

Little River Trail Project

Natural Environment Study



Humboldt County, California
Township 8N, Range 1E, Section 31, Township 7N, R1E Sections 6 and 7
USGS *Crannell, California* 7.5-Minute Quadrangle
01-HUM-101-96.96-97.83
Federal Project No. 01-0J280


March 2022



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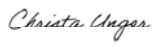
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STATE OF CALIFORNIA
Department of Transportation

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Acronyms and Abbreviations

°C, °F	degrees Celsius, degrees Fahrenheit
BA/EFHA	Biological Assessment/Essential Fish Habitat Assessment
BMP	best management practice
BSA	biological study area
Caltrans	California Department of Transportation
CCC	California Coastal Commission
CCC waters	waters within California Coastal Commission jurisdiction
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	Humboldt County
CWA	Clean Water Act of 1977, as amended
dbh	diameter at breast height
DPS	distinct population segment
EFH	essential fish habitat
EO	Executive Order
ESA	environmentally sensitive area
ESHA	environmentally sensitive habitat areas
ESU	evolutionarily significant unit
FESA	federal Endangered Species Act of 1973
FMP	Fisheries Management Plan
LCP	Local Conservation Plan
MBTA	Migratory Bird Treaty Act
MSFCMA	Magnuson Stevens Fishery Conservation and Management Act
MSE	mechanically stabilized earth
NES	Natural Environment Study
NMFS	National Oceanic and Atmospheric Administration National Marine Fisheries Service
project	Little River Trail Project
PPMC	Pacific Fisheries Management Council
RCAA	Redwood Community Action Agency
RWQCB	Regional Water Quality Control Board
SONCC	Southern Oregon/Northern California coast
Stantec	Stantec Consulting Services Inc.
SWPPP	Stormwater Pollution Prevention Plan
U.S.	United States
US 101	U.S. Route 101
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service

Summary

The Redwood Community Action Agency and the California Department of Transportation is planning to implement the Little River Trail Project (project) between the communities of McKinleyville and Trinidad in Humboldt County. The 1-mile-long Class 1 trail would provide a non-motorized connection between Clam Beach Drive at the southern end and Scenic Drive at the northern end and would close a critical gap in the California Coastal Trail system. Stantec Consulting Services Inc. (Stantec) prepared this Natural Environment Study (NES) to evaluate the project's potential effects on sensitive biological resources. The project occurs in the California Coastal Zone; therefore, the study also evaluates biological resources managed by the California Coastal Commission (CCC), including waters within CCC jurisdiction (CCC waters) and Environmentally Sensitive Habitat Areas (ESHAs).

This NES will be submitted to the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) for review under Section 7 of the federal Endangered Species Act (FESA) to address potential impacts to federally listed fish species and their critical habitat. A biological study area (BSA) was selected to evaluate potential effects and includes all project components as well as a buffer to allow for changes in the final project design. The BSA also serves as the action area for this effort.

Stantec conducted a delineation of wetlands and waters to determine whether potential waters of the United States (U.S.) and state and CCC waters were present in the BSA. Potentially jurisdictional waters mapped within the BSA include riparian wetland, riparian/fresh emergent wetland complex, fresh emergent wetland, vegetated ditch, and perennial stream. Potential waters of the U.S. total 2.92 acres (367 linear feet) and potential CCC waters total 4.10 acres (367 linear feet). Construction activities adjacent to the trail would temporarily impact less than 0.01 acre of potential waters of the U.S. and state and 0.08 acre of CCC waters. Grading and fill associated with the trail would permanently impact 0.01 acre of potential waters of the U.S. and state and 0.20 acre of CCC waters. Replacement of riparian vegetation would occur on-site at ratios acceptable to jurisdictional resource agencies in accordance with the project's Habitat Mitigation and Monitoring Plan. Cumulative impacts are not anticipated.

Stantec conducted vegetation mapping in the BSA, which included designating ESHAs, sensitive natural communities, and riparian habitat. Stantec delineated the limits of these resources in the BSA and designated upland ESHAs, which excludes potential waters of the U.S. and state, and CCC waters (described above). Stantec determined that all sensitive natural communities are either CCC waters or upland ESHAs, thus, impacts on sensitive natural communities are included in those sections. Impacts on riparian habitat outside of potential waters of the U.S. and CCC waters are not anticipated. Implementation of the project would result in the direct loss and indirect disturbance of upland ESHAs. Construction activities would temporarily impact 0.25 acre of upland ESHAs and would permanently impact 0.89 acre of upland ESHAs. Replacement of ESHAs would occur on-site at ratios acceptable to jurisdictional resource agencies in accordance with the project's Habitat Mitigation and Monitoring Plan. Cumulative impacts are not anticipated.

Redwood Community Action Agency conducted a botanical survey in April, May, August, and September 2021. The survey located one special status plant occurrence in the BSA: trailing black currant (*Ribes laxiflorum*), California Rare Plant Rank 4.3. No other special status plant species were found during the protocol-level survey. Direct impacts would not occur since the

occurrence is outside of the construction footprint. Avoidance measures would prevent indirect impacts to the species and cumulative impacts are not anticipated.

All non-native plant species observed in the BSA during the botanical survey were reviewed to determine their status as invasive plants according to the ratings in the California Invasive Plant Inventory produced by California Invasive Plant Council (Cal-IPC). Nineteen species observed during the botanical surveys are considered to be invasive by Cal-IPC. Conservation measures will be applied during construction to prevent the spread of invasive plants. Direct, indirect, and cumulative impacts are not anticipated with the application of invasive plant conservation measures.

Based on the review of habitat requirements and the results of the field assessments, the BSA has potential habitat for 20 special status wildlife species. Wildlife species are summarized below by taxonomic group, including fish, amphibians and reptiles, birds, bats, and mammals (excepting bats).

Fish species with the potential to occur include Southern Oregon/Northern California coast (SONCC) evolutionarily significant unit (ESU) coho salmon (*Oncorhynchus kisutch* pop. 2), California Coastal ESU Chinook salmon (*Oncorhynchus tshawytscha* pop. 17), Northern California Distinct Population Segment (DPS) steelhead (*Oncorhynchus mykiss irideus* pop. 16), coastal cutthroat (*Oncorhynchus clarkii clarkii*), western brook lamprey (*Lampetra richardsoni*), and Pacific lamprey (*Entosphenus tridentatus*). The following fish species were evaluated and determined not likely to occur or be affected by the project: southern DPS green sturgeon (*Acipenser medirostris*), southern DPS eulachon (*Thaleichthys pacificus*), and tidewater goby (*Eucyclogobius newberryi*). Potential direct and indirect effects on fish species include turbidity increases, exposure to hazardous chemicals or accidental spill of lubricants and fuels, alteration of riparian habitat, and construction-related noise and visual disturbances. Cumulative effects are not anticipated. Conservation measures to prevent spills, erosion, and sedimentation are provided to prevent impacts. Avoidance measures, including a preconstruction survey and debris catchment for bridge work, will be implemented to further avoid impacts.

The study determined that SONCC ESU coho salmon and California Coastal ESU Chinook salmon essential fish habitat (EFH) is present in the BSA. Potential effects on EFH include a temporary increase in turbidity and suspended sediment from construction area stormwater runoff, accidental release of hazardous chemicals/accidental spill of lubricants and fuels, alteration of riparian habitat, and effects from construction-related noise and visual effects. Measures provided for fish species will also serve to avoid impacts on EFH.

This NES will be submitted to NMFS for review under Section 7 of the FESA to address potential impacts to federally listed fish species and their critical habitats, including Northern California DPS steelhead, California Coastal ESU Chinook salmon, and the SONCC ESU coho salmon. With the implementation of conservation and avoidance measures contained in this NES, take of these species would be avoided. A determination of "May Effect, Not Likely to Adversely Affect" was made for Northern California DPS steelhead, California Coastal ESU Chinook salmon, and the SONCC ESU coho salmon. Additionally, due to the discountable probability of presence within the BSA, a "No Effect" determination was made for the southern DPS green sturgeon, southern DPS eulachon, and tidewater goby.

Special status amphibians and reptiles with the potential to occur include Northern red-legged frog (*Rana aurora*), Southern torrent salamander (*Rhyacotriton variegatus*), and Western pond turtle (*Emys marmorata*). Potential direct effects include harassment, injury, and mortality of

individuals due to equipment and vehicle traffic. Indirect effects could occur if construction activities result in degradation of aquatic habitat and water quality due to erosion and sedimentation, accidental fuel leaks, and spills. Vegetation removal may degrade upland habitat for Western pond turtle. Trail lighting and human disturbance from trail use may also decrease special status amphibian and reptile use of the area. Avoidance and minimization measures, including a pre-construction survey, would reduce the potential for adverse impacts on these species.

Special status birds with the potential to occur include the following species:

- Tricolored blackbird (*Agelaius tricolor*)
- White-tailed kit (*Elanus leucurus*)
- Northern harrier (*Circus cyaneus*)
- Vaux's swift (*Chaetura vauxi*)
- Purple martin (*Progne subis*)
- Yellow warbler (*Setophaga petechia*)
- Yellow-breasted chat (*Icteria virens*)

The riparian and forested habitats in and near the BSA and the bridge over the Little River provide nesting habitat for special status birds and other protected raptors and migratory birds. Cliff swallows (*Petrochelidon pyrrhonota*) were observed nesting on the bridge and are protected under the Migratory Bird Treaty Act. Direct impacts could occur if active nests are present and disturbed during project construction. Avoidance measures, including pre-construction surveys and a nest exclusion device to be placed on the bridge, would prevent direct impacts. Indirect and cumulative impacts are not anticipated.

Special status bats with the potential to occur include pallid bat (*Antrozous pallidus*) and Townsend's big-eared bat (*Corynorhinus townsendii*). Due to the absence of suitable habitat for maternity colonies and the ability of individual roosting bats to move away from disturbances, direct, indirect, or cumulative impacts are not anticipated. However, an avoidance measure is provided that details the need for a bat survey in the year prior to construction to determine if site conditions have changed and if bats may use the bridge for maternity colonies. Additional measures will be provided if habitat conditions have changed.

Special status mammals (except bats) with the potential to occur include white-footed vole (*Arborimus albipes*) and Sonoma tree vole (*Arborimus pomo*). Direct impacts on these species could result from tree removal and vegetation removal. Temporary noise disturbance generated by construction could indirectly affect these species as well. Trail lighting at the northern trailhead and human disturbance from trail use may also decrease their use of the area; however, abundant forested and riparian habitat would be available in the vicinity of the BSA. Avoidance and minimization measures, including a pre-construction survey, would reduce the potential for adverse impacts on these species.

The following permits may be required:

- Nationwide Permit 14 (Linear Transportation Projects) obtained from U.S. Army Corps of Engineers under Section 404.
- Authorization under a Clean Water Act Section 401 Water Quality Certification obtained from the North Coast Regional Water Quality Control Board.

- Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of perennial streams, notification of streambed alteration will be submitted to the California Department of Fish and Wildlife (CDFW); and, if required, a streambed alteration agreement will be obtained from CDFW.
- Coastal Development permit from the California Coastal Commission (consolidated with the County of Humboldt).

Chapter 1. Introduction

On behalf of the Redwood Community Action Agency (RCAA) and California Department of Transportation (Caltrans), Stantec Consulting Services Inc. (Stantec) prepared this Natural Environment Study (NES) to evaluate the potential effects on sensitive biological resources associated with implementing the Little River Trail Project (project).

1.1. Project Location

The project is located between the communities of McKinleyville and Trinidad in Humboldt County (County). The project's biological study area (BSA), which also serves as the project's action area for this effort, is approximately 1 mile long, located alongside the west side of U.S. Route 101 (US 101) and east of the Pacific Ocean. The BSA is shown on the *Crannell, California*, U.S. Geological Survey 7.5' quadrangle (Figure 1, Appendix A). The northern extent of the BSA is located where Scenic Drive cumulates at US 101, while the southern extent is located at Clam Beach Drive. The entire alignment would be located within the Caltrans right-of-way, with the exception of the most northern section, which would be located within Trinidad Coastal Land Trust owned property (Figure 2, Appendix A). The project is located in both the State and Appeal Zone jurisdictions of the Coastal Zone; therefore, a consolidated Coastal Development Permit would be submitted to the California Coastal Commission.

1.2. Project History

1.2.1. PROJECT'S PURPOSE AND NEED

The California Coast Trail is a mixed-use trail (e.g., pedestrian, bicycle, equestrian) composed of a braided network of trails along the state's coastline spanning from Mexico to Oregon. The project would close a critical gap in the local Hammond Coastal Trail and greater California Coastal Trail, resulting in improved access to communities, recreational areas, and coastal resources. Installation of this 1-mile trail would improve access and safety for pedestrian and bicycle users as well as improve opportunities for nature study and recreation. The Little River Trail would extend the existing California Coastal Trail to include the stretch between Scenic Drive and Clam Beach Drive, crossing the Little River (Figure 2, Appendix A). Pedestrians and bicyclists traveling this stretch are currently limited to US 101, which is dangerous for alternative modes of transport. A feasibility study for the Little River Trail was previously completed in 2014 by RCAA with support from the State Coastal Conservancy. Pending funding, Caltrans has agreed to finalize design, conduct environmental permitting, and construct the Little River Trail. Caltrans would own and maintain the Little River Trail as a Caltrans facility.

1.3. Project Description

The project would construct an approximately 1-mile Class I Bike Path (pedestrian and bicycle trail) from Scenic Drive to Clam Beach. The trail would be a paved pathway, alternating between an approximately 10-foot-wide trail (5 feet per travel lane) with 2-foot-wide shoulders on either side and an approximately 8-foot-wide trail (4 feet per travel lane) with 2-foot-wide shoulders on either side, depending on-site constraints. The trail would cross the Little River via the existing US 101 bridge, which would be widened up to 2 feet to accommodate the additional width required for the trail. South of the Little River, the trail alignment would be located into and/or on top of the undeveloped vegetated surface and along the US 101 Crannell Road off-ramp within the Caltrans right-of-way.

In order to accommodate the trail on the bridge, the project also includes modifications to the US 101 Little River Bridge and realignment of the southbound travel lanes. Stationing referenced throughout Section 1.3. (Project Description) is shown in the 30% project design in Appendix B.

The project is being designed in accordance with the Caltrans Highway Design Manual, 7th Edition (Caltrans 2020). In addition, the project would be designed in accordance with other specific applicable standards, including the California Manual on Uniform Traffic Control Devices (Caltrans 2021) and the Americans with Disabilities Act Standards for Accessible Design (Department of Justice 2010).

1.3.1. GEOTECHNICAL INVESTIGATIONS

A Preliminary Foundation Report has been prepared for the Project and includes a review of geologic literature for the area, site reconnaissance and geologic mapping, results from shallow hand-auger borings, review of historic photos of US 101 construction, review of proposed retaining wall concepts, and preliminary geotechnical recommendations (SHN 2021). The Preliminary Foundation Report finds that the proposed trail alignment comprises highway fill related to the late-1960s highway alignment: unconsolidated alluvium, floodplain alluvium, beach/dune deposits, Falor Formation, and Franciscan Complex mélange. The Preliminary Foundation Report notes trail development will require removal of unsuitable (unstable) soils and imported fill and/or engineered fill and may require the use of geotextiles.

Consistent with the recommendations of the Preliminary Foundation Report, additional geotechnical investigations are required during the project design phase in order to obtain necessary information to support retaining wall type selection and design. The investigation would occur north of Little River, between the Scenic Drive trailhead and the Little River. The geotechnical investigations would employ drill rigs and ancillary equipment and would require tree and vegetation removal along the trail alignment for access. Any excess sediments that result from geological investigations are expected to be relatively small in quantity and would be hauled offsite by the contractor for legal disposal or reuse.

1.3.2. RETAINING WALLS

Two retaining walls would be necessary to maintain accessible slopes, minimize the construction footprint, and facilitate crossing an existing culvert over an unnamed tributary along the northern trail alignment between the Scenic Drive trailhead and the Little River. The final retaining wall design would follow further geotechnical investigations and recommendations. Construction scenarios for the retaining walls are summarized below and include a soldier pile wall with ground anchors, cantilever soldier pile walls, mechanically stabilized earth (MSE) wall, and a concrete boardwalk structure. More than one retaining wall construction scenario may be included in the final design, which would also determine the final number, length, and heights of required retaining wall structures. The retaining wall structures would not be easily visible since there is no access or use on the west side of the trail.

The location and stationing of retaining walls may adjust in the future as the design progresses. However, based on the 30% design, the northern retaining wall is proposed from Station 50+41 to Station 57+86.

The trail would cross an existing culvert (perennial unnamed tributary) at Station 46+06. To separate the trail from the culvert outlet, a second retaining wall would be constructed near the unnamed tributary (Station 45+86 to Station 46+38,), helping ensure that the trail does not encroach into the stream. The retaining wall would be located approximately 10 feet upslope and upstream of the unnamed tributary, on top of the existing buried culvert. One large Sitka spruce would be removed in order to construct the retaining wall (see Section 1.3.18. – Vegetation Removal).

Retaining walls would not be necessary on the sand slopes adjacent to portions of the southern end of the proposed trail alignment at the southbound US 101 off-ramp between the Little River and Crannell Road. Based on field reconnaissance, the subject sand slopes adjacent to US 101 have gradients slightly steeper than the angle of repose due to root reinforcement associated with significant ground cover vegetation (SHN 2021).

1.3.2.1. Soldier Pile Wall with Ground Anchors

The soldier pile wall construction scenario would include a retaining wall on the western edge of the trail only. Soldier piles would be installed in a drilled hole approximately 18 feet below grade and anchored into the ground with horizontal ground anchors. Horizontal lagging would extend above and below grade. A structural concrete waler beam and concrete cap would be installed on top of the lagging, resulting in a total above grade height of approximately 8 feet, although final structure heights would vary based on-site-specific conditions and final designs. A safety railing would be attached to the structural concrete cap. Temporary sheet piling would be installed on the western and eastern edge of the trail to facilitate the drilling process for the soldier piles and construction of the retaining wall.

1.3.2.2. Cantilever Soldier Pile Wall 14-Foot Design Height

The 14-foot maximum design height cantilever soldier pile wall includes retaining structures on both the western and eastern edge of the trail. On the western edge, soldier piles would be installed in a drilled hole approximately 30 feet below grade and anchored into the ground. Horizontal lagging would be installed above and below grade, with a maximum exposed height limit of 14 feet. A concrete cap and safety railing would be installed on top of the lagging. Temporary sheet piling would be installed on the western and eastern edge of the trail to facilitate the drilling process for the soldier piles and construction of the retaining wall.

1.3.2.3. Cantilever Soldier Pile Wall 12-Foot Design Height

The 12-foot maximum design height cantilever soldier pile wall includes retaining structures on both the western and eastern edge of the trail. On the western edge, soldier piles would be installed in a drilled hole approximately 20 feet below grade and anchored into the ground. Lagging would be installed above and below grade, with a maximum height limit of 12 feet. A concrete cap and safety railing would be installed on top of the lagging. If necessary, a concrete retaining wall would also be constructed on the eastern edge of the trail with an above-grade height of approximately 6 feet. Temporary sheet piling would be installed on the western and eastern edge of the trail to facilitate the drilling process for the soldier piles and construction of the retaining wall.

1.3.2.4. Mechanically Stabilized Earth Wall

A MSE wall approximately 18 feet tall would be constructed on the eastern edge of the trail to retain the cutslope above and below grade. On the western edge of the trail, MSE wall panels approximately 16 feet tall would be installed to elevate and retain the trail. A safety railing would be installed at the top edge of the MSE wall.

1.3.3. CONCRETE BOARDWALK STRUCTURE

Cast-in-drilled-holes piles approximately 16 feet tall would be installed below grade with a drill rig. The piles would be topped with bent caps approximately 2 feet tall to form the base of the trail. The bent caps would be topped with an 8-inch-thick concrete slab.

1.3.4. GRADING AND FILL

Grading would need to occur along the entire trail alignment to achieve accessible slopes and suitable trail width. Similarly, fill would be placed and compacted along the alignment to establish the trail prism.

1.3.5. BARRIER INSTALLATION

South of the Little River, barriers would be installed to separate the trail from US 101 or the Crannell Road off-ramp. End treatments or similar safety modifications would be installed at the end of the barriers.

1.3.6. ANCILLARY TRAIL FEATURES CONSTRUCTION

Ancillary trail features, such as lookouts or other nature viewing areas, would be constructed adjacent to the primary alignment. Ancillary trail features may include benches, interpretive signage, and other features related to public access and education. Ancillary trail features would include up to three nature viewing areas that are anticipated for this project, preliminarily being located at Stations 19+50, 34+00, and 59+50. The footprint of each nature viewing area, including the trail to access the area, would be approximately 1,000 square feet. Each area would likely contain one to two benches, a picnic table, a trash/recycling receptacle, and interpretive signage.

1.3.7. US ROUTE 101 LITTLE RIVER CROSSING

The trail would cross the Little River via the existing US 101 bridge. The existing travel lanes would be reconfigured to support the multi-use trail. Under the scenario with the greatest potential for environmental impacts under consideration, the bridge deck would be widened 2 feet on the western edge. Other lane reconfiguration scenarios would not require bridge deck widening. For all scenarios considered, additional pilings or in-water work would not be required to support reconfiguring the travel lanes or widening the bridge deck. The existing lanes would be reconfigured to accommodate a 10-foot trail in addition to Caltrans standard shoulder and travel lane widths (Illustration 1). As a result of the widening and lane shifts, the bridge and portions of US 101 immediately north and south of the bridge would need to be repaved and restriped. To accommodate lane shifts on the bridge, the existing vegetation in the median between the northbound and southbound lanes of US 101 would be removed and replaced with pavement. The existing barrier between the travel lanes would be replaced and extended.

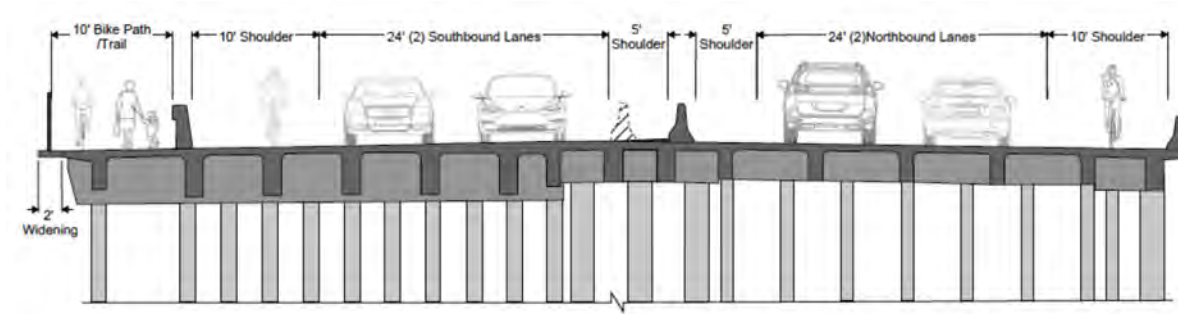


Illustration 1. Conceptual Overview of Little River Bridge Design Approach

Bridge deck widening would include removing the existing concrete bridge barrier and installing additional concrete reinforcement and new barrier and railings to widen the bridge by approximately 2 feet. To widen the bridge, a temporary shoulder closure would be established with a k-rail for the duration of work. A temporary work platform and debris containment system would be installed below the existing bridge deck using a snoopers truck on the bridge deck, which would require lane closure. Overhanging brackets to support the platform and debris containment system would be installed on the face of the existing edge girder using drilled-in anchors. The existing concrete barrier and edge of the deck would be removed by chipping. Existing reinforcement bars would be extended with mechanical couplers. Formwork would be installed below the edge of the bridge deck. Bridge reinforcement would be completed, followed by pouring a widened deck. Forms would be stripped, and the railing would be installed. The temporary work platform would be removed, and drill holes would be patched using a snoopers truck from the bridge deck.

Temporary lane closures on the US 101 Little River Bridge would be required for bridge widening, barrier construction, and striping. Temporary lane closures would follow Caltrans requirements for temporary roadway closures, including signage and public noticing.

1.3.8. DRAINAGE AND STORMWATER IMPROVEMENTS

The Class 1 facility will be exempt from municipal separate storm sewer system requirements. The trail would be constructed to mimic the existing site topography and be outsloped to the maximum extent feasible. In localized areas where outsloping is not feasible, traditional drainage inlets and storm drainage piping would be deployed to convey stormwater through the trail prism. Stormwater would be discharged through energy dissipation devices such as riprap aprons and/or outlet basins to prevent scour, protect the outlet structure, and minimize the potential for downstream erosion. A drainage inlet located adjacent to the US 101 off-ramp and one located just north of the Little River Bridge in the highway median would need to be modified to accommodate planned improvements for this project. Additionally, trenching for storm drain pipes and related infrastructure is proposed in the following locations:

- New drainage inlets along US 101 southbound off-ramp from Station 7+50, Station 10+50, and Station 13+60
- New drainage piping along US 101 southbound off-ramp from Station 7+50 to Station 13+60

- The existing drainage inlet located just north of the Little River bridge (at Station 32+20) would be moved north approximately 150 feet along the US 101, which would also require the installation of approximately 150 feet of new storm drain piping from Station 32+20 to Station 33+70
- Two drainage inlets with downdrains along the retaining wall at Station 50+50, Station 53+00, and Station 55+50, along the northern trail segment

1.3.9. UTILITY RELOCATION

One Caltrans streetlight located approximately at Station 16+60 south of the Little River along the US 101 off-ramp would be relocated outside the trail footprint in coordination with Caltrans.

1.3.10. STRIPING AND SIGNAGE

The trail would include required striping and signage in order to comply with the California Manual on Uniform Traffic Control Devices (Caltrans 2021). Striping and directional signage would indicate two travel directions.

Signage to direct southbound cyclists to exit northbound US 101 in Westhaven to access the trail may also be incorporated. Interpretive signage along the trail would promote education of the coastal resources and surrounding environment.

1.3.11. TRAIL LIGHTING

The project would include streetlight installation at either trailhead or to improve safety in key locations. Any exterior lighting would be designed to protect wildlife and nighttime views, including views of the night sky. The project would be designed to be consistent with the recommendations of the International Dark-Sky Association, which includes standards for fixtures, shielding, wattage, placement, height, and illumination levels. To comply with these requirements, lighting for the project would use the minimum lumens necessary; and it would be directed downward, shielded, and at pedestrian level when feasible. This would help ensure lighting is contained within the site and does not cause significant lighting and glare impacts for surrounding land uses and sensitive habitat areas.

Trenching for the new streetlight pole at the southern end of the trail would include connecting the existing streetlight (at the California Highway Patrol weigh station) at Station 9+60 to the proposed new streetlight pole location at Station 5+40. The trench would be approximately 1 foot wide, 3 feet deep, and 310 feet long. Between station 5+40 and 7+60 the trench would be located under the trail. At station 7+60 the trench would turn to the east and cross through the southbound off ramp and then through an open vegetated area before connecting to the existing streetlight near the weigh station.

Trenching for the new streetlight at the northern end of the trail would connect the existing power pole at Station 60+20 to the proposed new streetlight pole location at Station 60+30. The pathway of the trench is anticipated to be a straight line from the existing power pole to the proposed light. The trench would be approximately 1 foot wide, 3 feet deep, and 60 feet long.

1.3.12. TRAILHEAD DEVELOPMENT

Travel lanes at both trailheads would be divided to enhance user safety and discourage motorized vehicles from inadvertently entering the trail. Trailhead improvements would include signage, striping for parking, and additional trail amenities such as benches or picnic tables. At the Scenic Drive trailhead, parking spaces may be delineated within the existing cul-de-sac footprint. The existing Clam Beach parking area near the southern trailhead would continue to be used.

Additional parking at the southern trailhead is not proposed. Crosswalks and shoulder striping improvements may be installed along Clam Beach Road to improve safety between the existing parking area and the new trailhead in coordination with Caltrans and the County of Humboldt.

1.3.13. MOUNDABLE APRON AT SOUTHERN TRAILHEAD

A mountable apron would be constructed between the southern trailhead and the US 101 southbound off-ramp.

1.3.14. CONSTRUCTION SCHEDULE

Construction could require up to two construction seasons. If feasible, vegetation clearing would occur first prior to construction, between September 2 and February 14 (outside of the special status bird nesting period). Construction would require up to 8 months, beginning in March and concluding by October 15.

1.3.15. CONSTRUCTION ACTIVITIES AND EQUIPMENT

Equipment required for construction would include drill rigs, concrete mixer and pump trucks, all terrain forklifts, snooper truck, compressors, tracked excavators, backhoes, graders, bulldozers, dump trucks, skid steers, and pick-up trucks. Jackhammers or similar pieces of equipment may be necessary to support bridge widening. It is not anticipated that any temporary utility extensions, such as electric power or water, would be required for trail construction. Trenching and ground disturbance in support of utility connection for relocated and new lighting is anticipated. Water would be used for dust control, compaction, and revegetation.

1.3.16. CONSTRUCTION ACCESS

The project would be accessed via US 101, Scenic Drive, and Clam Beach Drive. No new access roads would need to be constructed in order to implement the project.

1.3.17. ESTABLISH EXCLUSION AREAS AND EROSION CONTROL

Sensitive biological areas would be excluded with protective fencing prior to construction, except for areas that would be unavoidably impacted during construction. Erosion control Best Management Practices (BMPs) would also be installed prior to construction.

1.3.18. VEGETATION REMOVAL

Clearing and grubbing of vegetation would occur within the construction footprint, including tree removal north of the Little River. During project design, contractors mapped trees 6 inches in

diameter at breast height (dbh) or greater. One hundred seventeen (117) trees that are 6-inch dbh or greater would be removed to clear the proposed alignment for trail installation, many of which are Sitka spruce (*Picea sitchensis*) and other native species (Table 1). One larger Sitka spruce location approximately 10 feet from the unnamed tributary would also be removed and is accounted for in Table. Otherwise, no additional trees (e.g., riparian habitat) would need to be removed near the unnamed tributary. Final tree removal numbers by species may be adjusted as the design progresses.

Table 1. Trees 6-inch or Greater Diameter at Breast Height Proposed for Removal

Diameter at Breast Height	Alder	Spruce	Fir	Pine	Willow	Elderberry
6-inch	5	—	1	1	—	—
8-inch	4	—	6	2	—	—
10-inch	13	2	7	3	4	
12-inch	5	1	2	3	—	1
14-inch	8	—	2	2	—	—
16-inch	9	—	2	1	—	—
18-inch	1	1	1	3	—	—
20-inch	—	1	—	—	—	—
22-inch	2		1		—	—
24-inch	—	3	1	5	—	—
30-inch	—	2	1	—	—	—
34-inch	—	1	—	—	—	—
36-inch	—	3	2	—	—	—
40-inch	—	1		—	—	—
48-inch	—	2	1	—	—	—
72-inch cluster	—	—	1	—	—	—
Total	47	17	28	20	4	1

1.3.19. STOCKPILING AND STAGING

Stockpiling and staging would occur in an existing graveled area east of US 101, near Clam Beach Drive at the south end of the project (Figure 2, Appendix A). Stockpiling and staging would also occur within the cul-de-sac at the terminus of Scenic Drive at the north end of the project (Figure 3, Appendix A). Stockpiling and staging areas are located within the existing project area boundary in disturbed areas and would not require grading. Within the stockpiling and staging areas, BMPs would be used to prevent construction materials and hazardous materials from impacting the environment. Stockpiling and staging is not planned to occur on State Parks property.

Excess soils, aggregate road base, and construction materials would be stored on-site within designated stockpiling and staging areas. Excess materials may be re-used on-site for backfill and finished grading. Excess materials would not be stockpiled on-site once the project is complete. The contractor would haul additional excess materials off-site for beneficial reuse, recycling, or legal disposal.

1.3.20. GROUNDWATER DEWATERING

Groundwater dewatering is generally not expected to be required. However, if needed, temporary groundwater dewatering would involve pumping water out of a trench or excavation area. Groundwater would typically be pumped to a settling pond, settling tanks, or into a dewatering bag. The water may also be percolated back into the ground in uplands. Discharge to regulated waters would not occur.

1.3.21. SITE RESTORATION AND CLOSURE

Following construction, the contractor would demobilize and remove equipment, supplies, and construction wastes. The disturbed areas would be restored to pre-construction conditions or stabilized with a combination of grass seed (through broadcasting or hydroseeding), straw mulch, rolled erosion control fabric, and revegetation. Disturbed areas resulting from construction in the undeveloped area west of the Crannell Road off-ramp would be revegetated with appropriate species. Revegetation would include replanting and compliance monitoring if mitigation is required by resource agencies for impacts to sensitive habitats.

1.4. Conservation Measures

Conservation measures will be incorporated into the project to minimize potential effects on federally listed species and other biological resources. This section describes project design modifications proposed to minimize the anticipated temporary and permanent effects associated with the project. Species-specific conservation measures are provided in Chapter 4.

1.4.1. PROJECT DESIGN MODIFICATIONS FOR AVOIDANCE AND MINIMIZATION

1.4.1.1. Conservation Measure #1 – Erosion and Sedimentation Control

Erosion control measures implemented during construction of the project will conform to the provisions in Section 21 of the Caltrans Standard Specifications (Caltrans 2018) and any special provisions included in the contract for the project. Special provisions include the preparation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP will describe and illustrate the types and locations of BMPs in the project site to be implemented and would require regular inspections and a Rain Event Action Plan.

Erosion control measures to be included in the SWPPP will include the following:

- To the maximum extent practicable, activities that potentially increase soil erosion in the BSA will be restricted to the summer and early fall period to minimize the potential for stormwater transport of sediment to surface water features. Construction activities that take place during the late fall, winter, or spring (e.g., vegetation removal prior to bird nesting periods) will use temporary erosion and sediment control structures that will be in place and operational at the end of each construction day and maintained until permanent erosion control structures are installed, if necessary.
- Areas where vegetation need to be removed will be identified in advance of ground disturbance and limited to only those areas that have been approved. Exclusionary fencing will be installed around sensitive habitats, as shown in Figures 5-7, Appendix A.

- Approved fabric barriers will be installed to prevent the discharge of contaminants (e.g., sediment, oil, and grease), when equipment is working adjacent to or over waterways.
- Within 10 days of completion of construction in those areas where subsequent ground disturbance will not occur for 10 calendar days or more, weed-free mulch will be applied to reduce the potential for short-term erosion. Prior to a rain event or when there is a greater than 50 percent possibility of rain within 24 hours, as forecasted by the National Weather Service, weed-free mulch will be applied to all exposed areas upon completion of the day's activities. Soils will not be left exposed during the rainy season.
- Suitable BMPs, such as silt fences, straw wattles, or catch basins, will be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches the waterway. These structures will be installed prior to any clearing or grading activities. Any sediment built up at the base of BMPs will be removed before BMP removal to avoid any accumulated sediments from being mobilized post-construction.
- Sediment control measures will be in place prior to the onset of the rainy season and will be monitored and maintained in good working condition until disturbed areas have been revegetated with native species.

1.4.1.2. Conservation Measure #2 – Prevention of Accidental Spills

The proposed SWPPP will include a waste management section that provides procedural and structural BMPs for collecting, handling, storing, and disposing wastes generated by project construction and to prevent the accidental release of pollutants. The contractor would also be required to submit a demolition and debris containment and management plan to the Caltrans Resident Engineer for approval prior to bridge demolition. All construction will be completed according to the most recent Caltrans Site Best Management Practices Manual to protect water quality including the following measures:

- A site-specific spill prevention plan to be included in the SWPPP will be implemented for potentially hazardous materials. The plan will include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting any spills. If necessary, containment berms will be constructed to prevent spilled materials from reaching surface water features.
- Equipment and hazardous materials will be stored in the staging area 500 feet to the west and away from surface water features.
- Vehicles and equipment used during construction will receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling will be conducted within an adequate fueling containment area, at least 50 feet away from all streams and wetlands.
- Minimize sand and gravel (from new asphalt) entering storm drains, streets, and creeks by sweeping. Old or spilled asphalt must be recycled or disposed as approved by the resident engineer.

- All project materials will be prevented from entering streams. Silt fences will be installed until soils are stabilized or permanent controls are in place.
- Installment of netting or other similar method for debris catchment during bridgework will also be implemented to protect aquatic species.

1.4.1.3. Conservation Measure #3 – Air Quality/Dust Control

Caltrans will include provisions in the construction bid documents that the contractor will implement a dust control program to limit fugitive dust emissions. The dust control program will include the following elements as appropriate:

- Water inactive construction sites and exposed stockpile sites at least twice daily, including non-work days, until soils are stable.
- Soil piles for backfill will be marked and flagged separately from native topsoil stockpiles. These soil piles will also be surrounded by silt fencing, straw wattles, or other sediment barriers or will be covered unless they are to be immediately used.
- Equipment or manual watering will be conducted on all stockpiles, dirt/gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust.

1.4.1.4. Conservation Measure #4 – Replacement of Lost Riparian Habitat

The following measures will be implemented to reduce potential impacts to riparian habitat in the BSA:

- A habitat mitigation and monitoring plan will be developed at a later date.
- The width of the construction disturbance zone within the riparian habitat will be minimized through careful pre-construction planning.
- Exclusionary fencing will be installed along the boundaries of all riparian areas to be avoided to minimize impacts to riparian vegetation outside of the construction area.
- On-site restoration will occur in areas that have been disturbed during project construction. All native woody riparian plants 6 inches or greater dbh removed will be replanted with new plantings at a minimum 3:1 ratio. This replanting ratio will help establish at least one vigorous plant for each plant removed.
- Plant spacing intervals will be determined as appropriate based on-site conditions following construction and will be similar to undisturbed riparian habitat in the local area.
- Revegetation monitoring will be implemented in compliance with regulatory permit conditions and be initiated immediately following completion of the planting. The monitoring surveys will consist of a general site walkover evaluating the survival and health of riparian plantings, signs of drought stress, weed or herbivory problems, and the presence of trash or other debris. Eighty-five percent or greater survival of the total number of trees and shrubs (i.e., woody species) needed to meet required mitigation ratios, including planted and volunteer native species, will be considered a success at

the end of a five-year monitoring period. If monitoring results indicate that revegetation efforts are not meeting established success criteria, corrective measures will be used.

1.4.1.5. Conservation Measure #5 – Prevention of Spread of Invasive Species

The following measures will be implemented to prevent the spread of invasive species:

- All equipment used for off-road construction activities will be inspected, cleaned, and verified to be weed-free prior to entering the BSA.
- If project implementation calls for weed-free mulches or fill.
- Seed mixes or other vegetative material used for revegetation of disturbed sites will consist of locally adapted native plant materials to the extent practicable.
- Any construction equipment (including boots, waders, and hand tools) that may enter stream courses will be properly disinfected or cleaned according to guidance provided by the State of California Aquatic Invasive Species Management Plan (CDFG 2008, U.S. Bureau of Reclamation 2012) prior to instream work to prevent the spread of aquatic invasive species.

1.4.1.6. Conservation Measure #6 – Environmentally Sensitive Area Fencing

The following measures will be implemented to avoid impacts on Environmentally Sensitive Areas.

- Exclusionary fencing will be installed along the boundaries of all Environmentally Sensitive Areas (ESAs) to minimize impacts to ESA's outside of the construction area (Figures 5-7, Appendix A).

Chapter 2. Study Methods

2.1. Regulatory Requirements

2.1.1. FEDERAL REGULATORY REQUIREMENTS

2.1.1.1. Endangered Species Act

Section 9 of the Federal Endangered Species Act of 1973 (FESA) prohibits acts that result in the “take” of threatened or endangered species. As defined by the FESA, “endangered” refers to any species that is in danger of extinction throughout all or a significant portion of its current range. The term “threatened” is applied to any species likely to become endangered within the foreseeable future throughout all or a significant portion of its current range. “Take” is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” Sections 7 and 10 of the FESA provide methods for permitting otherwise lawful actions that may result in incidental take of a federally listed species. The term “incidental take” refers to take of a listed species that is incidental to, but not the primary purpose of, an otherwise lawful activity. Incidental take is permitted under Section 7 for projects involving a federal action; Section 10 provides a process for non-federal actions. The act is administered by the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS).

2.1.1.2. Clean Water Act

The objective of the Clean Water Act of 1977, as amended, (CWA) is to restore and maintain the chemical, physical, and biological integrity of the nation’s waters. Discharge of dredged or fill material into waters of the U.S., including jurisdictional wetlands, is regulated by the U.S. Army Corps of Engineers (USACE) under Section 404 of the CWA (33 U.S. Code [USC] 1251-1376) under a permitting process. Applicants for Section 404 CWA permits are also required to obtain water quality certification or waiver through the local Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA (33 USC 1341).

USACE regulations implementing Section 404 define “waters of the U.S.” as intrastate waters, including lakes, rivers, streams, wetlands, and natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce. “Wetlands” are defined for regulatory purposes as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 Code of Federal Regulations [CFR] 328.3; 40 CFR 230.3). To comply with the USACE policy of no net loss of wetlands, discharge into wetlands must be avoided and minimized to the extent practicable. For unavoidable impacts, compensatory mitigation is typically required to replace the loss of wetland functions in the watershed.

2.1.1.3. Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) makes it unlawful to pursue, hunt, take, capture, kill, possess, sell, purchase, barter, import, export, or transport any migratory bird, or any part, nest, or egg. “Take” is defined as pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (USFWS 2017). Migratory birds, as defined by the MBTA, include all species native to the U.S. or its territories that occur as a result

of natural biological or ecological processes (1,093 total species), with exceptions for some species including upland game birds like quail and grouse (USFWS 2020a).

Executive Order (EO) 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, directs federal agencies that are taking actions that have or are likely to have a negative effect on migratory birds to develop and implement a Memorandum of Understanding with USFWS to promote conservation of migratory bird populations. This EO further implements the MBTA and requires coordination between the USFWS and federal agencies.

2.1.1.4. Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) takes immediate action to conserve and manage fishery resources found off the coasts of the U.S. and the anadromous species and Continental Shelf fishery resources of the U.S. by exercising sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone of the U.S., and exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in the special areas.

Public Law 104-297, the Sustainable Fisheries Act of 1996, amended the MSFCMA to establish new requirements for EFH descriptions in federal fishery management plans. In addition, the MSFCMA established procedures designed to identify, conserve, and enhance EFH for those species regulated under a federal fisheries management plan. Pursuant to the MSFCMA,

- Federal agencies must consult with National Marine Fisheries Service (NMFS) on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect essential fish habitat (EFH).
- NMFS must provide conservation recommendations for any federal or state action that would adversely affect EFH.
- Federal agencies must provide a detailed response in writing to the NMFS within 30 days after receiving EFH conservation recommendations. The response must include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the effect of the activity on EFH. In the case of a response that is inconsistent with the NMFS EFH conservation recommendations, the federal agency must explain its reasons for not following the recommendations.

EFH has been defined for the purposes of the MSFCMA as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” NMFS has further added the following interpretations to clarify this definition:

- “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate.
- “Substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities.

- “Necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem.
- “Spawning, breeding, feeding, or growth to maturity” covers the full life cycle of a species.
- “Adverse effect” means any effect that reduces quality and/or quantity of essential fish habitat, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), or site-specific or habitat-wide effects, including individual, cumulative, or synergistic consequences of actions.

EFH consultation with the NMFS is required regarding any federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

2.1.1.5. Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940, as amended (16 USC 668-668c), prohibits take of bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) or any part, nests, or eggs unless federally permitted. The act also prohibits human-induced alterations around an unoccupied nest site if upon return of the eagle, the alterations result in adverse impacts on the eagle (USFWS 2018).

USFWS is charged with implementing the Bald and Golden Eagle Protection Act to ensure that any authorized take of bald and golden eagles is compatible with their preservation. Levels of take must be consistent with the goal of maintaining stable, or increasing, breeding populations.

2.1.1.6. Executive Order 11990 (Wetlands)

EO 11990 is an overall wetlands policy for all agencies managing federal lands, sponsoring federal projects, or providing federal funds to state or local projects. It requires federal agencies to follow avoidance, mitigation, and preservation procedures with public input before proposing new construction in wetlands.

2.1.1.7. Executive Order 13112 (Invasive Species)

EO 13112 directs federal agencies to use relevant programs and authorities to:

- prevent the introduction of invasive species;
- detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner;
- monitor invasive species populations accurately and reliably;
- provide for restoration of native species and habitat conditions in ecosystems that have been invaded;
- conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species;

- promote public education on invasive species and the means to address them; and
- not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, in accordance with guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions.

2.1.1.8. Executive Order 11988 (Floodplain Management)

EO 11988 requires federal agencies to avoid the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and avoid direct and indirect support of floodplain development.

2.2. California Regulatory Requirements

2.2.1. CALIFORNIA ENDANGERED SPECIES ACT

The California Endangered Species Act (CESA) (Section 2800 of the Fish and Game Code) prohibits take of state-listed species and protects native species of fishes, amphibians, reptiles, birds, mammals, invertebrates, and plants, and their habitats, that are threatened with extinction or experiencing a significant decline, which if not halted, would lead to a threatened or endangered designation. CESA authorizes the California Department of Fish and Wildlife (CDFW) to issue incidental take permits for state-listed species, when specific criteria are met.

2.2.2. PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act authorizes the State Water Resources Control Board to oversee water rights and water quality policy and establishes nine RWQCBs to protect and enhance water quality at the regional and local levels. In addition to preparing water quality control plans to designate beneficial uses of water bodies in each region, these boards issue waste discharge requirements for activities that result in pollutant or nuisance discharges that may affect surface or groundwater, including isolated wetlands not subject to USACE jurisdiction.

2.2.3. COASTAL WATERS ACT

The California Coastal Act was enacted by the State Legislature in 1978 to provide long-term protection of California's coastal zone. The Coastal Act also established the California Coastal Commission (CCC). The CCC plans and regulates development and natural resource use along the coast in partnership with local governments and in keeping with the requirements of the Coastal Act. Under the Coastal Act, new development that requires a coastal development permit either from the CCC or the appropriate local government includes any project in the coastal zone that results in a change in the density or intensity of use of land and any project that results in a change in the intensity of use of water, or of access thereto. The Coastal Act requires every city and county lying partly or wholly within the designated coastal zone to prepare a Local Conservation Plan (LCP). Coastal Act policies constitute the standards used by the CCC in its coastal development permit decisions and for the review of LCPs. The current LCP for the region is provided in the McKinleyville Area Plan and Trinidad Area Plan of the

Humboldt County Local Coastal Program (Humboldt County 2007a, Humboldt County 2007b). These policies are also used by the CCC to review federal activities that affect the coastal zone.

The California Coastal Act requires that most development avoid and buffer wetland resources. Policies include:

- **Section 30231**, which requires the maintenance and restoration (if feasible) of the biological productivity and quality of wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health.
- **Section 30233**, which limits the filling of wetlands to identified high priority uses, including certain boating facilities, public recreational piers, restoration, nature study, and incidental public services (such as burying cables or pipes). Any wetland fill must be avoided unless there is no feasible, less environmentally damaging alternative; and authorized fill must be fully mitigated.

The CCC regulations define “wetlands” as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and will also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats (14 California Code of Regulations Section 13577).

The California Coastal Act also provides for the designation of environmentally sensitive habitat areas (ESHAs). An ESHA is any area 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. The California Coastal Act states that ESHAs will be protected against any significant disruption of habitat values, and only uses dependent on those resources will be allowed within those areas. Development in areas adjacent to ESHAs, parks, and recreation areas will be sited and designed to prevent impacts which would significantly degrade those areas and will be compatible with the continuance of those habitat and recreation areas.

