferous forest, riparian forest; microhabitats of Roadsides (sometimes), Seeps (sometimes), and Streambanks; blooms Feb-Jun; at elevations ranging from 35 to 1770 ft | High. Project Area contains suitable habitat. 3 Calflora records within 5 miles of Project Area, of which one is 0.15 miles southeast of Project. |
| Whitney's farewell-to-spring *(Clarkia amoena* ssp. *whitneyi)* | None/None/1B.1 | Coastal bluff scrub, Coastal scrub; blooms Jun-Aug; at elevations ranging from 35 to 330 ft | None. Project Area does not contain suitable habitat. The nearest CNDDB occurrence is a 1914 occurrence over 13 miles N of the Project Area that is reported as extirpated. |
| Round-headed collinsia *(Collinsia corymbosa)* | None/None/1B.2 | Coastal dunes; blooms Apr-Jun; at elevations ranging from 0 to 65 ft | None. Project Area does not contain suitable habitat. The species occurs at elevations lower than the Project Area. The nearest CNDDB occurrences are over 15 miles north of the Project Area. |
| Oregon goldthread (*Coptis laciniata*) | None/None/4.2 | Meadows and seeps, North Coast coniferous forest (streambanks); Mesic microhabitats; blooms (Feb)Mar-May(Sep-Nov); at elevations ranging from 0 to 3280 ft | High. Project Area contains suitable habitat. 4 Calflora records within 5 miles of Project Area. |
| Bunchberry (*Cornus unalaschkensis*) | None/None/2B.2 | Bogs and fens, Meadows and seeps, North Coast coniferous forest; blooms May-Jul; at elevations ranging from 195 to 6300 ft | None. Species occurs at elevation that exceeds Project Area. 4 Calflora records within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Mendocino dodder (*Cuscuta pacifica* var. *papillata*) | None/None/1B.2 | Coastal dunes (interdune depressions); blooms (Jun)Jul-Oct; at elevations ranging from 0 to 165 ft | None. Project Area does not contain suitable habitat. No CNDDB records within 5 miles of Project Area. |
| California pitcherplant (*Darlingtonia californica*) | None/None/4.2 | Bogs and fens, Meadows and seeps; Mesic, Serpentine (usually) microhabitats; blooms Apr-Aug; at elevations ranging from 0 to 8480 ft | None. Project Area does not contain suitable habitat; 2 Calflora records within 5 miles of Project Area. |
| Swamp harebell (*Eastwoodiella californica*) | None/None/1B.2 | Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Marshes and swamps (freshwater), Meadows and seeps, North Coast coniferous forest; Mesic microhabitats; blooms Jun-Oct; at elevations ranging from 5 to 1330 ft | High. Project Area contains suitable habitat. 4 CNDDB records within 5 miles of Project Area. |
| Supple daisy (*Erigeron supplex*) | None/None/1B.2 | Coastal bluff scrub, Coastal prairie; blooms May-Jul; at elevations ranging from 35 to 165 ft | None. Project Area does not contain suitable habitat. 3 CNDDB records within 5 miles of Project. |
| Bluff wallflower (*Erysimum concinnum*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes, Coastal prairie; blooms Feb-Jul; at elevations ranging from 0 to 605 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 4 CNDDB records within 5 miles of Project Area. |
| Menzies' wallflower *(Erysimum menziesii)* | FE/SE /1B.1 | Coastal Dunes; Localized on dunes and coastal strand.; blooms Mar-Sep; at elevations ranging from 0 to 115 ft | None. Project Area does not contain suitable habitat. The species occurs at elevations lower than the Project Area. The nearest CNDDB occurrences are over 15 miles north of the Project Area. |
| Pacific gilia (*Gilia capitata* ssp. *pacifica*) | None/None/1B.2 | Chaparral (openings), Coastal bluff scrub, Coastal prairie, Valley and foothill grassland; blooms Apr-Aug; at elevations ranging from 15 to 5465 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 1 CNDDB record within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Woolly-headed gilia (*Gilia capitata* ssp. *tomentosa*) | None/None/1B.1 | Coastal bluff scrub, Valley and foothill grassland; Rocky, serpentine outcrops microhabitats; blooms May-Jul; at elevations ranging from 35 to 720 ft | Low. Grassland offers low quality habitat, but does not contain serpentine. 0 CNDDB records within 5 miles of Project Area. |
| Dark-eyed gilia (*Gilia millefoliata*) | None/None/1B.2 | Coastal dunes; blooms Apr-Jul; at elevations ranging from 5 to 100 ft | None. Project Area does not contain suitable habitat. 1 CNDDB record within 1 mile of Project Area. |
| American glehnia *(Glehnia littoralis* ssp. *leiocarpa)* | None/None/4.2 | Coastal dunes; blooms May-Aug; at elevations ranging from 0 to 65 feet | None. Project Area does not contain suitable habitat. The species occurs at elevations lower than the Project Area. The nearest Calflora occurrences are approximately 16 miles north of the Project Area. |
| Congested-headed hayfield tarplant *(Hemizonia congesta* ssp. *congesta)* | None/None/1B.2 | Valley and foothill grassland; Grassy valleys and hills, often in fallow fields, sometimes along roadsides; blooms Apr-Nov; at elevations ranging from 65 to 1835 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. The CNDDB and Calflora include is a 1938 occurrence of this species approximately 15 miles northeast of the Project Area. |
| Tracy's tarplant *(Hemizonia congesta* subsp. *tracyi)* | None/None/4.3 | Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest; Openings, Serpentine (sometimes); blooms (Mar-Apr)May-Oct; at elevation ranging from 395 to 3935 ft | Low because of the distance to verified occurrences. The CNPS rare plant inventory reports this species within the Noyo Hill quad, but details on this observation are not provided. Calflora includes occurrences over 30 miles northeast of the Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*) | None/None/1B.2 | Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie; blooms Mar-Jun; at elevations ranging from 0 to 705 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. 3 CNDDB records within 5 miles of Project Area. |
| Pygmy cypress (*Hesperocyparis pygmaea*) | None/None/1B.2 | Closed-cone coniferous forest (usually podzol-like soil); at elevations ranging from 100 to 1970 ft | None. Project Area does not contain suitable habitat. 8 CNDDB occurrences within 5 miles of Project. |
| Point Reyes horkelia *(Horkelia marinensis)* | None/None/1B.2 | Coastal dunes, Coastal prairie, Coastal scrub; On sandy soil; blooms May-Sep; at elevations ranging from 15 to 2475 ft | Low. Grassland habitat in Project Area is managed and contains low quality habitat. The nearest CNDDB occurrence is approximately 13 miles north of the study area. A recent herbarium specimen was also collected from Russian Gulch State Park approximately 5 miles north of the Project Area. |
| Harlequin lotus (*Hosackia gracilis*) | None/None/4.2 | Broadleafed upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland; often roadside wetlands; blooms Mar-Jul; at elevations ranging from 0 to 2295 ft | High. Project Area contains suitable habitat. 12 Calflora records within 5 miles of Project Area. |
| Hair-leaved rush (*Juncus supiniformis*) | None/None/2B.2 | Bogs and fens, Marshes and swamps (freshwater); near coast microhabitats; blooms Apr-May(Jun-Jul); at elevations ranging from 65 to 330 ft | None. Project Area does not contain suitable habitat. 1 CNDDB record within 5 miles of Project Area. |
| Small groundcone (*Kopsiopsis hookeri*) | None/None/2B.3 | Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest; blooms Apr-Aug; at elevations ranging from 295 to 2905 ft | None. Species occurs at elevation that exceeds Project Area. 1 Calflora record within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Burke's goldfields (*Lasthenia burkei*) | FE/SE/1B.1 | Vernal pools and wet meadows; blooms April-June, at elevations 50 to 1970 feet | None. Suitable habitat does not occur in Project Area. No CNDDB occurrences within 5 miles of Project Area. |
| Baker's goldfields (*Lasthenia californica* ssp. *bakeri*) | None/None/1B.2 | Closed-cone coniferous forest (openings), Coastal scrub, Marshes and swamps, Meadows and seeps; blooms Apr-Oct; at elevations ranging from 195 to 1705 ft | None. Species occurs at elevation that exceeds Project Area. 1 CNDDB record within 5 miles of Project Area. |
| Perennial goldfields (*Lasthenia californica* ssp. *macrantha*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes, Coastal scrub; blooms Jan-Nov; at elevations ranging from 15 to 1705 ft | None. Project Area does not contain suitable habitat. 2 CNDDB records within 5 miles of Project Area. |
| Contra Costa goldfields (*Lasthenia conjugens*) | FE/None/1B.1 | Alkaline or saline vernal pools and swales; blooms March-June; below 700 feet; | None. Project Area does not contain suitable habitat. No CNDDB occurrences within 5 miles of Project Area. |
| Marsh pea (*Lathyrus palustris*) | None/None/2B.2 | Bogs and fens, Coastal prairie, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest; Mesic microhabitats; blooms Mar-Aug; at elevations ranging from 5 to 330 ft | Low. Project contains suitable habitat. 1 CNDDB record within 5 miles of Project Area. |
| Broad-lobed leptosiphon *(Leptosiphon latisectus)* | None/None/4.3 | Broadleafed upland forest, Cismontane woodland; blooms Apr-Jun; at elevations ranging from 560 to 4920 ft | None. This species occurs at elevations that are higher than the Project Area. |
| Coast lily (*Lilium maritimum*) | None/None/1B.1 | Broadleafed upland forest, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Marshes and swamps (freshwater), North Coast coniferous forest; Roadside (sometimes) microhabitats; blooms May-Aug; at elevations ranging from 15 to 1560 ft | Moderate. Project contains suitable habitat. 6 CNDDB records within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Redwood lily *(Lilium rubescens)* | None/None/4.2 | Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest; Sometimes found on roadside or serpentine; blooms (Mar)Apr-Aug(Sep); at elevations ranging from 100 to 6265 ft | Low because of the distance to verified occurrences. The nearest Calflora occurrence of this species is approximately 12 miles east of the Project Area |
| Heart-leaved twayblade (*Listera cordata*) | None/None/4.2 | Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest; blooms Feb-Jul; at elevations ranging from 15 to 4495 ft | Moderate. Project contains suitable habitat. Project Area contains suitable habitat. 2 Calflora records within 5 miles of Project Area. |
| Running-pine (*Lycopodium clavatum*) | None/None/4.1 | Lower montane coniferous forest (mesic), Marshes and swamps, North Coast coniferous forest (mesic); Edges (often), Openings, and Roadside microhabitats; blooms Jun-Aug(Sep); at elevations ranging from 150 to 4020 ft | Low. Potential habitat in Project Area. No Calflora records within 5 miles of Project Area. |
| Northern microseris (*Microseris borealis*) | None/None/2B.1 | Bogs and fens, Lower montane coniferous forest, Meadows and seeps; Mesic microhabitats; blooms Jun-Sep; at elevations ranging from 3280 to 6560 ft | None. Species occurs at elevation that exceeds Project Area. 1 CNDDB record within 5 miles of the Project Area. |
| Leafy-stemmed mitrewort (*Mitellastra caulescens*) | None/None/4.2 | Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest; Mesic and sometimes roadside microhabitats; blooms (Mar)Apr-Oct; at elevations ranging from 15 to 5580 ft | High. Potential habitat in Project Area. 1 CNDDB record within 5 miles of the Project Area. 13 Calflora records within 5 miles of Project Area (one approximately 0.15 miles east of Project Area), |
| Seacoast ragwort (*Packera bolanderi* var. *bolanderi*) | None/None/2B.2 | Coastal scrub, North Coast coniferous forest; Roadsides(sometimes) microhabitats; blooms (Jan-Apr)May-Jul(Aug); at elevations ranging from 100 to 2135 ft | Low. Potential habitat occurs in Project Area. 2 CNDDB records within 5 miles of Project Area. |
| North Coast phacelia (*Phacelia insularis* var. *continentis*) | None/None/1B.2 | Coastal bluff scrub, Coastal dunes; Rocky (sometimes), Sandy microhabitats; blooms Mar-May; at elevations ranging from 35 to 560 ft | None. Project area does not contain suitable habitat. No CNDDB occurrences within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Bolander's beach pine (*Pinus contorta* ssp. *bolanderi*) | None/None/1B.2 | Closed-cone coniferous forest (podzol-like soil); at elevations ranging from 245 to 820 ft | None. Project area does not contain suitable habitat. 11 CNDDB occurrences within 5 miles of Project Area. |
| White-flowered rein orchid (*Piperia candida*) | None/None/1B.2 | Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest; serpentine (sometimes); blooms (Mar-Apr)May-Sep; at elevations ranging from 100 to 4300 ft | Low. Potential habitat in Project Area, but serpentine soils are not present. No CNDDB record within 5 miles of Project Area. |
| California pinefoot (*Pityopus californicus*) | None/None/4.2 | Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest; Mesic microhabitats; blooms (Mar-Apr)May-Aug; at elevations ranging from 50 to 7300 ft | High. Suitable habitat occurs in Project Area. 5 Calflora records within 5 miles of Project Area, the closest of which is an historic occurrence is 0.15 mile is of Project. |
| Nodding semaphore grass *(Pleuropogon refractus)* | None/None/4.2 | Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, riparian forest; occurs in mesic areas; blooms (Feb-Mar)Apr-Aug; at elevations ranging from 0 to 5250 ft | Moderate. Project Area contains suitable habitat. Calflora contains several occurrences of this species in Russian Gluch State Park approximately 5 miles north of the Project Area. |
| Dwarf alkali grass *(Puccinellia pumila)* | None/None/2B.2 | Marshes and swamps (coastal salt); found in mineral spring meadows and coastal salt marshes; blooms Jul; at elevations ranging from 5 to 35 ft | None. Species occurs at elevations that are lower than the Project Area. Project Area does not contain suitable habitat. The nearest CNDDB and Calflora occurrence is approximately 13 miles north of the Project Area. |
| Angel's hair lichen (*Ramalina thrausta*) | None/None/2B.1 | North Coast coniferous forest on dead twigs and other lichens; at elevations ranging from 245 to 1410 ft | None. Species occurs at elevation that exceeds Project Area. 1 CNDDB occurrence within 5 miles of Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| White beaked-rush (*Rhynchospora alba*) | None/None/2B.2 | Bogs and fens, Marshes and swamps (freshwater), Meadows and seeps; blooms Jun-Aug; at elevations ranging from 195 to 6695 ft | None. Project Area does not contain suitable habitat. 1 CNDDB occurrence within 5 miles of Project Area. |
| Great burnet (*Sanguisorba officinalis*) | None/None/2B.2 | Bogs and fens, Broadleafed upland forest, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, riparian forest; often serpentine microhabitats; blooms Jul-Oct; at elevations ranging from 195 to 4595 ft | None. Species occurs at elevation that exceeds Project Area, which lacks serpentine soils. 2 CNDDB records within 5 miles of Project Area. |
| Point Reyes checkerbloom (*Sidalcea calycosa* ssp. *rhizomata*) | None/None/1B.2 | Marshes and swamps (freshwater, near coast); blooms Apr-Sep; at elevations ranging from 10 to 245 ft | None. Project Area does not contain suitable habitat. 2 CNDDB occurrences within 5 miles of Project Area. |
| Maple-leaved checkerbloom (*Sidalcea malachroides*) | None/None/4.2 | Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland; often disturbed areas; blooms (Mar)Apr-Aug; at elevations ranging from 0 to 2395 ft | Low. Project Area contains suitable habitat. No occurrences within 5 miles of Project Area. |
| Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) | None/None/1B.2 | Coastal bluff scrub, Coastal prairie, North Coast coniferous forest; often roadside and roadcut microhabitats; blooms (Mar-Apr)May-Aug; at elevations ranging from 50 to 4035 ft | Low. Project Area contains suitable habitat. 1 occurrence within 5 miles of Project Area. |
| Purple-stemmed checkerbloom (*Sidalcea malviflora* ssp. *purpurea*) | None/None/1B.2 | Broadleafed upland forest, Coastal prairie; blooms May-Jun; at elevations ranging from 50 to 280 ft | Low. Potential habitat in Project Area. No CNDDB occurrences within 5 miles of Project. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Trifoliate laceflower *(Tiarella trifoliata* var. *trifoliata)* | None/None/3.2 | Lower montane coniferous forest, North Coast coniferous forest; moist shady banks; blooms (May)Jun-Aug; at elevations ranging from 560 to 4920 feet | None. This species is found at elevations that are higher than the Project Area. Calflora reports this species in Jug Handle State Park approximately 9 miles north of the Project Area, and also from an occurrence 8 miles east of the Project Area. |
| Showy Indian clover (*Trifolium amoenum*) | FE/None/1B.1 | Low elevation grasslands, including swales and disturbed areas; blooms April–June | None. Low quality habitat occurs in managed grassland. The closest extant CNDDB occurrence is approximately 83 miles south of the study area. |
| Santa Cruz clover (*Trifolium buckwestiorum*) | None/None/1B.1 | Broadleafed upland forest, Cismontane woodland, Coastal prairie; Gravelly margins microhabitats; blooms Apr-Oct; at elevations ranging from 115 to 2000 ft | Low. Grassland offers low quality habitat. No CNDDB occurrences within 5 miles of Project. |
| Monterey clover (*Trifolium trichocalyx*) | FE/SE/1B.1 | In Monterey County found in closed-cone coniferous forest (burned areas, openings, sandy); In Mendocino County, found in coniferous forest dominated by redwood *(Sequoia sempervirens)*, Douglas fir *(Pseudotsuga menziesii)* and tanoak *(Notholithocarpus densiflorus)* at elevations ranging from 100 to 1000 feet; Generally, germinates in response to fire and other disturbance; blooms Apr-Jun; at elevations ranging from 100 to 1000 ft | Low. Project Area contains low quality habitat. No CNDDB occurrences within 5 miles of Project. The nearest CNDDB occurrence is 11.5 miles northeast of the study area (Occurrence No. 6). |
| Coastal triquetrella *(Triquetrella californica)* | None/None/1B.2 | Coastal bluff scrub, Coastal scrub; Grows within 30m from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops; Bryophyte (moss); at elevations ranging from 0 to 490 ft | None because the lack of suitable habitat and the distance to known occurrences. Calfora reports two 1968 herbarium collections from MacKerricher State Park over 20 miles north of the Project Area. |