2.2.4. CALIFORNIA FISH AND GAME CODE

The California Fish and Game Code provides several provisions for the protection of waters of the state and the State’s plant, fish, and wildlife resources, including the following relevant sections:

- **Sections 1900-1913 (Native Plant Protection Act):** The Native Plant Protection Act prohibits the taking, possessing, or sale within the state of any plants that the California Department of Fish and Wildlife (CDFW) has determined are rare, threatened, or endangered. The CDFW has the authority to enforce the provisions of this act and authorize measures to salvage native plants that may otherwise be affected by project activities, if deemed appropriate.

- **Sections 3500-3516 (Game Birds and Birds of Prey):** CDFW protects game birds, birds of prey, migratory birds, and fully protected birds from take or possession, except as otherwise provided by the code (e.g., incidental take under CESA).
- **Sections 3511, 4700, 5050, and 5515 (Fully Protected Species):** California statutes accord a “fully protected” status to a number of specifically identified birds, mammals, reptiles, amphibians, and fish. These species cannot be “taken,” even with an incidental take permit.
- **Section 1602, Lake or Streambed Alteration:** Section 1602 governs construction activities that substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the CDFW as providing a fish or wildlife resource. Under Section 1602, a Streambed Alteration Agreement must be obtained from the CDFW prior to the initiation of construction activities that will affect drainages under CDFW jurisdiction and that are determined by the CDFW to have the potential to adversely affect a fish or wildlife resource.

2.2.5. COUNTY TREE ORDINANCE

Humboldt County Code Section 313-64 describes major vegetation removal (in part) as the removal of trees within a total aggregate contiguous or non-contiguous area or areas exceeding 6,000 square feet, measured as the total of the area(s) located directly beneath the tree canopy. (Formerly Section CZ#A314-20(D)(2)).

Major vegetation removal may be permitted with a special permit in all zones, as an accessory use associated with a specified principal or conditionally permitted use. Major vegetation removal may be permitted with a special permit in conjunction with or prior to the establishment of a principal or conditionally permitted use. (Formerly Section CZ#A314-20(B)).

2.3. Studies Required

2.3.1. BIOLOGICAL STUDY AREA

The BSA includes all areas that could be potentially impacted by the project plus a buffer to accommodate any changes to project limits and project design that may occur during project development (Figures 2 and 3, Appendix A). It includes the trail alignment, all areas associated with trail construction, and stockpiling and staging areas. For the purposes of this effort, the BSA is equivalent to the action area.

2.3.2. BACKGROUND RESEARCH

Special status plant and wildlife species and sensitive habitats that may occur in the BSA were determined, in part, by reviewing natural resource agency databases, literature, and other relevant sources. The following information sources were reviewed:

- U.S. Geological Survey *Crannell, California* 7.5-minute quadrangle
- Aerial photography of the biological study area and vicinity

- U.S. Fish and Wildlife list of endangered and threatened species that may occur in the vicinity of the project (Appendix C)
- National Oceanic and Atmospheric Administration National Marine Fisheries Service list of endangered and threatened fisheries resources that may occur in the vicinity of the project (Appendix C)
- California Natural Diversity Database and California Native Plant Society records for the *Crannell, California* 7.5-minute quadrangle and the seven surrounding quadrangles (Appendix D) (CDFW 2022, CNPS 2022)
- California Wildlife Habitat Relationships System (CDFW 2013)
- eBird occurrences (The Cornell Lab of Ornithology 2021)
- Other pertinent databases and literature, including the online *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2022), *The Jepson manual: vascular plants of California* (Baldwin et al. 2012), and Jepson eFlora (Jepson Flora Project (eds.) 2021).

Original USFWS, NMFS, California Natural Diversity Database (CNDDDB), and California Native Plant Society (CNPS) queries are provided in Appendices B and C. Stantec biologists developed a list of special status species that could occur or are known to occur in the BSA and vicinity based on background research. After the field visits, Stantec biologists further refined the list to identify species that could occur in the BSA.

2.3.3. FIELD REVIEWS AND SURVEY METHODS

During September 1-3, 2020, Stantec biologists Sarah Tona and Jacqueline Phipps conducted a wetland delineation according to methodology described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE 2010). Stantec biologists also evaluated features that may qualify as CCC waters. The biologists mapped vegetation following the technical approach and vegetation alliance classification system described in A Manual of California Vegetation, Second Edition (MCV) (Sawyer et al. 2009) and updated in the current online edition (CNPS 2021). The biologists also performed a reconnaissance-level assessment for habitat for special status plant and wildlife species during the field visit.

RCAA conducted a botanical survey in the BSA on April 14-15, May 20-21, August 27, and September 9, 2021, in general accordance with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018).

RCAA and Caltrans biologists conducted a survey for suitable habitat for special status bats and birds on July 6, 2021. The survey was conducted on foot and from the water in a kayak, and biologists used high-powered binoculars and flashlights to assess conditions of the bridge over Little River.

2.4. Personnel and Survey Dates

The following is a list of personnel and tasks performed during visits to the project site:

- Sarah Tona and Jacqueline Phipps, Stantec, wetland delineation survey, vegetation mapping, and reconnaissance-level habitat assessment, September 1-3, 2020.
- Susannah Ferson, Andres Rodriguez, and Calvin Brekeen IV, RCAA, botanical survey, April 14-15 and May 20-21, 2021.
- Nicholas Simpson, CDFW, Denise Newman, RCAA, and Andrea Hilton, GHD for anadromy evaluation of the unnamed tributary on June 1, 2021.
- Denise Newman, RCAA, and Christa Unger, Caltrans, bridge survey for birds and bats, July 6, 2021.
- Denise Newman, Susannah Ferson, and Candace Reynolds, RCAA, late-season botanical survey, August 27 and September 9, 2021.

2.5. Agency Coordination and Professional Contacts

Stantec biologists obtained a list (Consultation Code 08EACT00-2021-SLI-0411 [Appendix C]) of federally listed, proposed, and candidate species with the potential to occur in the vicinity of the BSA. The list was electronically obtained from the USFWS Arcata Fish and Wildlife Office Information for Planning and Consultation planning tool on July 19, 2021 and updated on March 16, 2022.

Stantec biologists electronically obtained a list of federally listed fishes that have the potential to occur in the BSA (Appendix C) from the NMFS West Coast Region kmz tool on July 19, 2021 and updated on March 16, 2022.

GHD environmental staff Andrea Hilton corresponded via email with Mike Kelly at NMFS on July 27 and 28, 2021 to confirm a hydroacoustic assessment would not be required for the project, related to widening the Little River bridge and other informal details related to crossing options for the unnamed tributary. Jen Olsen of CDFW was included on the email correspondence.

Caltrans provided the draft project plans to NMFS for review and has engaged in ongoing technical assistance with NMFS to inform the design process.

2.6. Limitations That May Influence Results

All field studies were conducted in accordance with applicable protocols. Therefore, no limitations that may influence the results of field studies associated with this project are known to have occurred.

Chapter 3. Results: Environmental Setting

3.1. Description of Existing Physical and Biological Conditions

3.1.1. BIOLOGICAL STUDY AREA

Under Section 7 consultations, the action area includes those areas of land, water, and air to be affected directly or indirectly by the federal action and not merely the immediate footprint of the project activities (50 CFR 402.02). The action area is determined in part by the proposed project activities; site geography; topography and hydrology; and an understanding of the distribution, habitat requirements, phenology, and vulnerability of special status species potentially occurring in the action area. For the purposes of the Section 7 consultation, the BSA area depicted in Figure 2 (Appendix A) is the same area as the action area; and the term BSA is used for the remainder of this effort. The BSA encompasses the anticipated footprint of the proposed construction activity, construction staging and storage areas, and portions of waterways outside the immediate construction footprint that may be impacted.

The BSA is bisected about midpoint by the Little River, a wide, slow moving, estuarine perennial stream. The northern upland terrace is forested and located adjacent to US 101, occurring from Little River north to Scenic Drive. Estuarine-influenced vegetation and riparian wetlands are adjacent to the Little River and are downslope from the upland terrace. The section of the BSA south of Little River includes coastal scrub habitat located on a hillslope east of the active dunes at Little River Beach, which are outside the BSA and project boundary.

Land uses in the immediate vicinity include US 101 and a few lesser roads, and natural resources and recreation, including State Parks property on the adjacent public beaches that generally border the alignment to the west. Aside from US 101, the area is generally undeveloped and does not include residential, commercial, or other public facilities.

3.1.2. PHYSICAL CONDITIONS

The topography of the BSA is generally characterized as stream floodplain and fresh emergent wetland/riparian habitat that is associated with the Little River. The topography rises up to an upland terrace south, north, and east of the Little River. The Little River generally has a broad floodplain, except near the US 101 bridge, where it is steep. The elevation ranges from 0 to about 80 feet above mean sea level.

Climate conditions for the BSA summarized below are based on historical data collected between 1971 and 2020 at the Arcata-Eureka Airport (Western Regional Climate Center 2020):

- **Type:** Mediterranean Summer Fog with cool wet winters and cool foggy summers.
- **Precipitation:** Average annual precipitation is approximately 47 inches. Most precipitation falls as rain between the months of October and May.
- **Air Temperature:** Air temperatures range between an average January high of 56 degrees Fahrenheit (°F), and an average August high of 64 °F. The year-round average high temperature is approximately 60 °F.

- **Growing Season:** The growing season (i.e., 50 percent probability of air temperature 28 °F or higher) is 354 days.

Hydrology in the BSA is primarily driven by the Little River, which is an estuarine perennial stream that drains westward and bisects the BSA. Estuaries form a transition zone between river systems and the ocean, where freshwater features are influenced by the tide and the influx of saline water. Culverts under US 101 provide additional hydrology through unnamed perennial streams and overflow water during rain events.

The custom soil resources report for the Humboldt and Del Norte Area, California, shows three soil map units within the BSA (Natural Resources Conservation Service 2021). These soil map units are described below:

- **Fluvaquents, 0 to 2 percent slopes (131).** This is a poorly drained hydric soil associated with alluvium derived from mixed sources in overflow stream channels. The depth to a restrictive layer is more than 80 inches.
- **Samoa-Clam Beach complex, 0 to 50 percent slopes (155).** This soil complex consists of two soil types. Samoa is an excessively drained non-hydric soil associated with eolian and marine sand derived from mixed sources on sand dunes. The depth to a restrictive layer is more than 80 inches. Clambeach is very poorly drained hydric soil associated with eolian and marine sand derived from mixed sources in deflation basins. The depth to a restrictive layer is more than 80 inches.
- **Lepoil-Espa-Candy Mountain complex, 15 to 50 percent slopes (258).** This soil complex consists of well-drained non-hydric soils associated with mixed marine deposits derived from sedimentary rock on marine terraces. The depth to the restrictive layer is more than 80 inches. Hydric minor components occur in drainage ways and on marine terraces.

3.1.3. BIOLOGICAL CONDITIONS

3.1.3.1. Vegetation Communities

Vegetation mapping followed the technical approach and vegetation alliance classification system described in *A Manual of California Vegetation, Second Edition* (Sawyer et al. 2009) and updated in the current online edition (CNPS 2021) or in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), as appropriate.

Descriptions of these communities are provided below and shown on Figure 4, Appendix A.

Forests and Woodlands: Sitka Spruce Forest Alliance

Sitka spruce forest alliance occurs above Little River beach south of the Little River, and as mature forest on an upland terrace north of Little River. This community is dominated by Sitka spruce with scattered Monterey pine (*Pinus radiata*) and Douglas fir (*Pseudotsuga menziesii*). The tree layer is sparse in the southern portion of the BSA, with only about 10 percent absolute tree cover. The shrub layer is dominated by about 8 percent absolute cover of coyote brush (*Baccharis pilularis*). The herbaceous layer is dense and dominated by European beachgrass

(*Ammophila arenaria*), with yellow bush lupine (*Lupinus arboreus*) and sword fern (*Polystichum munitum*) common as well.

The Sitka spruce forest north of Little River occurs on an upland terrace and is a high-quality intact stand dominated by mature Sitka spruce trees at approximately 30 percent absolute cover. Red alder (*Alnus rubra*) and Hooker's willow (*Salix hookeriana*) occur to a small extent in the subcanopy. The herbaceous layer is dominated by sword fern, bracken fern (*Pteridium aquilinum*), slough sedge (*Carex obnupta*), English ivy (*Hedera helix*), and California blackberry (*Rubus ursinus*).

Forests and Woodlands: Red Alder Forest Alliance

Red alder forest alliance occurs on the north side of Little River. Red alder is the sole dominant tree in the upland areas of the BSA; while in the lower elevation areas, red alders are co-dominant with Hooker's willow. Shrubs in the understory include red elderberry (*Sambucus racemosa*), California blackberry, and Himalayan blackberry (*Rubus armeniacus*). The herbaceous layer contains sword fern and bracken fern in the upland areas and skunk cabbage (*Lysichiton americanus*), slough sedge, and small-fruited bulrush (*Scirpus microcarpus*) in the wetland areas.

Shrublands: Coastal Dune Willow Thickets Alliance

Coastal dune willow thickets alliance occurs in small patches throughout the BSA. Hooker's willow is dominant in the shrub layer and moderate to dense at about 60 percent absolute cover. Scattered wax myrtle (*Morella californica*), coast twinberry (*Lonicera involucrata*), and Cascara sagrada (*Frangula purshiana*) are present as well. Slough sedge and sword fern are common in the herbaceous layer.

Shrublands: Coyote Brush Scrub Alliance

Coyote brush scrub alliance occurs intermixed with Sitka spruce forest and coastal dune willow thickets south of Little River in coastal scrub habitat. The shrub layer is fairly sparse, with only 8-10 percent absolute cover of coyote brush. Himalayan blackberry and California blackberry are common in the shrub layer as well. The herbaceous layer is dominated by European beachgrass and sword fern.

Herbaceous Vegetation: Slough Sedge Swards Alliance

Slough sedge swards alliance occurs along the edge and within the ordinary high water mark of Little River. Little River is an estuarine feature adjacent to the Pacific Ocean and is tidally influenced. The slough sedge community is partially inundated by the Little River when the tide is high. The alliance is dominated by slough sedge, and no other plant species occurs in the small area adjacent to the river.

Herbaceous Vegetation: Pacific Silverweed Marshes Alliance

Pacific silverweed (*Argentina egedii*¹) marshes alliance occurs on the north bank of the Little River, located between the slough sedge community and the coastal dune willow community on the river terrace. The community is dominated by Pacific silverweed and redtop (*Agrostis stolonifera*). Other common plants in the herbaceous community include bird's foot trefoil (*Lotus corniculatus*), Pacific aster (*Symphyotrichum chilense*), and Baltic rush (*Juncus balticus*).

Herbaceous Vegetation: Non-Native Grassland

Non-native grassland occurs in small patches alongside US 101 and side roads in the southern portion of the BSA. The vegetation was mowed, so plant identification was limited and is not categorized as a natural community. The community has a dense herbaceous cover dominated by fescue (*Festuca* sp.), carrot (*Daucus carota*), plantain (*Plantago* sp.), and bird's foot trefoil. This community also contains a narrow, vegetated ditch with hydrophytic vegetation, including rushes (*Juncus* spp.) and willow (*Salix* sp.) seedlings.

3.1.3.2. Common Wildlife

Mixed conifer forest, hardwood forest, shrubland, riparian, and estuarine habitats in the BSA provide habitat for a variety of common wildlife species. During the site visit conducted in September 2020, Stantec biologists observed song sparrow (*Melospiza melodia*), Brandt's cormorant (*Phalacrocorax penicillatus*), and cliff swallow (*Petrochelidon pyrrhonota*). Roosevelt elk (*Cervus canadensis roosevelti*) or black-tailed deer (*Odocoileus hemionus*) forage and bed in the area, indicated by scat and bed down areas throughout the BSA. Other common mammals that may forage and den in the area include gray fox (*Urocyon cinereoargenteus*), raccoon (*Procyon lotor*), and black bear (*Ursus americanus*). Reptiles may occur near Little River and other aquatic features in the BSA, including Western toad (*Anaxyrus boreas*), Pacific treefrog (*Pseudacris regilla*), and bullfrog (*Lithobates catesbeianus*). Common reptiles in the area that may occur in the forest and shrublands include Western fence lizard (*Sceloporus occidentalis*), common garter snake (*Thamnophis sirtalis*), and gopher snake (*Pituophis catenifer*). River otters (*Lontra canadensis*) are commonly seen in estuarine systems and may occur in and along Little River.

3.1.3.3. Habitat Connectivity

Habitat corridors are segments of land that provide linkages between different habitats while also providing cover. On a broader level, corridors also function as avenues along which wide-ranging animals can travel, plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and threatened species can be replenished from other areas. Habitat corridors often consist of riparian areas along streams, rivers, or other natural features. Additionally, the rivers and streams themselves serve as migration corridors for anadromous fish.

Within the BSA, Little River and its associated riparian habitat provides a migration corridor for wildlife species, including anadromous fish traveling upstream from the ocean to their spawning ground. Similarly, the unnamed tributary within the BSA is also an anadromous migration

¹ Synonym to *Potentilla anserina* in Jepson eFlora (Jepson Flora Project 2021).

corridor (PS-2 on Page 2 of Figure 5, Appendix A). Upland forest habitat within the BSA provides habitat and migration connectivity for wildlife and avian species.

3.1.3.4. Invasive Species

Invasive plants (including designated noxious weeds) are undesirable, non-native plants that commonly invade disturbed sites. Most species have been introduced from Europe and Asia and are known to degrade native wildlife habitat and plant communities. When disturbance results in the creation of habitat openings or in the loss of intact native vegetation, invasive plants may colonize the site and spread, often out-competing native species. Once established, they are very difficult to eradicate and could pose a threat to native species.

All non-native plant species observed in the BSA during the botanical survey were reviewed to determine their status as invasive plants according to the ratings in the California Invasive Plant Inventory produced by California Invasive Plant Council (Cal-IPC 2021). The California Invasive Plant Council categorizes non-native invasive plants into three categories of overall negative ecological impact in California: high, moderate, limited. The non-native plants were also reviewed to determine if any plants are on the California Department of Food and Agriculture list of Noxious Weeds (California Department of Food and Agriculture 2021). Table 2 shows the invasive plant species observed in the BSA during the 2021 botanical survey.

Table 2. Invasive Plant Species in the Biological Study Area

Scientific Name	Common Name	Cal-IPC/CDFA ¹
<i>Agrostis stolonifera</i>	creeping bent/redtop bent	Limited/-
<i>Ammophila arenaria</i>	European beachgrass	High/-
<i>Anthoxanthum odoratum</i>	sweet vernal grass	Limited/-
<i>Avena fatua</i>	wild oats	Moderate/-
<i>Brassica rapa</i>	field mustard	Limited/-
<i>Bromus diandrus</i>	ripgut brome	Moderate/-
<i>Bromus hordeaceus</i>	soft brome	Limited/-
<i>Cirsium vulgare</i>	bull thistle	Moderate/-
<i>Cortaderia jubata</i>	Jubata grass	High/Noxious
<i>Cotoneaster pannosus</i>	silverleaf cotoneaster	Moderate/-
<i>Cytisus scoparius</i>	Scotch broom	High/Noxious
<i>Delairea odorata</i>	cape ivy	High/Noxious
<i>Digitalis purpurea</i>	purple foxglove	Limited/-
<i>Festuca arundinacea</i>	reed fescue	Moderate/-
<i>Foeniculum vulgare</i>	fennel	Moderate/-
<i>Genista monspessulana</i>	French broom	High/Noxious
<i>Geranium dissectum</i>	wild geranium	Limited/-
<i>Hedera helix</i>	English ivy	High/-
<i>Holcus lanatus</i>	common velvet grass	Moderate/-
<i>Hypochaeris radicata</i>	rough cat's-ear	Moderate/-
<i>Ilex aquifolium</i>	English holly	Limited/-

Scientific Name	Common Name	Cal-IPC/CDFA ¹
<i>Plantago lanceolata</i>	English plantain	Limited/-
<i>Rubus armeniacus</i>	Himalayan blackberry	High/-
<i>Rumex acetosella</i>	sheep sorrel	Moderate/-

Notes:

1) Ratings

California Invasive Plant Council (Cal-IPC)

High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate: These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

California Department of Food and Agriculture (CDFA)

Noxious: listed as a noxious weed by CDFA.

3.2. Regional Species and Habitats and Natural Communities of Concern

3.2.1. HABITATS AND NATURAL COMMUNITIES OF CONCERN

3.2.1.1. Tree Resources

One hundred seventeen (117) upland trees (6 inches or greater dbh) would be removed to accommodate trail construction. Tree species proposed for removal include red alder, Sitka spruce, and Monterey pine. Tree removal would not occur within riparian habitats. According to Humboldt County Code, this would be considered major vegetation removal and would require a special permit prior to tree removal.

3.2.1.2. Waters of the United States and State and California Coastal Commission Waters

Waters within the BSA include a perennial stream (Little River) and an unnamed perennial tributary to Little River. Riparian wetlands and fresh emergent wetlands are located on either side of Little River, as well as in the extensive estuarine habitat on the west side of the BSA (Figure 5 and 6, Appendix A).

3.2.1.3. Sensitive Natural Communities

Several natural communities mapped in the BSA are considered sensitive by the CDFW (CDFW 2020). Sensitive natural communities in the BSA include coastal dune willow thickets, Pacific silverweed marshes, Sitka spruce forest, and slough sedge swards (Figure 4, Appendix A).

Riparian habitat is considered a sensitive natural community by USACE, CDFW, and CCC and is present in the BSA. In addition to providing habitat for many wildlife species, riparian areas provide shade, sediment, nutrient or chemical regulation, stream bank stability, and input for large woody debris or organic matter to the channel, which are necessary habitat elements for fish and other aquatic species. Riparian habitat is present on either side of Little River in the

BSA and include Pacific silverweed marshes, slough sedge swards, and coastal dune willow thickets (Figure 4, Appendix A).

3.2.1.4. Upland Environmentally Sensitive Habitat Areas

Upland ESHAs within the BSA include all sensitive natural communities that are not waters of the U.S. or CCC waters (Figure 7, Appendix A).

3.2.2. SPECIAL STATUS PLANTS

For the purpose of this evaluation, special status plant species include plants that are (1) listed as threatened or endangered under the CESA or the FESA; (2) identified as state or federal candidate or proposed species for listing as threatened or endangered; (3) designated as rare by the CDFW; and/or (4) have a California Rare Plant Rank (CRPR) of 1, 2, 3, or 4.

Regionally occurring special status plant species were identified based on a review of pertinent literature, the USFWS species list, CNDDDB and California Native Plant Society database records, and the field survey results. The status of each special status plant species was verified using the *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2021a) and the *State and Federally Listed Endangered, Threatened and Rare Plants of California* (CDFW 2021b).

All of the special status plant species identified (Table 3) were evaluated for their potential to occur in the BSA based on the expected geographic range and the presence of suitable habitat requirements (e.g., substrate, hydrology, vegetation type, disturbance). Federally listed species that may potentially occur in the BSA were given an effects determination (i.e., no effect, may affect, not likely to adversely affect). All special status species were evaluated according to the following guidelines:

- **Not likely to occur:** Habitat within the biological study area (BSA) does not satisfy the species' requirements and/or the project is not within the known or expected range of the species. Known occurrences have not been reported from the region. The species was not detected during protocol-level surveys. The species' presence within the BSA is very unlikely.
- **Low Potential:** Habitat within the BSA satisfies few of the species' requirements. Known occurrences have not been reported from the BSA. The species' presence within the BSA is not likely.
- **Moderate Potential:** Habitat within the BSA meets some of the species' requirements and known locations for the species are found within 10 miles of the project. Presence of the species within the BSA is moderately possible.
- **High Potential:** Habitat within the BSA meets most or all of the species' requirements and known locations of the species are within 5 miles of the project. Presence of the species within the BSA is highly likely.

Based on the habitat assessment, the BSA provides potential habitat for 48 special status plant species. Only one special status plant species was observed in the BSA during the protocol-level botanical survey; the remainder were not observed and are not likely to occur in the BSA.

Table 3. Special Status Plants and Critical Habitat Potentially Occurring or Known to Occur in the Biological Study Area

Common Name <i>Scientific Name</i>	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Federal or State Listed Species				
Menzies' wallflower <i>Erysimum menziesii</i>	FE/SE/1B.1	Coastal dunes. Elevation: 0-100 feet. Bloom: March-April.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal dune habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No effect.
beach layia <i>Layia carnosa</i>	FE/SE/1B.1	Coastal dunes, sandy scrub. Elevation: 0-200 feet. Bloom: March-July.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal dune habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No effect.
western lily <i>Lilium occidentale</i>	FE/SE/1B.1	Coastal bluff scrub, bogs and fens, north coast coniferous forest. Elevation: 0-600 feet. Bloom: June-July.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No effect.
Other Special status Species				
Pink sand-verbena <i>Abronia umbellata</i> var. <i>breviflora</i>	—/—/1B.1	Coastal dunes. Elevation: 0-30 feet. Bloom: June-October.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal dune habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

Common Name Scientific Name	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Sea-watch <i>Angelica lucida</i>	—/—/4.2	Coastal bluff scrub, coastal dunes, coastal scrub, marshes, and swamps. Elevation: 0-50 feet. Bloom: April-September.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal dune habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Twisted horsehair lichen <i>Bryoria spiralifera</i>	—/—/1B.1	North coast coniferous forest. Elevation: 0-100 feet. Bloom: Not applicable.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Bolander's reed grass <i>Calamagrostis bolanderi</i>	—/—/1B.1	Bogs and fens, coastal scrub, marshes and swamps, meadows and seeps, north coast coniferous forest. Elevation: 0-400 feet. Bloom: May-August.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Seaside bittercress <i>Cardamine angulata</i>	—/—/2B.2	Lower montane coniferous forest and North Coast coniferous forest. Elevation: 100-3,000 feet. Bloom: March-July.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Northern clustered sedge <i>Carex arcta</i>	—/—/2B.2	Bogs and fens, and north coast coniferous forest. Elevation: 200-4,600 feet. Bloom: June-September.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period, and therefore, was presumed absent. No impact.

Common Name Scientific Name	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Lagoon sedge <i>Carex lenticularis</i> var. <i>limnophila</i>	—/—/2B.2	Bogs and fens, marshes, swamps, and north coast coniferous forest. Elevation: 0-20 feet. Bloom: June-August.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Bristle-stalked sedge <i>Carex leptalea</i>	—/—/2B.2	Bogs, fens, marshes, seeps, and swamps. Elevation: 0-2,300 feet. Bloom: March-July.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Lyngbye's sedge <i>Carex lyngbyei</i>	—/—/2B.2	Marshes and swamps. Elevation: 0-30 feet. Bloom: April- August.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Deceiving sedge <i>Carex saliniformis</i>	—/—/1B.2	Mesic habitat, coastal prairie, coastal scrub, meadows, seeps, and swamps. Elevation: 0-750 feet. Bloom: May- June.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Green yellow sedge <i>Carex viridula</i> ssp. <i>viridula</i>	—/—/2B.3	Bogs, fens, marshes, and swamps. North coast coniferous forest. Elevation: 0-5,250 feet. Bloom: July- September.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

Common Name Scientific Name	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Humboldt Bay owl's-clover <i>Castilleja ambigua</i> var. <i>humboldtiensis</i>	—/—/1B.2	Marshes and swamps. Elevation: 0-10 feet. Bloom: April- August.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Oregon coast paintbrush <i>Castilleja litoralis</i>	—/—/2B.2	Sandy habitat, coastal bluff scrub, coastal dunes, and coastal scrub. Elevation: 49-325 feet. Bloom: June-July.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal dune habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Mendocino Coast paintbrush <i>Castilleja</i> <i>mendocinensis</i>	—/—/1B.2	Coastal bluff scrub, closed- cone coniferous forest, coastal dunes, coastal prairie, and coastal scrub. Elevation: 0-525 feet. Bloom: April- August.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal dune habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Point Reyes bird's-beak <i>Chloropyron</i> <i>maritimum</i> ssp. <i>palustre</i>	—/—/1B.2	Marshes and swamps. Elevation: 0-30 feet. Bloom: June-October.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Pacific golden saxifrage <i>Chrysosplenium</i> <i>glechomifolium</i>	—/—/4.3	North coast coniferous forest, riparian forest. Elevation: 30-700. Bloom: February- June.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

Common Name Scientific Name	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Naked flag moss <i>Discelium nudum</i>	—/—/2B.2	Coastal bluff scrub. Elevation: 30-160 feet. Bloom: Unknown.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal bluff scrub habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Black crowberry <i>Empetrum nigrum</i>	—/—/2B.2	Costal bluff scrub, coastal prairie. Elevation: 30-650 feet. Bloom: April-June.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal bluff scrub habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Coast fawn lily <i>Erythronium revolutum</i>	—/—/2B.2	Mesic, streambanks, bogs and fens, north coast coniferous forest. Elevation: 0-5,250 feet. Bloom: March-July.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Minute pockey moss <i>Fissidens pauperculus</i>	—/—/1B.2	North Coast coniferous forest. Elevation: 30-3,350 feet. Bloom: Not applicable.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Pacifica gilia <i>Gilia capitata</i> ssp. <i>pacifica</i>	—/—/1B.2	Coastal bluff scrub, chaparral openings, coastal prairie, valley and foothill grassland. Elevation: 15-5,400 feet. Bloom: April-August.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal bluff scrub habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

Common Name Scientific Name	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Dark-eyed gilia <i>Gilia millefoliata</i>	—/—/1B.2	Coastal dunes Elevation: 0-100 feet. Bloom: April- July.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal dune habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Sierra rush <i>Juncus nevadensis</i> var. <i>inventus</i>	—/—/2B.2	Bogs, fens, and swamps. Elevation: 0-30 feet. Bloom: July- November.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Small groundcone <i>Kopsiopsis hookeri</i>	—/—/2B.3	North Coast coniferous forest. Elevation: 300- 2,900 feet. Bloom: April- August.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Seaside pea <i>Lathyrus japonicus</i>	—/—/2B.1	Coastal dunes. Elevation: 0-100 feet. Bloom: May- August.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal dune habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Marsh pea <i>Lathyrus palustris</i>	—/—/2B.2	Bogs and ferns, coastal prairie, coastal scrub, lower montane coniferous forest, marshes, and swamps. Elevation: 0-320 feet. Bloom: March-August.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

Common Name Scientific Name	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Heart-leaved twayblade <i>Listera cordata</i>	—/—/4.2	Bogs and fens, north coast coniferous forest. Elevation: 15- 4,500 feet. Bloom: February- July.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Inundated bog club-moss <i>Lycopodiella inundata</i>	—/—/2B.2	Bogs and ferns, lower montane coniferous forest, marshes, and swamps. Elevation: 15-300 feet. Bloom: Not applicable.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Running pine <i>Lycopodium clavatum</i>	—/—/4.1	Marshes and swamps, north coast coniferous forest. Elevation: 150-4,200 feet. Bloom: Not applicable.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Northern bungleweed <i>Lycopus uniflorus</i>	—/—/4.3	Marshes and swamps. Elevation: 15- 6,500 feet. Bloom: July- September.	HP	Not likely to occur. Swamp habitat in the western portion of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Leafy stemmed miterwort <i>Mitellastra caulescens</i>	—/—/4.2	Meadows and seeps, north coast coniferous forest. Elevation: 15- 5,400 feet. Bloom: April- October.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

Common Name Scientific Name	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Woodnymph <i>Moneses uniflora</i>	—/—/2B.2	Broadleafed upland forest, north coast coniferous forest. Elevation: 330-3,600 feet. Bloom: May-August.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Howell's montia <i>Montia howellii</i>	—/—/2B.2	Vernally mesic, sometimes roadsides. Meadows and seeps, North coast coniferous seeps, and vernal pools. Elevation: 0-2,750 feet. Bloom: March-May.	HP	Not likely to occur. Seep habitat in north coast coniferous forest provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Wolf's evening-primrose <i>Oenothera wolfii</i>	—/—/1B.1	Coastal bluff scrub, coastal dunes, coastal prairie, and lower montane coniferous forest. Elevation: 0-2,600 feet. Bloom: May-October.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal dune habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Seacoast ragwort <i>Packera bolanderi</i> var. <i>bolanderi</i>	—/—/2B.2	Coastal scrub, north coast coniferous forest, sometimes roadside. Elevation: 100-2,100 feet. Bloom: May-July.	HP	Not likely to occur. North coast coniferous forest and coastal scrub throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
California pinefoot <i>Pityopus californicus</i>	—/—/4.2	North coast coniferous forest, lower montane coniferous forest. Elevation: 50-7,500 feet. Bloom: May-August.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

Common Name Scientific Name	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Nodding semaphore grass <i>Pleuropogon refractus</i>	—/—/4.2	Meadows and seeps, north coast coniferous forest. Elevation: 0-5,200 feet. Bloom: April- July.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Oregon Polemonium <i>Polemonium carneum</i>	—/—/2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation: 0-6,000 feet. Bloom: April- September.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal scrub habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Trailing black currant <i>Ribes laxiflorum</i>	—/—/4.3	North coast coniferous forest. Elevation: 15- 4,500 feet. Bloom: March- July.	P	Present. This species occurs in the BSA. It was located during the 2021 botanical surveys. No impact with avoidance measures.
Tracy's Romanzoffia <i>Romanzoffia tracyi</i>	—/—/2B.3	Rocky habitat, coastal bluff scrub, and coastal scrub. Elevation: 50-100 feet. Bloom: March-May.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal scrub habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Maple leaved checkerbloom <i>Sidalcea malachroides</i>	—/—/4.2	North coast coniferous forest, riparian woodland. Elevation: 0-2,300 feet. Bloom: April- August.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

Common Name <i>Scientific Name</i>	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Siskiyou checkerbloom <i>Sidalcea malviflora</i> ssp. <i>patula</i>	—/—/1B.2	Coastal bluff scrub, coastal prairie, and North Coast coniferous forest. Elevation: 50-2,900 feet. Bloom: May- August.	HP	Not likely to occur. North coast coniferous forest and coastal scrub throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Coast checkerbloom <i>Sidalcea oregana</i> ssp. <i>eximia</i>	—/—/1B.2	Lower montane coniferous, meadows and seeps, and north coast coniferous forest. Elevation: 15-4,400 feet. Bloom: June- August.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Scouler's catchfly <i>Silene scouleri</i> ssp. <i>scouleri</i>	—/—/2B.2	Coastal bluff scrub, coastal prairie, valley, and foothill grassland. Elevation: 0-2,000 feet. Bloom: June-August.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal bluff scrub habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.
Methuselah's beard lichen <i>Usnea longissima</i>	—/—/4.2	Broadleaf upland forest, north coast coniferous forest. Elevation: 160- 4,500 feet. Bloom: Not applicable.	HP	Not likely to occur. North coast coniferous forest throughout the majority of the BSA provides suitable habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

Common Name <i>Scientific Name</i>	Status ¹ (Fed/State/ CRPR)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Alpine marsh violet <i>Viola palustris</i>	—/—/2B.2	Bogs and fens, coastal scrub. Elevation: 0-500 feet. Bloom: March-August.	HP	Not likely to occur. The southern portion of the BSA contains suitable coastal scrub habitat for the species. The species was not located during protocol-level botanical surveys performed during the species' bloom period and, therefore, was presumed absent. No impact.

1) **Status Codes:**

Federal: Federal Threatened (FT)

State: State Threatened (ST); State Fully Protected (FP); State Species of Special Concern (SSC).

CRPR Codes and Extensions:

1A Plants presumed extirpated in California and either rare or extinct elsewhere.

1B Plants rare, threatened, or endangered in California and elsewhere.

2A Plants presumed extirpated in California, but more common elsewhere.

2B Plants rare, threatened, or endangered in California, but more common elsewhere.

xx.3 Not very endangered in California

xx.2 Fairly endangered in California

xx.1 Seriously endangered in California

4. Plants of limited distribution, a watch list.

2) **Assessment Codes:**

Absent (A): No habitat present and no further work needed. Habitat Present (HP): Habitat is, or may be

present. Present (P): The species is present. Critical Habitat (CH): BSA is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

3.2.3. SPECIAL STATUS WILDLIFE

Special status wildlife species include species that are (1) listed as threatened or endangered under the CESA or the FESA; (2) proposed for federal listing as threatened or endangered; (3) identified as state or federal candidates for listing as threatened or endangered; (4) identified by the CDFW as Species of Special Concern or California Fully Protected Species; and/or (5) protected under the Bald and Golden Eagle Protection Act.

Regionally occurring special status wildlife species were identified based on a review of pertinent literature, the NMFS list, the USFWS species list, CNDDDB database records, eBird, a query of the California Wildlife Habitats Relationship system, and the field survey results. The status for each special status wildlife species was verified using the *Special Animals List* (CDFW 2021c) and the *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2021d).

All of the special status wildlife species identified (Table 4) were evaluated for their potential to occur in the BSA based on the expected geographic range and the presence of suitable habitat requirements of each species.

Federally listed species that may potentially occur in the BSA were given an effects determination (i.e., no effect, may affect, not likely to adversely affect). All special status species were evaluated according to the following guidelines:

- **Not likely to occur:** Habitat within the biological study area (BSA) does not satisfy the species' requirements and/or the project is not within the known or expected range of the species. Known occurrences have not been reported from the region. The species' presence within the BSA is very unlikely.
- **Low Potential:** Habitat within the BSA satisfies few of the species' requirements. Known occurrences have not been reported from the BSA. The species' presence within the BSA is not likely.
- **Moderate Potential:** Habitat within the BSA meets some of the species' requirements and known locations for the species are found within 10 miles of the project. Presence of the species within the BSA is moderately possible.
- **High Potential:** Habitat within the BSA meets most or all of the species' requirements and known locations of the species are within 5 miles of the project. Presence of the species within the BSA is highly likely.

A species was only considered for additional review if it had at least a low potential to occur; that is, species were not addressed further if suitable habitat was not identified within the BSA, the BSA was found to be outside the species' range, and/or the species (or signs of presence) was not observed during surveys. Based on the habitat assessment, 20 special status wildlife species were determined to have a low, moderate, or high potential to occur in the BSA or are known to be present in the BSA (Table 4). These special status wildlife species are further discussed in Chapter 4.

Table 4. Special Status Wildlife and Critical Habitat Potentially Occurring or Known to Occur in the Biological Study Area

Common Name <i>Scientific Name</i>	Status ¹ (Fed/State)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Federal or State Listed Species				
Crotch bumble bee <i>Bombus crotchii</i>	—/CE	Grasslands and shrublands in hot and dry environments.	A	Not likely to occur. The Biological Study Area (BSA) is outside the known range of this species. No impact.
Western bumblebee <i>Bombus occidentalis</i>	—/CE	Blooming flowers along streams, meadows, roadsides, and burned or logged areas. Nests found underground in abandoned rodent burrows.	A	Not likely to occur. Suitable nesting habitat (rodent burrows) is absent in the BSA. No impact.
Southern Distinct Population Segment (DPS) Green Sturgeon <i>Acipenser medirostris</i>	FT/—	Found in Sacramento and San Joaquin rivers and Delta. Also can be found in Humboldt Bay and the open ocean.	A	Not Likely to Occur. Adults inhabit the open ocean and estuaries, this DPS only spawns in the Sacramento River and its tributaries. No effect.

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Tidewater goby <i>Eucyclogobius newberryi</i>	FE/SSC	Shallow lagoons and coastal streams with brackish to fresh and slow-moving or fairly still water.	A	Not Likely to Occur. Brackish water may be present in the BSA, but preferred lagoon and slow water back habitat is not. Recent eDNA testing for tidewater goby in Little River was negative (Sutter and Kinziger 2019). No effect.
Southern Oregon Northern California coast (SONCC) evolutionarily significant unit (ESU) coho salmon <i>Oncorhynchus kisutch</i>	FT/ST	This ESU occurs from Punta Gorda, California north to Cape Blanco, Oregon. Spawn and rear in freshwater rivers and streams. Juveniles prefer deep (greater than 1 meter) pools with dense overhead cover, and clear water. Requires cool water temperatures for spawning, egg-incubation, and juvenile rearing. Spawning occurs in riffles with gravel and cobble substrates.	HP, CH	High Potential. SONCC coho salmon are known to occur in the Little River and unnamed tributary. The BSA is within migratory habitat for adults and juveniles with rearing not likely to occur. The Little River in the BSA is considered critical habitat. May affect, not likely to adversely affect.
California Coastal ESU Chinook salmon <i>Oncorhynchus tshawytscha</i>	FT/—	The California Coastal ESU includes rivers and streams south of the Klamath River to the Russian River. Populations utilize perennial streams with covered areas (e.g., fallen trees, back eddies, bank cover) and deeper water areas. Spawn and rear in freshwater rivers and streams. Requires cool water temperatures for spawning, egg-incubation and juvenile rearing. Spawn in riffles with gravel and cobble substrates.	HP, CH	High Potential. The Little River provides suitable perennial river habitat. The unnamed tributary has lower potential, as the species prefers mainstem habitat. The BSA is mainly migratory habitat for adults and juveniles with local rearing unlikely to occur. The Little River in the BSA is considered critical habitat. May affect, not likely to adversely affect

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Northern California DPS steelhead <i>Oncorhynchus mykiss</i>	FT/—	This DPS occurs in coastal streams from Redwood Creek south to the Russian River. Spawn and rear in freshwater rivers and streams. Juveniles prefer deep (greater than 1 meter) pools with dense overhead cover, and clear water. Requires cool water temperatures for spawning, egg-incubation and juvenile rearing. Spawn in riffles with gravel and cobble substrates.	P	Present. The Little River and unnamed tributary provides suitable perennial river habitat. The BSA is mainly migratory habitat for adults and juveniles with rearing unlikely to occur. Juvenile steelhead were observed by CDFW on June 1, 2021, in the unnamed tributary, downstream of the BSA. May affect, not likely to adversely affect
Longfin smelt <i>Spirinchus thaleichthys</i>	FC/ST	Adult and juvenile longfin smelt occur in salt or brackish water within estuaries of major rivers. Spawning occurs in fresh water over sandy, gravelly, or areas vegetated with aquatic vegetation. In California, occur in Sacramento-San Joaquin estuary, Humboldt Bay, Eel River estuary, Klamath River estuary, and coastal waters.	A	Not Likely to Occur. This species is not known to occur in Little River. No effect.
Southern eulachon DPS <i>Thaleichthys pacificus</i>	FT/—	Spend most of their life in salt water. Spawning occurs in the lower reaches of large rivers or tributaries with small gravel or in semi-sandy areas with debris. No large runs of eulachon are known to exist south of the Klamath River.	A	Not Likely to Occur. This species is not known to occur in Little River. No effect.
Bank swallow <i>Riparia</i> sp.	—/ST	Colonial nester on vertical banks or cliffs with fine-textured soils near water.	A	Not likely to occur. Suitable nesting habitat is absent from the BSA. No impact.

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Northern spotted owl <i>Strix occidentalis caurina</i>	FT/ST, SSC	In Northern California, resides in large stands of old growth, multi-layered mixed conifer, redwood, and Douglas-fir habitats.	A	Not likely to occur. The BSA lacks nesting habitat for the species. Potential nesting habitat occurs at least 300 feet east of the BSA on the east side of US 101. However, US 101 provides a topographical barrier between the BSA and potential nesting habitat and visual disturbance from construction is not expected. US 101 provides ambient noise at a very high level with large buses and semi-trucks with jake brakes (USFWS 2020b). Noise from construction will be at a similar level to ambient noise, and it is not expected to cause auditory disturbance to nesting Northern spotted owl on the east side of US 101. The region also lacks positive occurrences for the species, with the nearest occurrence located 1.3 miles southeast of the BSA and several negative occurrences located 1 mile northeast of the BSA. No effect.
marbled murrelet <i>Brachyramphus marmoratus</i>	FT/SE	Marine subtidal and pelagic habitats; requires dense, mature forests of redwood and Douglas-fir for breeding.	A	Not likely to occur. The BSA and vicinity lacks old growth habitat and conifers present in the BSA and the vicinity lacks platforms for nesting. No effect.
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT/SSC	Coastal wetlands and coastal dune habitat.	A	Not likely to occur. The coastal scrub habitat in the BSA to the east of existing dunes outside the BSA are well vegetated with European beach grass, coyote brush, and ferns and are not likely to support nesting western snowy plover. The BSA is approximately 400 feet inland from high tide line and coastal beach area. There is no line of sight from the coastal scrub habitat in the southern portion of the BSA to the waveslope. The population breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely-vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries (USFWS 2001). No effect.

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Present/ Absent ²	Rationale
California Ridgeways' rail <i>Rallus obsoletus</i>	FE/SE, FP	Coastal wetlands and brackish areas with mudflats, tidal creeks, and higher marsh vegetation.	A	Not likely to occur. The BSA is outside the current known range of this species. No effect
Western yellow- billed cuckoo <i>Coccyzus americanus</i>	FT/SE	Nesting habitat is extensive and dense cottonwood/willow riparian forest. Occurs only in Northern California along the upper Sacramento Valley portion of the Sacramento River, and the Feather River in Sutter County.	A	Not likely to occur. No suitable nesting habitat is present, the BSA is outside the known range of this species. No effect.
tricolored blackbird <i>Agelaius tricolor</i>	—/ST, SSC	Breeds near fresh water in stands of dense emergent vegetation.	HP	Moderate Potential. Dense emergent wetland vegetation in the BSA provides suitable nesting and foraging habitat. No impact with avoidance measures.
Humboldt marten <i>Martes caurina humboldtensis</i>	PT/SE, SSC	Coastally influenced old- growth redwood forest.	A	Not likely to occur. Old-growth redwood forest is not present in the BSA. The BSA is outside the species' known range. No effect.
Other Special status Species				
Pacific lamprey <i>Entosphenus tridentatus</i>	—/SSC	Medium sized rivers and tributaries that have stable flow year-round where temperatures do not exceed 68 °F for spawning. Streams and rivers with complex channel morphology support ammocoetes (larval) feeding habitat.	HP	Moderate Potential. The Little River and unnamed tributary contains suitable habitat for spawning lamprey and rearing ammocoetes (larval lamprey). No impact with avoidance measures.
Western brook lamprey <i>Lampetra richardsoni</i>	—/SSC	Similar to salmonids and Pacific lamprey. In Oregon they have been found to most commonly occur in shady glides or riffles with relatively fine substrates.	P	Present. The Little River contains suitable habitat for spawning lamprey and rearing ammocoetes (larval lamprey). Adult western brook lamprey were observed by CDFW on June 1, 2021, in the unnamed tributary within the BSA. No impact with avoidance measures.

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Coastal cutthroat trout <i>Oncorhynchus clarkii</i>	—/SSC	Found in low gradient coastal streams and estuaries. Optimal streams are cool and shady, with a lot of instream cover. Spawns in reaches with small to moderate sized gravels. Occur in coastal streams from the Eel River north to Seward, Alaska.	P	Present. Coastal sloughs and streams provide seasonal habitat, including spawning, for the species. Cutthroat trout may seasonally migrate through the BSA between freshwater spawning and rearing habitat of upstream watershed tributaries and estuarine habitats. Juvenile coastal cutthroat trout were observed by CDFW on June 1, 2021, in the unnamed tributary within the BSA. No impact with avoidance measures.
Northern DPS Green Sturgeon <i>Acipenser medirostris</i>	—/SSC	Prefer deep, low gradient reaches in large rivers or off-channel coves and open ocean.	A	Not Likely to Occur. Adults inhabit the open ocean and estuaries. This DPS is not known to spawn in the Little River. No impact.
Northern red-legged frog <i>Rana aurora</i>	—/SSC	Humid forests, woodlands, grasslands, and stream sides in northwestern California, usually near dense riparian cover.	HP	Moderate Potential. The Little River and associated riparian vegetation provides potential breeding habitat for the species. No impact with avoidance measures.
foothill yellow-legged frog <i>Rana boylei</i>	—/SSC	Rocky streams in a variety of habitats.	A	Not Likely to Occur. Little River in the BSA is slow moving estuary tributary with a silty substrate; foothill yellow-legged frog is typically found in or near rocky streams and alluvial habitats. No impact.
Southern torrent salamander <i>Rhyacotriton variegatus</i>	—/SSC	Cold, well-shaded permanent streams and seeps in coastal forests.	HP	Moderate Potential. The Little River and tributaries, and adjacent upland provides potential breeding and upland habitat for the species. No impact with avoidance measures.
Western pond turtle <i>Actinemys marmorata</i>	—/SSC	Slow water aquatic habitat with available basking sites. Hatchlings require shallow water with dense submergent or short emergent vegetation. Require an upland oviposition site in the vicinity of the aquatic site.	HP	Moderate Potential. The Little River and adjacent upland provides potential breeding and upland habitat for the species. No impact with avoidance measures.

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Present/ Absent ²	Rationale
Pacific tailed frog <i>Ascaphus truei</i>	—/SSC	Clear, rocky, swift, cool perennial streams in densely forested habitats. This species is restricted to perennial streams of low temperature in steep-walled valleys with dense vegetation.	A	Not Likely to Occur. Little River in the BSA is slow moving and has a silty substrate. Pacific tailed frog is typically found in or near rocky and swift streams. No impact with avoidance measures.
white-tailed kite <i>Elanus leucurus</i>	—/FP	Nests in lowlands with dense oak or riparian stands near open areas, forages over grassland, meadows, cropland, and marshes.	HP	High Potential. Potential nest trees are present in the BSA and marsh habitat provides suitable foraging habitat. No impact with avoidance measures.
Northern goshawk <i>Accipiter gentiles</i>	—/SSC	Breeds in dense, mature conifer and deciduous forests, interspersed with meadows, other openings, and riparian areas; nesting habitat includes north-facing slopes near water.	A	Not Likely to Occur. The species requires mature forest and are not likely to nest in isolated habitat between the highway and the ocean. No impact.
golden eagle <i>Aquila chrysaetos</i>	—/FP	Breeds on cliffs or in large trees or electrical towers, forages in open areas.	A	Not likely to occur. Cliffs for nesting and open spaces for foraging are absent from the BSA. No impact.
Northern harrier <i>Circus cyaneus</i>	—/SC	Occurs in meadows, grasslands, open rangelands, fresh and saltwater emergent wetlands; seldom in wooded areas.	HP	Moderate Potential. Wetland habitat provides potential breeding habitat for the species. No impact with avoidance measures.
Vaux's swift <i>Chaetura vauxi</i>	—/SC	Prefers redwood and Douglas-fir habitats, nests in hollow trees and snags or, occasionally, in chimneys; forages aerially.	HP	Moderate Potential. Forested areas within the BSA may provide suitable nesting habitat. No impact with avoidance measures.
purple martin <i>Progne subis</i>	—/SC	Breeding habitat includes old-growth, multi-layered, open forest and woodland with snags; forages over riparian areas, forest, and woodlands.	HP	Low Potential. Old growth forest is not found within the BSA but nearby eBird database occurrences suggest that the species may still nest in the area. No impact with avoidance measures.
tufted puffin <i>Fratercula cirrhata</i>	—/SSC	Nests on islands and coastal cliffs.	A	Not likely to occur. Suitable coastal island habitat does not occur in the BSA. No impact.

Common Name Scientific Name	Status ¹ (Fed/State)	General Habitat Description	Habitat Present/ Absent ²	Rationale
fork-tailed storm-petrel <i>Hydrobates frucatus</i>	—/SSC	Forage over the ocean, nests on islands.	A	Not likely to occur. Suitable coastal island habitat does not occur in the BSA. No impact.
yellow warbler <i>Setophaga petechia</i>	—/SSC	Usually breeds in riparian deciduous habitats in summer: cottonwoods, willows, alders, and other small trees and shrubs typical of low, open-canopy riparian woodland.	HP	Moderate Potential. Willow and alder riparian habitats provide suitable nesting habitat for the species. No impact with avoidance measures.
yellow-breasted chat <i>Icteria virens</i>	—/SSC	Breeds in riparian habitats having dense understory vegetation, such as willow and blackberry.	HP	Moderate Potential. Riparian habitat in the BSA provides suitable nesting habitat. No impact with avoidance measures.
pallid bat <i>Antrozous pallidus</i>	—/SSC	Forages over many habitats; roosts in buildings, large oaks or redwoods, rocky outcrops and rocky crevices in mines and caves.	HP	Low Potential. Based on the lack of suitable crevices and wood elements on the bridge over Little River, pallid bat is unlikely to use the bridge for daytime roosting or maternity colonies. The species may roost on the bridge individually at night. No impact with avoidance measures.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	—/SSC	Roosts in colonies in caves, mines, tunnels, or buildings in mesic habitats. Occasionally found on bridges.	HP	Low Potential. Based on the lack of suitable crevices and wood elements on the bridge over Little River, Townsend's big-eared bat is unlikely to use the bridge for daytime roosting or maternity colonies. The species may roost on the bridge individually at night. No impact with avoidance measures.
white-footed vole <i>Arborimus albipes</i>	—/SSC	In California occurs along the Pacific coast from the Oregon border to Humboldt Bay, California. Found in areas with deciduous vegetation. Generally found near water.	HP	Moderate Potential. Suitable deciduous woodland habitat near water is present in the BSA. No impact with avoidance measures.

Common Name Scientific Name	Status¹ (Fed/State)	General Habitat Description	Habitat Present/ Absent²	Rationale
Sonoma red tree vole <i>Arborimus pomo</i>	—/SSC	Douglas-fir, redwood, and mixed evergreen trees in fog belt. Specialized on needles of Douglas and grand fir.	HP	Low Potential. Coniferous forests in the BSA provides potential habitat for the species, although the preferred tree species (Douglas fir and grand fir) used for foraging and nesting are not common in the BSA. No impact with avoidance measures.
Northern California/ Southern Oregon DPS fisher <i>Pekania pennanti</i>	—/SSC	Dens and forages in intermediate to large stands of old-growth forests or mixed stands of old-growth and mature trees with greater than 50% canopy closure. May use riparian corridors for movement.	A	Not likely to occur. The lack of old growth forest and the proximity of US101 to the project likely precludes the species' use of the area. No impact.

1) Status Codes

Federal: Federal Threatened (FT); Federal Endangered (FE)

State: State Threatened (ST); State Endangered (SE); State Fully Protected (FP); State Species of Special Concern (SSC).

2) Assessment Codes

Absent (A): No habitat present and no further work needed. **Habitat Present (HP):** Habitat is, or may be present. The species may be present. **Present (P):** The species is present. **Critical Habitat (CH):** BSA is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present.

Sources:

Sutter, M. and Kinziger, A. P. 2019. Rangewide tidewater goby occupancy survey using environmental DNA. – Conservation Genetics. 20: 597–613.

U.S. Fish and Wildlife Service. 2001. Western Snowy Plover (*Charadrius alexandrinus nivosus*) Pacific Coast Population Draft Recovery Plan. May 2001.

USFWS. 2020b. Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California.

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

4.1. Habitats and Natural Communities of Concern

4.1.1. POTENTIAL WATERS OF THE UNITED STATES AND STATE

4.1.1.1. Survey Results

Stantec biologists conducted a delineation of potential waters of the U.S. and state during the period of September 1-3, 2020 (Stantec, 2020a). Potentially jurisdictional waters include riparian wetland, riparian/fresh emergent wetland complex, fresh emergent wetland, vegetated ditch, and perennial stream occupying a total of 2.92 acres. Table 5 provides a summary by feature type. Potential CCC waters are summarized in section 4.1.2.

Table 5. Potential Waters of the United States and State Summary

Potential Waters of the United States and State	Total Acreage	Total Linear Feet
Wetlands		
Riparian Wetland	0.07	N/A
Riparian /Fresh Emergent Wetland Complex	1.89	N/A
Fresh Emergent Wetland	0.19	N/A
Vegetated Ditch	0.02	N/A
Other Waters		
Perennial Stream	0.75	367
Total Potential Waters of the United States and State	2.92	367

4.1.1.2. Potential Impacts

The following estimates of potential impacts are from the 30% design. Final areas of impact are likely to adjust as the design progresses; however, efforts to avoid and minimize potential impacts will continue throughout the remainder of the design process. The project would result in less than 0.01 acre of temporary impacts on riparian wetland/fresh emergent wetland complex and riparian wetland. Permanent impacts would total approximately 0.01 acre of riparian wetland. Temporary impacts would result from construction access on either side of the trail alignment. Permanent impacts would result from grading and fill, and retaining wall installation. Permanent and temporary impacts on potential waters of the U.S. and state are shown in Figure 5, Appendix A. Potential indirect impacts from construction include erosion, sedimentation, and accidental spills leading to pollution.

4.1.1.3. Avoidance and Minimization Efforts

The project was designed to minimize impacts on potential waters of the U.S. to the extent practicable. No work would occur in the Little River channel. In-water work in the unnamed perennial stream that is tributary to Little River would also not occur. All impacts would occur on the far edges of aquatic resources, where the features extend slightly into the trail alignment. Conservation Measure #1 (*Erosion and Sedimentation Control*) and Conservation Measure #2 (*Prevention of Accidental Spills*) (described in Section 1.4) will be used to reduce or avoid the potential for erosion and sedimentation, as well as to prevent accidental spills that could affect water quality. In addition, the following avoidance and minimization measures will be implemented:

- To the extent practicable, the discharge of dredged or fill material into waters of the United States, including wetlands, will be avoided.
- Exclusionary fencing will be installed along the boundaries of all ESAs to minimize impacts to ESA's outside of the construction area. See Figure 5, Appendix A for proposed exclusionary fencing placement along boundaries of aquatic resources.
- Although project impacts on waters of the United States are minor, the project would result in the discharge of fill material into wetlands, which are classified by the U.S. Army Corps of Engineers (USACE) as a special aquatic site. Therefore, authorization under a Nationwide Permit 14 (Linear Transportation Projects) would likely be obtained from USACE under Section 404.
- Authorization under a Clean Water Act Section 401 Water Quality Certification will be obtained from the North Coast RWQCB.
- Prior to any activities that would obstruct the flow of, or alter the bed, channel, or bank of perennial streams, notification of streambed alteration will be submitted to the California Department of Fish and Wildlife (CDFW) and, if required, a streambed alteration agreement will be obtained from CDFW.
- Any monitoring, maintenance, and reporting required by USACE and CDFW will be implemented and completed. All measures contained in the permits or associated with agency approvals will be implemented.

4.1.1.4. Compensatory Mitigation

Final ratios required for compensatory mitigation will depend on the area and quality of impacted resources. Final ratios will be determined during future consultation between Caltrans and each agency, to the satisfaction of jurisdictional resource agencies and consistent with review and approval of the project's Habitat Mitigation and Monitoring Plan. Under the USACE Nationwide Permit 14 for Linear Transportation Projects, notification to the USACE is required for impacts on special aquatic sites (i.e., wetlands). Approximately 0.01 acre of riparian wetland and riparian wetland/fresh emergent wetland complex will be permanently impacted by the project; notification and mitigation will be required.

Onsite mitigation will include an area ratio of no less than 1:1.2 area temporary and permanent impacts on potential waters of the U.S. Specific mitigation parameters will be decided in coordination with the CCC, USACE, RWQCB, and CDFW.

4.1.1.5. Cumulative Impacts

There are several planned projects in the vicinity of the project which may affect waters of the U.S. and State. Future nearby projects include a pavement rehabilitation project in and near Trinidad; Hum-101 Drainage North, which would rehabilitate culverts at spot locations along US 101; and a shoulder-widening project on Central Avenue in McKinleyville. Future drainage and road improvement projects in the region would apply similar measures as the project to reduce potential impacts to aquatic resources. With implementation of the measures identified above, the project would not result in cumulatively considerable impacts on waters of the U.S. and State, including wetlands.

4.1.2. POTENTIAL CALIFORNIA COASTAL COMMISSION WATERS

4.1.2.1. Survey Results

Potential CCC waters include riparian/fresh emergent wetland, fresh emergent wetland, riparian wetland, and vegetated ditch occupying a total of 4.10 acres (367 linear feet) (Stantec 2020b). CCC waters includes all the features that qualify as waters of the U.S. as well as several additional riparian wetlands that only qualify as CCC waters. Table 6 provides a summary by feature type.

Table 6. California Coastal Commission Waters Summary

California Coastal Commission Waters	Total Acreage	Total Linear Feet
3-Parameter Wetlands		
Riparian/Fresh Emergent Wetland Complex	1.89	N/A
Fresh Emergent Wetland	0.19	N/A
Riparian Wetland	0.07	N/A
Vegetated Ditch	0.02	N/A
1-Parameter Wetlands		
Riparian /Fresh Emergent Wetland Complex	0.54	N/A
Riparian Wetland	0.64	N/A
Streams		
Perennial Stream	0.75	367
Total Potential California Coastal Commission Waters	4.10	367

4.1.2.2. Potential Impacts

Estimates of potential impacts result from the 30% design. Final areas of impact are likely to adjust as the design progresses; however, efforts to avoid and minimize potential impacts will continue throughout the remainder of the design process. The project would result in approximately 0.08 acre of temporary impacts, including 0.07 acre of riparian wetland, and 0.01 acre of riparian/fresh emergent wetland complex. Permanent impacts would total approximately 0.20 acre of riparian wetland. Impacts on CCC waters are equivalent to impacts on waters of the U.S., except for an additional 0.07 acre of temporary impacts on riparian wetlands and an additional 0.19 acre of permanent impacts on riparian wetlands.

Temporary impacts would result from construction access on either side of the trail alignment. Permanent impacts would result from cut and fill, and retaining wall installation. Impacts on potential CCC waters are shown in Figure 6 (Appendix A). Potential indirect impacts from construction include erosion, sedimentation, and accidental spills leading to pollution.

4.1.2.3. Avoidance and Minimization Efforts

Avoidance and minimization efforts provided in the potential waters of the U.S. section would apply to CCC waters. In addition, if required, a Coastal Development Permit will be obtained from the CCC, which will include additional requirements to protect coastal resources, likely to include but not limited to limitations on equipment maintenance and refueling near waters and wetlands and requirements to use biodiesel fuels in equipment when possible.

Exclusionary fencing will be installed along the boundaries of all ESAs to minimize impacts to ESA's outside of the construction area. See Figure 6, Appendix A for proposed exclusionary fencing placement along boundaries of aquatic resources.

4.1.2.4. Compensatory Mitigation

Final ratios required for compensatory mitigation will depend on the area and quality of impacted resources. Final ratios will be determined during future consultation between Caltrans and each agency, to the satisfaction of jurisdictional resource agencies and consistent with review and approval of the project's Habitat Mitigation and Monitoring Plan. Impacts on potential CCC waters are equivalent to impacts of waters of the U.S., except for an additional 0.07 acre of temporary impacts and 0.19 acre of permanent impacts on riparian wetlands. Compensatory mitigation will be similar to mitigation described in the preceding section; mitigation will be no less than 1:1 to the satisfaction of the CCC. Mitigation will not be double-counted when considering riparian habitat mitigation and waters of the U.S. mitigation.

4.1.2.5. Cumulative Impacts

There are several planned projects in the coastal zone in the vicinity of the project which may also affect CCC waters. One planned project is Hum-101 Drainage North, which would rehabilitate culverts at spot locations along US 101. Future drainage and road improvement projects in the area would apply similar measures to reduce potential impacts to aquatic resources. With implementation of the measures identified above, the project would not result in cumulatively considerable impacts on CCC waters.

4.1.3. ENVIRONMENTALLY SENSITIVE HABITAT AREAS AND SENSITIVE NATURAL COMMUNITIES

4.1.3.1. Survey Results

Waters of the U.S. and State and CCC waters are described in preceding sections; only sensitive natural communities, including riparian habitat and the upland ESHA, are discussed in this section. The project's Environmentally Sensitive Habitat Areas Screening Memorandum describes the methods and results of vegetation mapping and determining the ESHA (Stantec 2021). Figure 7 in Appendix A shows the upland ESHA in the BSA.

Riparian habitat occurs on either side of Little River as the following vegetation communities: coastal dune willow thickets, Pacific silverweed marshes, and slough sedge swards (Figure 4, Appendix A). Coastal dune willow thickets also occur elsewhere in the BSA; however, only the community on the north bank of Little River functions as riparian habitat. Four of the seven vegetation communities mapped in the BSA are categorized as sensitive natural communities by CDFW: Sitka spruce forest, coastal dune willow thickets, Pacific silverweed marshes, slough sedge swards. Two of the sensitive natural communities, (Sitka spruce forest and coastal willow thickets) are further separated into high- and low- quality stands. Low-quality stands are not considered sensitive, and high-quality stands are considered sensitive natural communities (Table 7).

Table 7. Vegetation Communities in the Biological Study Area

Alliance	Total Area (acres)	Sensitive Stands (acres)	Upland ESHA (acres)
A Manual of California Vegetation Alliances¹			
Forests and Woodlands			
Sitka spruce forest	4.42	3.19	3.19
Red alder forest	7.05	0	0
Shrublands			
Coastal dune willow thickets	0.96	0.71	0
Coyote brush scrub	1.36	0	0
Herbaceous Vegetation			
Slough sedge swards	0.08	0.08	0
Pacific silverweed marshes	0.11	0.11	0
Non-native grassland ²	2.46	0	0

Notes:

1) A Manual of California Vegetation, available at: www.vegetation.cnps.org. (CNPS 2021)

2) Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986)

ESHA = environmentally sensitive habitat areas

4.1.3.2. Potential Impacts

The following sensitive natural communities are mapped as CCC waters: coastal dune willow thickets, Pacific silverweed marshes, and slough sedge swards. Impacts and mitigation provided for CCC waters also apply to these sensitive natural communities. Impacts on

sensitive natural communities that also qualify as CCC waters are shown on Figure 6, Appendix A.

Impacts on riparian habitat (Figure 4, Appendix A) are included in impacts on CCC waters, as described in the preceding section and shown on Figure 6, Appendix A. No additional impacts on riparian habitat outside of the CCC waters boundaries would occur.

Impacts on upland ESHAs include 0.89 acre of permanent impacts and 0.25 acre of temporary impacts (Figure 7, Appendix A). Upland ESHA also qualifies as the sensitive natural community Sitka spruce forest. Potential indirect impacts from construction include erosion, sedimentation, and accidental spills.

4.1.3.3. Avoidance and Minimization Efforts

Avoidance and minimization measures identified above in the potential waters of the U.S., and potential CCC waters sections will be implemented. In addition, the following measure would be implemented.

- Exclusionary fencing will be installed along the boundaries of all ESAs to minimize impacts to ESA's outside of the construction area. See Figure 7, Appendix A for proposed exclusionary fencing placement to prevent additional impacts on ESHAs.

4.1.3.4. Compensatory Mitigation

Final ratios required for compensatory mitigation will depend on the area and quality of impacted resources. Final ratios will be determined during future consultation between Caltrans and each agency, to the satisfaction of jurisdictional resource agencies and consistent with review and approval of the project's Habitat Mitigation and Monitoring Plan. Impacts on riparian habitat and sensitive natural communities are covered in part in the potential waters of the U.S. and CCC waters compensatory mitigation section. Impacts on upland ESHA (including the sensitive natural community Sitka spruce) will be no less than 1:1. Final mitigation ratios will be determined with jurisdictional agencies during future consultation with Caltrans. Specific mitigation parameters will be decided in coordination with the CCC and CDFW.

4.1.3.5. Cumulative Impacts

There are several planned projects in the vicinity of the project that occur in the coastal zone and may also affect ESHAs. One known project is Hum-101 Drainage North, which would rehabilitate culverts at spot locations along US 101. Future drainage and road improvement projects in the area would apply similar measures to reduce potential impacts to ESHAs. With implementation of the measures identified above, the project would not result in cumulatively considerable impacts on sensitive natural communities and ESHAs.

4.2. Special Status Plant Species

4.2.1. TRAILING BLACK CURRANT

4.2.1.1. Survey Results

The plants listed in Table 2 are considered to be special status based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the presence of habitat required by the special status plants occurring on-site. The BSA contains potential habitat for 48 potential special status plants (Table 2).

Protocol-level botanical surveys were conducted in April, May, August, and September of 2021 (Appendix E). One special status plant occurrence, trailing black currant (*Ribes laxiflorum*), was found in the BSA but outside the area that would be impacted during construction. The occurrence consists of five individual plants in one location, and is shown in Figure 4, Appendix A. The survey occurred during the identification period for special status plants species that have a low to high potential to be present in the BSA based on habitat and known records in the region. No other special status plants were found in the BSA and are not likely to occur.

4.2.1.2. Potential Impacts

The proposed trail alignment and all permanent and temporary impacts associated with the project would not occur within the trailing black currant occurrence. Additionally, trailing black currant is California Rare Plant Rank 4.3, which does not typically require mitigation. The small population will be flagged for avoidance, which would be feasible given the planned project disturbance location.

4.2.1.3. Avoidance and Minimization Efforts

While not required, the following avoidance and minimization measure will be implemented to avoid impacts to special status plants:

- Caltrans or a qualified contractor will flag an exclusionary boundary around the trailing black currant occurrence prior to start of project work.

4.2.1.4. Compensatory Mitigation

None required.

4.2.1.5. Cumulative Impacts

None.

4.3. Special Status Wildlife 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.

4.3.1. FEDERALLY LISTED FISH

Federally listed salmonids with the potential to occur in the BSA include SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead and their critical habitats. The discountable probability of presence in the BSA of southern DPS green sturgeon, southern DPS eulachon, and tidewater goby was used to determine that the project would have “No Effect” on these species. Accordingly, the following assessment of potential project effects on federally listed fish and their critical habitats are limited to the salmonids having the potential to occur in the BSA—SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead. This NES will be submitted to NMFS for review under Section 7 of the FESA to address potential impacts on federally listed fish species and their critical habitats and to solicit a Biological Opinion or concurrence letter.

4.3.1.1. Survey Results

Southern Oregon/Northern California Coast Evolutionarily Significant Unit Coho salmon

The SONCC ESU coho salmon includes all populations of coho salmon in coastal streams from the Elk River near Cape Blanco, Oregon, south to and including the Mattole River near Punta Gorda, California. NMFS proposed to list the SONCC ESU coho salmon as threatened under the FESA on July 25, 1995 (60 FR 38011). NMFS published its final decision to list coho salmon as threatened on May 6, 1997 (62 FR 24588). The SONCC ESU coho salmon threatened status was reaffirmed August 15, 2011 (76 FR 50447). Designated critical habitat includes all river reaches accessible to listed coho salmon between Cape Blanco, Oregon, and Punta Gorda, California, with tribal lands being excluded. The Little River and unnamed tributary within the BSA are designated critical habitat for SONCC ESU coho salmon. Abundance estimates for SONCC ESU coho salmon specific to the Little River were not available. SONCC ESU coho salmon populations in the Little River drainage are thought to be depressed compared to historic estimates, but numbers are believed to be relatively stable (CDFG 2004). Use of the unnamed tributary by SONCC ESU coho salmon is unknown but presumed as the tributary is accessible and appropriate rearing habitat is present.

SONCC ESU coho salmon are semelparous salmonids (i.e., they reproduce once in their lifetime), spending the first half of their life cycle rearing in streams and small freshwater tributaries. The remainder of the life cycle is spent foraging in estuarine and marine waters of the Pacific Ocean before returning to their stream of origin to spawn and die. In the short coastal streams of California, most coho salmon return during mid-November through-January, spawn by mid-winter, and then die. Most spawning adults are 3 years old; however, a small percentage (5 to 20 percent) of precocious males known as “jacks” return to spawn as 2-year-old fish. Spawning adults may measure more than 2 feet long and weigh an average of 8 pounds. Eggs incubate in redds (i.e., gravel spawning nests) from 1 to 3 months, depending on the water temperature, before emerging as alevins (i.e., larval life that depends upon yolk sacs as its food source). All life stages and their likely presence in waterways in the BSA are depicted in Table 8. Alevins emerge from redds as fry after yolk sac absorption and begin actively feeding within the water column. Alevins emerge as fry from February to May and initially congregate in shaded backwaters, side channels, or small streams where the stream velocity is low. As fry grow, they migrate to habitats with complex cover such as undercut banks, rootwads, woody debris, and vegetative overhangs. Instream habitat complexity, including a mixture of pools and riffles woody debris, and well oxygenated cool water (10–

15°C/50–59°F) are important habitat components for coho salmon fry (Moyle 2002, Moyle et al. 2017).

Table 8. Likely Occurrence and Timing of Southern Oregon/Northern California Coasts Evolutionarily Significant Unit Coho Salmon in the Little River and Unnamed Tributary

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Adult Migration												
Spawning												
Incubation												
Emergence												
Rearing (age 0)												
Rearing (age 1 out migration)												

Source: Modified from Table 4-1 of Biological assessment for coho salmon (*Oncorhynchus kisutch*), Eulachon (*Thaleichthys pacificus*) and essential fish habitat assessment for Pacific Coast Salmon, Hunter and Panther Creek Bridges Seismic Restoration Project. (Caltrans 2017).

California Coastal Evolutionarily Significant Unit Chinook salmon

The California Coastal ESU Chinook salmon was federally listed as a threatened species on September 16, 1999 (64 FR 50394). Their threatened status was reaffirmed August 15, 2011 (76 FR 50447). The ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River to and including the Russian River, California (64 FR 50394), as well as hatchery stocks. NMFS determined that these artificially propagated stocks are no more divergent relative to the local natural population(s) than what would be expected between closely related natural populations within the ESU (70 FR 37160). The Little River within the BSA is designated critical habitat for California Coastal ESU Chinook salmon. Abundance estimates for California Coastal Chinook salmon specific to the Little River were not available. Regular use of the unnamed tributary by California Coastal Chinook salmon is unknown but unlikely because of its smaller width.

California Coastal ESU Chinook salmon are fall-run, ocean-type fish that usually enter rivers from August to January. These fall-run Chinook salmon typically enter freshwater at an advanced stage of maturity, move rapidly to their spawning areas on the main stem or lower tributaries of rivers, and spawn within a few weeks of freshwater entry. Run timing is, in part, a response to river flow characteristics, with most spawning occurring in November and December. They typically spawn in the lower reaches of rivers and tributaries at elevations of 200–1,000 feet. Juveniles typically begin outmigrating to the ocean shortly after emerging from redds as fry. Freshwater residence, including outmigration, usually ranges from 2–4 months. After emergence, Chinook salmon fry seek out areas behind fallen trees, back eddies, undercut banks, and other areas of bank cover. Juveniles move away from stream margins and begin to use deeper water areas with slightly faster water velocities but continue to use available cover to minimize the risk of predation and reduce energy expenditure.

Because adult spawner estimates spanning 3–4 generations are lacking for most of the populations comprising the California Coastal ESU Chinook salmon, application of the viability

criteria developed for this ESU has been hindered (Spence et al. 2008). Additionally, the lack of historical population abundance estimates contributes a major uncertainty in the ongoing evaluation of the status of the California Coastal ESU Chinook salmon. For example, Chinook salmon are periodically observed in many mid-sized watersheds in the region between Cape Mendocino and the Russian River (i.e., Big River, Ten Mile River, Noyo River, Navarro River, Garcia River, and Gualala River) (Spence et al. 2008). However, these watersheds currently do not appear to support persistent populations, and there remains substantial uncertainty about whether they did historically (Bjorkstedt et al. 2005). The paucity of historical evidence may reflect, in part, the fact that substantial modification of stream habitats due to logging, splash-damming, and other forestry-related activities had already taken place by the late-1800s (Spence et al. 2008).

Northern California Distinct Population Segment Steelhead

The Northern California DPS steelhead was federally listed as a threatened species on June 7, 2000 (79 FR 20803). Its threatened status was reaffirmed on April 14, 2014 (71 FR 834). The Northern California DPS includes all naturally spawned anadromous *O. mykiss irideus* (steelhead) populations below natural and manufactured impassable barriers in California coastal river basins, from Redwood Creek southward to, but not including, the Russian River, as well as two artificial steelhead propagation programs, the Yager Creek Hatchery and North Fork Gualala River Hatchery (Gualala River Steelhead Project). The Little River within the BSA is designated critical habitat for Northern California DPS steelhead. Abundance estimates for Northern California DPS steelhead specific to the Little River were not available. Use of the unnamed tributary by Northern California DPS was confirmed by a CDFW survey in support of this project in 2021 (Appendix F).

Steelhead possess one of the most complex life history patterns of the Pacific salmonid species. Steelhead typically refers to the anadromous form of rainbow trout. Like other Pacific salmon, steelhead adults spawn in freshwater and spend a part of their life at sea. However, unlike other Pacific salmon, steelhead exhibit a wider variety of life history strategies during their freshwater rearing period. The adults may spawn more than once during their life, but how common this is remains unknown. The typical life history pattern for steelhead is to rear in freshwater streams for 2 years, followed by up to 2 or 3 years of residency in the marine environment. However, juvenile steelhead are known to rear in freshwater from 1–4 years (Moyle et al. 2017).

Steelhead spawn in gravel and small cobble substrates usually associated with riffle habitats or pool tails. Most juvenile steelhead prefer riffles, while larger (i.e., older) fish move into deeper pools. However, juvenile steelhead often congregate in riffle breaks during especially warm weather and water conditions. Instream and overhead cover are an extremely important element of freshwater habitat quality for steelhead. Preferred water temperatures range from 13–21°C (55–70°F). Most juvenile steelhead outmigration occurs from winter through spring (i.e., January to June), but some outmigration may occur during any significant flow event (Moyle 2002, Moyle et al. 2017).

4.3.1.2. Salmonid Habitats Within the Biological Study Area

Little River

The Little River within the BSA is critical habitat and supports the anadromous federally listed species SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead. The Little River is a smaller watershed located between the Mad River and Redwood watersheds, and it flows approximately 19.6 river miles. The Little River within the BSA is along the US 101 bridge corridor and has a wetted width of approximately 200 feet, depending on tidal influences and seasonal rains. From the BSA, the river bends to the north and continues to its confluence with the Pacific Ocean about 0.8 river mile away. Due to the BSA being at the bottom of the watershed and its proximity to the ocean, the substrate in the area is sandy; and the channel lacks significant pool complexity that spawning SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead prefer. Surveys have found juvenile salmonids within the estuarine area downstream from the BSA, but the habitat is considered heavily modified (CDFG 2004). With the lack of habitat complexity and cover in the Little River within the BSA, juvenile rearing of SONCC ESU coho salmon is unlikely; and the river would be used mainly as a migration corridor. However, the estuarine habitat of the Little River within the BSA does have the potential for natal and even non-natal rearing of salmonids.

Unnamed Tributary

An additional perennial creek (an unnamed tributary) flows into the estuarine area of the Little River north of the US 101 bridge over Little River. Within the BSA, this unnamed tributary flows out of a US 101 culvert which is approximately 48 inches diameter, constructed of concrete, and set at grade. Further evaluation would be needed to determine fish passage through this culvert. This tributary was surveyed by CDFW for habitat and fish presence using electrofishing equipment on June 1, 2021 (Appendix F). The survey evaluated habitat and documented the presence of Northern California DPS steelhead juveniles. No SONCC ESU coho salmon were observed, but habitat within the BSA was found to be conducive to winter and summer rearing juveniles. Additionally, juvenile coastal cutthroat trout (*Oncorhynchus clarki clarki*), juvenile sculpin (*Cottus* spp.) and adult Western brook lamprey (*Lampetra richardsoni*) were observed during the survey (Appendix F). Habitat of the surveyed portion of the unnamed tributary channel consisted of an average bankfull width of 3 feet, and average bankfull depth of 2 feet. Maximum residual pool depths exceeded 2 feet deep in multiple locations, with greater than 50 percent cover observed in most units. Substrate within the BSA and downstream is dominated by sandy substrate and very small gravels that are not favorable for salmonid spawning.

4.3.1.3. Potential Stressors from the Proposed Action

Stressors induce an adverse response in an organism due to physical, chemical, or biological alterations in the environment. The project does not include any in-water work in the Little River or the unnamed tributary. Channel or culvert modifications would not occur. Dewatering and fish relocation would not be required. However, the proposed action includes activities that potentially could result in stressors affecting federally listed fish species.

Potential stressors on federally listed fish species caused by the proposed action include

- Temporary increases in turbidity and suspended sediment from construction area stormwater runoff
- Exposure to hazardous chemicals/accidental spill of lubricants and fuels
- Alteration of riparian habitat
- Construction-related noise and visual effects

4.3.1.4. Exposure to Stressors from the Proposed Action

Exposures are defined as the interaction of the species, their resources, and the stressors that result from the project action. When determining the likelihood for exposure to a stressor, the probability of the organism to be near the stressor is a key consideration. Available data and life histories were evaluated for seasonal timing to determine likely presence and potential for exposure to stressors for freshwater life stages of federally listed salmonids present within the BSA.

Southern Oregon/Northern California Coast Evolutionarily Significant Unit Coho salmon

Little River. The tidally influenced stream habitat in the Little River within the BSA is unsuitable for spawning coho salmon due to the sandy substrate and lack of riffle or pool tail habitats. Due to the lack of favorable spawning habitat within and downstream of the Little River within the BSA, the aquatic habitat here is likely limited to migratory habitat for adult and juvenile coho salmon. This is because high-quality rearing habitat that is preferred by juvenile coho salmon for summer and winter rearing is absent due to tidal influences and lack of preferred rearing habitat such as deep pools, structural complexity, slower water habitats, and vegetative cover (Moyle et al. 2017).

Unnamed Tributary. No appropriate spawning habitat is present within at least 300 feet downstream of the BSA in the unnamed tributary due to the large percentage of fine sediments and lack of appropriate spawning gravels (photograph 1). However, the unnamed tributary does provide good potential habitat for rearing juveniles because of the presence of good cover and deeper pools.



Photograph 1. Nearest Unnamed Tributary Pool Tail Feature to BSA Showing Sand-Dominated Substrate

California Coastal Evolutionarily Significant Unit Chinook Salmon

Little River. The Little River within the BSA is also largely migratory habitat for adult Chinook salmon that would spawn farther upstream within the Little River where spawning habitat is more appropriate. However, because the BSA is in an area subject to seasonal flooding, natal or non-natal juvenile Chinook salmon may periodically occur in the BSA within the Little River (Moyle et al. 2017). The potential occurrence of juvenile Chinook salmon during summer construction would be minimal given their ocean-type life history and propensity to emigrate to the ocean as fry and sub-yearling smolts.

Unnamed Tributary. Chinook salmon would not likely occur within the unnamed tributary due to its smaller size (i.e., width and depth), lower flows, and lack of spawning size gravels.

Northern California Distinct Population Segment Steelhead

Little River. Much like the SONCC ESU coho salmon, the Northern California DPS steelhead would mainly use the Little River during adult and juvenile migration. Juvenile rearing is less likely, but seasonal presence is not discountable.

Unnamed Tributary. Unlike the Little River within the BSA, the unnamed tributary provides good rearing habitat with the presence of cover and deeper pools. Presence of juvenile steelhead at this location was confirmed during the survey of the unnamed tributary by CDFW on June 1, 2021 (Appendix F). Within and at last 300 feet downstream of the BSA, the

substrate is dominated by smaller sandy particles. Therefore, Northern California DPS steelhead spawning is unlikely in this section of the unnamed tributary.

4.3.1.5. Response to the Exposure

Turbidity Increases

No in-water work or work within the ordinary high-water mark is to occur at the unnamed tributary or the Little River, which will limit the potential for increases in turbidity attributable to construction of the project. The most likely potential exposure of a stressor from proposed project activities would be from vegetation removal above the unnamed tributary, potentially causing increased turbidity due to the proximity of ground disturbance which is estimated to be 10 feet from the wetted channel. Large increases in turbidity would not be expected as a result of the work adjacent to the Little River. No in-water work would occur and work in this area would occur during the dry season with storm water BMPs in place to mitigate for the minor potential for sedimentation-related impacts.

Increases in turbidity and suspended sediment can affect water quality and, in turn, can affect fish health and behavior. In general, increased turbidity does not acutely affect salmonids unless it reaches extremely high levels (i.e., levels of suspended solids reaching 25 mg/L or greater). At these higher levels, increased turbidity can adversely affect the physiology and behavior of aquatic organisms and may suppress photosynthetic activity at the base of food webs. It has been found in research on exposure that length of exposure plays a more dominant role than actual concentration (Bjornn and Reiser 1991). Salmonid eggs and fry are particularly susceptible to impacts from increased turbidity during their incubation as the entrained sediment can carry fines to spawning areas and settle out in redds. A high percentage of fine sediment within the channel substrate can result in reduced oxygen levels in redds as it blocks the percolation of oxygen-rich water running through the gravel. These fine sediments can smother and even entrap young

Disturbed areas may become a source of turbidity and suspended sediments during rain events during or following construction prior to vegetation becoming re-established. However, in general, adult and larger juvenile salmonids appear to be little impacted by the high concentrations of suspended sediments that occur during storms and snowmelt runoff episodes (Bjornn and Reiser 1991).

Exposure to Hazardous Chemicals/Accidental Spill of Lubricants and Fuels

The potential exists for accidental spills of potentially hazardous materials from construction activities adjacent to the waterway. Potential materials spilled could include such things as gasoline, diesel fuel, vegetable and synthetic hydraulic oils, radiator coolant, motor oil, and lubricants. These fluids may contain a variety of potential chemicals that could have a negative impact on salmonids and may also contain a wide variety of polynuclear aromatic hydrocarbons and metals that could result in adverse responses to any aquatic organisms present.

Polynuclear aromatic hydrocarbons can alter egg hatching rates and reduce egg survival in salmonids as well as harm the benthic organisms that are an important juvenile salmonid food source (Eisler 2000). Some of the effects that metals can have on fish are immobilization and impaired locomotion, reduced growth, reduced reproduction, genetic damage, tumors and lesions, developmental abnormalities, behavior changes (avoidance), and impairment of olfactory and brain functions (Eisler 2000). The severity of these impacts varies depending on

the extent, timing, and duration of the exposure; the ambient water quality conditions; and the species and life history stage exposed to the material.

Alteration of Riparian Habitat

Riparian habitat generally includes woody vegetation and cover associated with “natural” banks that function to provide shade; sediment, nutrient, and chemical regulation; stream bank stability; and input of woody debris and leaves that provide cover and serve as substrates for food-producing invertebrates. Removal of riparian vegetation that contributes large woody debris to the river channel and instream and overhead cover could reduce habitat complexity, channel patterns, and pool formation. This could lead to an increase in competition, predation risk, and localized decreases in food availability, which collectively can reduce juvenile fish growth, fitness, and survival. Removal of riparian vegetative cover could also increase solar heating in the BSA, which could include increased water temperature and exposure of stream banks to erosion. This could further result in higher levels of suspended sediment and turbidity, the responses to which were discussed previously.

The proposed expansion of the US 101 bridge would slightly increase shading in the Little River. Shading of aquatic habitat can be beneficial or detrimental depending on the environmental context and magnitude of shading cast by manufactured structures. Shade cast by infrastructure on waterways can reduce algal and plant photosynthesis and productivity, reducing the food and prey base for fishes. Shading can moderate and reduce water temperatures and provide visual cover for fishes. It might also cause fish to concentrate in localized areas, which could attract predators.

Noise and Visual Effects

Fish can be adversely impacted by construction noise and visual disturbances. These disturbances can be as minor as the appearance of a worker at the water’s edge. Although ambient noise levels in the BSA were not quantified for the purpose of this study, its proximity to both the open ocean and US 101 assumes constant, relatively high ambient noise levels throughout the proposed BSA and vicinity. Open ocean sound levels along the central coast have been measured between 74 and 100 peak decibels (Caltrans 2020). With the proximity to US 101, vehicle traffic may occasionally cause peaks above these levels. Physical stress resulting from noise disturbances sufficient to adversely affect fish occurs only after repeated disturbances and at elevated decibel levels (see Caltrans 2020).

The potential response of noise disturbances caused by the proposed action would be to disrupt normal behaviors in ways that can make fish more vulnerable to predation and/or interrupt normal foraging behavior. The potential responses to any visual disturbances caused by lighting or crews along the bank could be alterations of the individual’s normal behaviors, making them more vulnerable to predation, competition, atypical foraging, and/or abnormal migration behaviors.

4.3.1.6. Effects of the Action

The effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action, and it is reasonably certain to occur (50 CFR 402.17). Effects of the action

may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR 402.02). The effect of the action is the consequence (e.g., behavioral, physical, or physiological) of a response to a stressor. Insignificant effects relate to the size of the impact and should never reach the scale where “take” occurs. Discountable effects are those extremely unlikely to occur.

A conclusion that activities are reasonably certain to occur must be based on clear and substantial information, using the best scientific and commercial data available. Factors to consider in whether an activity caused by the proposed action is reasonably certain to occur include, but are not limited to past experiences with similar activities that have resulted from actions that are similar in scope, nature, and magnitude to the proposed action; existing plans for the activities; any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

Considerations for determining a consequence to the species or critical habitat is not caused by the proposed action include, but are not limited to: the consequence is so remote in time from the proposed action that it is not reasonably certain to occur; or the consequence is so geographically remote from the immediate area involved in the proposed action that it is not reasonably certain to occur; or the consequence is only reached through a lengthy causal chain that involves so many steps as to make the consequence not reasonably certain to occur (50 CFR 402.17).

Turbidity Increases

Little River - The project does not involve any in-water work, but some ground disturbance would occur at the bridge ends at the top of the bank of the Little River. With the installation of appropriate stormwater BMPs, and the implementation of Conservation Measure #1 – Erosion and Sedimentation Control (Section 1.4.1.1.), which includes implementation of a SWPPP, any potential turbidity impacts at this location would be reduced to an insignificant level. Installment of netting or other similar method for debris catchment during bridgework will also be implemented to protect aquatic species, as described under Conservation Measure 2.

Unnamed Tributary - Construction of trail components adjacent to the unnamed tributary could result in sediment releases and short turbidity plumes during rain events if they occur during construction, or immediately after construction but before complete stabilization of any disturbed areas occurs. Installation of ESA fencing near the unnamed tributary as indicated in Figure 5, Appendix A, would greatly limit the ground disturbance footprint within proximity of the waterway and reduce the potential for undesired sedimentation. Given the thick vegetation along the banks of the creek would be protected with ESA fencing, the upslope distance of the disturbed soil from the culvert outlet (10 feet), the installation of appropriate stormwater BMPs, and the implementation of Conservation Measure #1 – Erosion and Sedimentation Control (Section 1.4.1.1.), which includes implementation of a SWPPP, any potential turbidity impacts would be reduced to an insignificant level. With these measures in place and given the temporary nature of the stressor, increased turbidity may affect, but would not adversely affect SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead or their critical habitats.

Exposure to Hazardous Chemicals/Accidental Spill of Lubricants and Fuels

Little River and Unnamed Tributary - Listed salmonids could seasonally occur in the BSA during construction. Therefore, there exists the potential for accidental spills of potentially hazardous chemical and materials from construction activities to expose federally listed salmonids to this stressor. However, the project includes Conservation Measure #2, Prevention of Accidental Spills (Section 1.4.1.2.), to prevent and contain any large accidental spills of hazardous materials. While these measures reduce risks of large spills and discharges, small inadvertent leaks and drips of equipment fuels and use of non-toxic vegetable oil-based lubricants may occur; but they would present only insignificant effects to the listed salmonids and designated critical habitat. An additional measure will include the requirement for installation of a debris catchment/containment system during all bridgework. With Conservation Measure # 2 implemented and the unlikelihood of a major spill, it is anticipated that the stressor of exposure to hazardous chemicals/accidental spill of lubricants and fuels may affect, but would not adversely affect SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead or their critical habitats. Additionally, ESA fencing near the unnamed tributary will buffer the waterway from heavy equipment and accidental spills.

Alteration of Riparian Habitat

Little River - The Little River is designated critical habitat for SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead. Riparian vegetation would not be permanently altered within the BSA along the Little River as part of the action. The small amount (2 feet) of increase in width of the existing bridge would be an insignificant increase in shading relative to the existing structure and compared to the large area of sunlight-exposed; shallow habitat and riparian vegetation; the high level of tidal flux; and the exchange of water and prey organisms that occurs in the Little River within the BSA. While minimal, the additional shading could provide a minor thermal refugia or even provide cover for salmonids during low flow conditions in the summer and fall months, potentially resulting in a positive effect.

Unnamed Tributary - At the unnamed tributary which is designated critical habitat for SONCC ESU coho salmon and Northern California DPS steelhead, vegetation removal would occur on top of the culvert only (i.e., upslope of the culvert outlet) and not alongside natural habitat or the banks of the unnamed tributary. No work would occur within or below the ordinary high water mark at either location, which is the extent of designated critical habitat for Coastal ESU Chinook salmon and Northern California DPS steelhead. Within the grading footprint upslope of the culvert, vegetation is predominantly a fern and shrub understory. One nearby Sitka spruce located above the culvert at the unnamed tributary would need to be removed and could increase solar exposure. However, given the local western-facing aspect and steep slope in the BSA and overall vegetative cover at this location, the amount of shading provided by this tree is minimal relative to the thick riparian vegetation along the banks of the unnamed tributary. No additional trees would be removed near the unnamed tributary. Installation of ESA fencing, as shown in Figure 5, Appendix A, would protect riparian vegetation from inadvertent construction-related disturbance. In general, the vegetation along the banks of the unnamed tributary below the culvert would not be disturbed, and the full canopy would remain. It is anticipated that vegetation removal approximately 10 feet east of the unnamed tributary would be upland only.

The project includes Conservation Measure #4 – Replacement of Lost Riparian Habitat (section 1.4.1.4. which will include a Habitat Mitigation and Monitoring Plan to be completed. With

Conservation Measure #4 implemented and the limited disturbance of nearby riparian habitats, no permanent adverse changes to waters, substrates, food production, or availability of cover conditions that are necessary for rearing, migration, feeding, and growth of federally listed salmonids present are anticipated. Therefore, any effect would be considered insignificant. With Conservation Measure #4 implemented, it is anticipated that the stressor of the alteration of riparian habitat may affect, but would not adversely affect SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead or their critical habitats.

Noise and Visual Effects

Little River and Unnamed Tributary. No pile driving is to occur as part of the proposed action. A list of equipment likely used is described in Section 1.3.15. The loudest equipment used would likely be during the bridge expansion, which may include the use of jackhammers above the Little River. In most cases, any startled salmonids, if present, would simply relocate away from the BSA, with the ability to come back once the stressor has gone or it becomes habituated to the stressor. In the case of salmon migrating through the area, if startled, it would most likely either continue through the area rapidly or return from where it came until the stressor is gone. Any effect resulting in a brief delay in feeding behavior is unlikely to reduce growth or survival and would be insignificant. Given the potential for high-ambient noise levels with the adjacency of US 101, the lack of in-water work, the distance of work from the wetted canals (10 feet or more), and the types of equipment used, it is anticipated that the stressor of noise and visual effects may affect, but would not adversely affect SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead or their critical habitats.

4.3.1.7. Avoidance and Minimization Efforts

No additional conservation measures other than those included in this NES are needed to avoid or minimize project-related impacts on SONCC ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead or their critical habitats.

4.3.1.8. Compensatory Mitigation

No compensatory mitigation is proposed. The project has been designed such that the conservation measures and proposed avoidance and minimization measures will reduce the potential effects to SONCC ESU coho salmon, California Coastal ESU Chinook salmon, Northern California DPS steelhead, and their designated critical habitat to the greatest extent possible.