| Common Name (*Scientific Name*) | Status: State/Fed/CNPS | Habitat | Potential to Occur |
|---|---|---|---|
| Methuselah's beard lichen (*Usnea longissima*) | None/None/4.2 | Broadleafed upland forest, North Coast coniferous forest; on tree branches of old growth hardwoods and conifers; at elevations ranging from 165 to 4790 ft | Low. Project Area contains few old growth trees. Species known to occur in quadrangle containing the Project Area. |
| Fringed false-hellebore (*Veratrum fimbriatum*) | None/None/4.3 | Bogs and fens, Coastal scrub, Meadows and seeps, North Coast coniferous forest; Mesic microhabitats; blooms Jul-Sep; at elevations ranging from 10 to 985 ft | High. Suitable habitat occurs in Project Area. 7 Calflora records within 5 miles of Project Area, of which four are within the Park and two are within 0.15 miles. |
| Alpine marsh violet *(Viola palustris)* | None/None/2B.2 | Bogs and fens (coastal), Coastal scrub (mesic); blooms Mar-Aug; Swampy; shrubby places in coastal scrub or coastal bogs; at elevations ranging from 0 to 490 ft | None. Suitable habitat is not found within the Project Area. Calfora reports a 1946 herbarium collection from MacKerricher State Park over 20 miles north of the Project Area. |

Notes:
FE = listed as Endangered under federal Endangered Species Act
SE = listed as Endangered under California Endangered Species Act
ST = listed as Threatened under California Endangered Species Act

California Rare Plant Ranks (CRPR): 1A = presumed extinct in California and rare or extinct elsewhere; 1B = rare, threatened, or endangered in California and elsewhere; 2A = presumed extirpated in California but common elsewhere; 2B = rare, threatened, or endangered in California but more common elsewhere; 3 = need more information; 4 = Watch List: plants of limited distribution. Threat code extensions are: .1 = seriously threatened in California; .2 = moderately threatened in California; and .3 not very threatened in California. Species with CRPR 3 or 4 ratings are not included on CNDDB unless they were formerly ranked with a 1 or 2.

## Table 2: Plant species observed (April 14, 2025 and May 28, 2025)

| Taxonomic Group | Family | *Scientific Name* | Common Name | Status |
|---|---|---|---|---|
| Fern | Athyriaceae | *Athyrium filix-femina* var. *cyclosorum* | Western lady fern | |
| Fern | Dryopteridaceae | *Polystichum munitum* | Western sword fern | |
| Fern | Equisetaceae | *Equisetum telmateia* ssp. *braunii* | Giant horsetail | |
| Fern | Polypodiaceae | *Polypodium glycyrrhiza* | Licorice fern | |
| Fern | Pteridaceae | *Adiantum aleuticum* | Five finger fern | |
| Gymnosperm | Pinaceae | *Abies grandis* | Grand fir | |
| Gymnosperm | Pinaceae | *Pseudotsuga menziesii* var. *menziesii* | Douglas-fir | |
| Dicot | Anacardiaceae | *Toxicodendron diversilobum* | Poison oak | |
| Dicot | Apiaceae | *Heracleum maximum* | Cowparsnip | |
| Dicot | Apiaceae | *Osmorhiza berteroi* | Sweet cicely | |
| Dicot | Apiaceae | *Sanicula crassicaulis* | Pacific sanicle | |
| Dicot | Araliaceae | *Aralia californica* | California spikenard | |
| Dicot | Araliaceae | *Hedera helix* | English ivy | x |
| Dicot | Asteraceae | *Bellis perennis* | Lawn daisy | x |
| Dicot | Asteraceae | *Carduus pycnocephalus* | Italian thistle | x |
| Dicot | Asteraceae | *Petasites frigidus* var. *palmatus* | Western coltsfoot | |
| Dicot | Asteraceae | *Sonchus asper* | Prickly sowthistle | x |
| Dicot | Asteraceae | *Sonchus oleraceus* | Common sowthistle | x |
| Dicot | Asteraceae | *Taraxacum officinale* | Dandelion | x |
| Dicot | Betulaceae | *Alnus rubra* | Red alder | |
| Dicot | Betulaceae | *Corylus cornuta var. californica* | Beaked hazelnut | |
| Dicot | Boraginaceae | *Myosotis latifolia* | Broadleaf forget-me-not | x |
| Dicot | Brassicaceae | *Cardamine californica* | Milkmaids | |
| Dicot | Brassicaceae | *Cardamine oligosperma* | Idaho bittercress | |
| Dicot | Caryophyllaceae | *Stellaria media* | Chickweed | x |