4.3.1.9. Cumulative Impacts

Under FESA regulations, cumulative impacts are those impacts of future state, local, and private actions affecting endangered and threatened species that are reasonably certain to occur in the BSA. Private timber harvest operations occur in the upper watershed of Little River outside of the BSA, which may result in increased sedimentation downstream over time. However, the proposed action would not increase or alter these operations in any way; and the proposed project is not anticipated to have any major sedimentation impacts. Future projects that require a federal action will be subject to the consultation requirements established in Section 7 of the FESA and are not considered cumulative to the proposed project. With implementation of the

recommended conservation measures, the project would not have a cumulative adverse effect on listed anadromous salmonids. Therefore, cumulative effects of the proposed action are not described as part of this analysis because all listed species and designated critical habitats within the BSA are not likely to be adversely affected by the proposed action.

4.3.1.10. Effects Determination

The proposed action has been designed to include practicable conservation and avoidance and minimization measures that will avoid or minimize potentially adverse effects to federally listed salmonid species and their designated critical habitats to an insignificant level as described in Section 4.3.1.1. It is determined that the proposed action:

- *May affect, but is not likely to adversely affect*, Southern Oregon/Northern California Coast ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California DPS steelhead
- *May affect, but is not likely to adversely affect*, designated critical habitat for Southern Oregon/Northern California Coast ESU coho salmon, California Coastal ESU Chinook salmon, and Northern California Coast DPS steelhead

4.3.2. ESSENTIAL FISH HABITAT ASSESSMENT

The objectives of this EFH consultation section are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH. The MSFCMA requires consultation for all federal agency actions that may adversely affect EFH. EFH consultation with NMFS is required by federal agencies undertaking, permitting, or funding activities that may adversely affect EFH, regardless of its location. Under Section 305(b)(4) of the MSFCMA, NMFS is required to provide EFH conservation and enhancement recommendations to federal and state agencies for actions that adversely affect EFH. Wherever possible, NMFS utilizes existing interagency coordination processes to fulfill EFH consultations with federal agencies. For the proposed action, this goal is being met by incorporating the EFH consultation into this NES.

4.3.2.1. Managed Fisheries with Potential to Occur in the Proposed Biological Study Area

The MSFCMA requires that the EFH be identified for all federally managed species including all species managed by the Pacific Fisheries Management Council (PFMC). The PFMC is responsible for managing commercial fisheries resources along the coasts of Washington, Oregon, and California. Managed species that have a potential to occur in the proposed BSA are covered under the Pacific Salmon Fishery Management Plan (FMP).

The species under the jurisdiction of the MSFCMA with the potential to occur within or near the BSA include the SONCC ESU coho salmon and California Coastal ESU Chinook salmon; these salmon are regulated by the PFMC's Salmon FMP

4.3.2.2. Potential Adverse Effects of the Proposed Action on Essential Fish Habitat

Potential adverse effects of the proposed action on SONCC ESU coho salmon and California Coastal ESU Chinook salmon EFH include a temporary increase in turbidity and suspended sediment from construction area stormwater runoff, accidental release of hazardous chemicals/accidental spill of lubricants and fuels, alteration of riparian habitat, and effects from construction-related noise and visual effects. These effects are described in detail in Section 4.3.1.3.

Conservation measures described in Section 1.4. and avoidance and minimization measures presented in Section 4.3.1.7. would be used to avoid or minimize the potential magnitude and duration of any identified effects. Some construction activities could result in temporary and localized increases in turbidity and suspended sediment from stormwater runoff during and after construction, without causing significant long-term effects on salmonid habitat quality. All disturbed slopes would be re-vegetated to provide effective biofiltration treatment of stormwater runoff. No measurable, long-term adverse modification to waters, substrates, food production and availability, and changes in cover conditions from increased shading or vegetation removal are anticipated.

4.3.2.3. Essential Fish Habitat Conclusion

It is determined that the proposed action may not adversely affect the EFH for species managed under the Pacific Coast Salmon Fishery Management Plan. The effects of the action on the Pacific Coast salmon EFH would be the same as those discussed Section 4.3.1.6. and may have minor, temporary effects on the EFH. Inclusion of conservation measures and avoidance and minimization measures in the project design would reduce any potentially adverse effects to the EFH to a discountable level. The project is designed to minimize adverse effects and restore condition and function after construction. Therefore, no permanent impacts to the EFH would occur.

4.3.3. ADDITIONAL FEDERALLY LISTED FISH SPECIES

4.3.3.1. Tidewater Goby

The USFWS listed the tidewater goby as endangered on March 7, 1994 (59 FR 5494) and designated critical habitat on November 20, 2000 (67 FR 67803). Critical habitat for this species is not present in the BSA.

The tidewater goby is a small fish that inhabits coastal brackish water habitats entirely within California, ranging from Tillas Slough (at the mouth of the Smith River, Del Norte County) near the Oregon border south to Agua Hedionda Lagoon (northern San Diego County). The tidewater goby is known to have formerly inhabited at least 134 localities. Presently 23 (17 percent) of the 134 documented localities are considered extirpated; and 55–70 (41–52 percent) of the localities are naturally so small or have been degraded over time so that long-term persistence is uncertain (USFWS 2005, 2007). Tidewater goby are uniquely adapted to coastal lagoons and the uppermost brackish zone of larger estuaries, rarely invading marine or freshwater habitats (USFWS 2005). The species is typically found in water less than 3.3 feet (1 meter) deep with salinities of less than 12 parts per thousand. The species is benthic in nature and is found in shallow lagoons and lower stream reaches where the water is fairly still but not stagnant (Moyle 2002).

No long-term monitoring program is available for tidewater goby, and population dynamics are not well documented for this species. Deriving population size estimates for tidewater goby is difficult because of the variability in local abundance. In addition, seasonal changes in distribution and abundance further hamper efforts to estimate population size, especially for a short-lived species. Tidewater goby populations fluctuate with varying environmental conditions (e.g., drought, El Niño) between years; this population variation is normal (USFWS 2005).

Effects Determination

Brackish water in the Little River may be present in the BSA, but the tidewater goby's preferred lagoon and slow water back habitat is not. Brackish water is not present in the unnamed tributary, which is fresh water only within the BSA. No critical habitat for tidewater goby is present within the BSA. Recent eDNA testing² for tidewater goby presence within the Little River had negative results (Sutter and Kinziger 2019). Therefore, with the lack of preferred habitat, no in-water project-related work, and no documented presence, a "No Effect" determination was made for tidewater goby. No consultation for this species is required.

4.3.3.2. Southern DPS Green Sturgeon

On April 7, 2006, NMFS issued its final rule to list green sturgeon that spawn in rivers south of the Eel River (excluding the Eel River), described as the southern DPS, as threatened under FESA (71 FR 17757) (effective June 5, 2006). NMFS published the final rule for southern DPS green sturgeon critical habitat on October 9, 2009 (74 FR 52300). Southern DPS green sturgeon critical habitat is not present within the BSA.

Adult southern DPS green sturgeon generally migrate into San Francisco Bay between mid-February and early May, migrating rapidly up the Sacramento River. Spawning takes place in deep, fast water from March to July when water temperatures range from 46–60°F, with peak activity occurring from April through June (Moyle et al. 2015). Juveniles may rear in the river for 1–3 years before migrating to the estuary, primarily during the summer and fall. Once in the estuary, young sturgeon adopt an oceanic foraging habit, which may last from 3–13 years before returning for their first spawning season (Moyle 2002). Juveniles spend from 1–4 years in fresh and estuarine waters, then disperse into saltwater at lengths of 12–30 inches.

Effects Determination

Southern DPS green sturgeon use river habitat, estuarine habitat, and marine waters during their life cycle. However, southern DPS green sturgeon only spawn in the Sacramento River watershed, and no critical habitat is present within the BSA. While adults may use marine waters and estuarine areas, there is a discountable probability of occurrence within the BSA which is located almost 1 mile upstream from the Little River's confluence with the Pacific Ocean. The species is not likely to occur in the unnamed tributary due to the small channel size. Therefore, because no in-water work will occur in the Little River and their presence is discountable within the BSA, a "No Effect" determination was made for the southern DPS green sturgeon and its designated critical habitat. No consultation for this species is required.

² eDNA or Environmental DNA testing is a method used to evaluate the presence or absence of a specific species by sampling the water column for the presence of its DNA.

4.3.3.3. Southern Eulachon DPS

The southern DPS eulachon is listed as federally threatened (75 FR 13012, March 2010) with designated critical habitat designated (76 FR 65324, October 2011). Eulachon is endemic to the eastern Pacific Ocean, from northern California to southwest Alaska, and into the southeastern Bering Sea. In California, eulachon have been historically documented in the Sacramento River, Russian River, Humboldt Bay, and several nearby smaller coastal rivers. No critical habitat is present in the BSA, with the nearest being the Mad River to the south. No large runs of eulachon are known to exist south of the Klamath River.

Eulachon are anadromous fish that spawn in the lower reaches of rivers and tributaries with small gravel or in semi-sandy areas with debris. They typically spend 3–5 years in saltwater before returning to fresh water to spawn from late winter through mid-spring. Eulachon in the southern DPS are semelparous and die after spawning. There is no long-term monitoring program for eulachon in California, making assessment of historical abundance and abundance trends difficult. Large spawning aggregations of eulachon were reported to have once regularly occurred in the Klamath River. However, over the last several decades, runs have become more rare or sporadic; the last notable runs were observed in 1988 and 1989 by tribal fishers (NMFS 2016).

Effects Determination

No southern DPS of eulachon designated critical habitat exists in the BSA or in the Little River. Southern DPS eulachon are not known to occur or spawn in the Little River or estuarine tributaries of the Little River in recent times, and the probability of presence within the BSA is discountable. Therefore, a “No Effect” determination was made for southern DPS eulachon and its designated critical habitat. No consultation for this species is required.

4.3.4. COASTAL CUTTHROAT TROUT

4.3.4.1. Survey Results

Coastal cutthroat trout are found in coastal streams from the Eel River, Humboldt County, to Seward in southeastern Alaska. Some coastal cutthroat trout may spend their entire lives in freshwater, but most are anadromous, spending the summers in saltwater habitats. They prefer small, low gradient coastal streams and estuarine habitats. In Northern California, coastal cutthroat trout begin to migrate up spawning streams from August to October, following the first substantial rainfall, and spawn in the late-winter to early-spring (Moyle 2002). Stream sections with small or moderate-sized gravel substrates are essential for spawning. The species was observed in the unnamed tributary during a site survey conducted in coordination with CDFW on June 1, 2021 (Appendix F).

4.3.4.2. Project Impacts

Potential impacts to coastal cutthroat trout would be very similar to those described for listed salmonids in Section 4.3.1. and are anticipated to be insignificant with the use of conservation measures #1, #2, and #4 provided in Section 1.4.

4.3.4.3. Avoidance and Minimization Efforts

No additional conservation measures other than those included in this NES are needed to avoid or minimize project-related impacts upon coastal cutthroat trout and their preferred habitats.

4.3.4.4. Compensatory Mitigation

No compensatory mitigation is proposed.

4.3.4.5. Cumulative Impacts

Private timber harvest operations occur in the upper watershed of Little River outside of the BSA, which may result in increased sedimentation downstream over time. However, the proposed action would not increase or alter these operations in any way. Any future bridge and road improvement projects in the area would apply similar measures to reduce potential impacts to these species. With implementation of the measures identified above, the project would not result in cumulatively considerable impacts on coastal cutthroat trout.

4.3.5. WESTERN BROOK AND PACIFIC LAMPREY

4.3.5.1. Survey Results

Both the Western brook and the Pacific lamprey are found in coastal streams and may seasonally use the BSA as a migratory corridor. Habitat requirements are similar to that of salmonids requiring clear, cold, water in little disturbed watersheds, as well as clean gravel near cover (e.g., boulders, riparian vegetation, logs) for spawning (Moyle et al. 2015). Additionally, areas with low flow velocities and fine sediments are required for rearing juveniles called ammocoetes, which may take up to 5 years to mature before migrating to the ocean as adults. It has been observed that where Western brook and Pacific lamprey co-occur, Western brook lamprey may spawn within Pacific lamprey nests, but Western brook lamprey generally spawn further upstream than the Pacific lamprey (Moyle et al. 2015). Presence of either species within Little River was not verified by a survey but is likely. The Western brook lamprey was observed in the unnamed tributary during a site survey conducted in coordination with CDFW on June 1, 2021 (Appendix F). Presence of Pacific lamprey in the unnamed tributary was not verified but is likely given the habitat conditions present.

4.3.5.2. Project Impacts

Potential effects on Western brook and Pacific lamprey would be similar to those described for listed salmonids in Section 4.3.1. and are anticipated to be avoided with the proposed Conservation Measures #1, #2, and #4 described in Section 1.4.

4.3.5.3. Avoidance and Minimization Efforts

No additional avoidance and minimization efforts are required.

4.3.5.4. Compensatory Mitigation

No compensatory mitigation is proposed.

4.3.5.5. Cumulative Impacts

Private timber harvest operations occur in the upper watershed of Little River outside of the BSA, which over time may result in increased sedimentation downstream. However, the proposed action would not increase or alter these operations in any way. Future bridge and road improvement projects in the area would apply similar measures to reduce potential impacts to these species. With implementation of the measures identified above, the project would not result in cumulatively adverse effects on Western brook and Pacific lamprey.

4.3.6. SPECIAL STATUS AMPHIBIANS AND REPTILES

4.3.6.1. Survey Results

The streams and associated riparian habitat in and near the BSA provide potential habitat for three species of special concern: Northern red-legged frog, Southern torrent salamander, and Western pond turtle. The riverine and upland habitat may also support breeding habitat for these species. Reconnaissance-level biological surveys did not locate these species in or adjacent to the BSA. According to CNDDDB, the nearest known occurrence for Northern red-legged frog is approximately 0.6 mile from the BSA. The nearest CNDDDB occurrence for Southern torrent salamander is located approximately 3 miles from the BSA. A CNDDDB occurrence for Western pond turtle is located within the BSA.

4.3.6.2. Project Impacts

The project could adversely affect special status amphibian and reptile species if individuals are present in the BSA during construction. Potential direct effects include harassment, injury, and mortality of individuals due to equipment and vehicle traffic. Indirect effects could occur if construction activities result in degradation of aquatic habitat and water quality due to erosion and sedimentation, accidental fuel leaks, and spills. Vegetation removal may degrade upland habitat for Western pond turtle. Trail lighting and human disturbance from trail use may also decrease special status amphibian and reptile use of the area.

4.3.6.3. Avoidance and Minimization Efforts

In addition to the Conservation Measures #1, #2, and #4 provided in Section 1.4, the following measures will be used to avoid or minimize the potential for impacts on these species.

- A qualified biologist will provide environmental awareness training for construction personnel prior to onset of work. The training will instruct construction personnel on how to recognize potential special status species.
- Within 24 hours prior to the start of construction, a qualified biologist will conduct a pre-construction survey for special status amphibians within the disturbance footprint. Any special status amphibians found will be relocated to nearby suitable habitat outside of the disturbance footprint.
- If special status species are encountered in the BSA during construction and could be harmed by construction activities, work will stop in the area. A qualified biologist may relocate the individual(s) the shortest distance possible to a location containing habitat outside of the work area.

- If a Western pond turtle nest is discovered during construction activities, a qualified biologist will flag the site and determine if construction activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and relocated to a suitable location outside of the construction impact zone by a qualified biologist in coordination with CDFW.

4.3.6.4. Compensatory Mitigation

None required.

4.3.6.5. Cumulative Impacts

There are several planned projects in the vicinity of the project which may affect special status amphibians and reptiles. Future nearby projects include the Trinidad CAPM, which involves pavement rehabilitation in and near Trinidad; Hum-101 Drainage North, which would rehabilitate culverts at spot locations along US 101; and a shoulder-widening project on Central Avenue in McKinleyville. Future drainage and road improvement projects in the region would apply similar measures as the project to reduce potential impacts to special status amphibians and reptiles. With implementation of the measures identified above, the project would not result in cumulatively considerable impacts on special status amphibians or reptiles.

4.3.7. SPECIAL STATUS BIRDS AND OTHER MIGRATORY BIRDS

4.3.7.1. Survey Results

The forested, riparian, and shrubland habitats in the BSA and vicinity provide potential nesting habitat for special status birds and other migratory birds. The bridge supports nesting cliff swallows (*Petrochelidon pyrrhonota*), which are protected under the MBTA. (A bridge survey memorandum is provided in Appendix G). Special status bird species that could use these habitats include Northern harrier, Vaux's swift, purple martin, tricolored blackbird, white tailed kite, yellow warbler, and yellow-breasted chat. RCAA and Stantec biologists did not incidentally observe any special status birds during reconnaissance level field surveys. According to the CNDDB, none of the bird species mentioned above have been recorded within 10 miles of the BSA. The online database, eBird, shows occurrences of every potential special status bird in or near the BSA, including Northern harrier 0.03 mile from the BSA (2021), Vaux's swift 0.10 mile from the BSA (2015), purple martin 0.03 mile from the BSA (2021), yellow warbler 0.09 mile from the BSA (2015), yellow-breasted chat 0.03 mile from the BSA (2018), and white-tailed kite within the BSA near the bridge over Little River (2020). Other protected birds including migratory birds may occur in the BSA.

4.3.7.2. Project Impacts

Construction activities (e.g., vegetation removal, equipment noise, and bridge modifications) would occur during the bird breeding season (generally February 15 through August 31, depending on the species) and could disturb nesting birds in or adjacent to the BSA. Construction-related disturbance could result in the incidental loss of fertile eggs or nestlings or nest abandonment, which could affect local or regional populations of affected birds. Impacts on nesting birds could result from the following:

- Tree and shrub removal to accommodate the trail

- Ground disturbing activities (e.g., grubbing and grading) in woodlands that could affect ground-nesting birds
- Noise, vibrations, and presence of humans during construction activities
- Bridge modifications
- Debris catchment installation on bridge
- Trail lighting and disturbance from trail use after construction

Birds present in or adjacent to the BSA during non-breeding seasons would not be adversely impacted by construction activities due to their high mobility and available habitat outside of the BSA. They may be temporarily disturbed or precluded from using the area during construction. Additionally, the trail lighting and increased disturbance from trail use after construction may reduce protected bird use of the area.

Trail construction would result in a loss of approximately 0.14 acre of coastal dune willow thickets, 0.6 acre of coyote brush scrub, 0.47 acre of non-native grassland, 0.54 acre of red alder forest, and 1.21 acres of Sitka spruce forest. (Figure 4, Appendix A). Regulated vegetation communities would be replaced via required compensatory mitigation (see Section 4.2.4), likely to occur on-site. Additional revegetation would occur along the trail margins as part of the project design. Thus, not all vegetation loss would be permanent. Abundant bird nesting and foraging habitat would be retained within the BSA and similarly suitable habitat occurs in the project vicinity.

4.3.7.3. Avoidance and Minimization Efforts

The project was designed to minimize removal of native vegetation to the greatest extent practicable. To minimize or avoid project-related effects on nesting birds, the following measures will be implemented:

- If all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the project should be removed before the onset of the nesting season (February 15 through August 31), if practicable. This will help preclude nesting and substantially decrease the likelihood of direct impacts.
- If construction occurs during the nesting season (February 15 through September 1), a qualified biologist will conduct a pre-construction survey of the BSA including up to a 500-foot buffer for white tailed kite and other raptor species and a 100-foot buffer for all other species, as access is available, to locate active bird nests and identify measures to protect the nests. The entire buffer will be surveyed if landowner approval is available or the buffer is in public lands. If access is not available, biologists will survey from the edge of the BSA using high-powered binoculars, or survey from public roads if roads occur in the buffer. The pre-construction survey will be performed between February 15 and August 31, but no more than 7 days prior to the implementation of construction activities, including staging and equipment access. If a lapse in construction activities for 7 days or longer occurs between those dates, another pre-construction survey will be performed.
- If an active nest is found, a qualified biologist, in consultation with the CDFW, will determine the extent of a construction-free buffer zone to be established around the nest. The buffers will be determined by the bird species and site-specific conditions (e.g., line of site, proximity to roads and other disturbances).

- If the final design involves work on the bridge over the Little River and work will occur during the nesting bird season (February 15 through August 31), an exclusion plan for migratory birds that may nest under the bridge (e.g., cliff swallows) will be incorporated into the project. A qualified biologist will develop the plan in coordination with CDFW. The plan will involve an exclusionary device installed on the underside and outside edge of the bridge prior to February 15 to prevent cliff swallows or other migratory birds from nesting on the bridge. A qualified biologist will monitor the exclusionary device monthly to ensure it is not damaged until the end of the nesting season or the end of construction, whichever occurs first.
- The debris catchment installation on the bridge (see section 1.4.1.2.) would occur outside of the nesting bird season to prevent nesting birds from getting entrapped in the device while nesting.

4.3.7.4. Compensatory Mitigation

None required.

4.3.7.5. Cumulative Impacts

There are several planned projects in the vicinity of the project which may affect special status birds or other migratory birds. Future nearby projects include the Trinidad CAPM, which involves pavement rehabilitation in and near Trinidad; Hum-101 Drainage North, which would rehabilitate culverts at spot locations along US 101; and a shoulder-widening project on Central Avenue in McKinleyville. Future drainage and road improvement projects in the area would apply similar measures as the project to reduce potential impacts to these species. With implementation of the measures identified above, the project would not result in cumulatively considerable impacts on special status birds or other migratory birds.

4.3.8. PALLID BAT AND TOWNSEND'S BIG-EARED BAT

4.3.8.1. Survey Results

Pallid bat and Townsend's big-eared bat roost in crevices and cavities in a wide range of habitat types. The bridge over Little River does not contain suitable crevices or wood elements for day roosting bats or maternity colonies, and no significant sign of bat use (e.g., guano accumulation) was observed. There was minimal guano and urine staining on the pier walls, indicating that individual bats may use sections of the bridge as night roosts. It is recommended that an additional bat habitat survey should be performed the year prior to construction to verify that habitat elements and bridge use by bats have not changed. According to CNDDDB, there are no known occurrences of pallid bat or Townsend's big eared bat within 10 miles of the BSA.

4.3.8.2. Project Impacts

Bats may roost individually in riparian vegetation or on the bridge at night. Due to the ability of individual bats to move away from disturbances, direct impacts on bats are not expected when the bats are not in a maternity colony. If bridge construction occurs at night, individual bats may be using the bridge as a night roost; however, individual bats will move to a new roost when disturbed, so impacts are not expected. Avoidance and minimization measure provided below reduces the potential for adverse impacts on pallid bat and Townsend's big-eared bat.

4.3.8.3. Avoidance and Minimization Efforts

The following avoidance and minimization measure will be implemented to avoid impacts on special status bat species.

- A qualified biologist will survey to assess conditions under and on the bridge for suitable bat habitat. The survey should be conducted in the year prior to construction. If conditions have changed and bats may use the bridge, additional avoidance and minimization measures will be applied, including but not limited to:
 - Limited bridge work at night
 - Installation of exclusion devices on bridge crevices suitable for roosting bats
 - Seasonal limitations for work conducted on the bridge

4.3.8.4. Compensatory Mitigation

None required.

4.3.8.5. Cumulative Impacts

There are several planned projects in the vicinity of the project which may affect special status bats. Future nearby projects include the Trinidad CAPM, which involves pavement rehabilitation in and near Trinidad; Hum-101 Drainage North, which would rehabilitate culverts at spot locations along US 101; and a shoulder-widening project on Central Avenue in McKinleyville. Future drainage and road improvement projects in the region would apply similar measures as the project to reduce potential impacts to these species. With implementation of the measures identified above, the project would not result in cumulatively considerable impacts on special status bats.

4.3.9. WHITE-FOOTED VOLE AND SONOMA TREE VOLE

4.3.9.1. Survey Results

Deciduous vegetation in the red alder forests and riparian habitat in the BSA could provide potential habitat for the white-footed vole. Sonoma tree vole prefers redwood, grand fir, and Douglas fir dominated forests; however, they have been documented using Sitka spruce trees for nesting. Stantec biologists did not make any incidental observations of these species during the reconnaissance level survey. According to CNDDDB, the nearest known occurrence for white-footed vole is 2.5 miles from the BSA, and the nearest CNDDDB occurrence for Sonoma tree vole is approximately 7 miles from the BSA.

4.3.9.2. Project Impacts

Direct impacts on these species could result from tree removal and vegetation removal. Temporary noise disturbance generated by construction could indirectly affect these species as well. Trail lighting and human disturbance from trail use may also decrease their use of the area, however abundant forested and riparian habitat would be available in the vicinity of the BSA. Avoidance and minimization measures provided below reduce the potential for adverse impacts on these species.

4.3.9.3. Avoidance and Minimization Efforts

The following measures will be implemented:

- A qualified biologist will conduct a pre-construction survey of the BSA to locate and identify potential presence of these species. The survey should occur no more than 14 days prior to the implementation of construction activities (including staging and equipment access). If a lapse in construction activities for 14 days or longer occurs between those dates, another pre-construction survey will be performed.
- Consultation with CDFW would occur prior to surveys to determine if seasonal restrictions are appropriate for either species if a nest is located in a tree proposed for removal.
- If an active nest is found, a qualified biologist, in consultation with CDFW, will determine the extent of a construction-free buffer zone to be established around the nest or if seasonal restrictions would reduce impacts to the species.

4.3.9.4. Compensatory Mitigation

None required.

4.3.9.5. Cumulative Impacts

There are several planned projects in the vicinity of the project which may affect white-footed vole and Sonoma tree vole. Future nearby projects include the Trinidad CAPM, which involves pavement rehabilitation in and near Trinidad; Hum-101 Drainage North, which would rehabilitate culverts at spot locations along US 101; and a shoulder-widening project on Central Avenue in McKinleyville. Future drainage and road improvement projects in the region would apply similar measures as the project to reduce potential impacts to these species. With implementation of the measures identified above, the project would not result in cumulatively considerable impacts on white-footed vole or Sonoma tree vole.

Chapter 5. Results: Conclusions and Regulatory Determinations

5.1. Federal Endangered Species Act Consultation Summary

Stantec biologists obtained a list (Consultation Code 08EACT00-2020-SLI-0411 [Appendix C]) of federally listed, proposed, and candidate species with the potential to occur in the vicinity of the BSA. The list was electronically obtained from the USFWS Arcata Fish and Wildlife Office Information for Planning and Consultation planning tool on July 19, 2021. Stantec biologists electronically obtained a list of federally listed fishes that have the potential to occur in the BSA (Appendix C) from the NMFS West Coast Region kmz tool on January 6, 2021.

This NES will be submitted to NMFS for review under Section 7 of the FESA to address potential impacts to federally listed fish species and their critical habitats, including Northern California DPS steelhead, California Coastal ESU Chinook salmon, and the SONCC ESU coho salmon. With the implementation of conservation and avoidance measures contained in this NES, take of these species would be avoided and a “May Effect, Not Likely to Adversely Affect” determination was made. Additionally, due to the discountable probability of presence within the BSA, a “No Effect” determination was made for the southern DPS green sturgeon, southern DPS eulachon, and tidewater goby.

5.2. Essential Fish Habitat Consultation Summary

SONCC ESU coho salmon and California Coastal ESU Chinook salmon EFH is present in the BSA. This NES will be submitted to NMFS for review under Section 7 of the FESA to address potential impacts on EFH. It was determined that the proposed action may not adversely affect EFH for species managed under the Pacific Coast Salmon Fishery Management Plan.

5.3. Wetlands and Other Waters Coordination Summary

The preliminary delineation of waters of the U.S. has not been submitted to USACE for verification, so the delineation results are considered preliminary until verified. Caltrans will submit the delineation to USACE for verification.

The project will comply with terms of Nationwide Permit No. 14 for Linear Transportation Projects. A preconstruction notification will be required due to the discharge of fill into a riparian wetland (special aquatic site). Project authorization under the CWA requires that Section 401 Water Quality Certification be obtained from the RWQCB.

5.4. Migratory Bird Treaty Act

With implementation of measures identified in Chapter 4 to avoid impacts on nesting migratory birds, the project would comply with the MBTA.

5.5. Bald and Golden Eagle Protection Act

Bald and golden eagles are not anticipated to occur in the BSA; however, if present, measures provided in Chapter 4 that call for pre-construction nesting bird surveys would help ensure project compliance with the Bald and Golden Eagle Protection Act.

5.6. California Coastal Act

The project could result in direct and indirect impacts to CCC waters that are described by Humboldt County's LCP (Humboldt County 2007a, 2007b). The project would also result in direct and indirect impacts to the upland ESHA that are regulated by the CCC. Avoidance and minimization measures would be implemented to avoid or minimize indirect impacts to wetlands, other waters, and upland ESHA. Avoidance measures and compensatory mitigation are identified in Chapter 4.

5.7. California Endangered Species Act Consultation Summary

The project would not result in the "take" of any state-listed species. No CESA consultation with the CDFW is required.

5.8. California Fish and Game Code

The project would not involve work adjacent to Little River, including riparian habitat. It would also not involve work near an unnamed perennial tributary to Little River upstream of the existing culvert; however, modifications to the streambed or culvert are not planned. If required by the CDFW, Caltrans would obtain a streambed alteration agreement and will see that all conditions of the agreement are implemented.

During the construction, it may be necessary to relocate aquatic animals that are species of special concern, including Northern red-legged frog, Southern torrent salamander, and Western pond turtle. Per CDFW guidelines, the relocation of species of special concern or other animals for movement "out of harm's way" is permitted via a letter from the CDFW regional office.

The project would comply with other sections of the Fish and Game Code (i.e., birds of prey, migratory birds, fully protected species) with implementation of avoidance and minimization measures.

5.9. Invasive Species

With implementation of measures identified in Chapter 4 to avoid and minimize the introduction and spread of invasive species, the Project would comply with EO 13112.

5.10. Executive Order 11990 (Wetlands)

The project was designed to avoid wetlands to the greatest extent practicable. Due to the location of the existing bridge and the extent of riparian vegetation, no practicable alternative exists to avoid wetlands completely. Avoidance and mitigation measures have been incorporated and are described in Chapter 4.

5.11. Executive Order 11988 (Floodplain Management)

The proposed bridge would maintain floodway conveyance in the BSA. Therefore, the project complies with EO 11988.

5.12. County Tree Ordinance

Under the Humboldt County Code, the project's removal of approximately 117 trees would be considered major tree removal. A special permit may be required for removal of trees.

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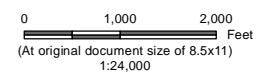
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Appendix A Figures



 Biological Study Area (22.93 acres)



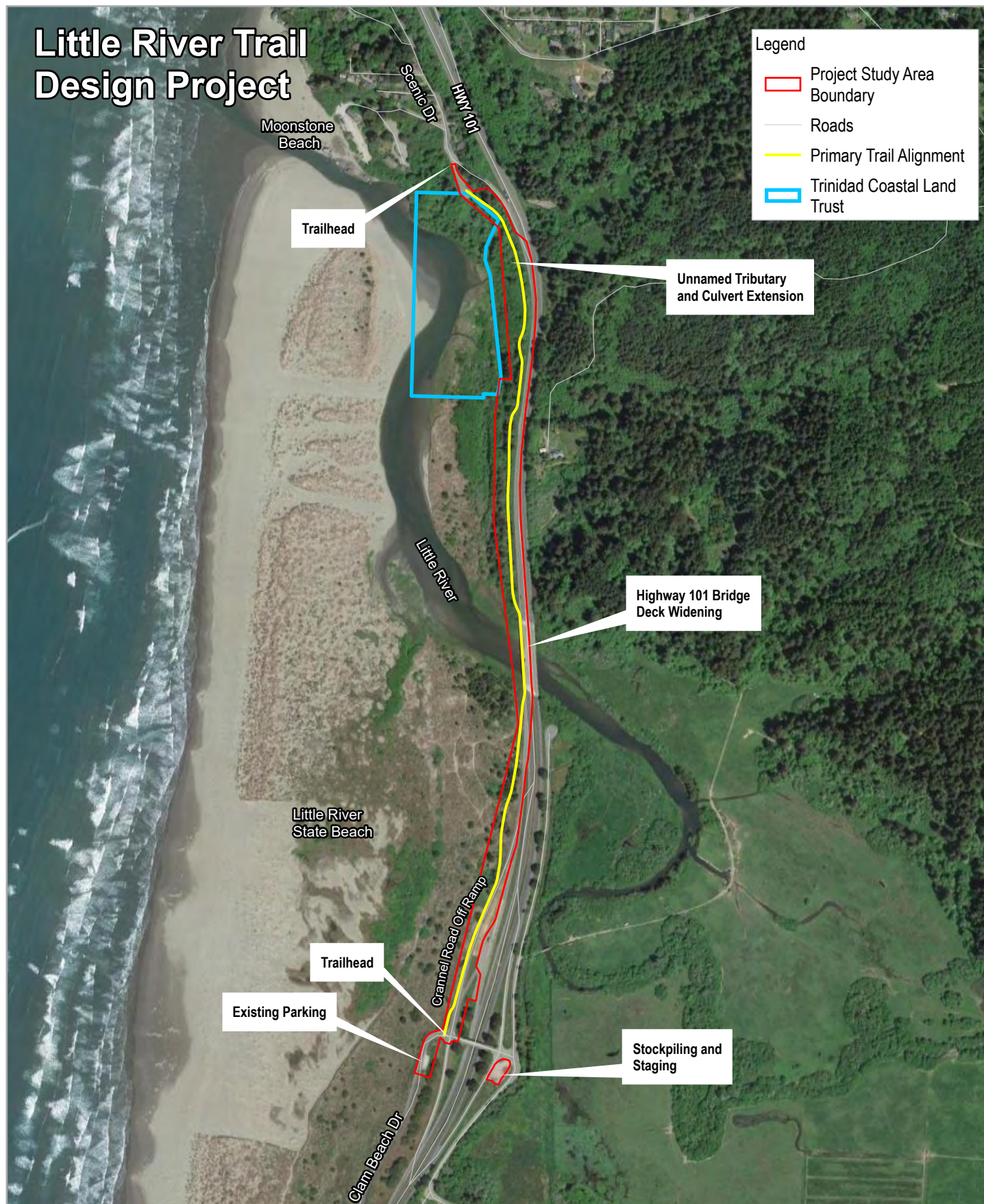
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 2. Sources: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Project Location Prepared by ST on 2020-09-10
 T06N, R01E, Sec. 31, T07N, R01E IR by GY on 2020-09-10
 Sec. 6 and 7 Crannell, California USGS 7.5' Quad

Client/Project 185705051
 Redwood Community Action Agency
 Little River Trail Project

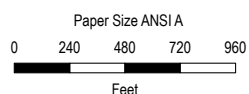
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 1
 Title
Project Location

Little River Trail Design Project

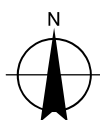


Legend

- Project Study Area Boundary
- Roads
- Primary Trail Alignment
- Trinidad Coastal Land Trust



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

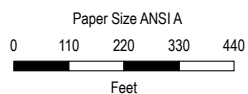
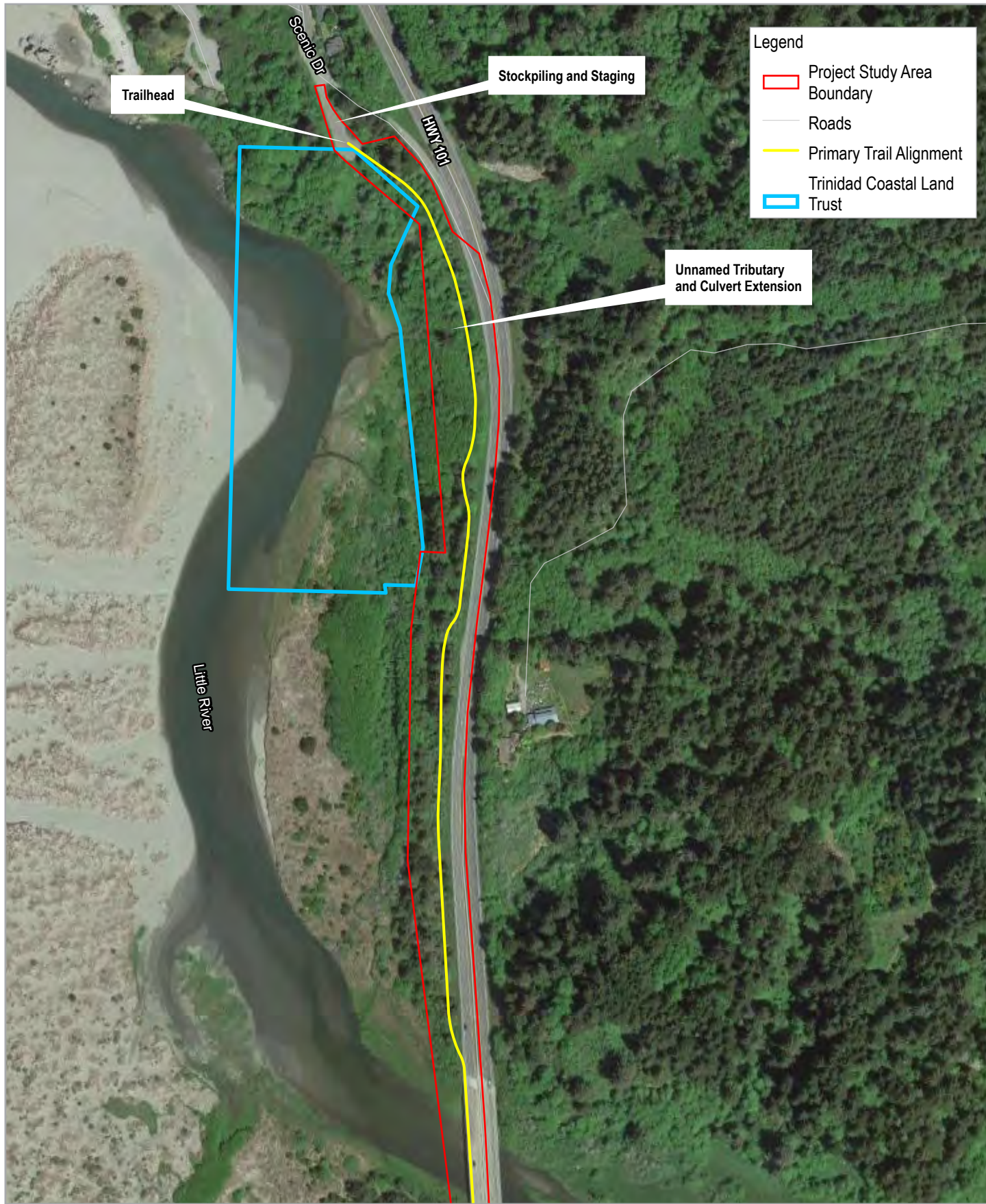


Redwood Community Action Agency
Little River Trail Project Description

Project No. 11212216
Revision No. -
Date 9/3/2021

Project Overview

FIGURE 2



Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

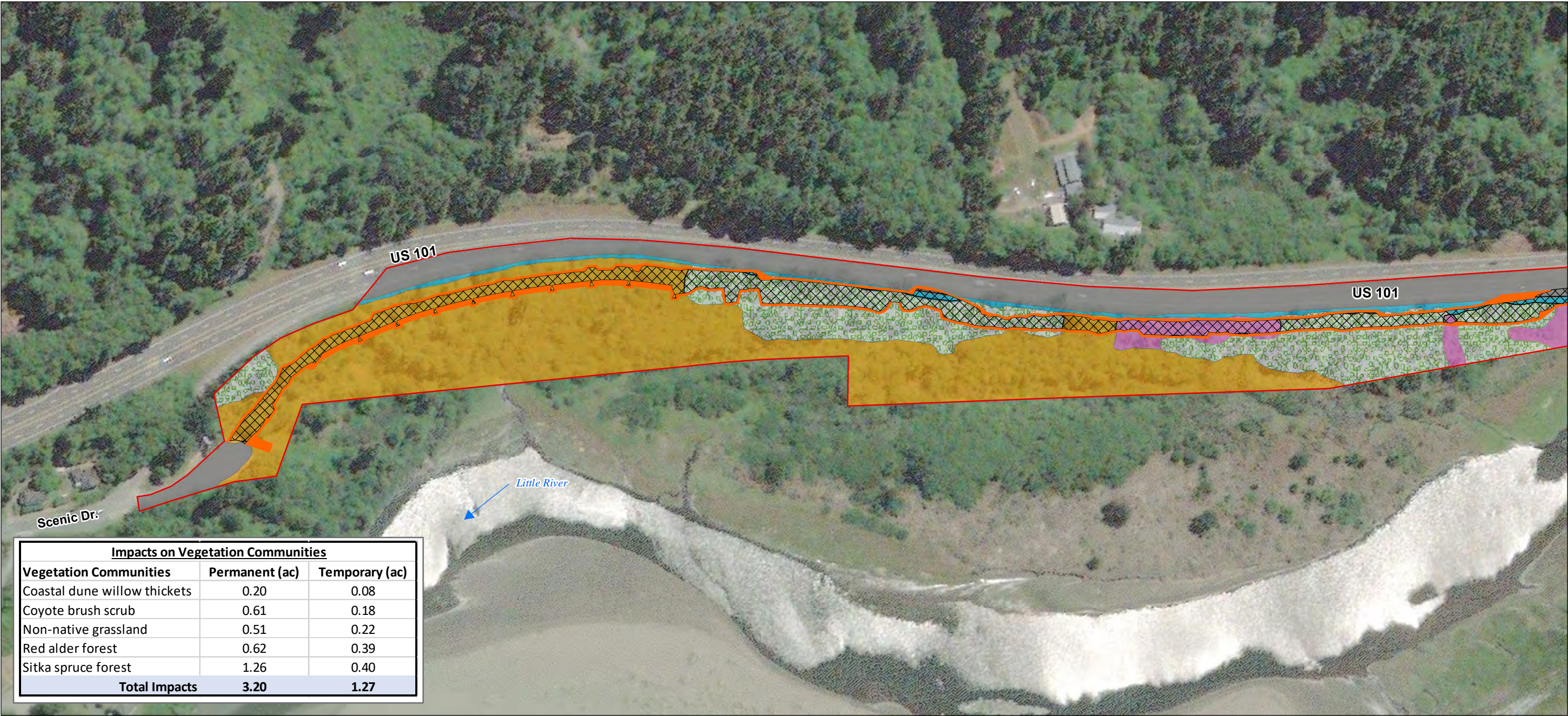


Redwood Community Action Agency
Little River Trail Project Description

Project No. 11212216
Revision No. -
Date 11/3/2021

Northern Project Overview

FIGURE 3



Impacts on Vegetation Communities		
Vegetation Communities	Permanent (ac)	Temporary (ac)
Coastal dune willow thickets	0.20	0.08
Coyote brush scrub	0.61	0.18
Non-native grassland	0.51	0.22
Red alder forest	0.62	0.39
Sitka spruce forest	1.26	0.40
Total Impacts	3.20	1.27



Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
NAD 1983 StatePlane California I FIPS 0401 Feet
2. Data Sources: Aerial Imagery: Vivid Maxar 11/7/2018

- Biological Study Area (22.93 acres)

Permanent Impacts (3.20 acres)

Temporary Impacts (1.27 acres)

Riverine (0.69 acre)

Barren (5.45 acres)
- Vegetation Communities**

Coastal dune willow thickets (0.96 acre)

Coyote brush scrub (1.36 acres)

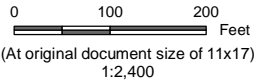
Non-native grassland (2.81 acres)

Pacific silverweed marshes (0.11 acre)

Red alder forest (7.05 acres)

Sitka spruce forest (4.42 acres)

Slough sedge swards (0.08 acre)



Project Location	Prepared by TM on 2022-01-24 IR by ST on 2022-01-24
Humboldt County, California	
Client/Project	185705051
Redwood Community Action Agency Little River Trail Project	
Figure No.	
4	
Title	
Impacts on Vegetation Communities	



Impacts on Vegetation Communities		
Vegetation Communities	Permanent (ac)	Temporary (ac)
Coastal dune willow thickets	0.20	0.08
Coyote brush scrub	0.61	0.18
Non-native grassland	0.51	0.22
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Temporary Impacts (1.27 acres)

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Barren (5.45 acres)
- Vegetation Communities**

Coastal dune willow thickets (0.96 acre)

Coyote brush scrub (1.36 acres)

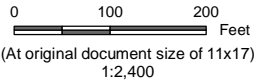
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Red alder forest (7.05 acres)

Sitka spruce forest (4.42 acres)

Slough sedge swards (0.08 acre)



Project Location	Prepared by TM on 2022-01-24 IR by ST on 2022-01-24
Humboldt County, California	
Client/Project	185705051
Redwood Community Action Agency Little River Trail Project	
Figure No.	
4	
Title	
Impacts on Vegetation Communities	



Notes
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NAD 1983 StatePlane California I FIPS 0401 Feet
2. Data Sources: Aerial Imagery: Vivid Maxar 11/7/2018
3. Delineator: Sarah Tona and Jacqueline Phipps
4. Delineation Date: September 1-3, 2020

- Biological Study Area (22.93 acres)
- Map Reference Point
- Culvert
- OHWM
- ESA Fencing
- Permanent Impacts (0.01 acre)
- Temporary Impacts (<0.01 acre)

Potential Waters of the United States

Wetlands

- Riparian / Fresh Emergent Wetland Complex (1.89 acres)
- Fresh Emergent Wetland (0.19 acre)
- Riparian Wetland (0.07 acre)
- Vegetated Ditch (0.02 acre)

Other Waters

- Perennial Stream (0.75 acre, 367 linear feet)

0 50 100 Feet
(At original document size of 11x17)
1:1,200



This delineation of waters of the United States is subject to verification by the United States Army Corps of Engineers (USACE). Statnec advises all parties that the delineation is preliminary until the USACE provides a written verification.