| Taxonomic Group | Family | *Scientific Name* | Common Name | Status |
|---|---|---|---|---|
| Dicot | Cucurbitaceae | *Marah oregana* | Coastal manroot | |
| Dicot | Fagaceae | *Notholithocarpus densiflorus* | Tanoak | |
| Dicot | Grossulariaceae | *Ribes bracteosum* | Stink Currant | |
| Dicot | Grossulariaceae | *Ribes sanguineum* var. *glutinosum* | Red-flowering Currant | |
| Dicot | Lamiaceae | *Lamium purpureum* | Purple deadnettle | x |
| Dicot | Lamiaceae | *Stachys ajugoides* | Bugle hedgenettle | |
| Dicot | Montiaceae | *Claytonia perfoliata* | Miner's lettuce | |
| Dicot | Montiaceae | *Claytonia sibirica* | Candy flower | |
| Dicot | Myricaceae | *Morella californica* | Pacific wax myrtle | |
| Dicot | Oxalidaceae | *Oxalis oregana* | Redwood sorrel | |
| Dicot | Oxalidaceae | *Oxalis smalliana* | Redwood sorrel | |
| Dicot | Papaveraceae | *Dicentra formosa* | Pacific Bleeding Heart | |
| Dicot | Polygonaceae | *Rumex crispus* | Curly dock | x |
| Dicot | Ranunculaceae | *Aquilegia formosa* | Columbine | |
| Dicot | Ranunculaceae | *Ranunculus muricatus* | Pricklefruit buttercup | x |
| Dicot | Ranunculaceae | *Ranunculus repens* | Creeping buttercup | x |
| Dicot | Rhamnaceae | *Frangula purshiana* | Cascara sagrada | |
| Dicot | Rosaceae | *Rubus parviflorus* | Thimbleberry | |
| Dicot | Rosaceae | *Rubus spectabilis* | Salmonberry | |
| Dicot | Rosaceae | *Rubus ursinus* | California blackberry | |
| Dicot | Rubiaceae | *Galium aparine* | Common bedstraw | |
| Dicot | Rubiaceae | *Galium triflorum* | Fragrant bedstraw | |
| Dicot | Rubiaceae | *Sherardia arevensis* | Field madder | x |
| Dicot | Saxifragaceae | *Tellima grandiflora* | Fringe cups | |
| Dicot | Saxifragaceae | *Tiarella trifoliata* | Threeleaf Foamflower | |
| Dicot | Urticaceae | *Urtica gracilis* | Stinging nettle | |
| Dicot | Viburnaceae | *Sambucus racemosa* var. *racemosa* | Red elderberry | |
| Dicot | Violaceae | *Viola glabella* | Stream violet | |

| Taxonomic Group | Family | *Scientific Name* | Common Name | Status |
|---|---|---|---|---|
| Dicot | Violaceae | *Viola sempervirens* | Redwood violet | |
| Monocots | Cyperaceae | *Carex leptopoda* | Slender-footed sedge | |
| Monocots | Cyperaceae | *Scirpus microcarpus* | Panicled bulrush | |
| Monocots | Melanthiaceae | *Veratrum fimbriatum* | Fringed cornlily | CRPR 4.3 |
| Monocots | Poaceae | *Bromus diandrus* | Ripgut brome | x |
| Monocots | Poaceae | *Bromus laevipes* | Narrow flowered brome | |
| Monocots | Poaceae | *Bromus sitchensis* var. *carinatus* | California brome | |
| Monocots | Poaceae | *Bromus vulgaris* | Columbia brome | |
| Monocots | Poaceae | *Festuca arundinacea* | Alta fescue | x |
| Monocots | Poaceae | *Festuca bromoides* | Brome fescue | x |
| Monocots | Poaceae | *Glyceria elata* | Tall mannagrass | |
| Monocots | Poaceae | *Hordeum murinum* ssp. *leporinum* | Foxtail barley | x |
| Monocots | Poaceae | *Poa annua* | Annual blue grass | x |
| Monocots | Poaceae | *Poa kelloggii* | Redwood blue grass | |
| Monocots | Poaceae | *Poa pratensis* | Kentucky blue grass | x |
| Monocots | Poaceae | *Poa trivialis* | Rough blue grass | x |
| Monocots | Poaceae | *Trisetum cernuum* | Nodding false oat | |

Notes:
x = Species considered non-native or introduced to the study area
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SE = listed as Endangered under California Endangered Species Act
ST = listed as Threatened under California Endangered Species Act

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# Appendix A
# Photographs



Photograph 1. Downstream of the bridge facing northeast toward the old bridge (May 28, 2025).



Photograph 2. Downstream of the bridge facing west away from the old bridge (May 28, 2025).



Photograph 3. Bank stabilization area downstream of the old bridge (May 28, 2025).



Photograph 4. Upstream of the bridge facing west toward the old bridge (April 15, 2025).



Photograph 5. Upstream of the bridge facing west toward the old bridge. This photograph shows the location of the new crossing. (April 15, 2025).



Photograph 6. The location of the new crossing upstream of the old bridge; taken from the north bank of Little River facing southwest (April 15, 2025).



Photograph 7. Campsite within the study area adjacent to the south bank of Little River (April 15, 2025).



Photograph 8. Fringed false hellebore *(Veratrum fimbriatum)* observed along the south bank of Little River in the study area.

August 12, 2025

County of Mendocino
Department of Planning and Building Services
860 North Bush Street
Ukiah, California 95482

**Van Damme State Park Little River Restoration and Bridge Replacement Alternatives Designs Analysis**

The California Department of Parks and Recreation (State Parks) is seeking to restore a segment of Little River by replacing a failed bridge that spans over the Little River within Van Damme State Park, in Mendocino County. Currently, a temporary railcar bridge is in place over a failed double arch culvert bridge. Failure of the double arch culvert could result in further degradation of aquatic habitat at this site.

State Parks has analyzed alternatives for replacing the failed bridge and determined that locating the bridge just upstream of the existing crossing would be the most advantageous and least environmentally damaging alternative. Below is a list of considerations that were explored.

**Option 1: Replace bridge in the exact location of the existing crossing.**
Due to the need for full-time access (there is a residence on the north side of the river), replacing the bridge in its current location would require construction of a temporary crossing. This would be both more expensive from a construction standpoint and more risky environmentally if the temporary crossing needed to remain in place through the winter. Furthermore, the existing crossing is at an angle that introduces downstream scour on the north embankment. The project as proposed straightens out the crossing and eliminates components of the existing bridge that are causing this downstream erosion.

**Option 2: Relocate the crossing downstream.**
State Parks considered moving the crossing downstream to a location that would provide for minimal additional placement of pavement. The alternative crossing locations were ultimately deemed unsatisfactory for several reasons. First, at the narrowest crossing location, truck turning movements were constrained. Achieving the proper turning radii would have resulted in the elimination of campsites. Further downstream, at the wider crossing, construction would have resulted in a larger riparian impact and more tree removal. See photos below of these locations:



*Narrow downstream crossing option. Not pictured are campsites that would be eliminated for truck turning movements.*



*Wider downstream crossing option. Note numerous trees.*

Second, maintaining a location near the existing crossing allows for utilities to be minimally impacted. Moving the bridge downstream would require costly utility extensions. More importantly, the sewer would potentially be too deep to hang from the bridge, resulting in the need for a pump station, force main and ESHA additional impacts.

**Option 3: Relocate bridge just upstream of the existing alignment.**
This option is what is currently proposed for the project. This would entail moving the bridge upstream of the current railcar bridge. This option was selected for several reasons. First, the alignment allows for utilities to cross on the bridge with minimal impact to the current depths and locations. Second, the alignment allows for trucks and camp trailers to make the turn to the north campground while maintaining a two-lane bridge. While this alignment does impact a large Douglas fir tree, the tree root wad and trunk will be put to good use. The root wad and trunk will be placed in the river in a fashion to introduce large woody debris, a practice that has been noted to provide beneficial fish habitat. Third, this option confines construction activities to one area. This option allows for restoration of the river channel at the failed bridge location with minimal impacts from the new alignment. The new alignment was walked by State Park botanical experts and no special status species were observed. Finally, this alignment also allows the existing railcar bridge to stay in place during construction. This will be demolished and the area restored once the proposed bridge is completed.