Project Location Humboldt County, California Prepared by TM on 2022-01-24
IR by ST on 2022-01-24

Client/Project Redwood Community Action Agency 185705051
Little River Trail Project

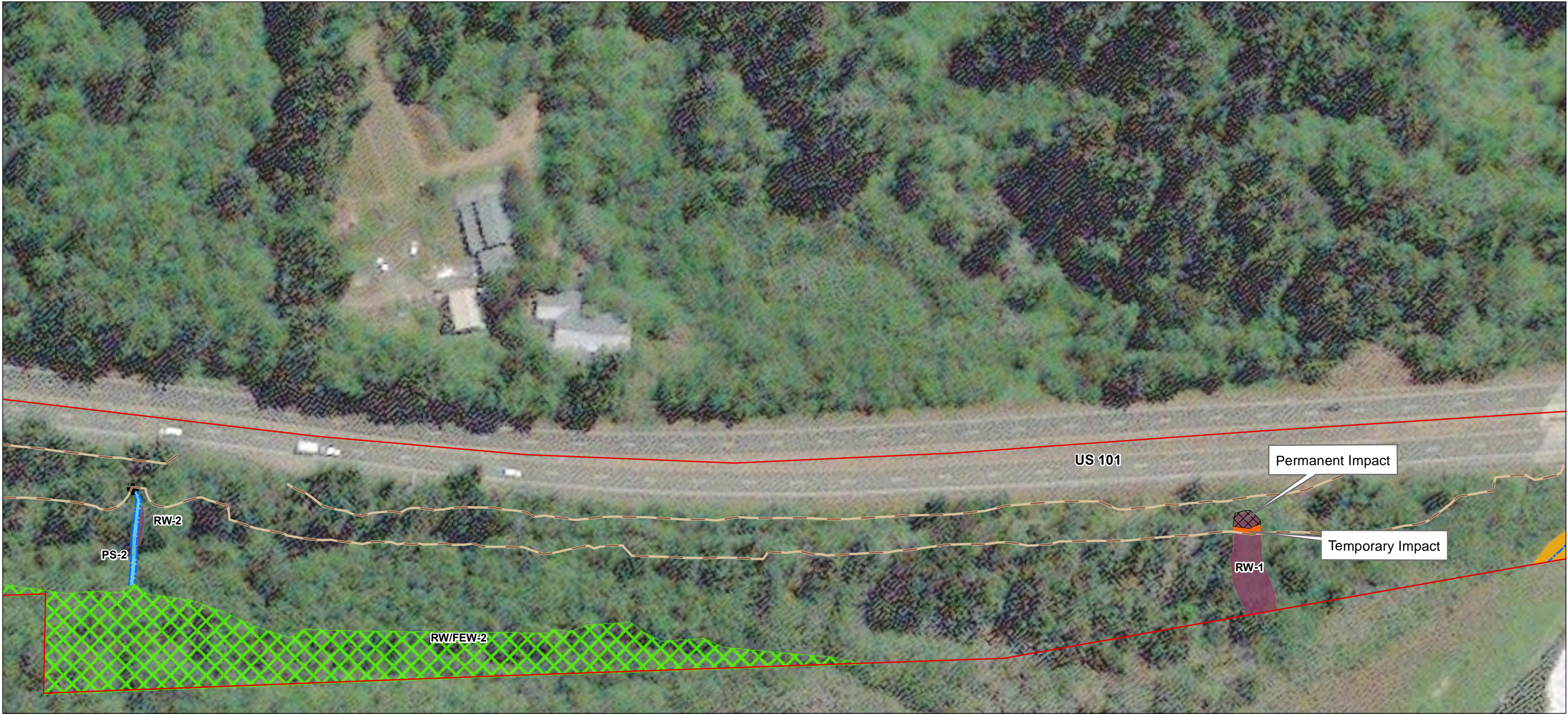
Figure No. 5

Impacts on Potential Waters of the United States

Page 1 of 4

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Notes
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- Culvert
- OHWM
- ESA Fencing
- Permanent Impacts (0.01 acre)
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Potential Waters of the United States

Wetlands

- Riparian / Fresh Emergent Wetland Complex (1.89 acres)
- Fresh Emergent Wetland (0.19 acre)
- Riparian Wetland (0.07 acre)
- Vegetated Ditch (0.02 acre)

Other Waters

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Project Location Humboldt County, California Prepared by TM on 2022-01-24
IR by ST on 2022-01-24

Client/Project Redwood Community Action Agency 185705051
Little River Trail Project

Figure No. 5

Impacts on Potential Waters of the United States

Page 2 of 4



Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
NAD 1983 StatePlane California I FIPS 0401 Feet
2. Data Sources: Aerial Imagery: Vivid Maxar 11/7/2018
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4. Delineation Date: September 1-3, 2020

- Biological Study Area (22.93 acres)
- Map Reference Point
- Culvert
- OHWM
- ESA Fencing
- Permanent Impacts (0.01 acre)
- Temporary Impacts (<0.01 acre)

Potential Waters of the United States

- Wetlands**
 - Riparian / Fresh Emergent Wetland Complex (1.89 acres)
 - Fresh Emergent Wetland (0.19 acre)
 - Riparian Wetland (0.07 acre)
 - Vegetated Ditch (0.02 acre)
- Other Waters**
 - Perennial Stream (0.75 acre, 367 linear feet)

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(At original document size of 11x17)
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Project Location Humboldt County, California Prepared by TM on 2022-01-24
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Client/Project Redwood Community Action Agency 185705051
Little River Trail Project

Figure No. 5

Impacts on Potential Waters of the United States
Page 3 of 4

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3. Delineator: Sarah Tona and Jacqueline Phipps
4. Delineation Date: September 1-3, 2020

- Biological Study Area (22.93 acres)
- Map Reference Point
- Culvert
- OHWM
- ESA Fencing
- Permanent Impacts (0.01 acre)
- Temporary Impacts (<0.01 acre)

Potential Waters of the United States

- Wetlands**
- Riparian / Fresh Emergent Wetland Complex (1.89 acres)
 - Fresh Emergent Wetland (0.19 acre)
 - Riparian Wetland (0.07 acre)
 - Vegetated Ditch (0.02 acre)
- Other Waters**
- Perennial Stream (0.75 acre, 367 linear feet)

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Project Location Humboldt County, California Prepared by TM on 2022-01-24
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Client/Project Redwood Community Action Agency 185705051
Little River Trail Project

Figure No. 5

Impacts on Potential Waters of the United States
Page 4 of 4

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Impacts on Potential Waters of the United States							
Temporary							
Wetlands							
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)
RW/FEW-3	Riparian / Fresh Emergent Wetland Complex	<0.01	-	-	E2SS	41.01641	-124.10783
Subtotal		<0.01					
RW-1	Riparian Wetland	<0.01	-	-	E2SS	41.02176	-124.10757
Subtotal		<0.01					
Total Temporary Impacts on Wetlands		<0.01					
Total Temporary Impacts on Potential Waters of the United		<0.01					
Permanent							
Wetlands							
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)
RW-1	Riparian Wetland	0.01	-	-	E2SS	41.02176	-124.10757
Subtotal		0.01					
Total Permanent Impacts on Wetlands		0.01					
Total Permanent Impacts on Potential Waters of the United		0.01					
Total Impacts on Potential Waters of the United States		0.01					

Potential Waters of the United States							
Wetlands							
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)
RW/FEW-1	Riparian / Fresh Emergent Wetland Complex	0.02	-	-	E2SS	41.02697	-124.10801
RW/FEW-2	Riparian / Fresh Emergent Wetland Complex	1.68	-	-	E2SS	41.02486	-124.10793
RW/FEW-3	Riparian / Fresh Emergent Wetland Complex	0.19	-	-	E2SS	41.01641	-124.10783
Subtotal		1.89					
FEW-1	Fresh Emergent Wetland	0.17	-	-	E2EM	41.02072	-124.10734
FEW-2	Fresh Emergent Wetland	0.02	-	-	E2EM	41.02002	-124.10721
Subtotal		0.19					
RW-1	Riparian Wetland	0.07	-	-	E2SS	41.02176	-124.10757
RW-2	Riparian Wetland	<0.01	-	-	E2SS	41.02476	-124.10753
Subtotal		0.07					
VD-1	Vegetated Ditch	0.02	-	-	E2EM	41.01561	-124.10775
Total Wetlands		2.17					
Other Waters							
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)
PS-1	Perennial Stream	0.05	130	15	E1UB	41.02694	-124.10791
PS-2	Perennial Stream	0.01	96	5	E2SB	41.02478	-124.10759
PS-3	Perennial Stream	0.69	141	285	E1UB	41.02033	-124.10713
Total Other Waters		0.75	367				
Total Potential Waters of the United States		2.92	367				

Project Location

Humboldt County, California

Client/Project

Redwood Community Action Agency
Little River Trail Project

Figure No.

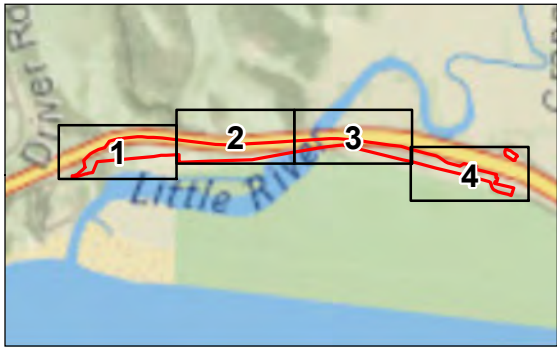
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Title

Impacts on Potential Waters of the United States
Summary

Prepared by TM on 2022-01-24
IR by ST on 2022-01-24

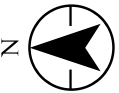
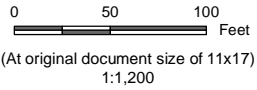
185705051



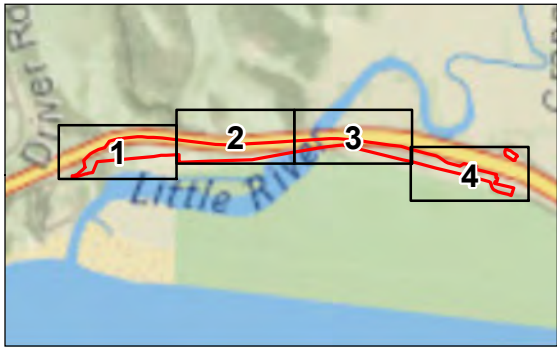
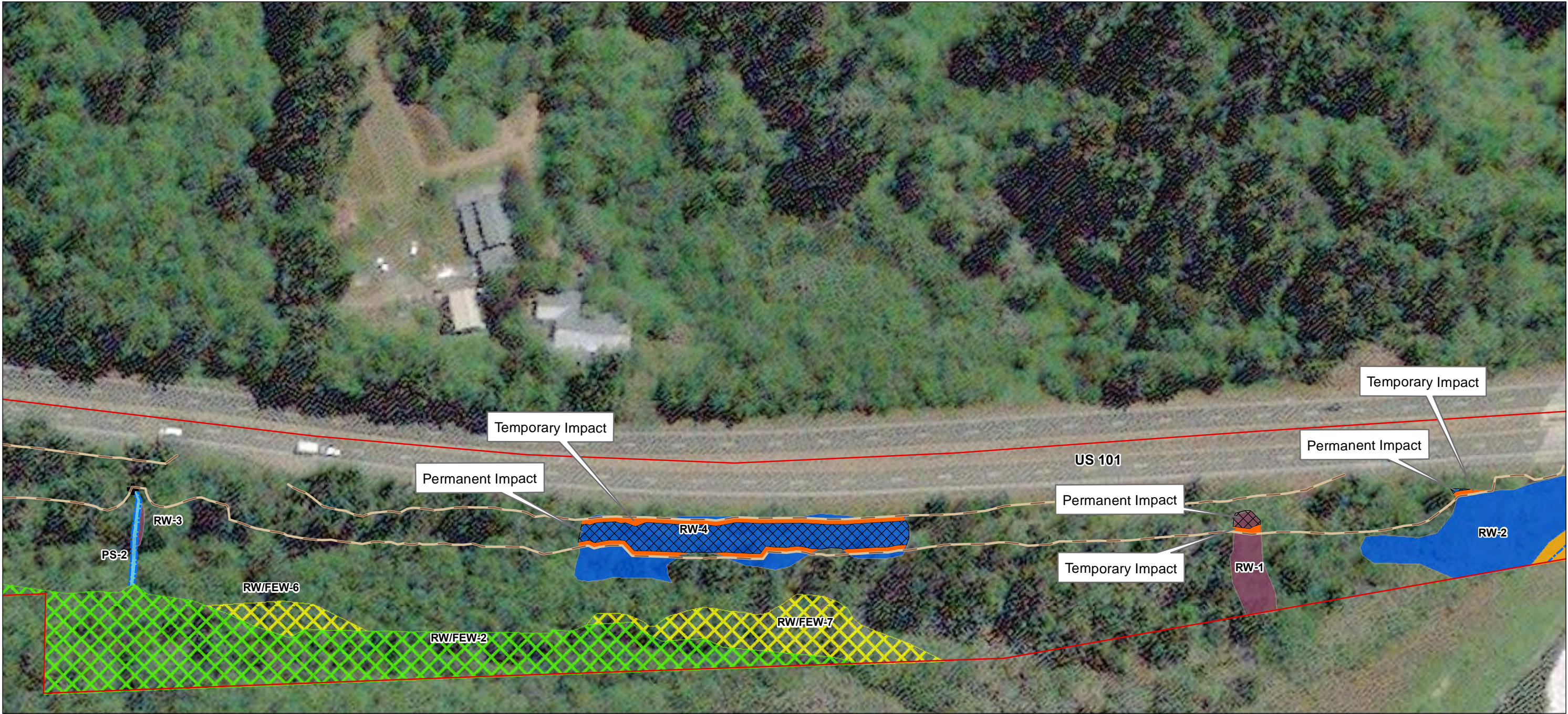
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3. Delineator: Sarah Tona and Jacqueline Phipps
4. Delineation Date: September 1-3, 2020

Potential Coastal Act Waters			
<div></div> <div></div> <div></div> <div></div> <div></div>	Biological Study Area (22.93)	3-Parameter Wetlands	1-Parameter Wetlands
	Map Reference Point	<div></div> Riparian / Fresh Emergent Wetland Complex (1.89 acres)	<div></div> Riparian / Fresh Emergent Wetland Complex (0.54 acre)
	Culvert	<div></div> Fresh Emergent Wetland (0.19 acre)**	<div></div> Riparian Wetland (0.64 acre)*
	Ordinary High Water Mark	<div></div> Riparian Wetland (0.07 acre)*	Streams
	ESA Fencing	<div></div> Vegetated Ditch (0.02 acre)	<div></div> Perennial Stream (0.75 acre, 367 linear feet)
<div></div>	Permanent Impacts (0.20 acre)	Streams	
<div></div>	Temporary Impacts (0.08 acre)	<div></div> Perennial Stream (0.75 acre, 367 linear feet)	

Coastal Act Waters are wetlands, coastal waters, and streams regulated under the California Coastal Act. This delineation of waters of the State is subject to verification by the California Coastal Commission (CCC). Statnec advises all parties that the delineation is preliminary until the CCC provides a written verification.



Project Location	Prepared by TM on 2022-01-24 IR by ST on 2022-01-24
Humboldt County, California	
Client/Project	185705051
Redwood Community Action Agency Little River Trail Project	
Figure No.	
6	
Title	
Impacts on Coastal Act Waters	



Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
NAD 1983 StatePlane California I FIPS 0401 Feet
2. Data Sources: Aerial Imagery: Vivid Maxar 11/7/2018
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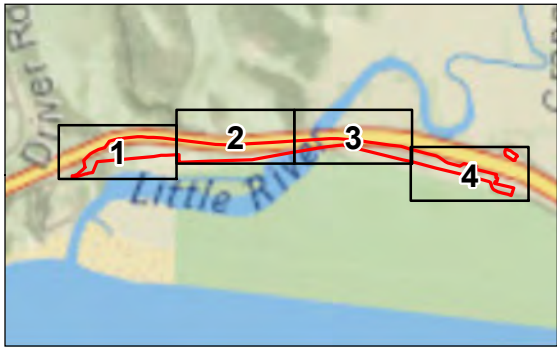
Potential Coastal Act Waters	
<div><div></div></div> Biological Study Area (22.93)	
<div><div></div></div> Map Reference Point	
<div><div></div></div> Culvert	
<div><div></div></div> Ordinary High Water Mark	
<div><div></div></div> ESA Fencing	
<div><div></div></div> Permanent Impacts (0.20 acre)	
<div><div></div></div> Temporary Impacts (0.08 acre)	
3-Parameter Wetlands	
<div><div></div></div> Riparian / Fresh Emergent Wetland Complex (1.89 acres)	
<div><div></div></div> Fresh Emergent Wetland (0.19 acre)**	
<div><div></div></div> Riparian Wetland (0.07 acre)*	
<div><div></div></div> Vegetated Ditch (0.02 acre)	
Streams	
<div><div></div></div> Perennial Stream (0.75 acre, 367 linear feet)	
1-Parameter Wetlands	
<div><div></div></div> Riparian / Fresh Emergent Wetland Complex (0.54 acre)	
<div><div></div></div> Riparian Wetland (0.64 acre)*	
Streams	
<div><div></div></div> Perennial Stream (0.75 acre, 367 linear feet)	

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*Riparian wetlands also qualify as sensitive natural communities (coastal dune willow thickets).
**Fresh emergent wetlands also qualify as sensitive natural communities (Pacific silverweed marshes and slough sedge swards).

Project Location	Prepared by TM on 2022-01-24 IR by ST on 2022-01-24
Humboldt County, California	
Client/Project	185705051
Redwood Community Action Agency Little River Trail Project	
Figure No.	6
Title	Impacts on Coastal Act Waters

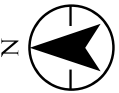
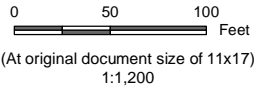


Notes
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3. Delineator: Sarah Tona and Jacqueline Phipps
4. Delineation Date: September 1-3, 2020

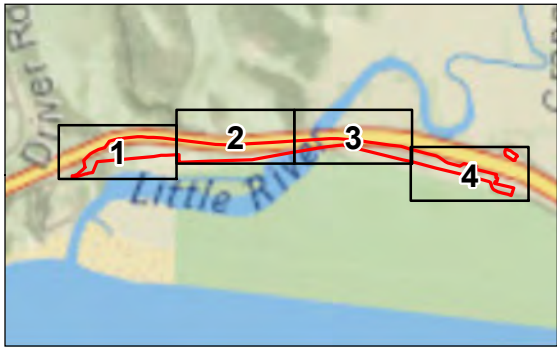
Potential Coastal Act Waters			
<div></div>	Biological Study Area (22.93)	<div></div>	3-Parameter Wetlands
<div></div>	Map Reference Point	<div></div>	Riparian / Fresh Emergent Wetland Complex (1.89 acres)
<div></div>	Culvert	<div></div>	Fresh Emergent Wetland (0.19 acre)**
<div></div>	Ordinary High Water Mark	<div></div>	Riparian Wetland (0.07 acre)*
<div></div>	ESA Fencing	<div></div>	Vegetated Ditch (0.02 acre)
<div></div>	Permanent Impacts (0.20 acre)	<div></div>	Streams
<div></div>	Temporary Impacts (0.08 acre)	<div></div>	Perennial Stream (0.75 acre, 367 linear feet)
		<div></div>	1-Parameter Wetlands
		<div></div>	Riparian / Fresh Emergent Wetland Complex (0.54 acre)
		<div></div>	Riparian Wetland (0.64 acre)*
		<div></div>	Streams
		<div></div>	Perennial Stream (0.75 acre, 367 linear feet)

Coastal Act Waters are wetlands, coastal waters, and streams regulated under the California Coastal Act. This delineation of waters of the State is subject to verification by the California Coastal Commission (CCC). Stantec advises all parties that the delineation is preliminary until the CCC provides a written verification.

*Riparian wetlands also qualify as sensitive natural communities (coastal dune willow thickets).
**Fresh emergent wetlands also qualify as sensitive natural communities (Pacific silverweed marshes and slough sedge swards).



Project Location	Prepared by TM on 2022-01-24 IR by ST on 2022-01-24
Humboldt County, California	
Client/Project	185705051
Redwood Community Action Agency Little River Trail Project	
Figure No.	6
Title	Impacts on Coastal Act Waters

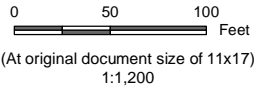


Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
NAD 1983 StatePlane California I FIPS 0401 Feet
2. Data Sources: Aerial Imagery: Vivid Maxar 11/7/2018
3. Delineator: Sarah Tona and Jacqueline Phipps
4. Delineation Date: September 1-3, 2020

Potential Coastal Act Waters	
<div></div> Biological Study Area (22.93)	3-Parameter Wetlands
<div></div> Map Reference Point	<div></div> Riparian / Fresh Emergent Wetland Complex (1.89 acres)
<div></div> Culvert	<div></div> Fresh Emergent Wetland (0.19 acre)**
<div></div> Ordinary High Water Mark	<div></div> Riparian Wetland (0.07 acre)*
<div></div> ESA Fencing	<div></div> Vegetated Ditch (0.02 acre)
<div></div> Permanent Impacts (0.20 acre)	Streams
<div></div> Temporary Impacts (0.08 acre)	<div></div> Perennial Stream (0.75 acre, 367 linear feet)
	1-Parameter Wetlands
	<div></div> Riparian / Fresh Emergent Wetland Complex (0.54 acre)
	<div></div> Riparian Wetland (0.64 acre)*
	Streams
	<div></div> Perennial Stream (0.75 acre, 367 linear feet)

*Coastal Act Waters" are wetlands, coastal waters, and streams regulated under the California Coastal Act. This delineation of waters of the State is subject to verification by the California Coastal Commission (CCC). Statnec advises all parties that the delineation is preliminary until the CCC provides a written verification.

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Project Location	Prepared by TM on 2022-01-24 IR by ST on 2022-01-24
Humboldt County, California	
Client/Project	185705051
Redwood Community Action Agency Little River Trail Project	
Figure No.	
6	
Title	
Impacts on Coastal Act Waters	

V:\1857\active\185705051\03_data\gis_cadd\mxd\185705051_Figure6_CCC_was_impacts.mxd Revised: 2022-01-24 By: mooney

Impacts on Potential Coastal Act Waters															
Temporary Impacts								Permanent Impacts							
3-Parameter Wetlands								3-Parameter Wetlands							
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)	Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)
RW/FEW-3	Riparian / Fresh Emergent Wetland Complex	<0.01	-	-	E2SS	41.01641	-124.10783	RW-1	Riparian Wetland	0.01	-	-	E2SS	41.02176	-124.10757
Subtotal		<0.01						Subtotal		0.01					
Total Permanent Impacts on 3-Parameter Wetlands								0.01							
RW-1	Riparian Wetland	<0.01	-	-	E2SS	41.02176	-124.10757								
Subtotal		<0.01													
Total Temporary Impacts on 3-Parameter Wetlands								<0.01							
								1-Parameter Wetlands							
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)	Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)
								RW-2	Riparian Wetland	<0.01	-	-	E2SS	41.02105	-124.10746
								RW-4	Riparian Wetland	0.19	-	-	E2SS	41.02105	-124.10746
Subtotal		0.19						0.19							
Total Permanent Impacts on 1-Parameter Wetlands								0.19							
Subtotal								0.01							
Total Permanent Impacts on Potential Coastal Act Waters								0.20							
RW-2	Riparian Wetland	<0.01	-	-	E2SS	41.02105	-124.10746								
RW-4	Riparian Wetland	0.07	-	-	E2SS	41.02105	-124.10746	Total Impacts on Potential Coastal Act Waters							
Subtotal		0.07						0.28							
Total Temporary Impacts on 1-Parameter Wetlands								0.08							
Total Temporary Impacts on Potential Coastal Act Waters								0.08							

Potential Coastal Act Waters																	
3-Parameter Wetlands								1-Parameter Wetlands									
Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)	Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)		
RW/FEW-1	Riparian / Fresh Emergent Wetland Complex	0.02	-	-	E2SS	41.02697	-124.10801	RW/FEW-4	Riparian / Fresh Emergent Wetland Complex	0.17	-	-	E2SS	41.01613	-124.10788		
RW/FEW-2	Riparian / Fresh Emergent Wetland Complex	1.68	-	-	E2SS	41.02486	-124.10793	RW/FEW-5	Riparian / Fresh Emergent Wetland Complex	0.06	-	-	E2SS	41.02606	-124.10767		
RW/FEW-3	Riparian / Fresh Emergent Wetland Complex	0.19	-	-	E2SS	41.01641	-124.10783	RW/FEW-6	Riparian / Fresh Emergent Wetland Complex	0.07	-	-	E2SS	41.02437	-124.10784		
Subtotal		1.89						RW/FEW-7	Riparian / Fresh Emergent Wetland Complex	0.24	-	-	E2SS	41.02295	-124.10786		
								Subtotal		0.54							
FEW-1	Fresh Emergent Wetland	0.17	-	-	E2EM	41.02072	-124.10734										
FEW-2	Fresh Emergent Wetland	0.02	-	-	E2EM	41.02002	-124.10721	RW-2	Riparian Wetland	0.29	-	-	E2SS	41.02105	-124.10746		
Subtotal		0.19						RW-4	Riparian Wetland	0.35	-	-	E2SS	41.02105	-124.10746		
								Subtotal		0.64							
RW-1	Riparian Wetland	0.07	-	-	E2SS	41.02176	-124.10757	Total 1-Parameter Wetlands		1.18							
RW-3	Riparian Wetland	<0.01	-	-	E2SS	41.02476	-124.10753										
Subtotal		0.07						Other Waters									
								Label	Type	Area (Ac)	Length (ft)	Width (ft)	Cowardin	Location (lat)	Location (long)		
VD-1	Vegetated Ditch	0.02	-	-	E2EM	41.01561	-124.10775	PS-1	Perennial Stream	0.05	130	15	E1UB	41.02694	-124.10791		
Total 3-Parameter Wetlands		2.17						PS-2	Perennial Stream	0.01	96	5	E2SB	41.02478	-124.10759		
								PS-3	Perennial Stream	0.69	141	285	E1UB	41.02033	-124.10713		
								Total Other Waters		0.75	367						
								Total Potential Coastal Act Waters								4.10	367



Project LocationHumboldt County, California

Client/ProjectRedwood Community Action Agency
Little River Trail Project

Figure No.
6

Title
Impacts on Coastal Act Waters

Summary



Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
NAD 1983 StatePlane California I FIPS 0401 Feet
2. Data Sources: Aerial Imagery: Vivid Maxar 11/7/2018

- Biological Study Area (22.93 acres)
- Upland ESHA (3.19 acres)*
- ESA Fencing
- Permanent Impacts (0.89 acre)
- Temporary Impacts (0.25 acre)
- Special Status Plant**
- Trailing black currant

*Upland ESHA also qualifies as sensitive natural communities (Sitka spruce forest).

0 100 200 Feet
(At original document size of 11x17)
1:2,400



Project Location Humboldt County, California
Client/Project Redwood Community Action Agency
Little River Trail Project

Figure No. 7
Title

Special Status Plant Location and Impacts on Upland Environmentally Sensitive Habitat Areas



Notes
1. Coordinate System: NAD 1983 StatePlane California I FIPS 0401 Feet
NAD 1983 StatePlane California I FIPS 0401 Feet
2. Data Sources: Aerial Imagery: Vivid Maxar 11/7/2018

- Biological Study Area (22.93 acres)
- Upland ESHA (3.19 acres)*
- ESA Fencing
- Permanent Impacts (0.89 acre)
- Temporary Impacts (0.25 acre)

Special Status Plant

- Trailing black currant

*Upland ESHA also qualifies as sensitive natural communities (Sitka spruce forest).

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(At original document size of 11x17)
1:2,400



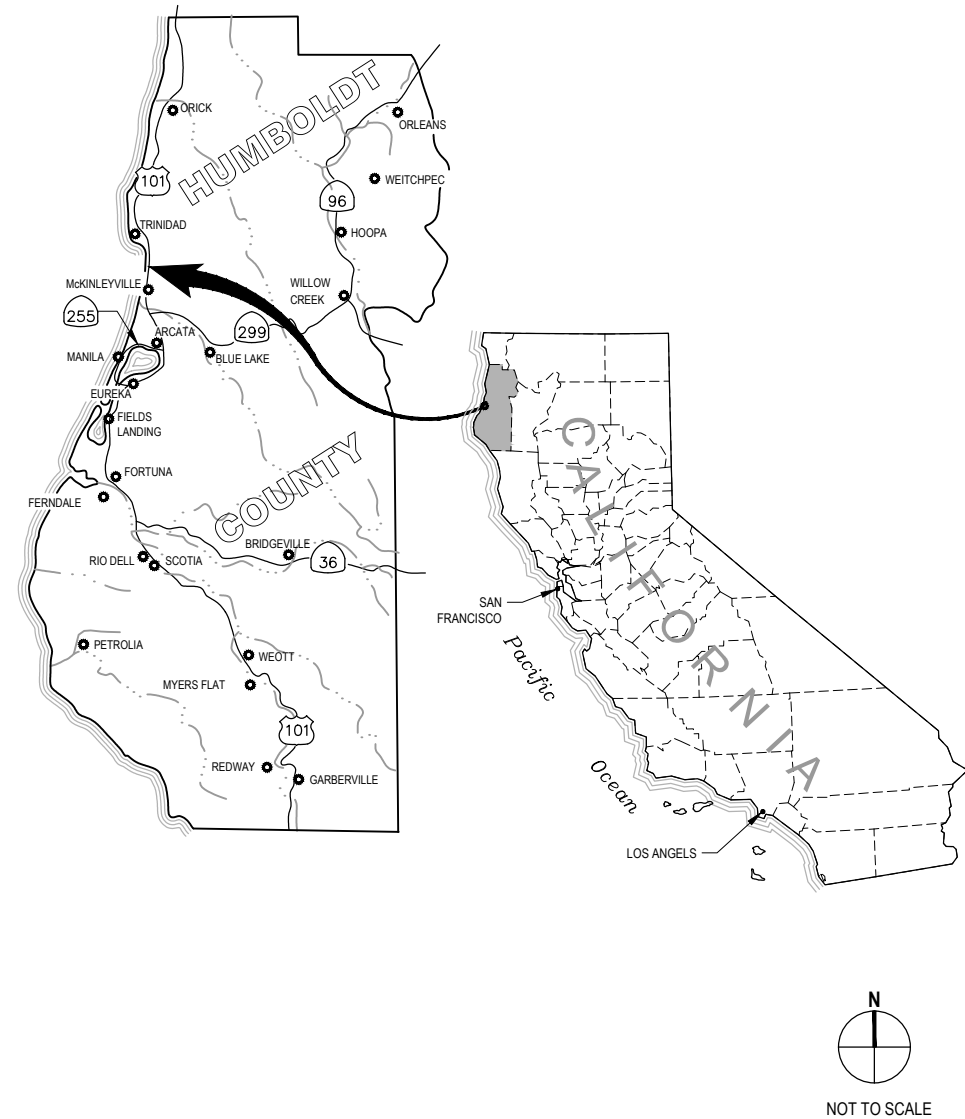
Project Location Humboldt County, California
Client/Project Redwood Community Action Agency
Little River Trail Project

Figure No. 7
Title Special Status Plant Location and Impacts on Upland Environmentally Sensitive Habitat Areas

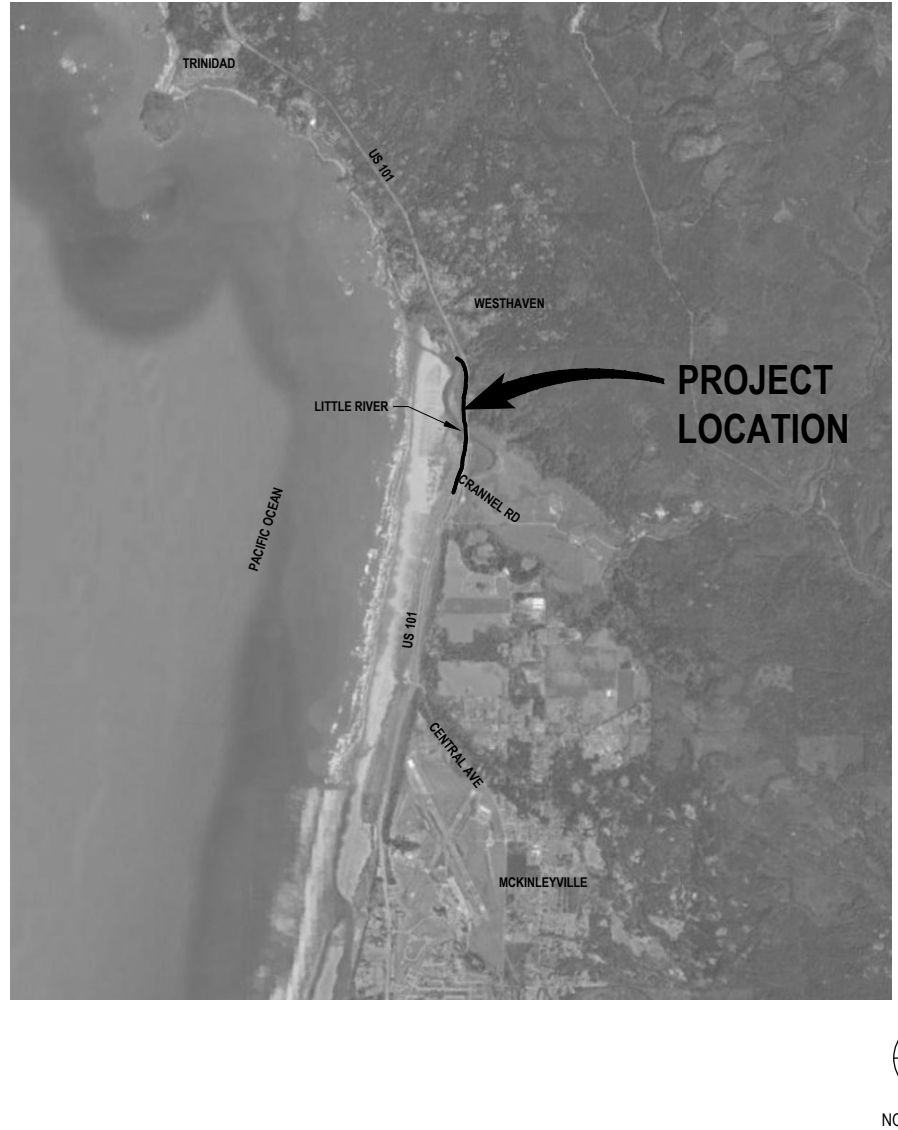
Appendix B Project Design

REDWOOD COMMUNITY ACTION AGENCY
LITTLE RIVER TRAIL PROJECT
EA 01-0J280
February 2022

AREA MAP



LOCATION MAP



SHEET INDEX

Sheet	Sheet No.	Title
GENERAL		
1	G-001	COVER SHEET
2	G-002	SHEET KEY
3	G-003	TYPICAL CROSS SECTIONS - 1 OF 4
4	G-004	TYPICAL CROSS SECTIONS - 2 OF 4
5	G-005	TYPICAL CROSS SECTIONS - 3 OF 4
6	G-006	TYPICAL CROSS SECTIONS - 4 OF 4
PATH PLAN & PROFILE		
7	C-101	STA 5+37 TO STA 11+00
8	C-102	STA 11+00 TO STA 17+00
9	C-103	STA 17+00 TO STA 23+00
10	C-104	STA 23+00 TO STA 27+70
11	C-105	STA 27+70 TO STA 33+00
12	C-106	STA 33+00 TO STA 39+00
13	C-107	STA 39+00 TO STA 45+00
14	C-108	STA 45+00 TO STA 51+00
15	C-109	STA 51+00 TO STA 57+00
16	C-110	STA 57+00 TO STA 60+30
US 101 REALIGNMENT AT LITTLE RIVER BRIDGE		
17	C-201	LITTLE RIVER BRIDGE
STRUCTURAL PLANS		
18	S-101	RETAINING WALL No. 1 GENERAL PLAN
19	S-102	RETAINING WALL No. 2 GENERAL PLAN No. 1
20	S-103	RETAINING WALL No. 2 GENERAL PLAN No. 2
21	S-104	RETAINING WALL No. 2 GENERAL PLAN No. 3
22	S-105	LITTLE RIVER BRIDGE GENERAL PLAN No. 1
23	S-106	LITTLE RIVER BRIDGE GENERAL PLAN No. 2
UTILITY PLANS		
24	E-101	STREET LIGHT AT CLAM BEACH DR
25	E-102	STREET LIGHT RELOCATION 101 SOUTHBOUND OFF-RAMP
26	E-103	UTILITY RELOCATION LITTLE RIVER BRIDGE
27	E-104	STREET LIGHT AT SCENIC DR

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No.	Issue	Checked	Approved
1	Author O.GOODIE	Drafting Check N. SANGER	Project Manager J. WOLF
2	Designer N. SANGER	Design Check J. WOLF	Project Director B. SILVA



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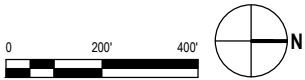
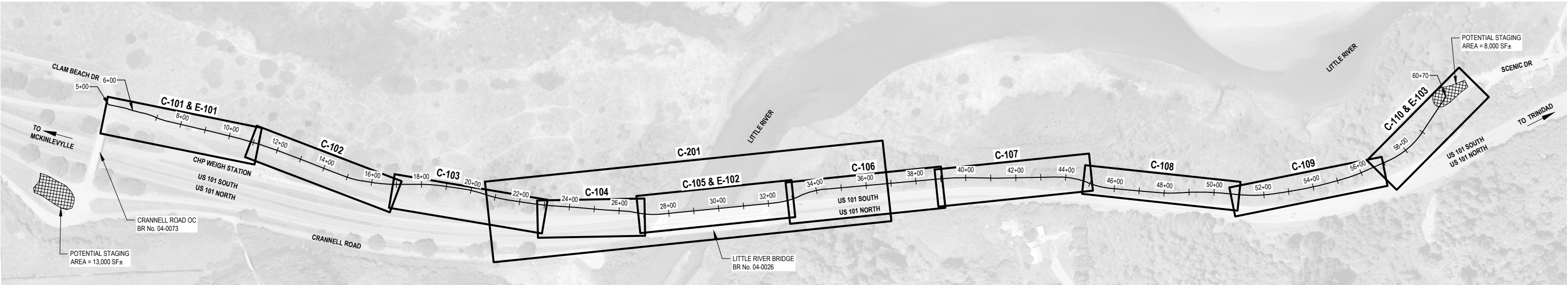
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Project	LITTLE RIVER TRAIL PROJECT
Project No.	11212216
Date	2/7/2022
Scale	AS SHOWN

Title	GENERAL: COVER SHEET
Sheet No.	G-001
Sheet	1
Status Code	27



ABBREVIATIONS	
AB	AGGREGATE BASE
EP	EDGE OF PAVEMENT
ES	EDGE OF SHOULDER
Exist	EXISTING
LF	LINEAL FEET
LT	LEFT
ME	MATCH EXISTING
MIN	MINIMUM
MPH	MILES PER HOUR
PVI	POINT OF VERTICAL INTERSECTION
RT	RIGHT
Shld	SHOULDER
TYP	TYPICAL
TW	TRAVELED WAY
NOTES:	
1. THE ABBREVIATIONS LISTED ABOVE SUPPLEMENT THOSE LISTED IN THE CALTRANS STANDARD PLANS A3A-A3C.	
2. CONTACT COUNTIES REPRESENTATIVE FOR ABBREVIATIONS NOT LISTED.	
DESIGN BASIS	
DESIGN SPEED:	30 MPH

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No.	Issue	Checked	Approved
Author	O.GOOD	Drafting Check	N. SANGER
Designer	N. SANGER	Design Check	J. WOLF
		Project Manager	J. WOLF
		Project Director	B. SILVA



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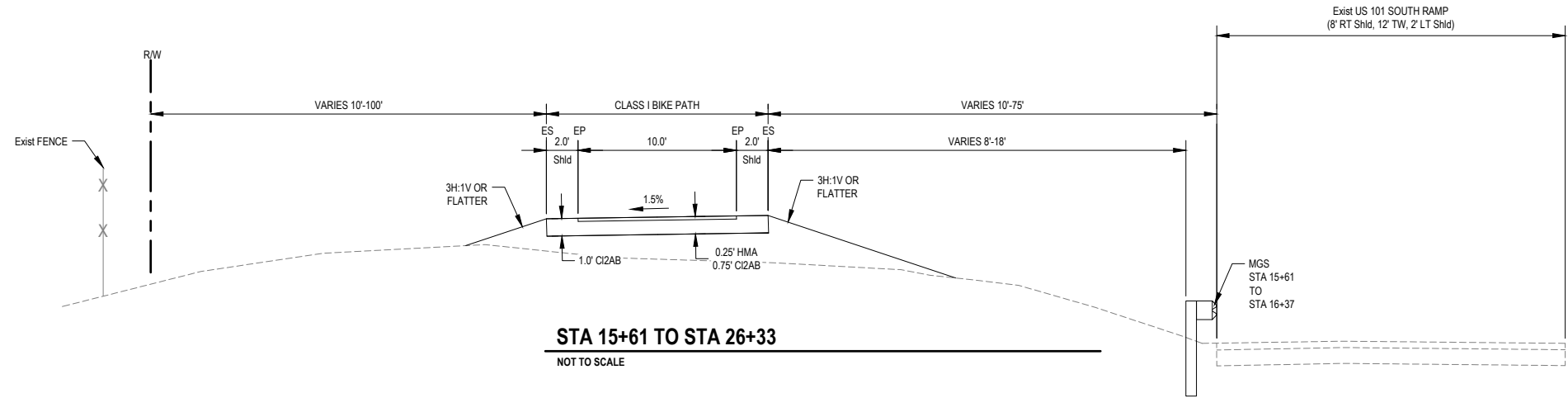
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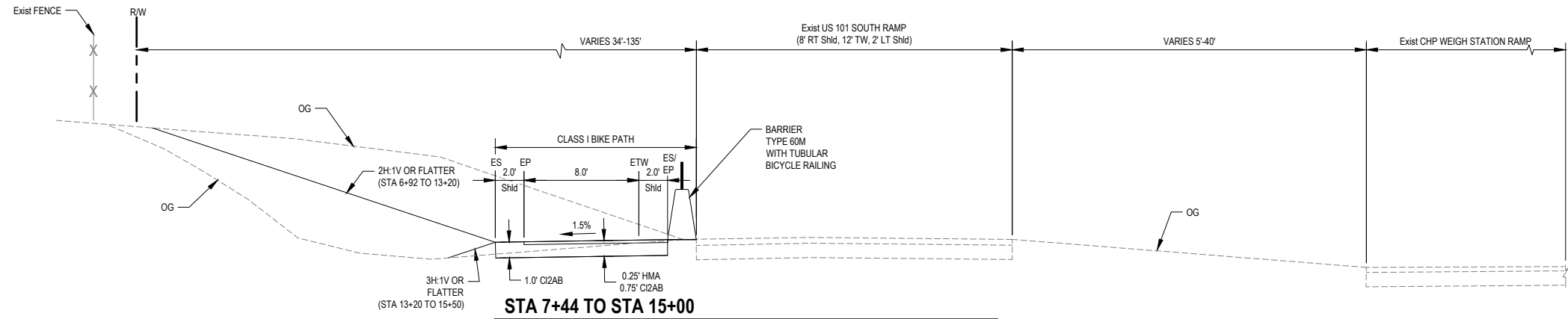
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Project	LITTLE RIVER TRAIL PROJECT
Project No.	11212216
Date	2/7/2022
Scale	AS SHOWN

Title	GENERAL: SHEET KEY
Sheet No.	G-002
Size	ANSI D
Page	2 of 27



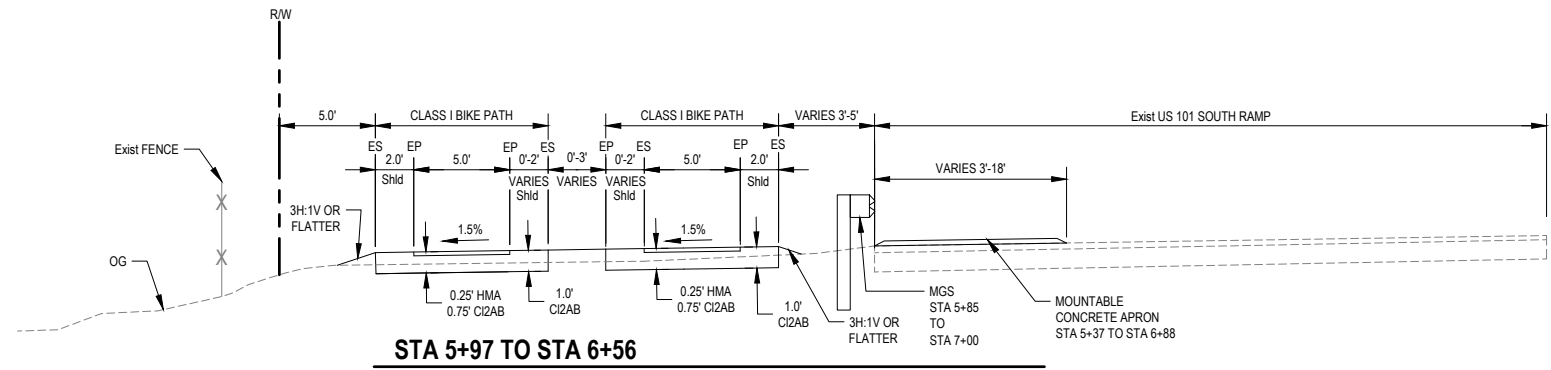
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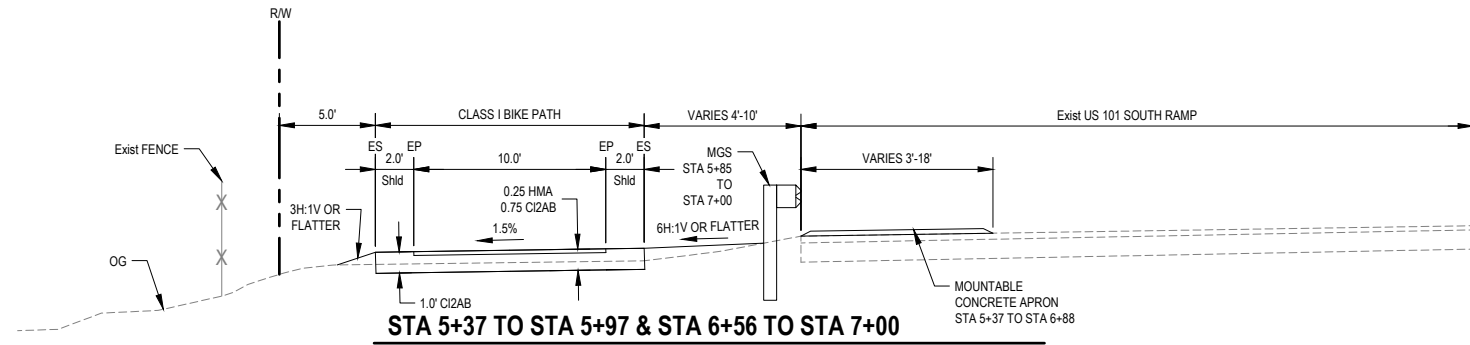
STA 7+44 TO STA 15+00

NOT TO SCALE



STA 5+97 TO STA 6+56

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STA 5+37 TO STA 5+97 & STA 6+56 TO STA 7+00

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NOTE:
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2	N. SANGER	J. WOLF	B. SILVA



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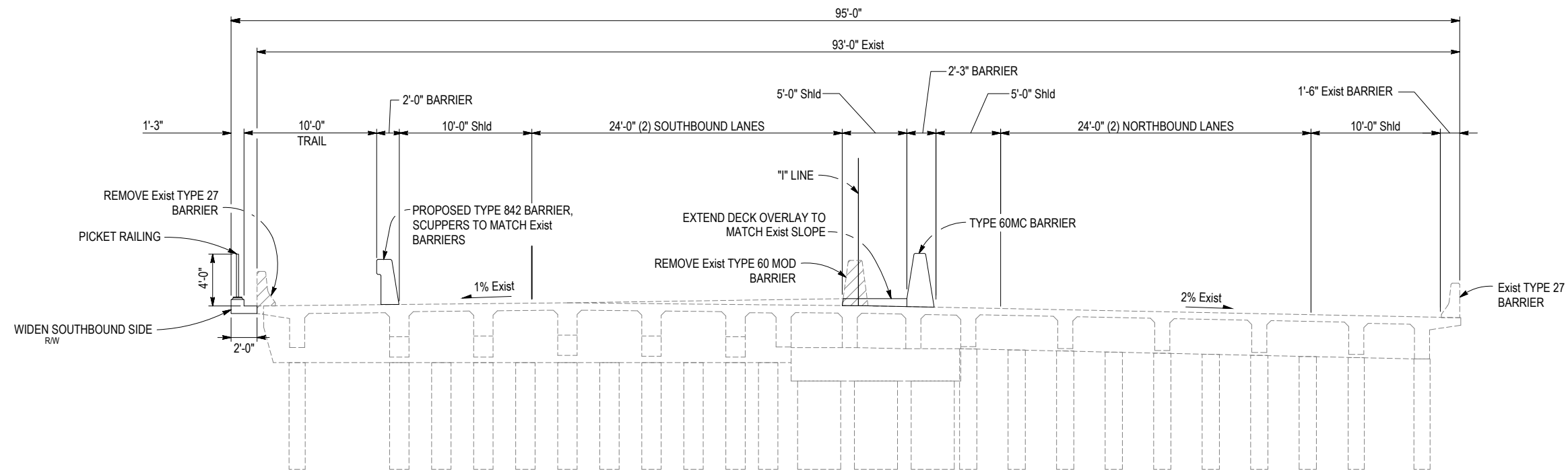
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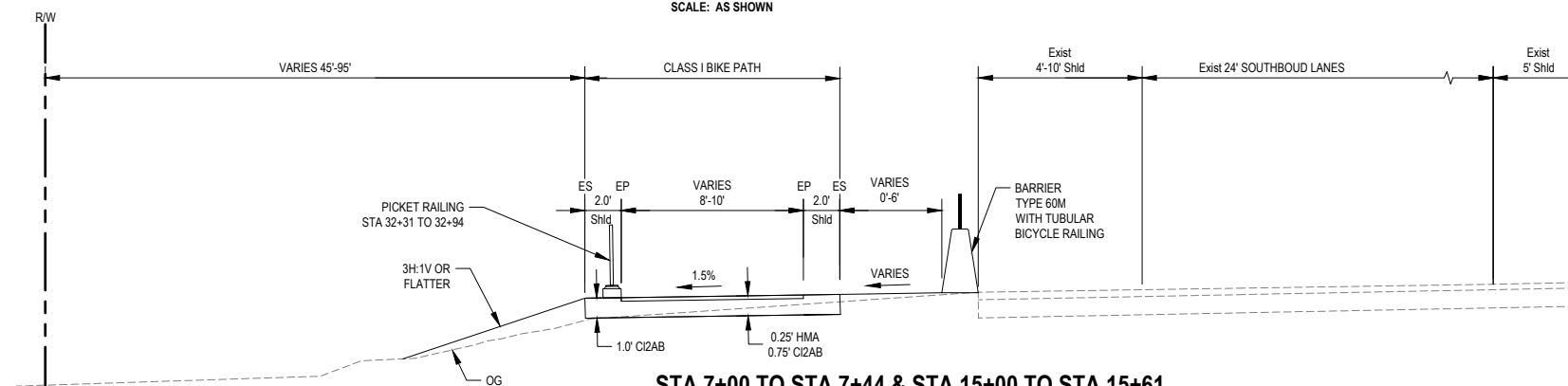
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Sheet No.	G-003
Sheet	3
Size	ANSI D