# Litte River Restoration and Bridge Replacement Project

# Restoration Plan

## Van Damme State Park

Mendocino County

July 2025

*Prepared By*:
**California Department of Parks and Recreation**
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Figure 1: Project Location Map

Figure 2: Project Vicinity Topographic Map

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Appendix 1: Representative Photographs

# 1. Introduction

## 1.1 Objective

The objective of this document is describe how the California Department of Parks and Recreation (State Parks) plans to meet the North Coast Regional Water Quality Control Board (Regional Board) stream and riparian mitigation and monitoring requirements for the Little River Restoration and Bridge Replacement Project (Project). To meet this objective, this restoration plan describes Project components that will be implemented to restore and improve habitat conditions at the Project Area and how success will be evaluated.

## 1.2 Responsible Parties

Permittee: California Department of Parks & Recreation

Contact: Joel Bonilla
2241 Harvard Street, Ste. 200
Sacramento, California 95815

The permittee will be financially responsible for the long-term maintenance and management, as needed, of the stream restoration features described in this report.

Restoration Manager: Lisa Paterson

California Department of Parks & Recreation
Northern Service Center
2241 Harvard Street, Ste. 200
Sacramento, California 95815

The Restoration Manager will oversee the completion of mitigation, monitoring, and reporting requirements.

# 2. Background

Van Damme State Park is located three miles south of Mendocino on Highway 1 (Figures 1 and 2). Little River bisects the Park. The Project Area is at a bridge that crosses Little River and provides access to a campground and the Fern Canyon Scenic Trail. The original bridge was built in 1951 and consists of a two-span corrugated metal arch on concrete abutments. Years of scour undermined the bridge foundations, and it ultimately failed in 2018. The underlying arch culverts are sagging, and the concrete abutments extend into the riverbed which impedes anadromous passage during low flows and contributes to erosion downstream. Little River is known to support the Northern California winter run steelhead (*Oncorhynchus mykiss irideus* pop. 49) and Northern California Coast Coho salmon (*Oncorhynchus kisutch* pop. 4).

# 3. Project Description

The objective of the Little River Restoration and Bridge Replacement Project is to restore anadromous fish passage during low flows and replace a failed bridge at Little River in Van Damme State Park.

Site Preparation:

Construction staging will be limited to campsite 20 and 21, within Van Damme State Park. Each site has a compacted and disturbed area of approximately 1,500 square feet, which is adequate for equipment and material storage.

Brush clearing for the proposed bridge site will use chainsaws and other gas-powered hand tools. The bridge abutments, and riprap would require clearing and grubbing of approximately 80 linear feet, at each bridge abutment (Plan Sheet: C-1). The new bridge abutment is approximately 30 feet wide, and the Rock Slope Protection (RSP) will be placed directly under the bridge and 25 feet upstream and 25 feet downstream along the slope. Salvaged woody debris will be used for restoration work.

A total 300-foot portion of Little River will be temporarily dewatered with a sandbag or bladder dam. Upstream water will be piped, via gravity flow, downstream of the construction site. The construction window for the Project is June 15 through October 31 to avoid steelhead spawning. A dewatering plan will be prepared by a State Parks Contractor prior to construction.

Road Extension:

Construction of the new bridge will require an extension of the roadway on the south side of the river. The road will be extended approximately 240 feet on the south side of the river to accommodate a new bridge alignment (Plan Sheet: L-1). Pavement conforms will be necessary on the north side of the river to connect the new bridge to the existing roadway (Plan Sheet: C-3). The road extension on the south side of the river will traverse through an existing bike-in campsite which is a compacted and disturbed area.

New Bridge:

The existing temporary bridge will be left in place while the new bridge is being constructed to allow access to the park and the construction site. The new bridge will be delivered to the site as preassembled modular units (including girders, secondary framing, metal deck forms), and transported on a flatbed truck and craned into position. Additional assembly work would include bolting and potential welding that would occur on site. The guardrails and barriers will likely consist of wood to match the park's aesthetics. Temporary excavation shoring will be required where the new bridge abuts the old bridge (Plan Sheet: S2.1). The new bridge alignment will be more perpendicular to the river than the existing structure, aiding with river hydraulics and reducing scour.

Similar to the existing bridge, utilities will be hung from the bridge to service the combo building on the north side of the river. The abutments for the bridge will require driving steel H-piles into the ground using diesel or hydraulic hammers. The piles will be driven until refusal is achieved. Splicing of steel H-piles may be required to increase the pile length as required. Rock Slope Protection (RSP) will be necessary around the abutments to minimize scouring and provide protection against geologic hazards. The project is located within a Tsunami hazard area. Approximately 0.02 acres of RSP will be placed on the Southside slope and 0.01 acres of RSP will be placed along the Northside slope (Plan Sheet: C-1).

Restoration Work:

The removal of 12 trees, predominantly red alder and one grand fir (Abies grandis) with a diameter at breast height of approximately 47 inches, is necessary to accommodate the prosed bridge and roadway (Plan Sheet: L-1). The material from those trees will be re-used to aid with revegetation and/or large woody debris augmentation. The large grand fir will be moved 150 feet downstream of the old bridge and would be anchored into the slope with 15-inch diameter RSP (Plan Sheet: C-2). The root wad will enhance aquatic habitat and provide slope protection to an existing road slope failure.

Upon completion of the proposed bridge, the old bridge and abutments will be removed. All components will be removed including the underlying concrete slab as well as the adjacent retaining wall (upstream). A road slope failure will also be repaired.

# 4. Environmental Setting

The Project Area is located along the Mendocino County coast in Van Damme State Park which covers approximately 2,170 acres including 20 acres of marine environment (Figure 1). Little River runs through the park with its mouth at Van Damme Beach. The park extends about three miles inland, encompassing nearly 55% of the Little River watershed. It is the home for spawning steelhead and coho salmon during the winter months.

The Project Area is within the steep-walled Fern Canyon of the Little River watershed at the location of a bridge over the river that provides access to the campground and the Fern Canyon Scenic Trail.

The Project Area is approximately 0.4 miles east of State Highway 1 (Figure 2), and approximately 0.5 miles northeast of the Van Damme State Marine Conservation Area and includes the temporary bridge, the failed bridge along Little River, the road on either side of the bridge, the location of the road extension to the new bridge, and the small bank stabilization area.

Land use in and around the Project Area includes the Van Damme State Park trails and campgrounds, Highway 1, privately-owned open space, Little River Golf Course, rural residential areas, a regional airport, and the town of Little River.

## 4.1 Climate

Climate data for the Project Area was sourced from the Fort Bragg 5N COOP Weather Station (ID: 043161), which averages 42.83 inches of annual precipitation (Western Regional Climate Center 2024). Van Damme State Park has cool, wet winters and mild, foggy summers. The mean maximum annual air temperature is 60.2 Fahrenheit (°F), and the mean minimum annual temperature is 44.6°F (Western Regional Climate Center 2024). The coolest temperatures occur in December and January, and the warmest months are July and August.

## 4.2 Topography

The Project Area occurs in the outer Coast Range foothills within an incised ravine containing Little River known as Fern Canyon. The average elevation within the Project Area is approximately 130 feet above mean sea level.

## 4.3 Hydrology

The Project Area centers around Little River which is fed by precipitation and the water table. Beal Creek converges with Little River downstream of the Project Area before it drains to the Pacific Ocean.

The National Wetland Inventory (NWI) classified Little River and Beal Creek as intermittent riverine features that have temporarily flooded streambeds (R4SBA); near their convergence, NWI reported broad-leaved deciduous scrub-shrub wetlands that are irregularly flooded, estuarine, and intertidal (E2SS1P) (Figure 3; USFWS 2024).

## 4.4 Aquatic Resources Delineation

An aquatic resources delineation of the Project Area was conducted in 2024. In total, 0.280 acres of Little River was delineated in and near the Project Area that is expected to be jurisdictional waters of the US and waters of the state regulated by the U.S. Army Corps of Engineers (ACOE) and Regional Board (Figure 4). The Ordinary High-Water Mark (OHWM) indicators used to delineate Litte River consisted of shelving, litter removal, and wrack. Abutted by roads, Little River is incised in the Project Area. As a result, Little River does not have access to a traditional floodplain. The results of the delineation concur with the NWI's classification of Little River as R4SB, an intermittent riverine feature with a streambed (USFWS 2024).

## 4.5 Biological Conditions

The Project Area is in the North Coast subregion of the California Floristic Province (Jepson Flora Project 2025). Little River flows through a red alder (*Alnus rubra*) riparian forest. The banks are dominated by an understory of ferns and vines, including the following dominant species: sword fern (*Polystichum munitum*), California blackberry (*Rubus ursinus*), cow parsnip (*Heracleum maximum*), thimbleberry (*Rubus parviflorus*), western lady fern (*Athyrium filix-femina*), elk clover (*Aralia californica*), and a variety of herbaceous species not in bloom at the time of the field visits. The biological conditions at the Project Area are described in detail in the Biological Resources Assessment for this Project (State Parks 2025).

# 5. Restoration Plan

## 5.1 Basis for the Restoration Plan

Existing site conditions, the 2024 aquatic resources delineation, and the Project design were used as the basis for this restoration plan. The current failed bridge includes a concrete slab in the bed of the river that is a barrier to fish passage during low flows. The new bridge will span Little River, and impacts will be limited to bridge foundations and rock installation on the bank adjacent to the bridge foundations. The construction of the new bridge and installation of RSP protection will result in permanent impacts to 160 linear feet on the banks of Little River. To offset this disturbance, the existing bridge and concrete crossing in the bed of Little River will be removed and the banks will be revegetated through plantings and natural recruitment. This will result in the restoration of approximately 87 linear feet of the Little River bank. This includes restoration of 59 feet from the removal of the old bridge abutments and the removal of a 28 linear foot concrete retaining wall, located on the southside of the bridge. Additionally, 72 square feet will be restored within the Little River streambed through the removal of the old bridge pier foundation and 177 square feet will be restored through the removal of the old ford river crossing.

## 5.2 Goals

- Reduce the footprint of the bridge in bed and banks of Little River.
- Improve anadromous fish passage.
- Stabilize existing bank erosion.
- Ensure the revegetation of the banks of Little River in the Project Area after the completion of the Project.

## 5.3 Actions

The Restoration Site encompasses the Project's ground disturbance locations and a 25-foot buffer around the ground disturbance. The Project's restoration goals will be accomplished through the following actions:

a) The old bridge including the concrete slab in the riverbed will be removed to restore anadromous fish passage.

b) Bank contours will be restored at the location where the old bridge was removed and the road slope failure location. Slash from tree removal will be used to stabilize gentle slopes and coconut fiber will be used on steeper slopes.

c) The grand fir will be successfully incorporated into the stream for large woody debris augmentation.

d) Native herbaceous species (e.g., ferns) and shrubs (e.g., elk clover and thimble berry) will be salvaged at locations proposed for ground disturbance. The excavated specimens will be stored in a shady location and transplanted to the old bridge location and road slope failure location after the location's contours have been restored.

e) Cuttings from local willows (*Salix* spp.) will be planted at the old bridge location and road slope failure location in areas that receive enough sunlight. Alder and red elderberry *(Sambucus racemosa)* cuttings will be planted in the shadier areas. All cuttings will be taken from the project site or from areas adjacent to Little River within Van Damme State Park. At a minimum, one cutting will be planted every five linear feet on both banks within the disturbance area.

f) Invasive species with a California Invasive Plant Council rating of Moderate or High[1] will be removed within 25 feet of Project Activities if feasible.

## 5.4 Schedule

Restoration Actions a), b), and c) will be completed by October 31 of the year that bridge construction is completed. Bridge construction is expected to be completed in one season (June 15 to October 31). These actions will be included in the contract for bridge construction and will be required for successful completion of the contract.

Initial planting [Restoration Actions d) and e)] will be completed by November 30 during the year that bridge construction is completed.

Invasive plant abundance will be assessed during each annual monitoring survey conducted in May or June of each year following the completion of construction, and necessary invasive species control will be conducted during summer or fall following each monitoring survey.

[1] https://www.cal-ipc.org/plants/profiles/

# 6. Monitoring

Restoration efforts will be monitored annually in May or June starting the first year after construction is completed to evaluate whether the performance standards were achieved.

The first monitoring report will be submitted to the Regional Board by January 31, two years after the completion of the bridge construction. (If the project is completed in October of 2026, monitoring visits will be conducted in the spring of 2027 and 2028, and the first monitoring report will be submitted in January of 2029.)

Annual monitoring will continue for two years or until performance standards are met. Monitoring will be conducted on both the north and south banks of Little River within the disturbance area of the project and at two undisturbed reference sites, one on the north bank and one on the south bank. The reference sites will be roughly equivalent in size to the disturbance area that is monitored on each bank, within approximately 50 feet upstream or downstream of the disturbance area, and representative of the existing riparian vegetation that occurs along Little River.

The following actions will be conducted during each monitoring visit at the four monitoring locations (north bank Project Site, south bank Project Site, north bank reference site, and south bank reference site) prior to construction and during monitoring surveys:

- Survey for new occurrences of invasive plants.
- Survey for evidence of erosion.
- Record the absolute percent cover of native species and non-native species within the understory (less than 10 feet in height).
- Record the overstory tree and large shrub cover (greater than 10 feet in height).
- Record the number of surviving willow *(Salix* spp.), red alder, and red elderberry plants (cuttings and naturally occurring plants).
- Record the percent of bare ground.
- Take photographs from eight permanent photo points including two photo points at each of the four monitoring locations.

## 6.1 Performance Standards

a) The old bridge and its concrete abutments, the impediment for anadromous fish passage, were successfully removed.
b) There will be no erosion or evidence of sedimentation at the old bridge and road slope failure locations.
c) Total plant cover within the Project Site monitoring locations will be at least 35%.

d) The combined number of live woody cuttings (willow, alder, and elderberry) or plants of these species that occur through natural recruitment in the Project Site monitoring locations will be at least 50% of the number of these species corresponding reference sites.
e) Invasive species cover is lower than or equal to the neighboring undisturbed portions of the stream.
f) The large woody debris augmentation is securely anchored.

The monitoring report will document the Project Site's progress towards or satisfaction of the performance standards listed above. The monitoring report will list the 10 dominant plant species in the old bridge and road slope failure locations, the percent cover of native species, the percent cover of invasive species, and the number woody saplings or cuttings at those locations.

Ten photograph stations will be established prior to the start of construction focused on the locations where ground disturbance will occur (e.g., old and new bridge locations, road slope failure, road extension, grand fir to be removed); photographs will be taken at these locations prior to the start of construction. The monitoring effort will capture a photograph from the same location facing the same vantage point.

The monitoring report will detail the results of the monitoring survey and any adaptive management actions that were implemented and the timeline of those that will be implemented.

# 7. Maintenance and Adaptive Management

If performance criteria are not satisfied during the year 2 monitoring, State Parks will develop measures to address how the restoration site can be modified to satisfy the criteria and propose a timeline for its implementation. If the performance criteria are not satisfied during the year 2 monitoring, State Parks will then conduct annual monitoring of the restoration site with a monitoring report submitted to the respective agencies as described above at the end of each year's monitoring; annual monitoring will ensue until the performance criteria are satisfied. The monitoring report will detail the adaptive management measures that were implemented.

# 8. Long-Term Management

Van Damme State Park will remain under State Parks ownership and management.

# 9. Financial Assurances

California Department of Parks and Recreation will be responsible for providing financial assurances for implementation and completion of the riparian habitat mitigation.

# 10. Completion of Compensatory Mitigation Plan

## 10.1 Notification of Completion

State Parks will notify the North Coast Regional Water Quality Control Board upon completion of the Project's mitigation plan. Completion of the plan will be contingent upon satisfaction of the performance standards listed in Section 6.1.