EXISTING BRIDGE CROSSING
STA 28+12 TO STA 31+84

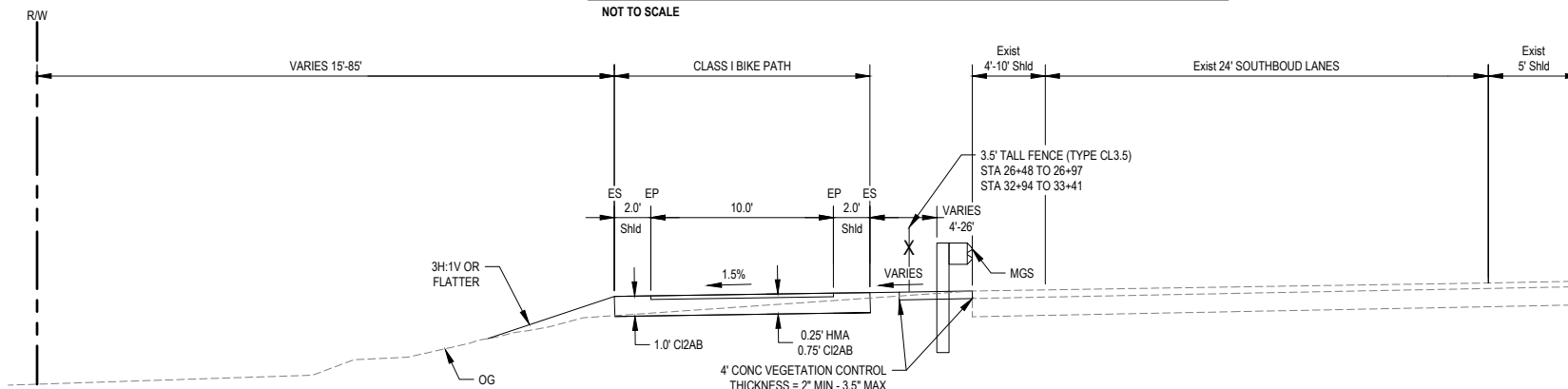
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STA 7+00 TO STA 7+44 & STA 15+00 TO STA 15+61
STA 26+97 TO STA 27+64 & STA 32+31 TO STA 32+94

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STA 26+33 TO STA 26+97 & STA 32+94 TO STA 33+98

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Designer	N. SANGER	Design Check	J. WOLF
		Project Manager	J. WOLF
		Project Director	B. SILVA



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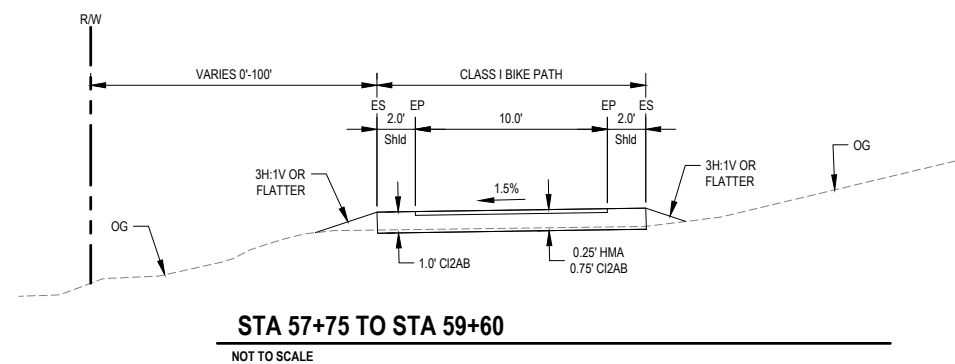
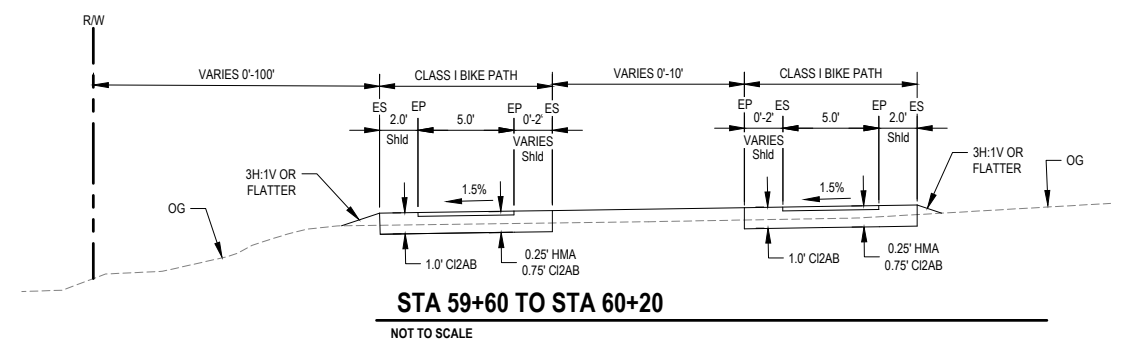
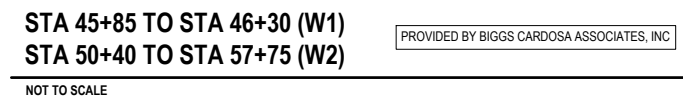
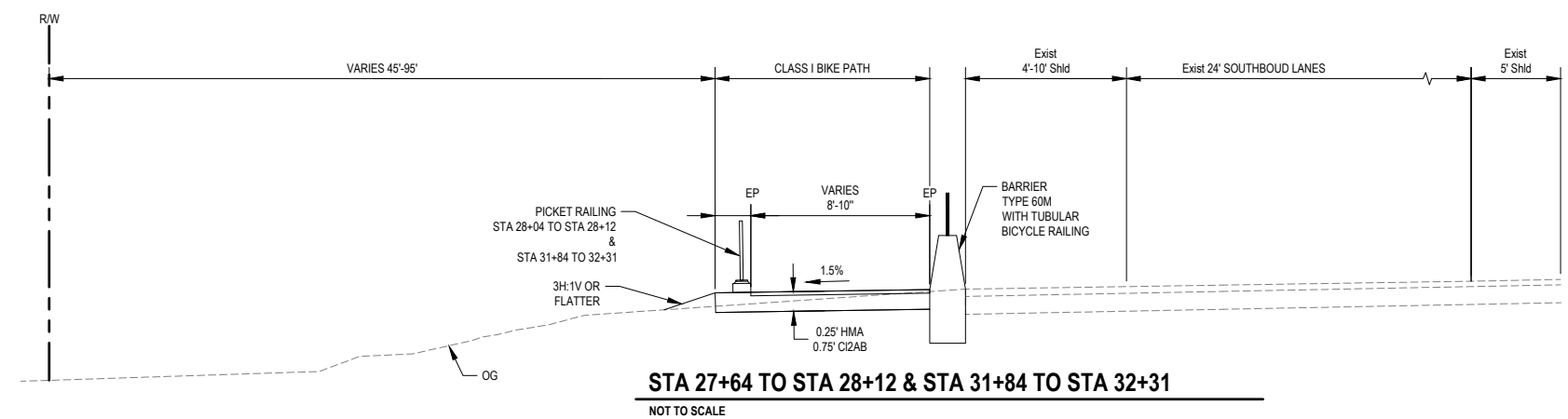
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Project **LITTLE RIVER TRAIL PROJECT**

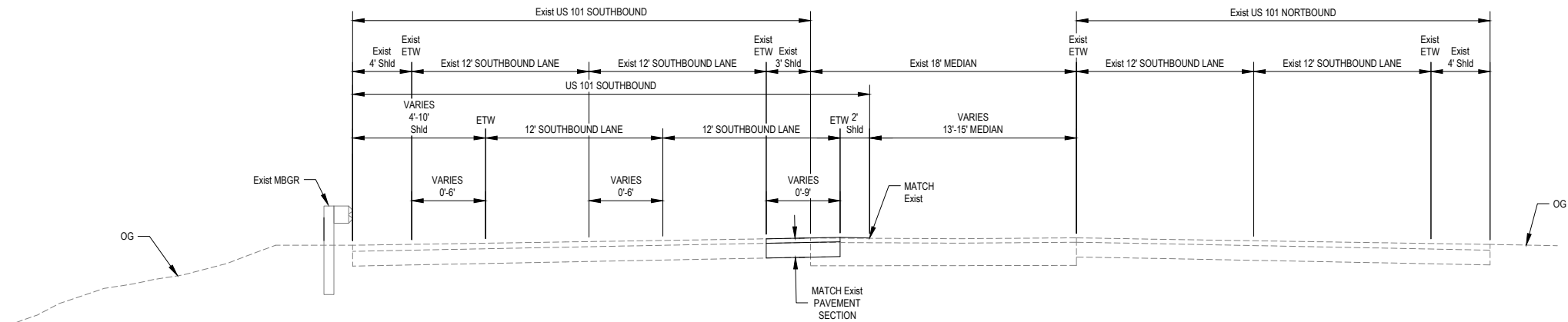
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TYPICAL CROSS SECTIONS -
2 OF 4**

Project No. **11212216** Date **2/7/2022** Scale **AS SHOWN**

Sheet No. **G-004** Sheet **4** of **27**

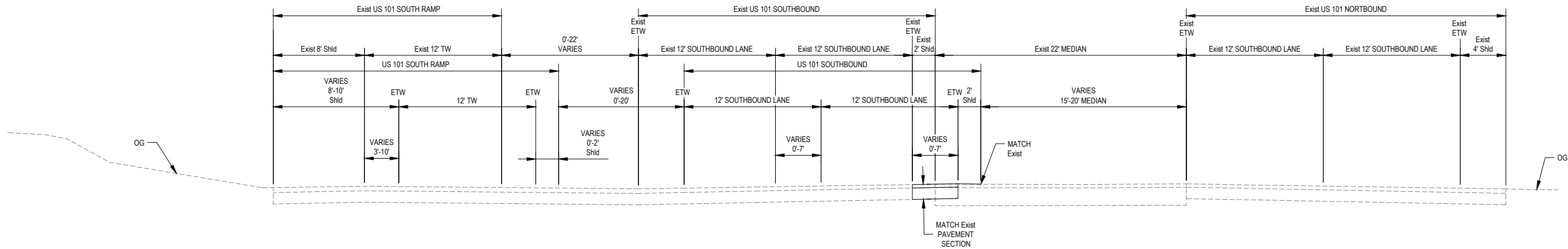


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**US 101 SOUTH RAMP & SOUTHBOUND REALIGNMENT:
STA "SPCL" 1+64 TO STA "SPCL" 4+35**

NOT TO SCALE

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Designer	N. SANGER	Design Check	J. WOLF
		Project Manager	J. WOLF
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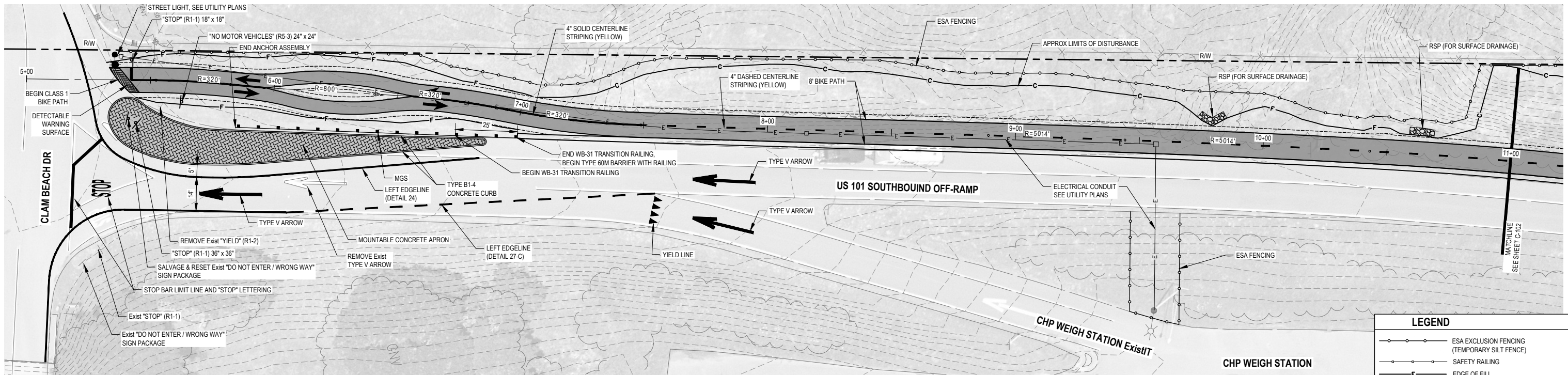
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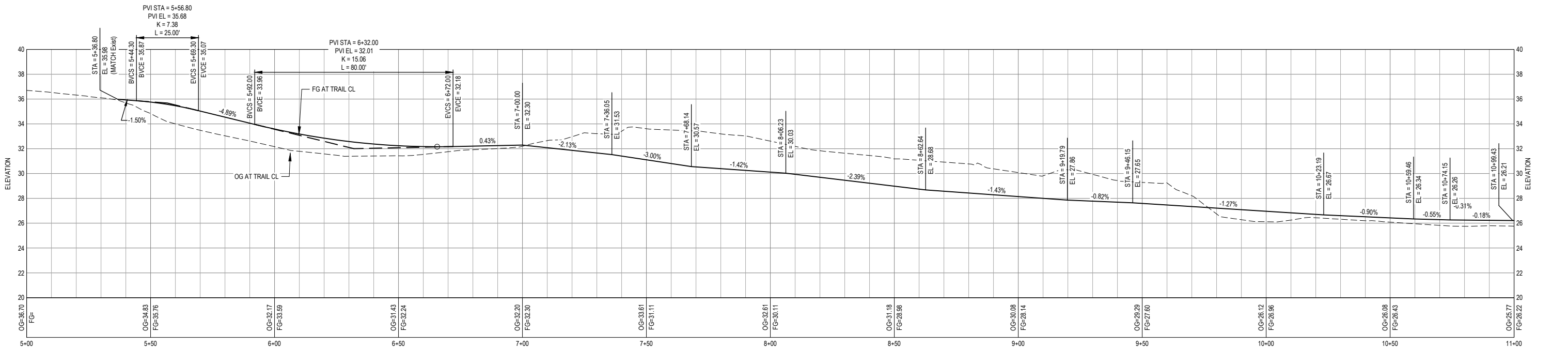
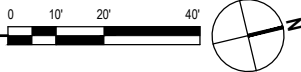
Client	REDWOOD COMMUNITY ACTION AGENCY
Project	LITTLE RIVER TRAIL PROJECT
Project No.	11212216
Date	2/7/2022
Scale	AS SHOWN

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Size	ANSI D
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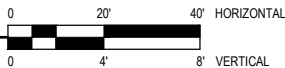
PLAN STA 5+37 TO STA 11+00

SCALE: AS SHOWN



PROFILE STA 5+37 TO STA 11+00

SCALE: AS SHOWN



NOTE:
PROVIDE 3' LONG VERTICAL CURVE
WHERE VERTICAL CURVE NOT SHOWN
AT CHANGE IN PROFILE GRADE.

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Author	O.GOODER	Drafting Check	N. SANGER
Designer	N. SANGER	Design Check	J. WOLF
		Project Manager	J. WOLF
		Project Director	B. SILVA



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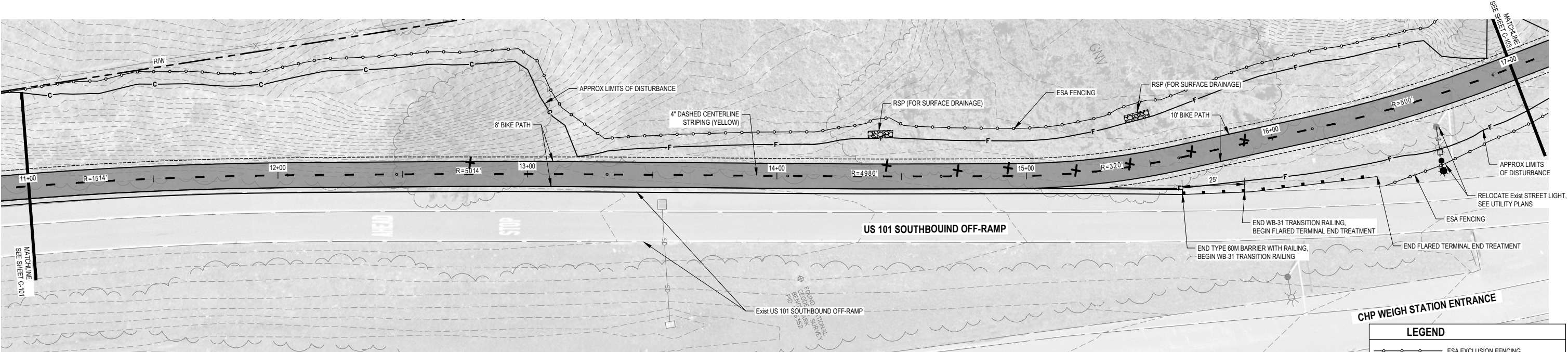
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Project	LITTLE RIVER TRAIL PROJECT
Project No.	11212216
Date	2/7/2022
Scale	AS SHOWN

Title	PATH PLAN & PROFILE: STA 5+37 TO STA 11+00
Sheet No.	C-101
Sheet	7
Size	ANSI D



PLAN STA 11+00 TO STA 17+00
SCALE: AS SHOWN

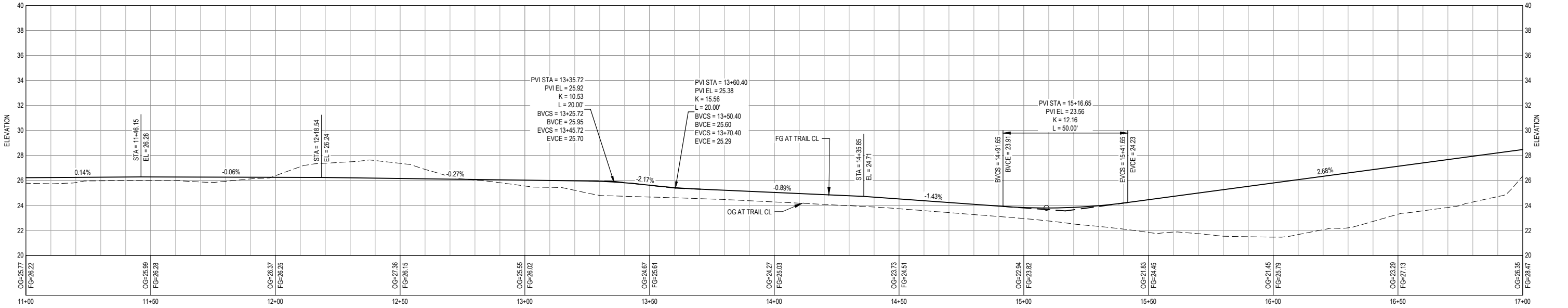


LEGEND

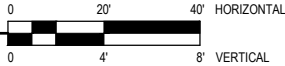
ESA EXCLUSION FENCING
(TEMPORARY SILT FENCE)

SAFETY RAILING

NOTE: TREES LESS 10" DBH NOT SHOWN



PROFILE STA 11+00 TO STA 17+00
SCALE: AS SHOWN



NOTE:
PROVIDE 3' LONG VERTICAL CURVE
WHERE VERTICAL CURVE NOT SHOWN
AT CHANGE IN PROFILE GRADE.

DRAFT 30% DESIGN

NOT FOR CONSTRUCTION

No.	Issue	Checked	Approved	Date	
Author	O.GOOD	Drafting Check	N. SANGER	Project Manager	J. WOLF
Designer	N. SANGER	Design Check	J. WOLF	Project Director	B. SILVA



Bar is one inch on original size sheet
0 1"



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Eureka California 95501 USA
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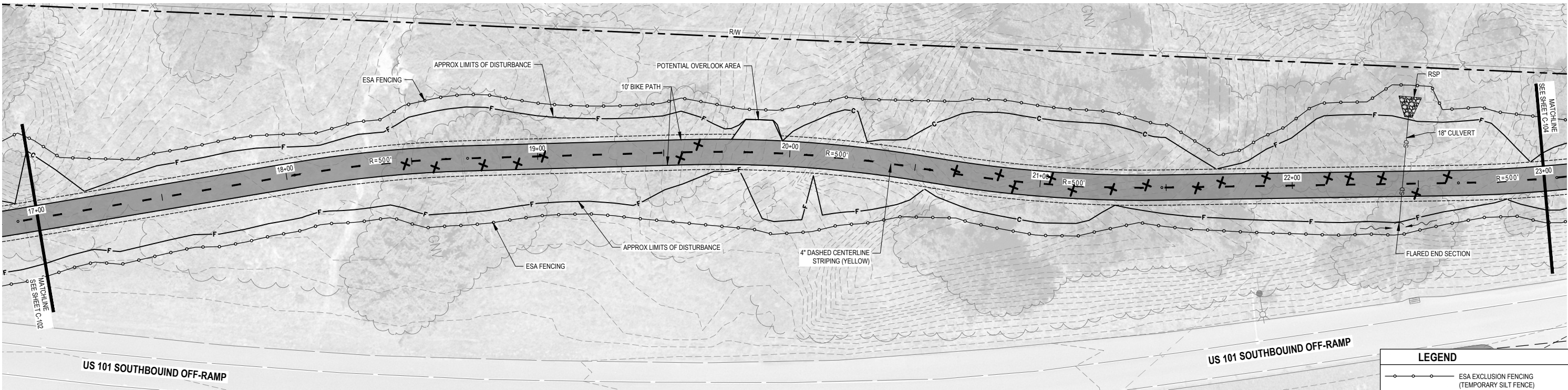


Client REDWOOD COMMUNITY ACTION AGENCY
Project LITTLE RIVER TRAIL PROJECT

Title PATH PLAN & PROFILE:
STA 11+00 TO STA 17+00

Project No. 11212216
Date 2/7/2022
Scale AS SHOWN

Sheet No. C-102
8 27



PLAN STA 17+00 TO STA 23+00

SCALE: AS SHOWN



LEGEND

ESA EXCLUSION FENCING
(TEMPORARY SILT FENCE)

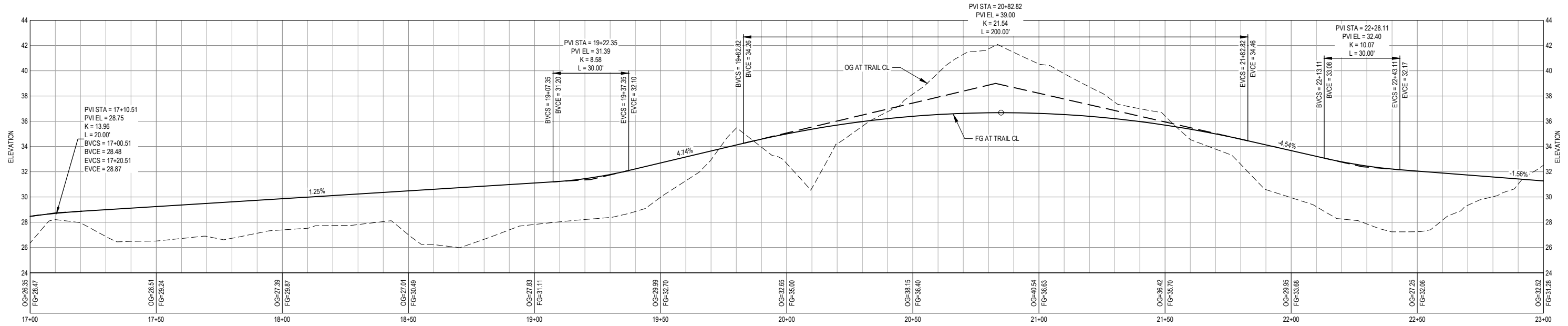
SAFETY RAILING

EDGE OF FILL

CUT DAYLIGHT

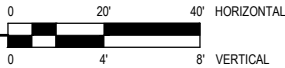
TREE TO BE REMOVED

NOTE: TREES LESS 10" DBH NOT SHOWN



PROFILE STA 17+00 TO STA 23+00

SCALE: AS SHOWN



NOTE:
PROVIDE 3' LONG VERTICAL CURVE
WHERE VERTICAL CURVE NOT SHOWN
AT CHANGE IN PROFILE GRADE.

DRAFT 30% DESIGN

NOT FOR CONSTRUCTION

No.	Issue	Checked	Approved	Date	
Author	O.GOOD	Drafting Check	N. SANGER	Project Manager	J. WOLF
Designer	N. SANGER	Design Check	J. WOLF	Project Director	B. SILVA



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Client REDWOOD COMMUNITY ACTION AGENCY
Project LITTLE RIVER TRAIL PROJECT

Title PATH PLAN & PROFILE:
STA 17+00 TO STA 23+00

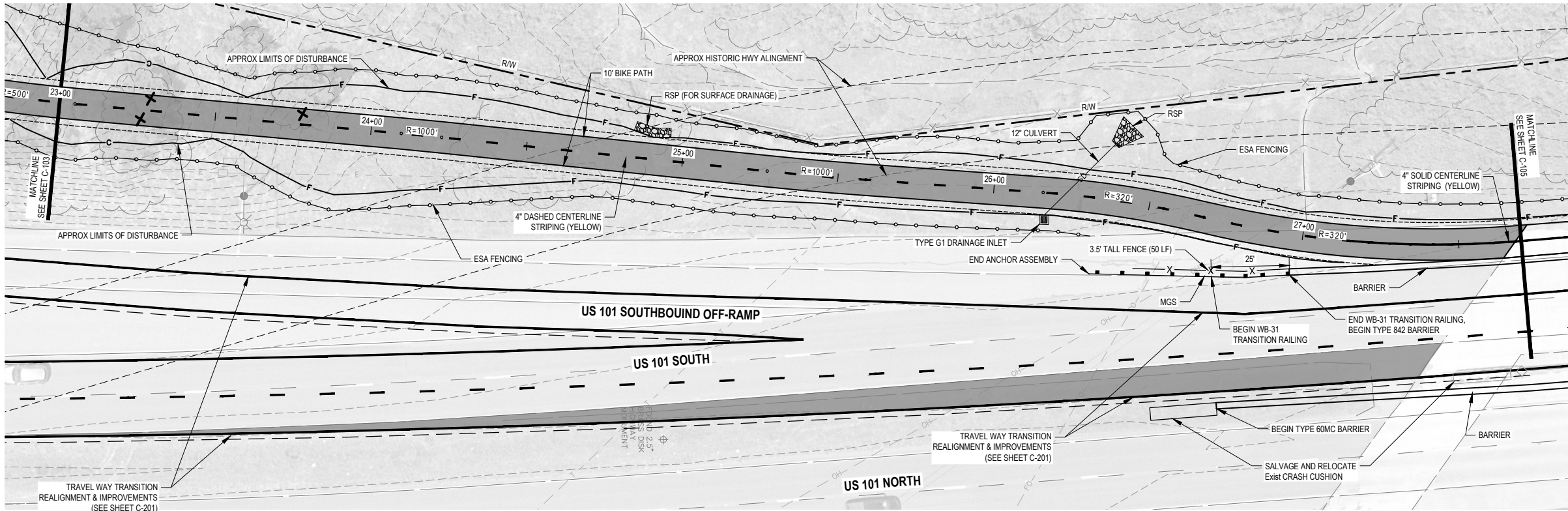
Project No.
11212216

Date
2/7/2022

Scale
AS SHOWN

Sheet No.
C-103

Sheet
9 27

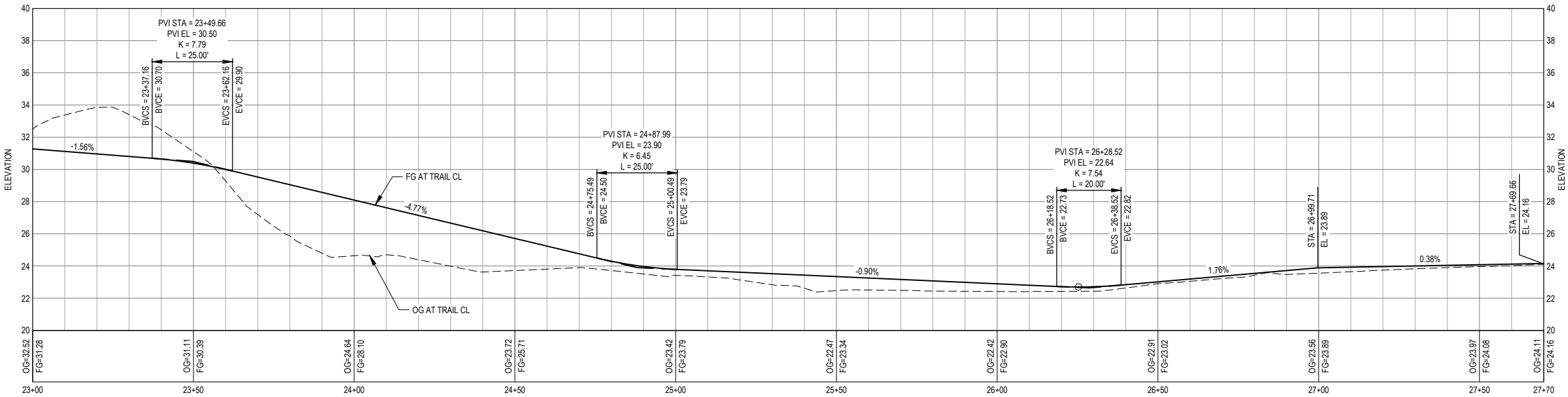


PLAN STA 23+00 TO STA 27+70

SCALE: AS SHOWN

LEGEND	
	ESA EXCLUSION FENCING (TEMPORARY SILT FENCE)
	SAFETY RAILING
	EDGE OF FILL
	CUT DAYLIGHT
	TREE TO BE REMOVED

NOTE: TREES LESS 10" DBH NOT SHOWN



PROFILE STA 23+00 TO STA 27+70

SCALE: AS SHOWN

NOTE:
PROVIDE 3' LONG VERTICAL CURVE
WHERE VERTICAL CURVE NOT SHOWN
AT CHANGE IN PROFILE GRADE.

DRAFT 30% DESIGN NOT FOR CONSTRUCTION			
No.	Issue	Checked	Approved
1	O.GOODIE	Drafting Check	N. SANGER
2	N. SANGER	Project Manager	J. WOLF
3	N. SANGER	Design Check	J. WOLF
4	N. SANGER	Project Director	B. SILVA



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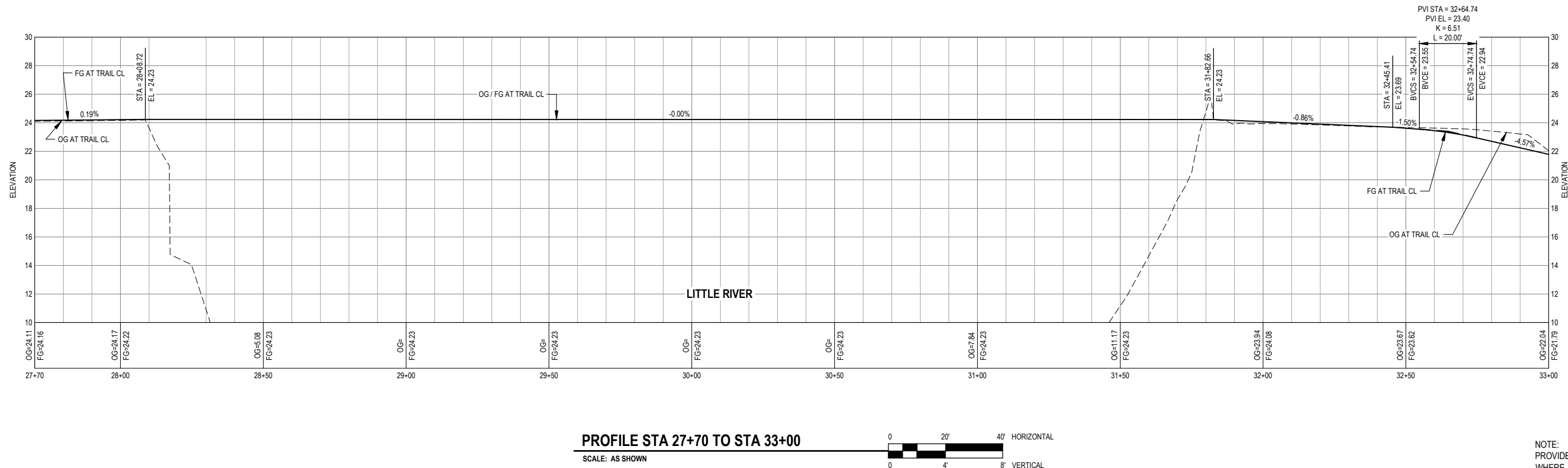
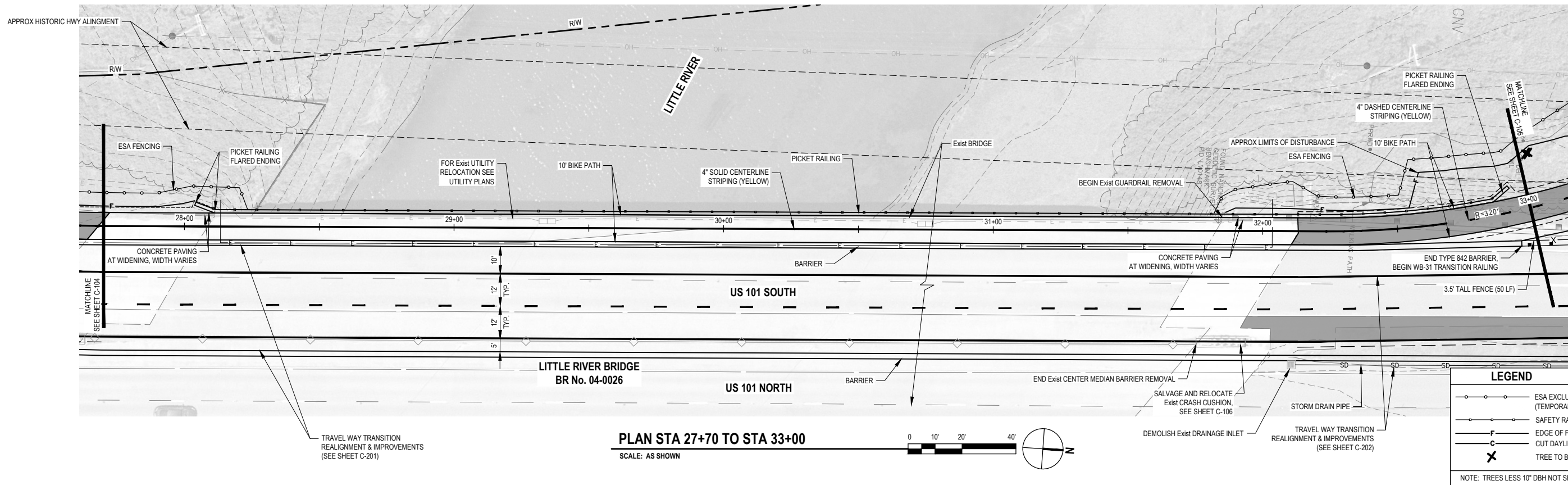


Client **REDWOOD COMMUNITY ACTION AGENCY**
Project **LITTLE RIVER TRAIL PROJECT**

Title **PATH PLAN & PROFILE:
STA 23+00 TO STA 27+70**

Project No. **11212216** Date **2/7/2022** Scale **AS SHOWN**

Sheet No. **C-104** Sheet **10 27**



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Author	O.GOOD	Drafting Check	N. SANGER
Designer	N. SANGER	Design Check	J. WOLF
		Project Manager	J. WOLF
		Project Director	B. SILVA



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0 1"



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Client REDWOOD COMMUNITY ACTION AGENCY

Project LITTLE RIVER TRAIL PROJECT

Title PATH PLAN & PROFILE:
STA 27+70 TO STA 33+00

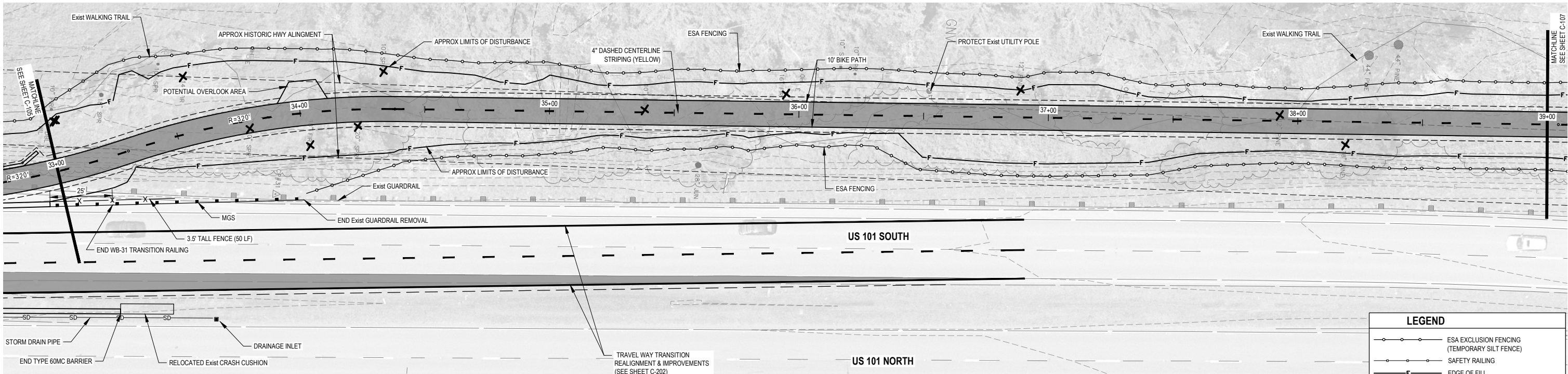
Project No. 11212216

Date 2/7/2022

Scale AS SHOWN

Sheet No. C-105

11 27



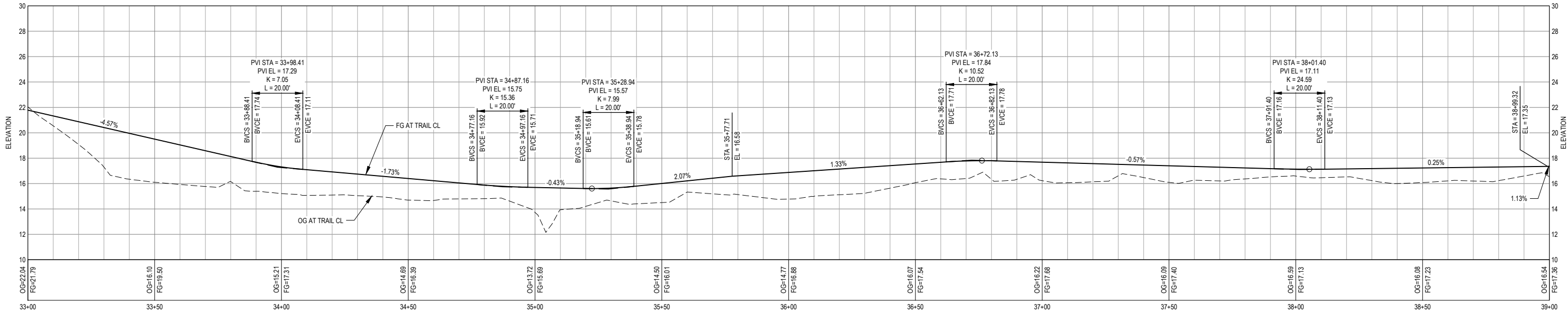
PLAN STA 33+00 TO STA 39+00

SCALE: AS SHOWN



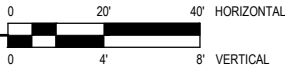
LEGEND	
	ESA EXCLUSION FENCING (TEMPORARY SILT FENCE)
	SAFETY RAILING
	EDGE OF FILL
	CUT DAYLIGHT
	TREE TO BE REMOVED

NOTE: TREES LESS 10" DBH NOT SHOWN



PROFILE STA 33+00 TO STA 39+00

SCALE: AS SHOWN



NOTE:
PROVIDE 3' LONG VERTICAL CURVE
WHERE VERTICAL CURVE NOT SHOWN
AT CHANGE IN PROFILE GRADE.