## 10.2 Agency Confirmation

After State Parks has submitted the final annual report and Notification of Completion, Regional Board representatives can request a site visit to verify successful completion. Once the regulatory agencies have verified completion of the Plan, State Parks will be free of further obligation.

# 11. References

California Department of Parks and Recreation (State Parks). 2025. Little River Restoration and Bridge Replacement Project, Biological Resources Assessment. California Department of Parks and Recreation, Northern Service Center, Sacramento, CA.

U.S. Fish and Wildlife Service. 2024. National Wetlands Inventory, California data download, Version 6.2 (Build 9200). U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Accessed November 26, 2024. https://www.fws.gov/program/national-wetlands-inventory/download-state-wetlands-data

# Figures

**Figure 1. Project Location.**

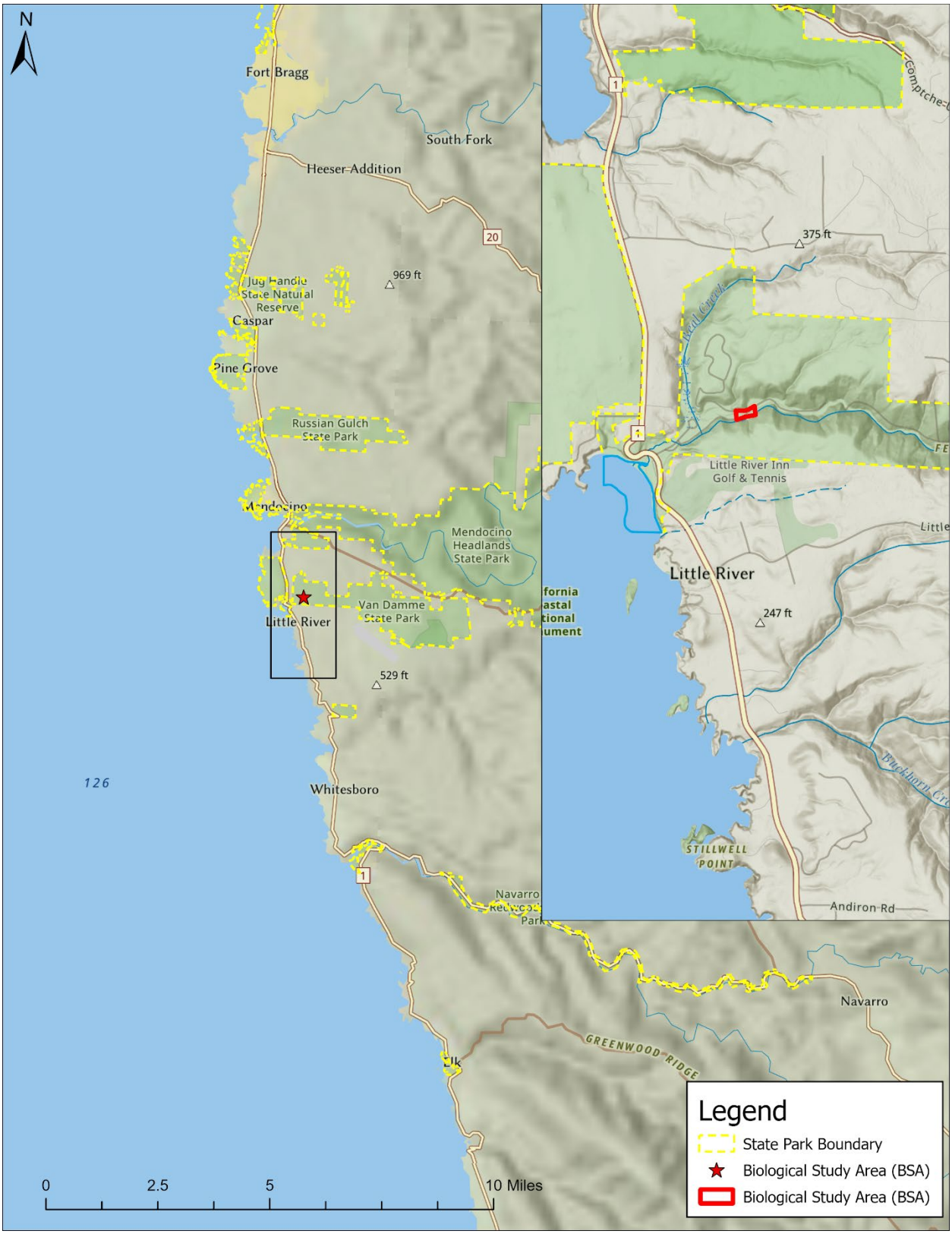


**Figure 2. Study Area.**



**Figure 3. National Wetlands Inventory (NWI) data for the Project Area and surrounding area (USFWS 2024).**

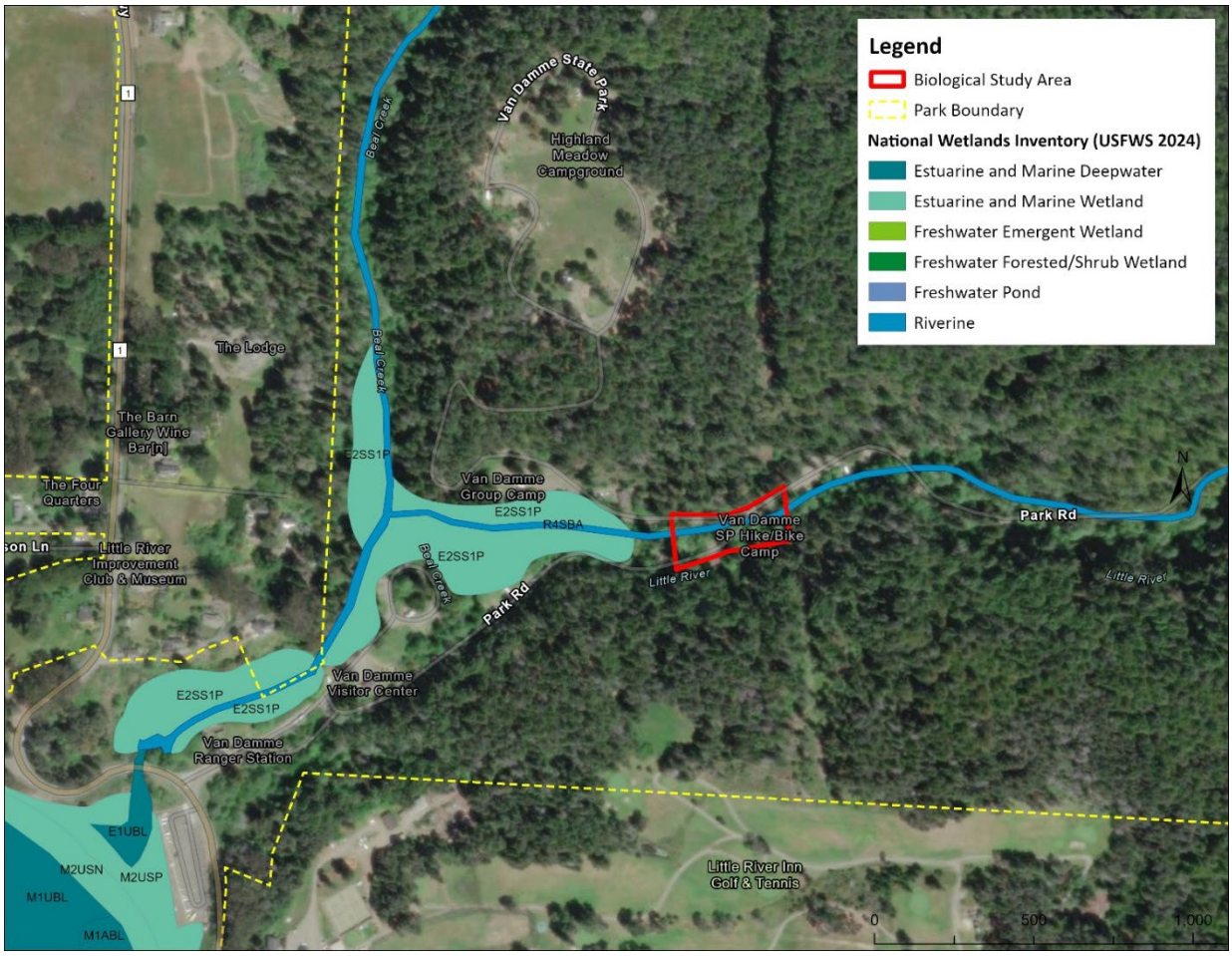


**Figure 4. Aquatic resources delineation results.**



# Appendix 1 – Representative Photographs

Photograph 1:

Looking southwest is a downstream view of the bridge.