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No.	Issue	Checked	Approved
Author	O.GOODIE	Drafting Check	N. SANGER
Designer	N. SANGER	Design Check	J. WOLF
		Project Manager	J. WOLF
		Project Director	B. SILVA



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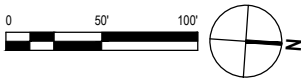
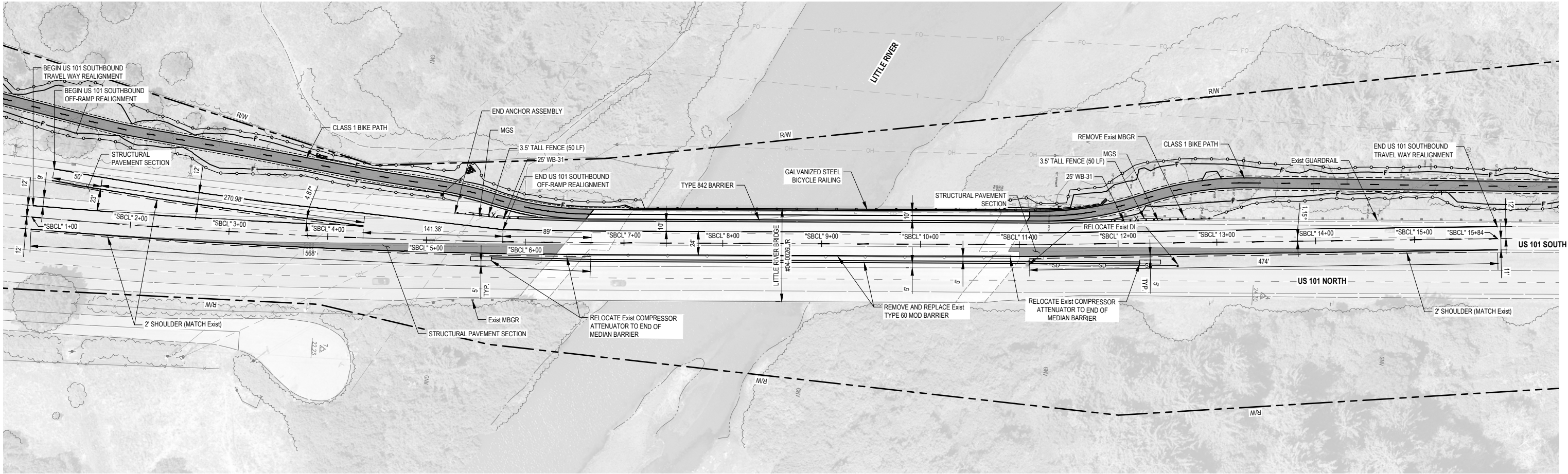


Client **REDWOOD COMMUNITY ACTION AGENCY**
Project **LITTLE RIVER TRAIL PROJECT**

Title **PATH PLAN & PROFILE:
STA 33+00 TO STA 39+00**

Project No. **11212216** Date **2/7/2022** Scale **AS SHOWN**

Size **ANSI D**
Sheet No. **C-106** Sheet **12 27**



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NOT FOR CONSTRUCTION			
No.	Issue	Checked	Approved
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Designer	N. SANGER	Design Check	J. WOLF
		Project Manager	J. WOLF
		Project Director	B. SILVA



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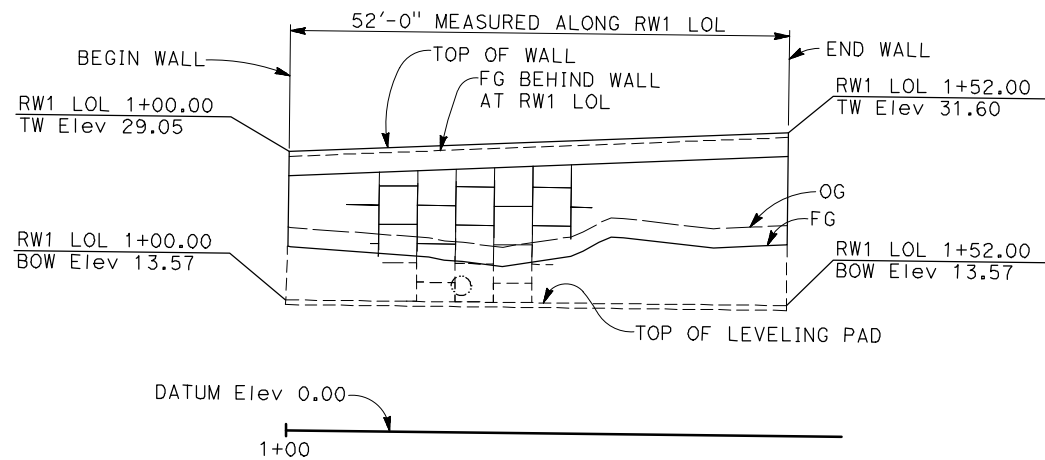


Client REDWOOD COMMUNITY ACTION AGENCY
Project LITTLE RIVER TRAIL PROJECT

Title US 101 REALIGNMENT AT LITTLE RIVER BRIDGE

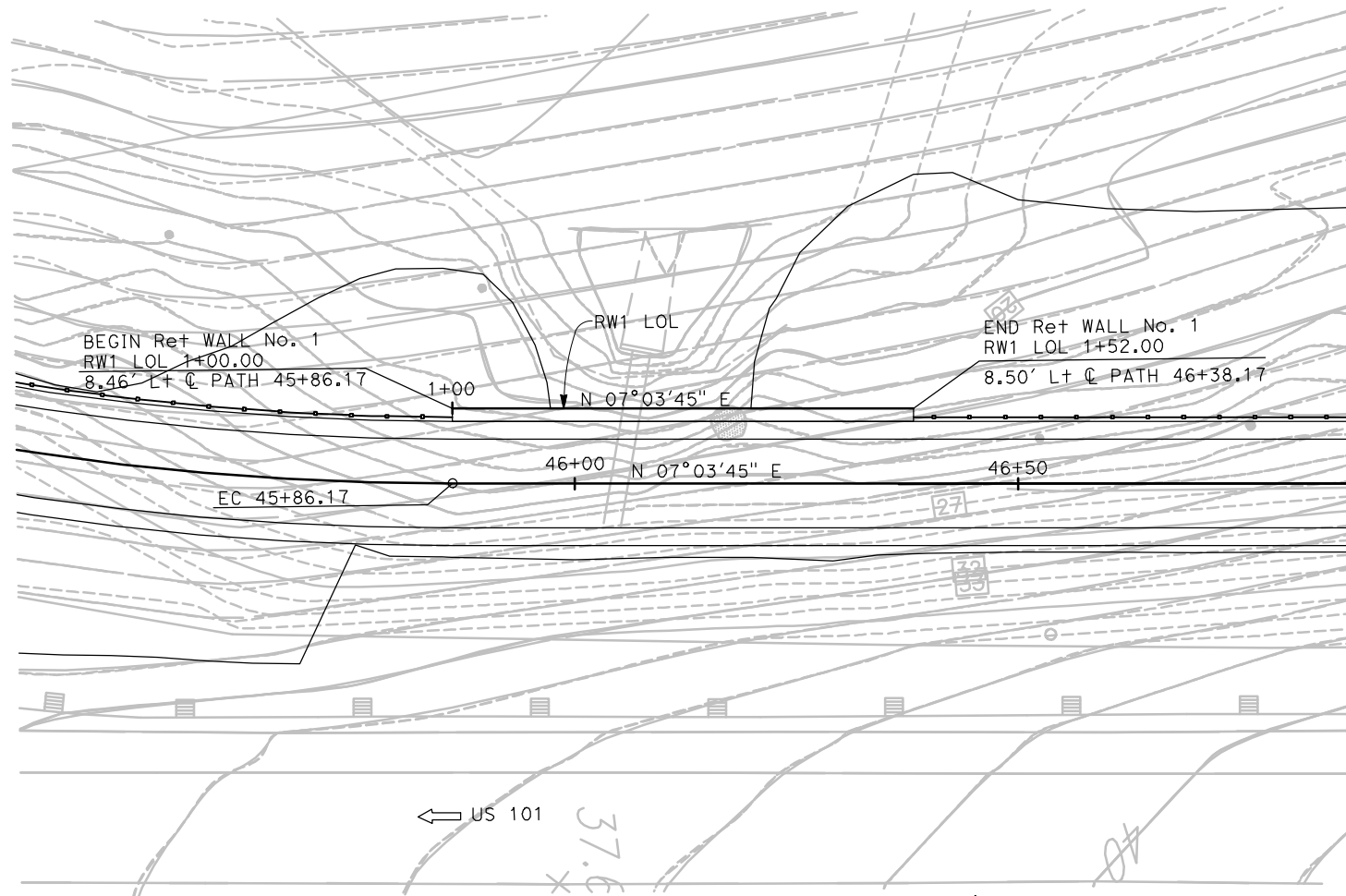
Project No. 11212216
Date 2/7/2022
Scale 1" = 50'

Sheet No. C-201
Sheet 17 27



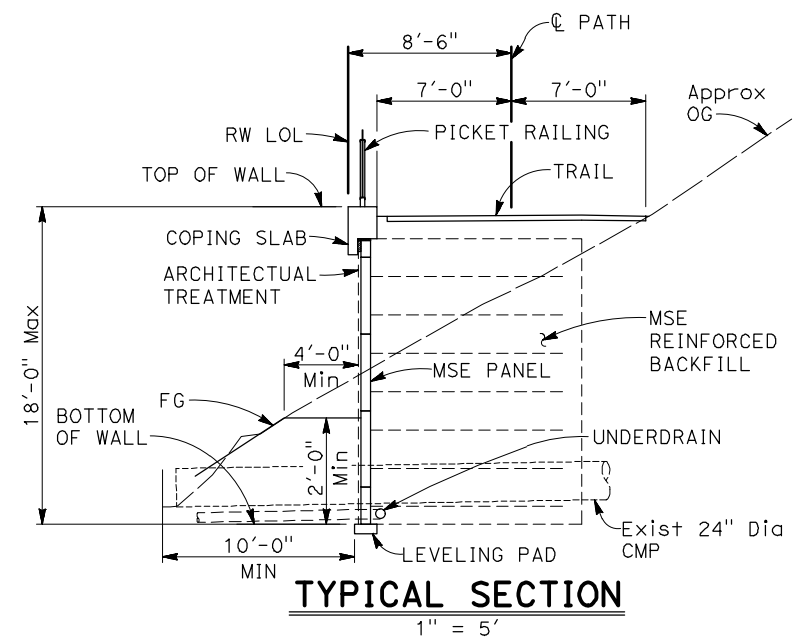
RETAINING WALL No. 1 MIRRORED ELEVATION

1" = 10'



RETAINING WALL No. 1 PLAN

1" = 10'

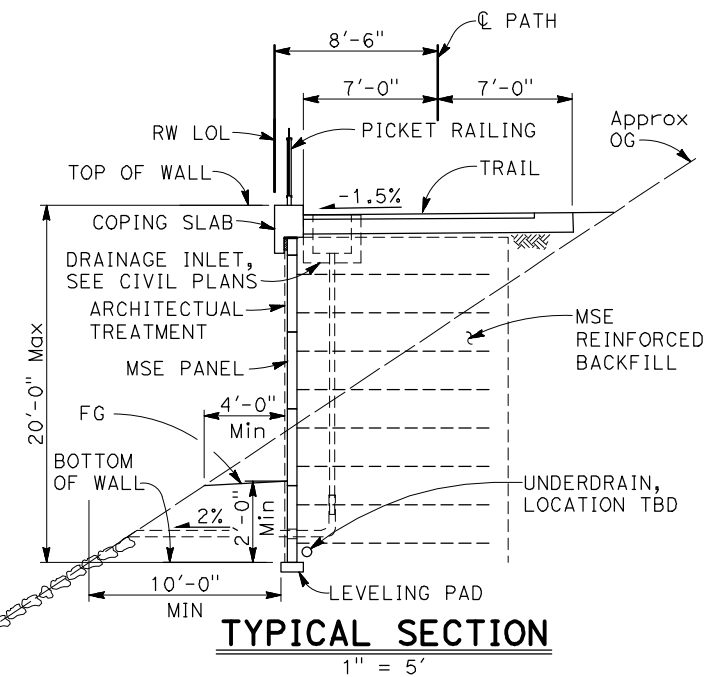
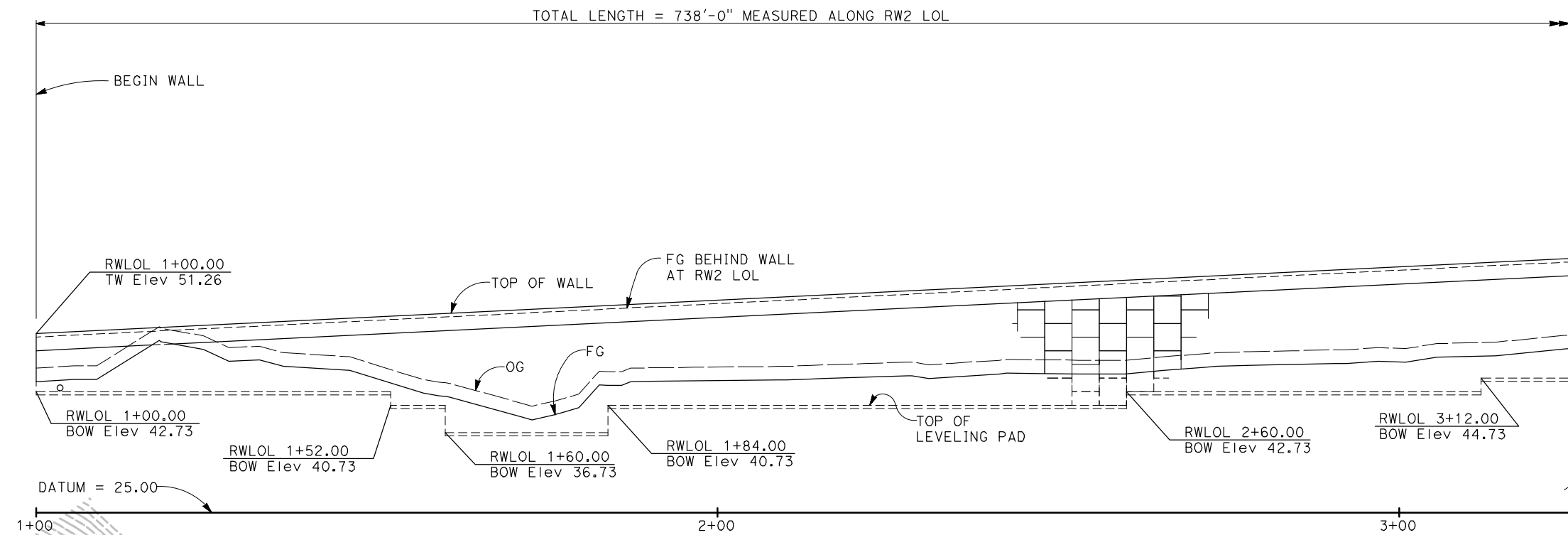


TYPICAL SECTION

1" = 5'

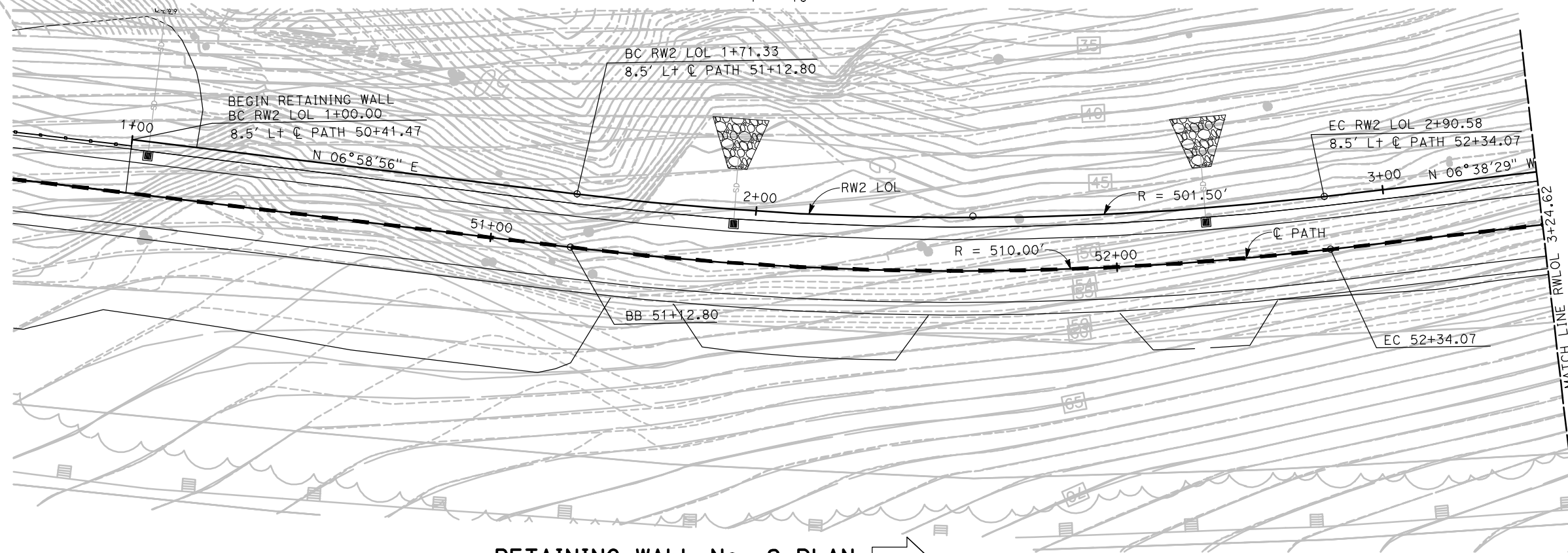
PLAN CHECK SET/NOT FOR CONSTRUCTION (2/7/22)

30% DESIGN NOT FOR CONSTRUCTION		BIGGS CARDOSA ASSOCIATES INC STRUCTURAL ENGINEERS		Bar is one inch on original size sheet 0 1"		GHD Inc. 718 Third Street Eureka California 95501 USA T 1 707 443 8326 F 1 707 444 8330 www.ghd.com		Client REDWOOD COMMUNITY ACTION AGENCY		Title	
No. Issue		Checked Approved Date		1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900		Conditions of Use This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.		Project LITTLE RIVER TRAIL PROJECT		RETAINING WALL No. 1 GENERAL PLAN	
Author BT		Drafting Check LEL		Project Manager AWR		Project No. 2020165		Date 12/17/21		Scale	
Designer BT		Design Check LEL		Project Director MMH		2020165		12/17/21		Sheet No. S-101	
Plot Date: 7 February 2022 - 4:14 PM		Plotted By: Steve Hickey		Filename: W:\2020\2020165\Retaining_Wall\2020165RW_S1.dwg		2020165		18 of 27		2020165	



RETAINING WALL No. 2 MIRRORED DEVELOPED ELEVATION

1" = 10'



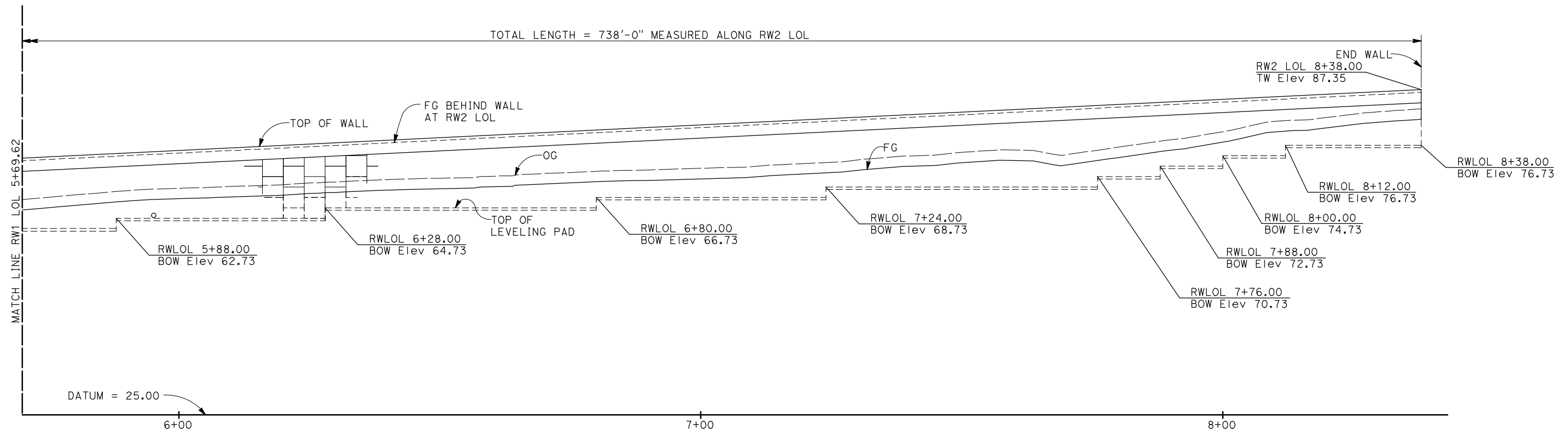
RETAINING WALL No. 2 PLAN

1" = 10'



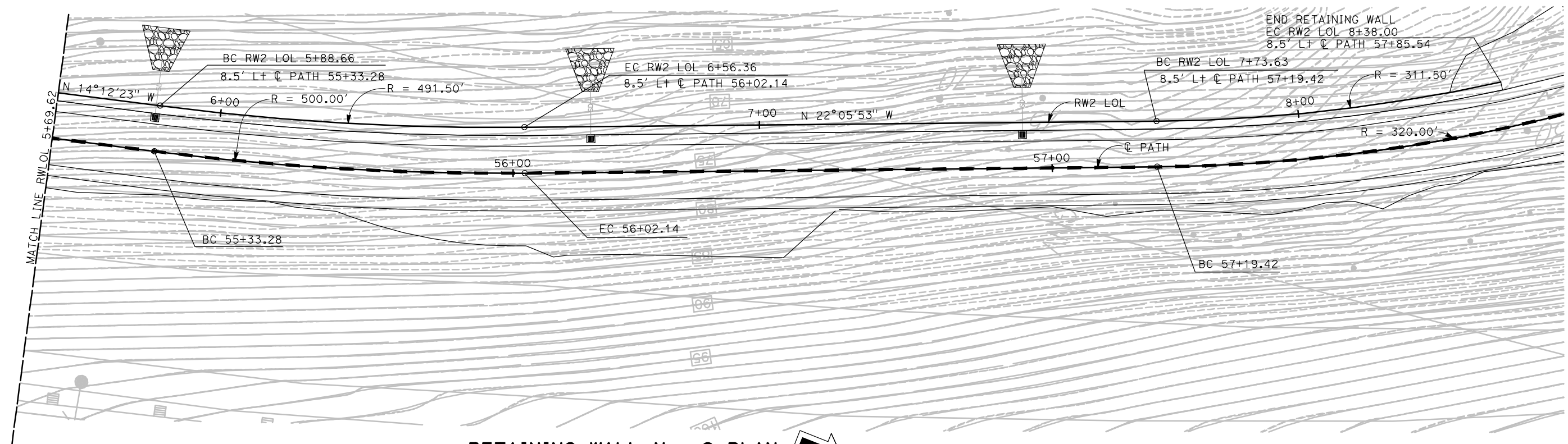
PLAN CHECK SET/NOT FOR CONSTRUCTION (2/7/22)

30% DESIGN NOT FOR CONSTRUCTION		BIGGS CARDOSA ASSOCIATES INC STRUCTURAL ENGINEERS		Bar is one inch on original size sheet 0 1"		GHD Inc. 718 Third Street Eureka California 95501 USA T 1 707 443 8326 F 1 707 444 8330 www.ghd.com		Client REDWOOD COMMUNITY ACTION AGENCY		Title	
No. Issue		Checked Approved Date		redwood communityaction agency		Conditions of Use This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.		Project LITTLE RIVER TRAIL PROJECT		RETAINING WALL No. 2 GENERAL PLAN No. 1	
Author BT		Drafting Check LEL		Project Manager AWR		Project No. 2020165		Date 12/16/21		Scale	
Designer BT		Design Check LEL		Project Director MMH		Sheet No. S-102		Sheet 19 of 27		Status Code	



RETAINING WALL No. 2 MIRRORED DEVELOPED ELEVATION

1" = 10'



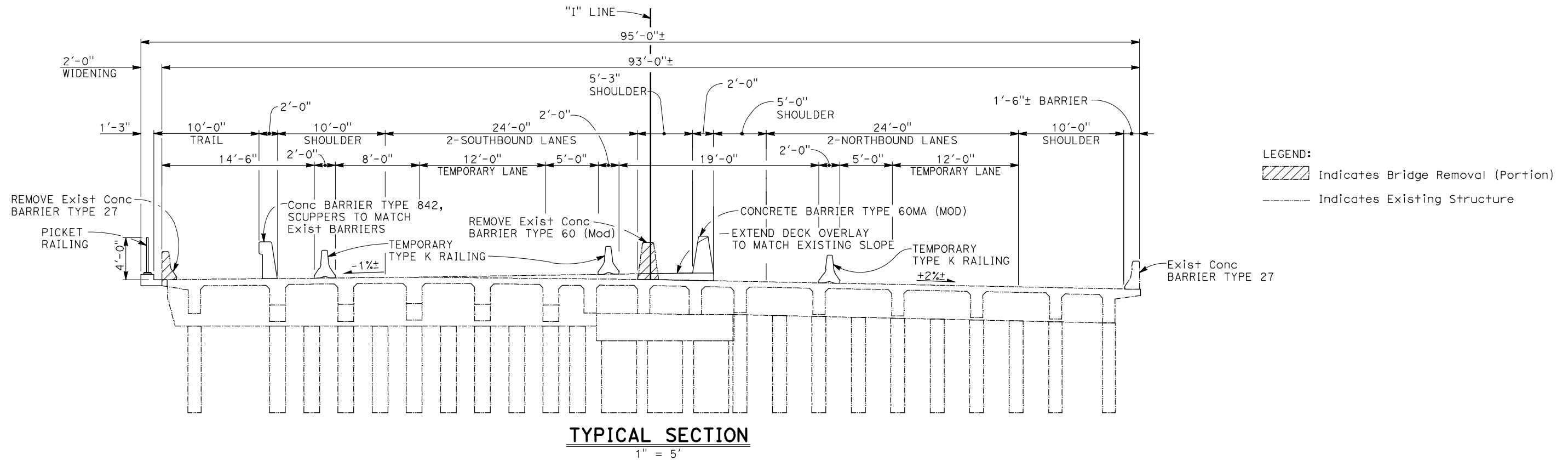
RETAINING WALL No. 2 PLAN

1" = 10'



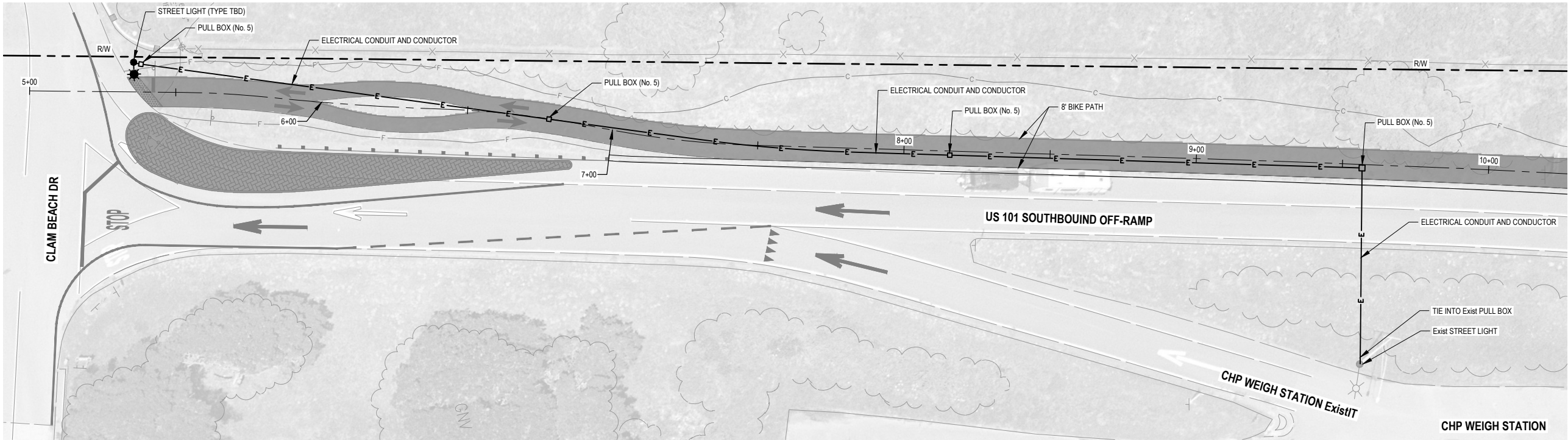
PLAN CHECK SET/NOT FOR CONSTRUCTION (2/7/22)

30% DESIGN NOT FOR CONSTRUCTION		BIGGS CARDOSA ASSOCIATES INC STRUCTURAL ENGINEERS 1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900		Bar is one inch on original size sheet 0 1"		 GHD Inc. 718 Third Street Eureka California 95501 USA T 1 707 443 8326 F 1 707 444 8330 www.ghd.com	Client REDWOOD COMMUNITY ACTION AGENCY	Title RETAINING WALL No. 2 GENERAL PLAN No. 3		Size ANSI D
No. Issue	Checked	Approved	Date			Conditions of Use This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.	Project LITTLE RIVER TRAIL PROJECT	Project No. 2020165		Status Code
Author BT	Drafting Check LEL	Project Manager AWR					Date 12/16/21	Scale		Sheet 21 of 27
Designer BT	Design Check LEL	Project Director MMH		Filename: W:\2020\2020165\Retaining_Wall\2020165RW_S4.dwg		Plot Date: 7 February 2022 - 4:15 PM		Plotted By: Steve Hickey		2020165 (2020165RW_S4)



PLAN CHECK SET/NOT FOR CONSTRUCTION (2/7/22)

<div>30% DESIGN</div> <div>NOT FOR CONSTRUCTION</div>				<div>BIGGS CARDOSA ASSOCIATES INC</div> <div>STRUCTURAL ENGINEERS</div>		<div>Bar is one inch on original size sheet</div> <div>0 <div></div> 1"</div>		<div></div>		<div></div> <div>GHD Inc. 718 Third Street Eureka California 95501 USA T 1 707 443 8326 F 1 707 444 8330 www.ghd.com</div> <div>Conditions of Use This document and the ideas and designs incorporated herein, as an instrument of professional service, is the property of GHD. This document may only be used by GHD's client (and any other person who GHD has agreed can use this document) for the purpose for which it was prepared and must not be used by any other person or for any other purpose.</div>		<div></div> <div>www.ghd.com</div>		<div>Client REDWOOD COMMUNITY ACTION AGENCY</div> <div>Project LITTLE RIVER TRAIL PROJECT</div>		<div>Title LITTLE RIVER BRIDGE GENERAL PLAN No. 2</div>		<div>Size ANSI D</div> <div>Status Code</div>	
<div>No. Issue</div> <div>Checked Approved Date</div>				<div>1111 Broadway, Suite 1510 Oakland, California 94607 510-625-9900</div> <div></div>								<div>Project No. 2020165</div> <div>Date 12/16/21</div> <div>Scale</div>		<div>Sheet No. S-106</div> <div>Sheet 23 of 27</div>					
<div>Plot Date: 7 February 2022 - 4:14 PM</div> <div>Plotted By: Steve Hickey</div> <div>Filename: W:\2020\2020165\ Bridge Widening\2020165S2.dwg</div>																			



STREET LIGHT AT CLAM BEACH DR
SCALE: AS SHOWN



DRAFT 30% DESIGN			
NOT FOR CONSTRUCTION			
No.	Issue	Checked	Approved
1	O. GOODE	N. SANGER	J. WOLF
2	N. SANGER	J. WOLF	B. SILVA



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0 1"



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Client	REDWOOD COMMUNITY ACTION AGENCY
Project	LITTLE RIVER TRAIL PROJECT
Project No.	11212216
Date	2/7/2022
Scale	AS SHOWN

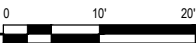
Title	UTILITY PLANS: STREET LIGHT AT CLAM BEACH DR
Sheet No.	E-101

Size	ANSI D
Sheet	24



STREET LIGHT RELOCATION 101 SOUTHBOUND OFF-RAMP

SCALE: AS SHOWN



DRAFT 30% DESIGN			
NOT FOR CONSTRUCTION			
No.	Issue	Checked	Approved
Author	O. GOODE	Drafting Check	N. SANGER
Designer	N. SANGER	Design Check	J. WOLF
		Project Manager	J. WOLF
		Project Director	B. SILVA



Bar is one inch on original size sheet
0 1"



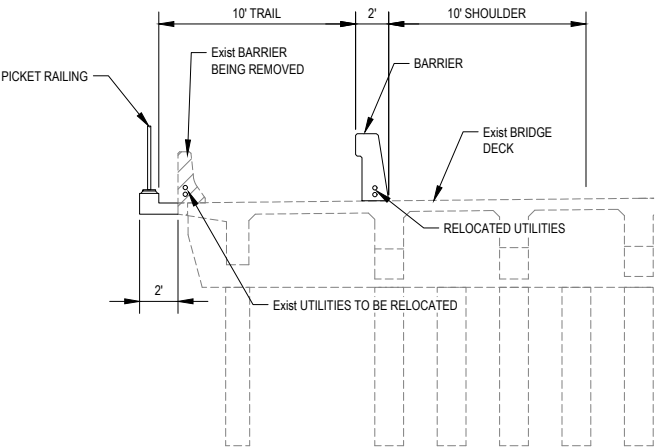
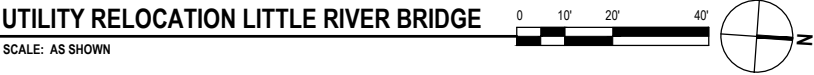
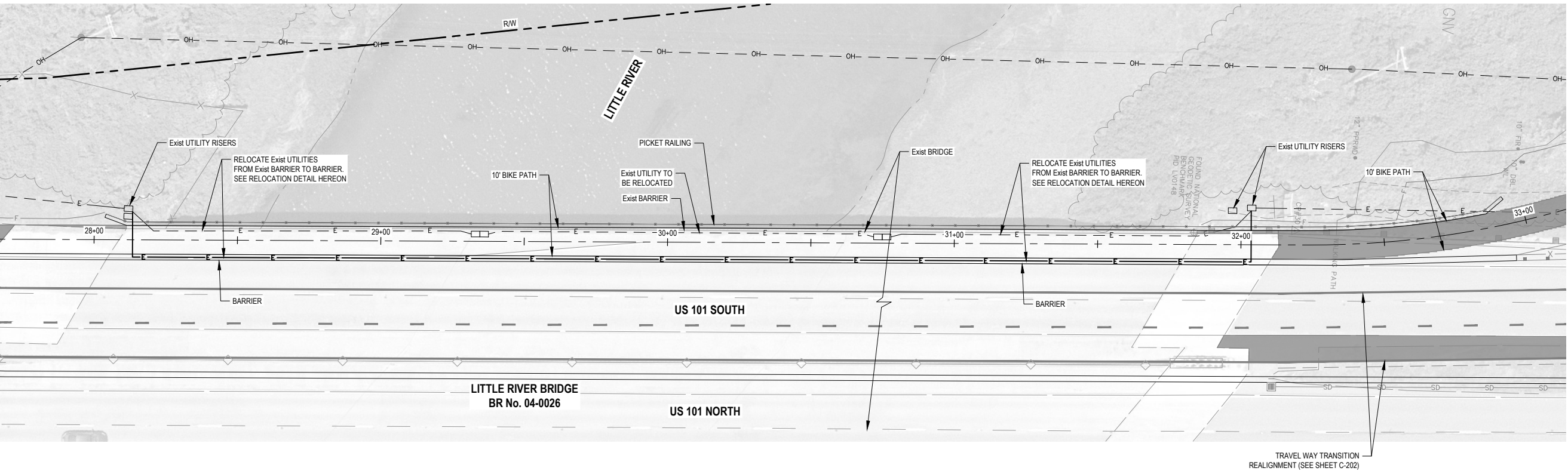
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Client	REDWOOD COMMUNITY ACTION AGENCY	Title	UTILITY PLANS: STREET LIGHT RELOCATION 101 SOUTHBOUND OFF-RAMP	Size	ANSI D
Project	LITTLE RIVER TRAIL PROJECT				
Project No.	11212216	Date	2/7/2022	Scale	AS SHOWN
				Sheet No.	E-102
				25	27



RELOCATION DETAIL
NOT TO SCALE

<div><div></div><div>DRAFT 30% DESIGN</div><div>NOT FOR CONSTRUCTION</div></div>			
No.	Issue	Checked	Approved
Author	O.GOOD	Drafting Check	N. SANGER
Designer	N. SANGER	Design Check	J. WOLF



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Client	REDWOOD COMMUNITY ACTION AGENCY
Project	LITTLE RIVER TRAIL PROJECT

Title	UTILITY PLANS: UTILITY RELOCATION LITTLE RIVER BRIDGE
-------	---

Project No.	11212216
Date	2/7/2022
Scale	AS SHOWN

Sheet No.	E-103
Sheet	26

Appendix C U.S. Fish and Wildlife Service and
NOAA National Marine Fisheries
Service List



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

Phone: (707) 822-7201 Fax: (707) 822-8411



In Reply Refer To:
Project Code: 2022-0020768
Project Name: Little River

March 16, 2022

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

To Whom It May Concern:

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

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

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

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

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

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

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

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

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

Official Species List

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

This species list is provided by:

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

(707) 822-7201

Project Summary

Project Code: 2022-0020768

Event Code: None

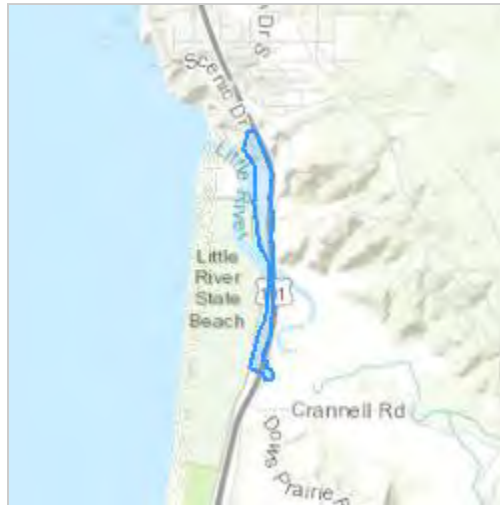
Project Name: Little River

Project Type: Recreation - New Construction

Project Description: Trail construction for non-motorized bikes

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.021193,-124.10725450694625,14z>



Counties: Humboldt County, California

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Mammals

NAME	STATUS
Pacific Marten, Coastal Distinct Population Segment <i>Martes caurina</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/9081	Threatened

Birds

NAME	STATUS
Marbled Murrelet <i>Brachyramphus marmoratus</i> Population: U.S.A. (CA, OR, WA) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Tidewater Goby <i>Eucyclogobius newberryi</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Beach Layia <i>Layia carnosa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6728	Endangered
Western Lily <i>Lilium occidentale</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/998	Endangered

Critical habitats

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

From: [Tona, Sarah](#)
To: [NMFS SpeciesList - NOAA Service Account](#)
Subject: Little River Trail Project
Date: Wednesday, March 16, 2022 12:44:00 PM

Quad Name **Crannell**

Quad Number **41124-A1**

ESA Anadromous Fish

SONCC Coho ESU (T) - **X**
CCC Coho ESU (E) -
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) - **X**
sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat - **X**
CCC Coho Critical Habitat -
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) -

Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH - X

Chinook Salmon EFH - X

Groundfish EFH - X

Coastal Pelagics EFH - X

Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

**See list at left and consult the NMFS Long Beach office
562-980-4000**

MMPA Cetaceans - X

MMPA Pinnipeds - X

Non-federal agency name:

Caltrans District 1

1656 Union St, Eureka, CA 95501

Point of contact:

Sarah Tona

Associate Biologist

Direct: 530-280-8385

sarah.tona@stantec.com

Stantec Consulting Services

376 Hartnell Ave Suite B

Redding CA 96002



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Appendix D California Native Diversity Database and California Native Plant Society Queries



Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Rodgers Peak (4112421) OR Bald Hills (4112328) OR Trinidad (4112412) OR Crannell (4112411) OR Panther Creek (4112318) OR Tyee City (4012482) OR Arcata North (4012481) OR Blue Lake (4012388))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAD12050	<i>Plethodon elongatus</i> Del Norte salamander	None	None	G4	S3	WL
AAAAJ01020	<i>Rhyacotriton variegatus</i> southern torrent salamander	None	None	G3G4	S2S3	SSC
AAABA01010	<i>Ascaphus truei</i> Pacific tailed frog	None	None	G4	S3S4	SSC
AAABH01021	<i>Rana aurora</i> northern red-legged frog	None	None	G4	S3	SSC
AAABH01050	<i>Rana boylei</i> foothill yellow-legged frog	None	Endangered	G3	S3	SSC
ABNDC04010	<i>Hydrobates furcatus</i> fork-tailed storm-petrel	None	None	G5	S1	SSC
ABNFD01020	<i>Nannopterum auritum</i> double-crested cormorant	None	None	G5	S4	WL
ABNGA04010	<i>Ardea herodias</i> great blue heron	None	None	G5	S4	
ABNGA11010	<i>Nycticorax nycticorax</i> black-crowned night heron	None	None	G5	S4	
ABNKC01010	<i>Pandion haliaetus</i> osprey	None	None	G5	S4	WL
ABNKC06010	<i>Elanus leucurus</i> white-tailed kite	None	None	G5	S3S4	FP
ABNME05011	<i>Rallus obsoletus obsoletus</i> California Ridgway's rail	Endangered	Endangered	G3T1	S1	FP
ABNNB03031	<i>Charadrius nivosus nivosus</i> western snowy plover	Threatened	None	G3T3	S2	SSC
ABNNN06010	<i>Brachyramphus marmoratus</i> marbled murrelet	Threatened	Endangered	G3	S2	
ABNNN11010	<i>Cerorhinca monocerata</i> rhinoceros auklet	None	None	G5	S3	WL
ABNNN12010	<i>Fratercula cirrhata</i> tufted puffin	None	None	G5	S1S2	SSC
ABPAU08010	<i>Riparia riparia</i> bank swallow	None	Threatened	G5	S2	
AFBAA02100	<i>Entosphenus tridentatus</i> Pacific lamprey	None	None	G4	S3	SSC
AFBAA02180	<i>Lampetra richardsoni</i> western brook lamprey	None	None	G4G5	S3S4	SSC



Selected Elements by Element Code
California Department of Fish and Wildlife
California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AFCHA02032	<i>Oncorhynchus kisutch pop. 2</i> coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	G5T2Q	S2	
AFCHA0208A	<i>Oncorhynchus clarkii clarkii</i> coast cutthroat trout	None	None	G5T4	S3	SSC
AFCHB03010	<i>Spirinchus thaleichthys</i> longfin smelt	Candidate	Threatened	G5	S1	
AFCHB04010	<i>Thaleichthys pacificus</i> eulachon	Threatened	None	G5	S2	
AFCQN04010	<i>Eucyclogobius newberryi</i> tidewater goby	Endangered	None	G3	S3	
AMACC01070	<i>Myotis evotis</i> long-eared myotis	None	None	G5	S3	
AMACC02010	<i>Lasionycteris noctivagans</i> silver-haired bat	None	None	G3G4	S3S4	
AMACC10010	<i>Antrozous pallidus</i> pallid bat	None	None	G4	S3	SSC
AMAF01017	<i>Aplodontia rufa humboldtiana</i> Humboldt mountain beaver	None	None	G5TNR	SNR	
AMAFF23010	<i>Arborimus albipes</i> white-footed vole	None	None	G3G4	S2	SSC
AMAFF23030	<i>Arborimus pomo</i> Sonoma tree vole	None	None	G3	S3	SSC
AMAFJ01010	<i>Erethizon dorsatum</i> North American porcupine	None	None	G5	S3	
AMAJC03010	<i>Eumetopias jubatus</i> Steller sea lion	Delisted	None	G3	S2	
AMAJF01012	<i>Martes caurina humboldtensis</i> Humboldt marten	Threatened	Endangered	G4G5T1	S1	SSC
AMAJF01020	<i>Pekania pennanti</i> Fisher	None	None	G5	S2S3	SSC
ARAAD02030	<i>Emys marmorata</i> western pond turtle	None	None	G3G4	S3	SSC
CTT21211CA	<i>Northern Foredune Grassland</i> Northern Foredune Grassland	None	None	G1	S1.1	
CTT51110CA	<i>Sphagnum Bog</i> Sphagnum Bog	None	None	G3	S1.2	
CTT52110CA	<i>Northern Coastal Salt Marsh</i> Northern Coastal Salt Marsh	None	None	G3	S3.2	
CTT52410CA	<i>Coastal and Valley Freshwater Marsh</i> Coastal and Valley Freshwater Marsh	None	None	G3	S2.1	
CTT82110CA	<i>Sitka Spruce Forest</i> Sitka Spruce Forest	None	None	G1	S1.1	



Selected Elements by Element Code
California Department of Fish and Wildlife
California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
IICOL4L070	<i>Scaphinotus behrensi</i> Behrens' snail-eating beetle	None	None	G2G4	S2S4	
IIHYM24250	<i>Bombus occidentalis</i> western bumble bee	None	None	G2G3	S1	
IIHYM24380	<i>Bombus caliginosus</i> obscure bumble bee	None	None	G4?	S1S2	
IIHYM24480	<i>Bombus crotchii</i> Crotch bumble bee	None	None	G3G4	S1S2	
IMBIV27020	<i>Margaritifera falcata</i> western pearlshell	None	None	G4G5	S1S2	
NBMUS2E010	<i>Discelium nudum</i> naked flag moss	None	None	G4G5	S1	2B.2
NBMUS2W0U0	<i>Fissidens pauperculus</i> minute pocket moss	None	None	G3?	S2	1B.2
NBMUS7N020	<i>Trichodon cylindricus</i> cylindrical trichodon	None	None	G4G5	S2	2B.2
NLLEC5P420	<i>Usnea longissima</i> Methuselah's beard lichen	None	None	G4	S4	4.2
NLT0042560	<i>Sulcaria spiralis</i> twisted horsehair lichen	None	None	G3G4	S2	1B.2
PDAST5N010	<i>Layia carnosa</i> beach layia	Endangered	Endangered	G2	S2	1B.1
PDAST8H0H1	<i>Packera bolanderi</i> var. <i>bolanderi</i> seacoast ragwort	None	None	G4T4	S2S3	2B.2
PDBRA0K010	<i>Cardamine angulata</i> seaside bittercress	None	None	G4G5	S3	2B.1
PDBRA160R0	<i>Erysimum menziesii</i> Menzies' wallflower	Endangered	Endangered	G1	S1	1B.1
PDCAR0U1MC	<i>Silene scouleri</i> ssp. <i>scouleri</i> Scouler's catchfly	None	None	G5T4T5	S2S3	2B.2
PDEMP03020	<i>Empetrum nigrum</i> black crowberry	None	None	G5	S1?	2B.2
PDFAB0F990	<i>Astragalus umbraticus</i> Bald Mountain milk-vetch	None	None	G4	S2	2B.2
PDFAB250C0	<i>Lathyrus japonicus</i> seaside pea	None	None	G5	S2	2B.1
PDFAB250P0	<i>Lathyrus palustris</i> marsh pea	None	None	G5	S2	2B.2
PDHYD0E030	<i>Romanzoffia tracyi</i> Tracy's romanzoffia	None	None	G4	S2	2B.3
PDMAL0K040	<i>Iliamna latibracteata</i> California globe mallow	None	None	G2G3	S2	1B.2



Selected Elements by Element Code
California Department of Fish and Wildlife
California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDMAL110E0	<i>Sidalcea malachroides</i> maple-leaved checkerbloom	None	None	G3	S3	4.2
PDMAL110F9	<i>Sidalcea malviflora ssp. patula</i> Siskiyou checkerbloom	None	None	G5T2	S2	1B.2
PDMAL110K9	<i>Sidalcea oregana ssp. eximia</i> coast checkerbloom	None	None	G5T1	S1	1B.2
PDMON03030	<i>Monotropa uniflora</i> ghost-pipe	None	None	G5	S2	2B.2
PDNYC010N4	<i>Abronia umbellata var. breviflora</i> pink sand-verbena	None	None	G4G5T2	S2	1B.1
PDONA0C1K0	<i>Oenothera wolfii</i> Wolf's evening-primrose	None	None	G2	S1	1B.1
PDORO01010	<i>Kopsiopsis hookeri</i> small groundcone	None	None	G4?	S1S2	2B.3
PDPLM040B6	<i>Gilia capitata ssp. pacifica</i> Pacific gilia	None	None	G5T3	S2	1B.2
PDPLM04130	<i>Gilia millefoliata</i> dark-eyed gilia	None	None	G2	S2	1B.2
PDPLM0E050	<i>Polemonium carneum</i> Oregon polemonium	None	None	G3G4	S2	2B.2
PDPOR05070	<i>Montia howellii</i> Howell's montia	None	None	G3G4	S2	2B.2
PDPYR02010	<i>Moneses uniflora</i> woodnymph	None	None	G5	S2	2B.2
PDRAN0A020	<i>Coptis laciniata</i> Oregon goldthread	None	None	G4?	S3?	4.2
PDSCR0D012	<i>Castilleja litoralis</i> Oregon coast paintbrush	None	None	G3	S3	2B.2
PDSCR0D3N0	<i>Castilleja mendocinensis</i> Mendocino Coast paintbrush	None	None	G2	S2	1B.2
PDSCR0D402	<i>Castilleja ambigua var. humboldtiensis</i> Humboldt Bay owl's-clover	None	None	G4T2	S2	1B.2
PDSCR0J0C3	<i>Chloropyron maritimum ssp. palustre</i> Point Reyes salty bird's-beak	None	None	G4?T2	S2	1B.2
PDVIO041G0	<i>Viola palustris</i> alpine marsh violet	None	None	G5	S1S2	2B.2
PMCYP030X0	<i>Carex arcta</i> northern clustered sedge	None	None	G5	S1	2B.2
PMCYP037A7	<i>Carex lenticularis var. limnophila</i> lagoon sedge	None	None	G5T5	S1	2B.2
PMCYP037E0	<i>Carex leptalea</i> bristle-stalked sedge	None	None	G5	S1	2B.2



Selected Elements by Element Code
California Department of Fish and Wildlife
California Natural Diversity Database










Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PMCYP037Y0	Carex lyngbyei Lyngbye's sedge	None	None	G5	S3	2B.2
PMCYP03BY0	Carex saliniformis deceiving sedge	None	None	G2	S2	1B.2
PMCYP03EM5	Carex viridula ssp. viridula green yellow sedge	None	None	G5T5	S2	2B.3
PMJUN011Z5	Juncus nevadensis var. inventus Sierra rush	None	None	G5T3T4	S1	2B.2
PMLIL0U0C0	Erythronium oregonum giant fawn lily	None	None	G4G5	S2	2B.2
PMLIL0U0F0	Erythronium revolutum coast fawn lily	None	None	G4G5	S3	2B.2
PMLIL1A0G0	Lilium occidentale western lily	Endangered	Endangered	G1	S1	1B.1
PMORC1X050	Piperia candida white-flowered rein orchid	None	None	G3	S3	1B.2
PPLYC01080	Lycopodium clavatum running-pine	None	None	G5	S3	4.1
PPLYC03060	Lycopodiella inundata inundated bog-clubmoss	None	None	G5	S1	2B.2










Record Count: 92








Search Results










65 matches found. Click on scientific name for details










Search Criteria: Quad is one of [4112411:4112328:4112412:4112421:4112318:4012482:4012481:4012388]











▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
<u><i>Abronia umbellata</i> var. <i>breviflora</i></u>	pink sand-verbena	Nyctaginaceae	annual herb	Jun-Oct	None	None	G4G5T2	S2	1B.1	 <p>©2021 Scot Loring</p>
<u><i>Angelica lucida</i></u>	sea-watch	Apiaceae	perennial herb	Apr-Sep	None	None	G5	S3	4.2	 <p>© 2022 Stillwater Sciences</p>
<u><i>Astragalus rattanii</i> var. <i>rattanii</i></u>	Rattan's milk-vetch	Fabaceae	perennial herb	Apr-Jul	None	None	G4T4	S4	4.3	No Photo Available
<u><i>Astragalus umbraticus</i></u>	Bald Mountain milk-vetch	Fabaceae	perennial herb	May-Aug	None	None	G4	S2	2B.2	 <p>©2013 Scot Loring</p>
<u><i>Calamagrostis bolanderi</i></u>	Bolander's reed grass	Poaceae	perennial rhizomatous herb	May-Aug	None	None	G4	S4	4.2	 <p>©2009 Zoya Akulova</p>
<u><i>Cardamine angulata</i></u>	seaside bittercress	Brassicaceae	perennial herb	(Jan)Mar-Jul	None	None	G4G5	S3	2B.2	 <p>© 2021 Scot Loring</p>
<u><i>Carex arcta</i></u>	northern clustered sedge	Cyperaceae	perennial herb	Jun-Sep	None	None	G5	S1	2B.2	 <p>© 2006 Dean Wm. Taylor</p>
<u><i>Carex buxbaumii</i></u>	Buxbaum's sedge	Cyperaceae	perennial rhizomatous herb	Mar-Aug	None	None	G5	S3	4.2	 <p>© 2008 Dean Wm.</p>