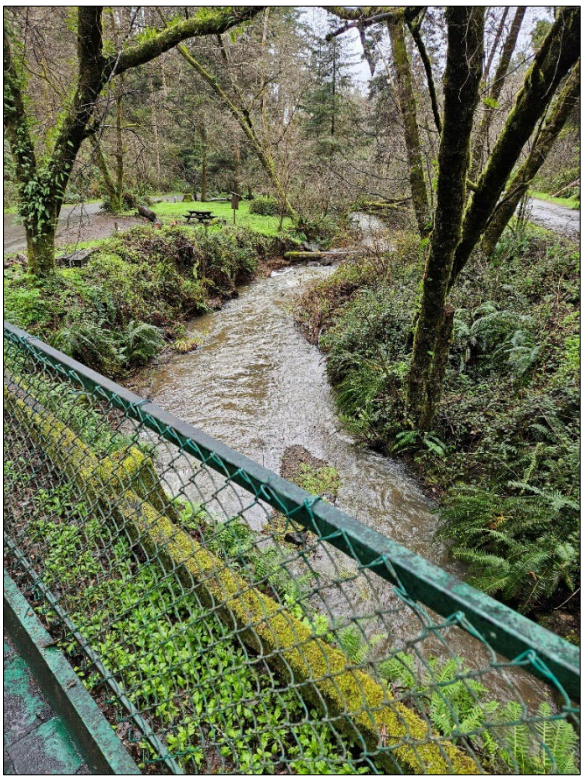


Photograph 2:

Looking northeast is an upstream view of the bridge. Note the concrete abutment is a fish barrier during low flows.

Photograph 3:

From the bridge is a view downstream





Photograph 4:

View from bridge looking upstream. The replacement bridge will be placed just upstream of the existing bridge.

Photograph 5:

View of south riverbank.





Photograph 6:

View of south riverbank (just upstream of Photograph 5's vantage) where the new bridge will be constructed.

Photograph 7:

View looking northeast towards where the new bridge will connect on the north bank.



State of California • Natural Resources Agency
Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Armando Quintero, *Director*

Julianne Polanco, State Historic Preservation Officer
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March 27, 2024

In reply refer to: UAID: CAPAR_2024_0308_002

VIA EMAIL

Leslie J. Hartzell, PhD
Department Preservation Officer and Tribal Liaison
Cultural Resources Division Chief
California State Parks
PO Box 942896
Sacramento, CA 94296

**RE: PRC § 5024 Determination of Eligibility for Van Damme Bridge #1, Van Damme State Park, Mendocino County**

Dear Dr. Hartzell:

The Office of Historic Preservation has received the March 8, 2024 letter from the Department of Parks and Recreation (DPR) initiating consultation pursuant to Public Resources Code (PRC) Section 5024 for the eligibility determination of the Van Damme Bridge #1 in Van Damme State Park.

The submission included the following documentation:

- "Van Damme Bridge #1 DPR 523 Forms" (2024)

Per the evaluation, Van Damme Bridge #1 is one of two identical concrete double-arch culvert bridges constructed in 1951 to replace circa 1934 CCC-constructed wood bridges. After repeated weather-induced structural damage over several years, a 2018 atmospheric river caused massive flooding and the bridge's collapse. A temporary steel railroad car frame was installed over the failed bridge to allow vehicle and pedestrian traffic to cross the Little River.

DPR determined that the Van Damme Bridge #1 in Van Damme State Park does not meet eligibility criteria for the National Register of Historic Places or the California Historical Landmarks program.

OHP has reviewed the documentation submitted and is offering the following comments.

**I concur** that the Van Damme Bridge #1 in Van Damme State Park is not eligible under National Register Criterion A because it is not associated with significant events at the local, state, or national level. The property is not eligible under Criterion B because it is not associated with any significant individuals and not eligible under Criterion C because it Is not an important example of a type, period, or method of construction and is not a work of high artistic value or designed by a master architect. The property is not eligible under Criterion D, as it is unlikely to yield information important to history or prehistory.

In the absence of significance under any of the criteria, no formal assessment of integrity was made. It appears the property has lost integrity of design, materials, workmanship, feeling, and association.

**I concur** that the Van Damme Bridge #1 in Van Damme State Park does not meet the eligibility criteria of the California Historical Landmarks program. The property is not the first, last, only, or most significant historical property of its type or for its association in the region.

The Van Damme Bridge #1 in Van Damme State Park will not be added to the Master List of Historical Resources.

If you have any questions about our assessment of this evaluation, please contact Amy Crain at amy.crain@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer
California Office of Historic Preservation

Docusign Envelope ID: 278C5B28-ECAE-433F-9294-EDCBAB00FB6A

**CEQA # 13510**

**State of California – The Resources Agency**
**DEPARTMENT OF PARKS AND RECREATION**

# NOTICE OF EXEMPTION

**TO:** Office of Planning and Research
1400 Tenth Street
Sacramento, CA 95814

**FROM:** Department of Parks and Recreation
2241 Harvard Street, Suite 200
Sacramento, CA 95815

**PROJECT TITLE:** Little River Restoration and Bridge Replacement

**LOCATION:** Van Damme State Park **COUNTY:** Mendocino

**DESCRIPTION OF THE NATURE AND PURPOSE OF PROJECT:** The project proposes to replace a single lane, rail car bridge over Little River in Van Damme State Park to provide adequate access to the park's campground and Fern Canyon Scenic Trail. For purposes of access, the existing bridge will remain in place while the new bridge is constructed. Work will:

- Extend the existing roadway on the south side of the river;
- Conform the pavement, as necessary, on the north side of the river;
- Use sandbags or a bladder dam to dewater the river and pipe water, via gravity feed, through the site;
- Approximately 6-7 ft below the river channel elevation, compact the soil and install abutments on top of the compacted soil;
- Install rock slope protection to minimize future scouring;
- Install a pre-fabricated steel girder, two-lane, bridge with timber guardrails and barriers;
- Utilize the underside of the new bridge to carry utilities to the existing combination building;
- Remove the existing bridge and abutments, including the underlaying concrete slab and upstream retaining wall; and
- Remove the damming devices and regrade the disturbed area to a more natural condition and allow for revegetation.

**PUBLIC AGENCY APPROVING THE PROJECT:** California Department of Parks and Recreation

**NAME OF DIVISION OR DISTRICT CARRYING OUT THE PROJECT:** Northern Service Center

**EXEMPT STATUS:**
☒ Categorical Exemption *Class:* 33 *Section:* 15333

**REASONS WHY PROJECT IS EXEMPT:** Project consists of projects not to exceed five acres in size to assure the maintenance, restoration, enhancement, or protection of habitat for fish, plants, or wildlife.

**CONTACT:** Joel Bonilla
Northern Service Center

**PHONE NO.:** (279) 499-1205
**EMAIL:** Joel.Bonilla@parks.ca.gov

DocuSigned by:
Brian Dewey
4B24ADBC7E7B4B1...

2/19/2025

Brian Dewey
Assistant Deputy Director
Facilities and Development

DATE