<u>Carex lenticularis</u> <u>var. limnophila</u>	lagoon sedge	Cyperaceae	perennial herb	Jun-Aug	None	None	G5T5	S1	2B.2		©2003 Steve Matson
<u>Carex leptalea</u>	bristle-stalked sedge	Cyperaceae	perennial rhizomatous herb	Mar-Jul	None	None	G5	S1	2B.2		© 2003 Steve Matson
<u>Carex lyngbyei</u>	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	Apr-Aug	None	None	G5	S3	2B.2		©2017 Steve Matson
<u>Carex saliniformis</u>	deceiving sedge	Cyperaceae	perennial rhizomatous herb	Jun(Jul)	None	None	G2	S2	1B.2		©2003 Steve Matson
<u>Carex viridula</u> ssp. <u>viridula</u>	green yellow sedge	Cyperaceae	perennial herb	(Jun)Jul- Sep(Nov)	None	None	G5T5	S2	2B.3		© 2015 Dana York
<u>Castilleja</u> <u>ambigua</u> var. <u>humboldtiensis</u>	Humboldt Bay owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	Apr-Aug	None	None	G4T2	S2	1B.2		©2017 Steve Matson
<u>Castilleja litoralis</u>	Oregon coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Jun	None	None	G3	S3	2B.2		©2010 Dana York
<u>Castilleja</u> <u>mendocinensis</u>	Mendocino Coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Aug	None	None	G2	S2	1B.2		©2015 John Doyen
<u>Chloropyron</u> <u>maritimum</u> ssp.	Point Reyes salty bird's-	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	None	None	G4?T2	S2	1B.2		

<i>palustre</i>	beak											©2017 John Doyen
<i>Chrysosplenium glechomifolium</i>	Pacific golden saxifrage	Saxifragaceae	perennial herb	Feb-Jun	None	None	G5?	S3	4.3		© 2021 Scot Loring	
<i>Coptis laciniata</i>	Oregon goldthread	Ranunculaceae	perennial rhizomatous herb	(Feb)Mar-May(Sep-Nov)	None	None	G4?	S3?	4.2		© 2021 Scot Loring	
<i>Discelium nudum</i>	naked flag moss	Disceliaceae	ephemeral moss		None	None	G4G5	S1	2B.2	No Photo Available		
<i>Eleocharis parvula</i>	small spikerush	Cyperaceae	perennial herb	(Apr)Jun-Aug(Sep)	None	None	G5	S3	4.3		©2018 Ron Vanderhoff	
<i>Empetrum nigrum</i>	black crowberry	Empetraceae	perennial evergreen shrub	Apr-Jun	None	None	G5	S1?	2B.2		©2015 Dana York	
<i>Erysimum menziesii</i>	Menzies' wallflower	Brassicaceae	perennial herb	Mar-Sep	FE	CE	G1	S1	1B.1		©2007 Steve Matson	
<i>Erythronium oregonum</i>	giant fawn lily	Liliaceae	perennial herb	Mar-Jun(Jul)	None	None	G4G5	S2	2B.2		©2021 Scot Loring	
<i>Erythronium revolutum</i>	coast fawn lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4G5	S3	2B.2		©2007 Steve Matson	
<i>Fissidens pauperculus</i>	minute pocket moss	Fissidentaceae	moss		None	None	G3?	S2	1B.2		©2021 Scot Loring	
<i>Gilia capitata ssp. pacifica</i>	Pacific gilia	Polemoniaceae	annual herb	Apr-Aug	None	None	G5T3	S2	1B.2		© 2016 Steve Matson	

<u><i>Gilia millefoliata</i></u>	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2	 © 2017 John Doyen
<u><i>Glehnia littoralis</i></u> <u>ssp. <i>leiocarpa</i></u>	American glehnia	Apiaceae	perennial herb	May-Aug	None	None	G5T5	S2S3	4.2	 ©2017 Steve Matson
<u><i>Hemizonia congesta</i></u> ssp. <u><i>tracyi</i></u>	Tracy's tarplant	Asteraceae	annual herb	(Mar)May- Oct	None	None	G5T4	S4	4.3	 © 2016 Steve Matson
<u><i>Hesperevax sparsiflora</i></u> var. <u><i>brevifolia</i></u>	short-leaved evax	Asteraceae	annual herb	Mar-Jun	None	None	G4T3	S3	1B.2	 © 2006 Doreen L. Smith
<u><i>Hosackia gracilis</i></u>	harlequin lotus	Fabaceae	perennial rhizomatous herb	Mar-Jul	None	None	G3G4	S3	4.2	 © 2015 John Doyen
<u><i>Iliamna latibracteata</i></u>	California globe mallow	Malvaceae	perennial herb	Jun-Aug	None	None	G2G3	S2	1B.2	 ©2013 Scot Loring
<u><i>Juncus nevadensis</i></u> <u>var. <i>inventus</i></u>	Sierra rush	Juncaceae	perennial rhizomatous herb	Jul-Nov	None	None	G5T3T4	S1	2B.2	No Photo Available
<u><i>Kopsiopsis hookeri</i></u>	small groundcone	Orobanchaceae	perennial rhizomatous herb (parasitic)	Apr-Aug	None	None	G4?	S1S2	2B.3	 ©2016 Vernon Smith
<u><i>Lathyrus glandulosus</i></u>	sticky pea	Fabaceae	perennial rhizomatous herb	Apr-Jun	None	None	G3	S3	4.3	 2015 Barrett Jeffery
<u><i>Lathyrus japonicus</i></u>	seaside pea	Fabaceae	perennial rhizomatous herb	May-Aug	None	None	G5	S2	2B.1	 ©2021 Scot Loring

<u><i>Lathyrus palustris</i></u>	marsh pea	Fabaceae	perennial herb	Mar-Aug	None	None	G5	S2	2B.2	 © 2016 Keir Morse
<u><i>Layia carnosa</i></u>	beach layia	Asteraceae	annual herb	Mar-Jul	FE	CE	G2	S2	1B.1	 © 2007 Aaron Schusteff
<u><i>Lilium occidentale</i></u>	western lily	Liliaceae	perennial bulbiferous herb	Jun-Jul	FE	CE	G1	S1	1B.1	 © 2018 Jason Matthias Mills
<u><i>Listera cordata</i></u>	heart-leaved twayblade	Orchidaceae	perennial herb	Feb-Jul	None	None	G5	S4	4.2	 ©2013 Dr. Amadej Trnkoczy 0000 0000 0513 2468
<u><i>Lycopodiella inundata</i></u>	inundated bog- clubmoss	Lycopodiaceae	perennial rhizomatous herb	Jun-Sep	None	None	G5	S1	2B.2	 © 2021 Scot Loring
<u><i>Lycopodium clavatum</i></u>	running-pine	Lycopodiaceae	perennial rhizomatous herb	Jun- Aug(Sep)	None	None	G5	S3	4.1	 © 2021 Scot Loring
<u><i>Lycopus uniflorus</i></u>	northern bugleweed	Lamiaceae	perennial herb	Jul-Sep	None	None	G5	S4	4.3	 © 2021 Scot Loring
<u><i>Mitellastra caulescens</i></u>	leafy-stemmed mitrewort	Saxifragaceae	perennial rhizomatous herb	(Mar)Apr- Oct	None	None	G5	S4	4.2	 © 2014 Dana York
<u><i>Moneses uniflora</i></u>	woodnymph	Ericaceae	perennial rhizomatous herb	May-Aug	None	None	G5	S2	2B.2	 ©2021 Scot Loring

<u><i>Monotropa uniflora</i></u>	ghost-pipe	Ericaceae	perennial herb (achlorophyllous)	Jun-Aug(Sep)	None	None	G5	S2	2B.2	 © 2021 Scot Loring
<u><i>Montia howellii</i></u>	Howell's montia	Montiaceae	annual herb	(Feb)Mar-May	None	None	G3G4	S2	2B.2	 © 2004 Dean Wm. Taylor
<u><i>Oenothera wolffii</i></u>	Wolf's evening-primrose	Onagraceae	perennial herb	May-Oct	None	None	G2	S1	1B.1	 ©2017 Dana York
<u><i>Packera bolanderi</i></u> <u>var. bolanderi</u>	seacoast ragwort	Asteraceae	perennial rhizomatous herb	(Jan-Apr)May-Jul(Aug)	None	None	G4T4	S2S3	2B.2	 © 2021 Scot Loring
<u><i>Piperia candida</i></u>	white-flowered rein orchid	Orchidaceae	perennial herb	(Mar)May-Sep	None	None	G3	S3	1B.2	 ©2016 Barry Rice
<u><i>Pityopus californicus</i></u>	California pinefoot	Ericaceae	perennial herb (achlorophyllous)	(Mar-Apr)May-Aug	None	None	G4G5	S4	4.2	 ©2009 Barry Rice
<u><i>Pleuropogon refractus</i></u>	nodding semaphore grass	Poaceae	perennial rhizomatous herb	(Mar)Apr-Aug	None	None	G4	S4	4.2	 ©2004 Dean Wm. Taylor
<u><i>Polemonium carneum</i></u>	Oregon polemonium	Polemoniaceae	perennial herb	Apr-Sep	None	None	G3G4	S2	2B.2	 ©2018 John Doyen
<u><i>Ribes laxiflorum</i></u>	trailing black currant	Grossulariaceae	perennial deciduous shrub	Mar-Jul(Aug)	None	None	G5?	S3	4.3	 ©2010 Dana York
<u><i>Romanzoffia tracyi</i></u>	Tracy's romanzoffia	Hydrophyllaceae	perennial herb	Mar-May	None	None	G4	S2	2B.3	 ©2017 Steve

<u><i>Sidalcea malachroides</i></u>	maple-leaved checkerbloom	Malvaceae	perennial herb	(Mar)Apr- Aug	None	None	G3	S3	4.2	 ©2005 Dean Wm. Taylor
<u><i>Sidalcea malviflora</i> ssp. <i>patula</i></u>	Siskiyou checkerbloom	Malvaceae	perennial rhizomatous herb	(Mar)May- Aug	None	None	G5T2	S2	1B.2	 ©2004 Dean Wm. Taylor
<u><i>Sidalcea oregana</i> ssp. <i>eximia</i></u>	coast checkerbloom	Malvaceae	perennial herb	Jun-Aug	None	None	G5T1	S1	1B.2	No Photo Available
<u><i>Silene scouleri</i> ssp. <i>scouleri</i></u>	Scouler's catchfly	Caryophyllaceae	perennial herb	(Mar- May)Jun- Aug(Sep)	None	None	G5T4T5	S2S3	2B.2	 ©2015 Vernon Smith
<u><i>Sulcaria spiralis</i></u>	twisted horsehair lichen	Parmeliaceae	fruticose lichen (epiphytic)		None	None	G3G4	S2	1B.2	 © 2021 Scot Loring
<u><i>Tiarella trifoliata</i> var. <i>trifoliata</i></u>	trifoliate laceflower	Saxifragaceae	perennial rhizomatous herb	(May)Jun- Aug	None	None	G5T5	S2S3	3.2	 © 2021 Scot Loring
<u><i>Trichodon cylindricus</i></u>	cylindrical trichodon	Ditrichaceae	moss		None	None	G4G5	S2	2B.2	No Photo Available
<u><i>Usnea longissima</i></u>	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)		None	None	G4	S4	4.2	 © 2021 Scot Loring
<u><i>Viola palustris</i></u>	alpine marsh violet	Violaceae	perennial rhizomatous herb	Mar-Aug	None	None	G5	S1S2	2B.2	 ©2021 Scot Loring

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Appendix E Special Status Plant Surveys Technical Memorandum

Redwood Community Action Agency

14 September 2021

Memorandum

To: Andrea Hilton, GHD

From: Susannah Ferson, RCAA Biologist, Projects Coordinator

Contact: (707) 269-2058

CC: Denise Newman, RCAA Projects Coordinator, Little River Trail Project Manager

Subject: Special Status Plant Surveys 2021 Technical Memorandum for the Little River Trail – Trinidad to McKinleyville Project, Humboldt County, CA.

1. Introduction

This Technical Memorandum reports results of the 2021 special status plant survey in the area of the Little River Trail – Trinidad to McKinleyville Project (LRTP) in Humboldt County, CA (Figure 1). Results of the plant survey are presented in Table 1. RCAA biologist Susannah Ferson performed the early season special status plant surveys on April 14 and 15, 2021 and a follow up survey on May 20 and 21, 2021. Restoration Field Technicians Andres Rodriguez and Calvin Brekeen IV provided assistance. A late-season botanical survey was performed on August 27 and September 7, 2021 by Denise Newman, Susannah Ferson, and Candace Reynolds of RCAA to confirm the presence or absence of any late-blooming special status species within the project area.

The purpose of this evaluation was to conduct seasonally appropriate surveys for state, federal, and other sensitive listed plant species in the proposed project area in accordance with the CDFW floristic survey protocol. The surveys attempted to identify all vascular plants within the 2021 project area to the taxonomic level necessary to determine rarity and listing status, and to document the presence of special status plants within the project area. The results will be used for planning, design, and to avoid or mitigate impacts associated with project construction.

The length of the 2021 Project Study Boundary (PSB) for the LRTP runs parallel to the west side/ south-bound section of Highway 101 from HUM101 97.024 to HUM101 97.779 between Scenic Drive and Clam Beach Drive, three miles south of Trinidad. The width of the PSB extends from the edge of the highway shoulder west for approximately 35 meters in the lower Little River watershed located between McKinleyville and Trinidad, California (Figure 2).

The 2021 LRTP includes lands adjacent to Highway 101 South for an approximate 1.0-mile section between the southern end of Scenic Drive east of Moonstone Beach, across the Little River Bridge to Clam Beach Drive east of Little River State Park. The Trinidad Coastal Land Trust is the property owner of the northern trailhead and the remaining trail is located within the Caltrans right-of-way. California State Parks is the property owner west of the future trail.

The PSB contains coastal scrub forest, wetland and dune habitat, and consists of the highly modified habitat of the highway shoulder. An unnamed creek bisects the PSB approximately 200 meters from the north

trailhead and Little River crosses through the southern end of the trail, approximately 700 meters from the south trailhead.

The proposed Little River Trail will connect the existing Hammond Coastal Trail in McKinleyville north to Trinidad beaches thereby closing a key gap in the California Coastal Trail. The LRTP will provide pedestrians and bikers a much-needed alternative to utilizing the four foot shoulder of Highway 101 to travel from Clam Beach to Trinidad. The LRTP is currently in the planning and permitting phase.

2. **Regulatory Setting**

The plant species listed on the California Native Plant Society's (CNPS) California Rare Plant Ranking (CRPR) List 1A, 1B and 2 qualify for state listing as Endangered or Threatened following the California Fish and Game Code. Plant species that are classified as special status under State jurisdiction include all species listed as threatened, endangered, or as a candidate species by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA). As a trustee agency, CDFW manages and oversees these special status plant species. As a component of the CEQA process, these species should be considered because they meet the definition of Threatened or Endangered under Sections 2062 and 2067 of the California Fish and Game Code. Under CEQA, CRPR List 3 and 4 plants do not have formal protection. The lists of special status species are updated periodically by CDFW including the above categories.

Projects consisting of activities that would lead to "take," possession, import, or export of state-listed plant species including research, seed banking, reintroduction efforts, habitat restoration, and other actions relating to any plant designated SE (State endangered), ST (State threatened), SR (State rare), or SC (State candidate for listing) are obligated to obtain a "Scientific, Educational, or Management Permit" from CDFW. Those special status plant species that fall under Federal jurisdiction include those designated as endangered, threatened, or as candidate species by the Fish and Wildlife Service (USFWS) under the U.S. Endangered Species Act (ESA).

The ESA defines Critical Habitat as a specific geographic area containing features essential for the conservation of an endangered or threatened species. Consultation with USFWS by federal lead agencies for activities they carry out, authorize, or fund is required by the ESA. Critical habitat that is federally designated for a listed or proposed species that may be in the project action area should be evaluated according to Section 7 of the ESA.

3. **Methods**

RCAA staff worked together with the project manager to develop the limits of the 2021 project study boundary (PSB) prior to conducting environmental fieldwork. The PSB terminology is adopted from the language, definitions and permit processes by the U.S. Army Corps of Engineers (USACE). The PSB is determined on a project specific basis and takes into consideration the possible alternate boundaries of the project, fill/cut slopes, temporary impact areas and/or adjacent areas if appropriate, access, new or modified utilities and right of ways, and bordering areas that may be feasibly included in the study. The PSB may be altered depending on arising issues such as private property ownerships, access restrictions, and areas excluded from project use. The PSB for the LRTP is shown in Figure 2.

Pre-survey database investigations included a search of the *California Natural Diversity Database* (CNDDDB) [CDFW 2020], *Calflora* (Calflora 2021), and the CNPS *Inventory of Rare and Endangered Vascular Plants* (CNPS 2020) to determine if CRPR and List 3 and 4 plant species and habitats have been observed or have the potential to occur in the Crannell USGS 7.5' quadrangle and/or the surrounding quadrangles (Trinidad,

Rodger's Peak, Bald Hills, Panther Creek, Arcata north, Blue Lake, Tyee City). The resulting list of potential plant species and their rankings was compiled and referenced prior to and during the survey. Aerial images of the PSB were utilized prior to and during the survey to determine potential habitats for CRPR plant species and to assure the entire PSB was surveyed.

The database search generated 156 sensitive species previously documented in the eight-quadrangle assessment area. Of these, one species was found within the PSB during the survey. Within the search area, five sensitive plant communities are documented according to the CNDDDB (2020); none occur within the PSB or the Crannell quadrangle.

The survey to detect the habitation of special status plant species (listed as rare, threatened, endangered, or candidate under the State or Federal Endangered Species Acts, CNPS, or species of local importance) was scheduled accordingly to accommodate the blooming species predicted to have moderate to high potential to be present within the project area. The surveys followed the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* by the California Natural Resource Agency (CDFW 2018) and *General Rare Plant Survey Guidelines by the Endangered Species Recovery Program* (Cypher 2002).

A survey was conducted that sampled and identified potential habitat(s) in the project area. Nomenclature follows *The Jepson Manual* (Baldwin et al 2012). The surveyed plants were identified to the lowest taxonomic level (genus or species) needed for rare plant identification. The species surveys were conducted by walking the project area for target species and recording the extent, approximate number of species, and/or percent cover of special status plant species observed. Approximately 35 field person hours were spent surveying the PSB in 2021.

4. **Results**

On the first day of the site evaluation, May 20, 2021, one special status species was observed during the protocol level survey as identified in Table 1. One small patch consisting of 5 individual plants of trailing black currant was found along the west side of the existing footpath approximately 550 yards from the north trailhead. The mapped occurrence is presented in Figure 2 and the coordinates are N41°01'26.6, W126°06'27.1".

CNDDDB field forms were completed in the field and will be submitted to CNDDDB.

Table 1. Special Status Plant Survey Results		
Scientific Name	Common Name	Status
Ribes laxiflorum	Trailing black currant	4.3-watch list, not very threatened in Ca.

5. **Recommendations**

State and/or federal permits will address mitigation measures for special status plant species and recommend that significant impacts to special status plants present on site shall be minimized, avoided, and contingently compensated.

Trailing black currant will be flagged if avoidance is feasible and if the population is located adjacent to construction areas. The locations of any special status plant populations to be avoided shall be clearly identified in the contract documents.

6. **Conclusion**

The purpose of this survey was to identify and map State and Federal listed plants and special status plants within the project boundary. This survey identified one California Rare Plant Rank species, *Ribes laxiflorum*. This effort and reporting are intended to help guide Caltrans' construction of the project in a manner which avoids impacts to the plant species described herein.

7. **References**

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California Department of Fish and Wildlife. 2018. California Natural Diversity Database (CNDDDB). USGS 7.5 Minute Quadrangles: Trinidad North, Rodger's Peak, Bald Hills, Trinidad South, Panther Creek, Arcata north, Blue Lake, Tyee City. California Department of Fish and Wildlife (CDFW). Sacramento, California. Accessed April 2021.

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8. **Appendix**

9. **Figures**

i. Figure 1: Little River Trail Location Map

ii. Figure 2: 2021 Little River Trail Project Study Boundary

b. **2. Tables**

i. Table 2: Special status plant species with potential to occur in the PSB

ii. Table 3: Species list of plants observed within the PSB

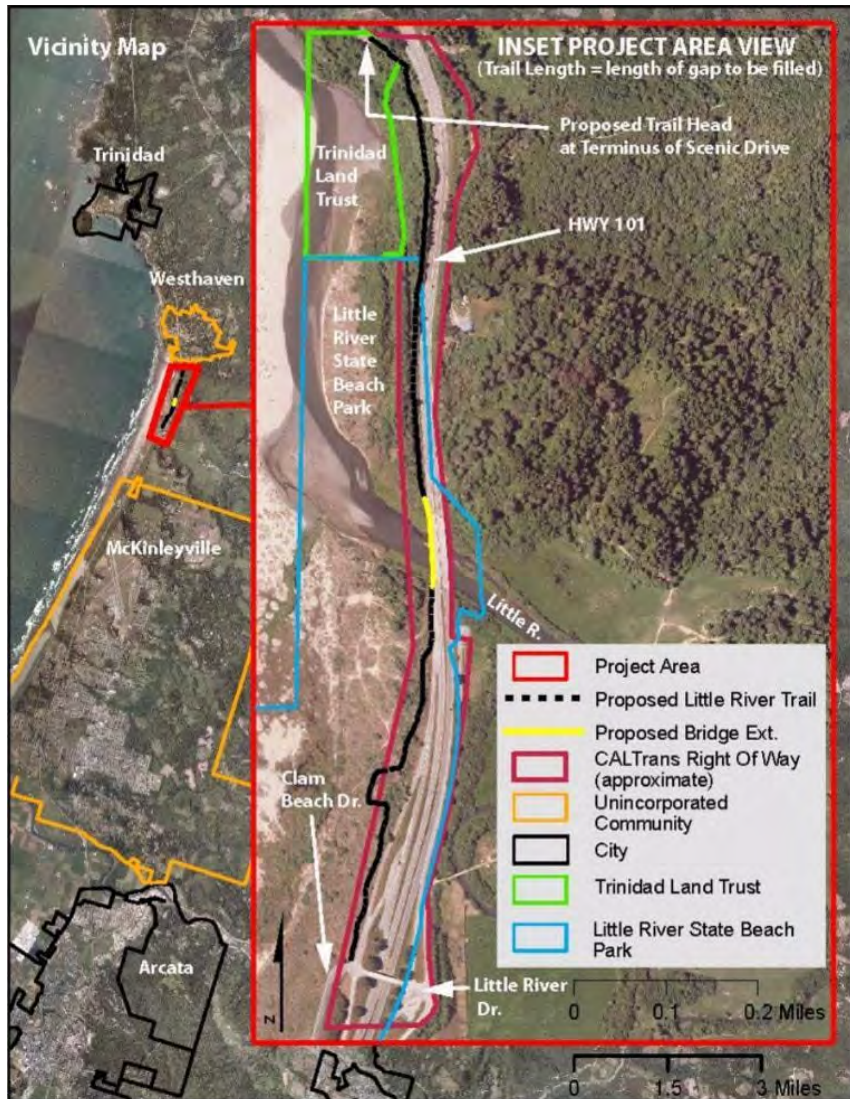


Figure 1: Little River Trail location map



Figure 2: 2021 Little River Trail project study boundary

- c.
- d.
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- f.
- g.

Table 2: Special status plant species with potential to occur in the PSB.

Scientific Name	Common Name	Federal Status	State Status	CA Rare Plant Rank	Quad Name	Survey Results
<i>Discelium nudum</i>	naked flag moss	None	None	2B.2	TRINIDAD	Not observed
<i>Trichodon cylindricus</i>	cylindrical trichodon	None	None	2B.2	TRINIDAD	Not observed
<i>Fissidens pauperculus</i>	minute pocket moss	None	None	1B.2	ARCATA NORTH	Not observed
<i>Bryoria spiralis</i>	twisted horsehair lichen	None	None	1B.1	CRANNELL	Not observed
<i>Usnea longissima</i>	Methuselah's beard lichen	None	None	4.2	BALD HILLS	Not observed
<i>Angelica lucida</i>	sea-watch	None	None	4.2	CRANNELL	Not observed
<i>Glehnia littoralis</i> ssp. <i>leiocarpa</i>	American glehnia	None	None	4.2	CRANNELL	Not observed

<i>Erigeron bloomeri</i> var. <i>nudatus</i>	Waldo daisy	None	None	2B.3	TRINIDAD	Not observed
<i>Hemizonia congesta</i> ssp. <i>tracyi</i>	Tracy's tarplant	None	None	4.3	BALD HILLS	Not observed
<i>Hesperivax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	None	None	1B.2	TRINIDAD	Not observed
<i>Layia carnosa</i>	beach layia	Endangered	Endangered	1B.1	CRANNELL	Not observed
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	None	None	2B.2	CRANNELL	Not observed
<i>Cardamine angulata</i>	seaside bittercress	None	None	2B.1	RODGERS PEAK	Not observed
<i>Erysimum menziesii</i>	Menzies' wallflower	Endangered	Endangered	1B.1	TYEE CITY	Not observed
<i>Silene scouleri</i> ssp. <i>scouleri</i>	Scouler's catchfly	None	None	2B.2	TRINIDAD	Not observed
<i>Carex arcta</i>	northern clustered sedge	None	None	2B.2	ARCATA NORTH	Not observed
<i>Carex buxbaumii</i>	Buxbaum's sedge	None	None	4.2	TRINIDAD	Not observed
<i>Carex lenticularis</i> var. <i>limnophila</i>	lagoon sedge	None	None	2B.2	TRINIDAD	Not observed
<i>Carex leptalea</i>	bristle-stalked sedge	None	None	2B.2	CRANNELL	Not observed
<i>Carex lyngbyei</i>	Lyngbye's sedge	None	None	2B.2	CRANNELL	Not observed
<i>Carex saliniformis</i>	deceiving sedge	None	None	1B.2	RODGERS PEAK	Not observed
<i>Carex viridula</i> ssp. <i>viridula</i>	green yellow sedge	None	None	2B.3	TRINIDAD	Not observed
<i>Eleocharis parvula</i>	small spikerush	None	None	4.3	RODGERS PEAK	Not observed
<i>Empetrum nigrum</i>	black crowberry	None	None	2B.2	TRINIDAD	Not observed
<i>Astragalus rattanii</i> var. <i>rattanii</i>	Rattan's milk-vetch	None	None	4.3	ARCATA NORTH	Not observed
<i>Astragalus umbraticus</i>	Bald Mountain milk-vetch	None	None	2B.2	BALD HILLS	Not observed
<i>Hosackia gracilis</i>	harlequin lotus	None	None	4.2	TRINIDAD	Not observed
<i>Lathyrus glandulosus</i>	sticky pea	None	None	4.3	ARCATA NORTH	Not observed
<i>Lathyrus japonicus</i>	seaside pea	None	None	2B.1	CRANNELL	Not observed
<i>Lathyrus palustris</i>	marsh pea	None	None	2B.2	TRINIDAD	Not observed
<i>Ribes laxiflorum</i>	trailing black currant	None	None	4.3	CRANNELL	Present
<i>Romanzoffia tracyi</i>	Tracy's romanzoffia	None	None	2B.3	TRINIDAD	Not observed
<i>Juncus nevadensis</i> var. <i>inventus</i>	Sierra rush	None	None	2B.2	TRINIDAD	Not observed
<i>Lycopus uniflorus</i>	northern bugleweed	None	None	4.3	TRINIDAD	Not observed
<i>Erythronium oregonum</i>	giant fawn lily	None	None	2B.2	PANTHER CREEK	Not observed
<i>Erythronium revolutum</i>	coast fawn lily	None	None	2B.2	BLUE LAKE	Not observed
<i>Lilium occidentale</i>	western lily	Endangered	Endangered	1B.1	ARCATA NORTH	Not observed
<i>Lycopodiella inundata</i>	inundated bog-clubmoss	None	None	2B.2	TRINIDAD	Not observed
<i>Lycopodium clavatum</i>	running-pine	None	None	4.1	CRANNELL	Not observed
<i>Iliamna latibracteata</i>	California globe mallow	None	None	1B.2	BLUE LAKE	Not observed
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	None	None	4.2	BLUE LAKE	Not observed
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	None	None	1B.2	BALD HILLS	Not observed

<i>Sidalcea oregana</i> ssp. <i>eximia</i>	coast checkerbloom	None	None	1B.2	ARCATA NORTH	Not observed
<i>Monotropa uniflora</i>	ghost-pipe	None	None	2B.2	TRINIDAD	Not observed
<i>Pityopus californicus</i>	California pinefoot	None	None	4.2	CRANNELL	Not observed
<i>Montia howellii</i>	Howell's montia	None	None	2B.2	ARCATA NORTH	Not observed
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	None	None	1B.1	CRANNELL	Not observed
<i>Oenothera wolfii</i>	Wolf's evening-primrose	None	None	1B.1	CRANNELL	Not observed
<i>Listera cordata</i>	heart-leaved twayblade	None	None	4.2	CRANNELL	Not observed
<i>Piperia candida</i>	white-flowered rein orchid	None	None	1B.2	CRANNELL	Not observed
<i>Castilleja ambigua</i> var. <i>humboldtensis</i>	Humboldt Bay owl's-clover	None	None	1B.2	TRINIDAD	Not observed
<i>Castilleja litoralis</i>	Oregon coast paintbrush	None	None	2B.2	CRANNELL	Not observed
<i>Castilleja mendocinensis</i>	Mendocino Coast paintbrush	None	None	1B.2	TRINIDAD	Not observed
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes salty bird's-beak	None	None	1B.2	TYEE CITY	Not observed
<i>Kopsiopsis hookeri</i>	small groundcone	None	None	2B.3	BALD HILLS	Not observed
<i>Calamagrostis bolanderi</i>	Bolander's reed grass	None	None	4.2	CRANNELL	Not observed
<i>Pleuropogon refractus</i>	nodding semaphore grass	None	None	4.2	CRANNELL	Not observed
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	None	None	1B.2	CRANNELL	Not observed
<i>Gilia millefoliata</i>	dark-eyed gilia	None	None	1B.2	CRANNELL	Not observed
<i>Polemonium carneum</i>	Oregon polemonium	None	None	2B.2	TRINIDAD	Not observed
<i>Moneses uniflora</i>	woodnymph	None	None	2B.2	RODGERS PEAK	Not observed
<i>Coptis laciniata</i>	Oregon goldthread	None	None	4.2	BALD HILLS	Not observed
<i>Chrysosplenium glechomifolium</i>	Pacific golden saxifrage	None	None	4.3	CRANNELL	Not observed
<i>Mitellastrum caulescens</i>	leafy-stemmed mitrewort	None	None	4.2	CRANNELL	Not observed
<i>Tiarella trifoliata</i> var. <i>trifoliata</i>	trifoliate laceflower	None	None	3.2	BLUE LAKE	Not observed
<i>Viola palustris</i>	alpine marsh violet	None	None	2B.2	TRINIDAD	Not observed

Source: CNDDDB and CNPS accessed 4/12/2021. Assessment area consists of USGS 7.5 minute quadrangles: Trinidad, Arcata North, Tyee City, Panther Creek, Blue Lake, Bald Hills, Rodger's Peak.

California Native Plant Society Rare Plant Ranks (CRPR)

1A- Presumed Extirpated in California and either Rare or extinct elsewhere

1B - Rare, Threatened, or Endangered in California and elsewhere

2 - Rare, Threatened or Endangered in California, but more common elsewhere

2A- Plants Presumed Extirpated in California, but more common elsewhere

2B- Plants Rare, Threatened, or Endangered in California, but more common elsewhere

3 - Review List (more information needed)

4 - Watch List (limited distribution in California)

Threat Ranks:

0.1 Seriously threatened in California

0.2 Moderately threatened in California

0.3 Not very threatened in California

Table 3: 2021 Species list of plants observed within the PSB

Scientific name	Common name
<i>Achillea millefolium</i>	common yarrow
<i>Agrostis stolonifera</i>	redtop
<i>Alectoria sarmentosa</i>	common witch's hair
<i>Allium triquetrum</i>	three-cornered garlic
<i>Alnus rubra</i>	red alder
<i>Ammophila arenaria</i>	European beach grass
<i>Anthoxanthum odoratum</i>	sweet vernal grass
<i>Arctostaphylos uva-ursi</i>	oso manzanita
<i>Armeria maritima</i>	Sea-pink
<i>Artemisia vulgaris</i>	mugwort
<i>Asarum caudatum</i>	wild ginger
<i>Athyrium filix-femina</i>	Lady fern
<i>Avena fatua</i>	wild oat
<i>Baccharis pilularis</i>	coyote brush
<i>Blechnum spicant</i>	deer fern
<i>Brassica rapa</i>	common mustard
<i>Briza minor</i>	small rattlesnake grass
<i>Bromus carinatus</i>	California brome
<i>Bromus diandrus</i>	rip gut brome
<i>Bromus hordeaceus</i>	soft chess
<i>Calamagrostis nutkaensis</i>	Nootka reed grass
<i>Cardamine hirsuta</i>	hairy bittercress
<i>Cardionema ramosissimum</i>	sand mat
<i>Carex leptopoda</i>	slender-foot sedge
<i>Carex obnupta</i>	slough sedge
<i>Ceanothus thyrsiflorus</i>	blue blossom ceanothus
<i>Cerastium glomeratum</i>	sticky chickweed
<i>Cirsium vulgare</i>	bull thistle
<i>Claytonia sibirica</i>	candy flower
Scientific name	Common name
<i>Claytonia perfoliata</i>	miner's lettuce
<i>Cortaderia jubata</i>	pampas grass
<i>Cotoneaster pannosus</i>	silverleaf cotoneaster
<i>Cytisus scoparius</i>	Scotch broom
<i>Daucus carota</i>	wild carrot
<i>Delairea odorata</i>	cape ivy
<i>Delphinium decorum</i> ssp. <i>decorum</i>	coastal larkspur

<i>Digitalis purpurea</i>	purple foxglove
<i>Dryopteris expansa</i>	wood fern
<i>Equisetum telmateia</i>	giant horsetail
<i>Eriogonum latifolium</i>	coast buckwheat
<i>Erodium moschatum</i>	whitestem filaree
<i>Erythranthe dentata</i>	tooth leaved monkeyflower
<i>Eschscholzia californica</i>	California poppy
<i>Festuca arundinacea</i>	reed fescue
<i>Festuca rubra</i>	red fescue
<i>Foeniculum vulgare</i>	fennel
<i>Fragaria chiloensis</i>	strawberry
<i>Frangula purshiana</i>	cascara sagrada
<i>Galium aparine</i>	bed straw
<i>Gallium triflorum</i>	sweet scented bedstraw
<i>Gaulthoria shallon</i>	salal
<i>Genista monspessulana</i>	French broom
<i>Geranium dissectum</i>	wild geranium
<i>Geranium robertianum</i>	herb robert
<i>Hedera helix</i>	English ivy
<i>Heracleum maximum</i>	cow's parsnip
<i>Hesperocyparis macrocarpa</i>	Monterey cypress
<i>Holcus lanatus</i>	common velvet grass
<i>Hypochaeris radicata</i>	rough cat's-ear
<i>Hypogymnia inactiva</i>	forking bone lichen
<i>Ilex aquifolium</i>	English holly
Scientific name	Common name
<i>Juncus balticus</i>	Baltic rush
<i>Juncus patens</i>	spreading rush
<i>Lamium purpureum</i>	red dead nettle
<i>Linum</i> ssp.	flax
<i>Lonicera involucrata</i>	twinberry honeysuckle
<i>Lonicera</i> ssp.	honeysuckle
<i>Lotus corniculatus</i>	garden bird's foot-trefoil
<i>Lupinus arboreus</i>	yellow bush lupine
<i>Lupinus bicolor</i>	miniature lupine
<i>Lysichiton americanus</i>	yellow skunk cabbage
<i>Lysimachia arvensis</i>	scarlet pimpernel
<i>Maianthemum dilatatum</i>	false lily of the valley
<i>Malvus</i> ssp.	mallow
<i>Marah oregana</i>	coast man-root
<i>Medicago arabica</i>	spotted burclover
<i>Mentha arvensis</i>	American wild mint
<i>Morella californica</i>	Pacific bayberry
<i>Myrica californica</i>	Pacific wax myrtle
<i>Oenanthe sarmentosa</i>	water parsely
<i>Oxalis oregana</i>	redwood sorrel

Pentagramma triangularis	goldback fern
Petasites frigidus	colt's foot
Phalaris arundinacea	reed canary grass
Picea sitchensis	Sitka spruce
Pinus contorta ssp. contorta	lodgepole pine
Pinus radiata	Monterey pine
Plantago lanceolata	plantain
Platismatia glauca	rag bag lichen
Platismatia norvegica	laundered rag lichen
Poa annua	annual blue grass
Polygonum paronychia	dune knotweed
Polypodium scolieri	leather fern
Polystichum munitum	sword fern
Populus trichocarpa	black cottonwood
Potentilla anserina	Pacific silverweed
Pseudotsuga menziesii	Douglas fir
Scientific name	Common name
Pteridium aquilinum	nothern bracken fern
Raphanus raphanistrum	wild radish
Ribes laxiflorum	trailing black currant
Ribes sanguineum	red flowered currant
Rosa californica	California wild rose
Rubus armeniacus	Himalyan blackberry
Rubus spectabilis	salmonberry
Rubus ursinus	California dewberry
Rumex acetosella	sheep sorrel
Rumex obtusifolius	broad-leaved dock
Salix hookeriana	coastal willow
Sambucus racemosa	red elderberry
Scirpus microcarpus	red-tinge bulrush
Scrophularia californica	bee plant
Senecio minimus	coastal burnweed
Silene gallica	common catchfly
Solanum spp.	nightshade
Solidago spathulata	dune golden rod
Sonchus asper ssp. asper	sow thistle
Stachys ajugoides	hedge nettle
Stellaria spp.	chickweed
Symphyotrichum chilense	Pacific American-aster
Tanacetum bipinnatum	dune tansy
Tolmiea menziesii	piggyback plant
Trifolium repens	common clover
Trifolium dubium	shamrock
Triphysaria eriantha ssp. eriantha	butter and eggs
Trisetum cernuum	tall trisetum
Umbellularia californica	California bay
Urtica dioica	stinging nettle
Vaccinium ovatum	black huckleberry

Vaccinium parvifolium	red huckleberry
Veronica persica	bird's eye speedwell
Vicia hirsuta	hairy vetch
Vicia gigantea	giant pea
Vicia sativa	common vetch
Vinca major	greater periwinkle

Appendix F California Department of Fish and Wildlife Stream Evaluation



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Region 1 – Northern
619 Second Street
Eureka, CA 95501
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director



June 22, 2021

Andrea Hilton
GHD Consultants
718 3rd St,
Eureka, CA 95501

Subject: California Department of Fish and Wildlife (CDFW) stream evaluation of an unnamed tributary to Little River estuary, associated with a proposed CALTRANS Little River Trail Project watercourse crossing construction project.

Dear Andrea Hilton,

This memorandum summarizes a survey I conducted with you and Denise Newman (Redwood Community Action Agency) on June 1, 2021, to evaluate habitat and presence of fish and amphibians within an approximately 500-foot reach on unnamed tributary to Little River Estuary (See Figure 1). The project occurs approximately one mile south of the community of Westhaven, Humboldt County. The reach inspected extended from the confluence of Little River estuary (-124.10933, 41.025223) upstream to the Highway 101 culvert (-124.024624, -124.10727). The mapped stream gradient in this reach ranges between 0 to 4 percent slope.

Using a backpack electrofisher, all habitat units accessible were surveyed. Approximately half of the reach was inaccessible to perform electrofishing or bank surveys due to dense willow encroachment. During the survey, juvenile steelhead (*Oncorhynchus mykiss*), juvenile coastal cutthroat trout (*Oncorhynchus clarki clarki*), juvenile sculpin (*Cottus spp.*) and adult western brook lamprey (*Lampetra richardsoni*) were observed. Within the proposed construction area, a brook lamprey redd and multiple lamprey adults were observed. Although coho salmon (*Oncorhynchus kisutch*) were not observed during this survey, winter and summer juvenile rearing habitat exists within this reach. The stream channel had an average bankfull width of 3 feet, and average bankfull depth of two feet. Maximum residual pool depths exceeded 2 feet deep in multiple locations, with greater than 50 percent cover in most units.

The Highway 101 culvert at the upstream end of the reach is approximately 48-inches in diameter, constructed of concrete, set at grade, and is 40 percent embedded in gravel though out the entire culvert length. This culvert is not considered to be a barrier to adult or juvenile salmonids during design flows.

Conserving California's Wildlife Since 1870

Based on the survey results, CDFW recommends the following:

1. Prior to construction, a biologist shall conduct surveys 100-feet down stream of culvert 5 days prior to construction. If fish or amphibians are encountered within this reach, CDFW shall be contacted to discuss a mutually agreeable relocation plan.
2. To avoid impacts on western brook lamprey and associated redds, work shall be conducted after August 1st and prior to October 15th.
3. The newly constructed culvert extension should be embedded at least 20 percent, similar to the existing culvert condition.

Please direct questions or correspondence regarding this letter to Senior Environmental Scientist (Specialist) Nicholas Simpson at (707) 445-6512 or nicholas.simpson@wildlife.ca.gov.

Sincerely,

A handwritten signature in black ink, appearing to be 'NS' followed by a horizontal line.

Nicholas Simpson
Senior Environmental Scientist (Specialist)

Andrea Hilton
CDFW Little River Estuary Tributary Consultation
Consultation # 21-R1b-003
June 21, 2021
Page 3

ec:

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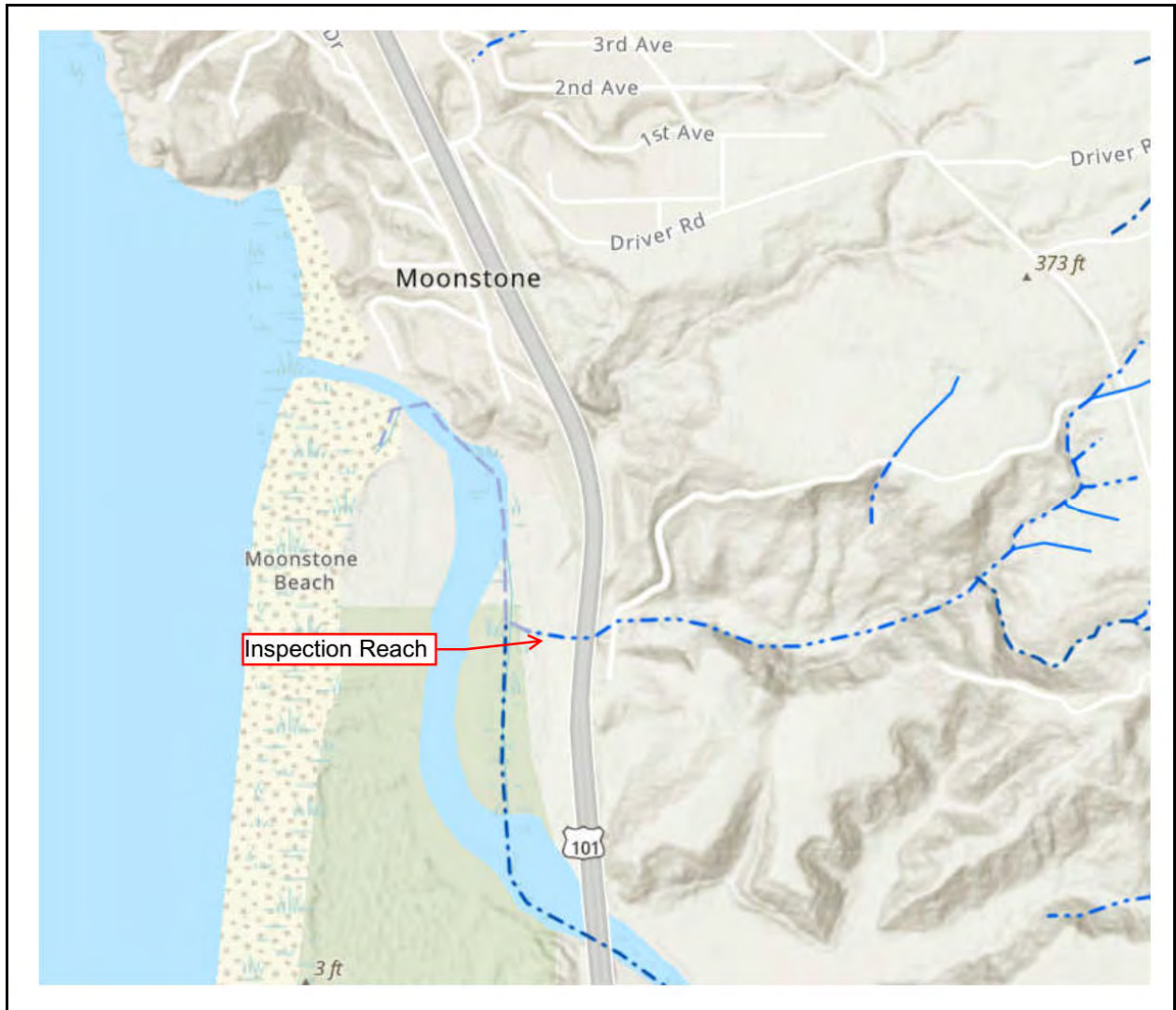


Figure 1. Location of reach inspected during the June 1, 2021 CDFW evaluation.

Appendix G Bridge Survey Memorandum

On July 6th, 2021 Denise Newman of RCAA and Christa Unger, Environmental Planner for Caltrans Local Assistance D1 conducted a bridge survey on Little River Bridge. The survey was conducted both on foot and from the water in a kayak. Visual surveys were conducted using high powered binoculars and flashlights. This survey was intended to record the presence or absence of migratory birds and bats present on the bridge.

The bridge did not have any exposed or open joints at the center of the bridge, at piers, or at the abutments. Small cracks at the pier caps where seals failed did not contain nesting birds or roosting bats.

No bats were observed on the bridge during this day time survey. Some urine staining was observed at pier walls and in the open cells between girders. No accumulation of bat guano was observed but some amounts were observed on pier walls. Accumulation of cobwebs on most of the bridge indicate bat roosting is not common. Based on the lack of suitable crevices, wood elements, minimal guano and urine staining as well as the temperature gradient at this location, bats are unlikely to utilize Little River bridge for roosting. It is possible the occasional solitary bat may use the bridge as a temporary night roost while digesting in between foraging cycles. It is highly recommended that an additional presence/absence survey be conducted the year prior to construction to ensure habitat elements and bat use of the bridge has not changed.

Birds were observed to be nesting on the bridge structure. Roughly 40-50 active nests of Cliff Swallows, *Petrochelidon pyrrhonota*, were observed primarily on the western outside edge of the bridge deck and in the open cells between girders favoring the western underside of the bridge. Numerous vacant nests and nests remains were also observed on the bridge. Cliff swallows are protected under the Migratory Bird Act and disturbance of nests is prohibited by CDFW from February 15-September 1st. No other birds were seen nesting and no other indications of nesting was observed.

Depending on the final design of the project components that will occur on Little River bridge, it is likely an exclusion plan for migratory birds will need to be incorporated into the project. This will require a qualified contractor biologist be on staff for pre nesting season surveys and exclusionary device installation prior to February 15. The qualified contractor supplied biologist will then check the installation to ensure it is not damaged monthly until the end of construction. The exclusionary devices should include one-way exits. Attached to this email is more information on this.

Thank you for the opportunity to go out in the field with you for this bridge survey. If you have any questions feel free to reach out.

All the best,

Christa R. Unger

Environmental Planner

D1 Local Assistance

(707)684-6995