STATE ROUTE 128/253 CULVERT REHABILITATION PROJECT

MENDOCINO COUNTY, CALIFORNIA
DISTRICT 1 – MEN – 128/253
KP 0.3/81.4 & 1.6/27.6 (PM 0.2/50.9 & 1.0/17.2)
378100

Initial Study/Environmental Assessment

Prepared by the
U.S. Department of Transportation
Federal Highway Administration
and the
State of California Department of Transportation

General Information About This Document

What's in this document?

The Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) have prepared this Initial Study/Environmental Assessment, which examines the potential environmental impacts of alternatives being considered for the proposed project located in Mendocino County, California. The document describes why the project is being proposed, alternative methods for constructing the project, the existing environment that could be affected by the project, the potential impacts from each of the alternatives, and proposed mitigation for the potential impacts.

What should you do?

Please read this Initial Study/Environmental Assessment. Additional copies of this document, as well as the technical studies, are available for review at the District Office, Department of Transportation, 1656 Union Street, P.O. Box 3700, Eureka, CA 95501.

We welcome your comments. If you have any comments regarding the proposed project or wish us to hold a public meeting to discuss the project, please contact Caltrans.

- Submit written comments via postal mail to:

  Karen McWilliams, Environmental Branch Chief
  Department of Transportation, Environmental Planning
  2389 Gateway Oaks Drive, Suite 100
  Sacramento, CA 95833

- Submit comments via email to: karen_mcwilliams@dot.ca.gov

- Submit comments by the deadline: May 16, 2005

What happens after this?

After comments are received from reviewing agencies as well as the public, Caltrans and FHWA may: (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document can be made available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Karen McWilliams, Environmental Branch Chief, Environmental Management S2, 2389 Gateway Oaks Drive, Sacramento, CA 95833; (916) 270-0568. Voice or use the California Relay Service TTY number, (800) 735-2929.

01 – MEN – 128/253
KP 0.3/81.4 & 1.6/27.6
(PM 0.2/50.9 & 1.0/17.2)

State Route 128/253 Culvert Rehabilitation Project, from the Pacific Ocean to Mendocino/Sonoma County and from Junction 128/253 to south of Ukiah, Mendocino County

INITIAL STUDY/ENVIRONMENTAL ASSESSMENT

Submitted Pursuant to: (State) Division 13, California Public Resources Code
(Federal) 42 USC 4332(2)(C

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and
THE STATE OF CALIFORNIA
Department of Transportation

17 February 2005
Date of Approval

for Lena R. Ashley, Chief
North Region Environmental Services, North
California Department of Transportation

4/11/05
Date of Approval

Division Administrator
Federal Highway Administration

PROPOSED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation is proposing to rehabilitate or replace deteriorated culverts and appurtenant structures at 270 locations on State Routes (SR) 128 and 253 in Mendocino County. There are 213 of these culverts crossing SR 128, a two-lane conventional highway from KP 0.29 (PM 0.18), to KP 81.41(PM 50.59), and 57 of the culverts cross SR 253 from the 128/253 junction, KP 1.59 (PM 0.99) to the south end of Ukiah, KP 27.60 (PM 17.15). Trenchless technologies or jacking methods may be utilized to replace the existing culverts at the following locations, KP 35.08 (PM 21.80) and KP 49.84 (PM 30.97) on SR 128, and KP 10.20 (PM 6.34) and KP 10.67 (PM 6.63) on SR 253. Other proposed work includes replacing or adding downdrains, overside drains, anchor assemblies, rock energy dissipaters, and concrete headwalls/endwalls. Replacement of non-standard drainage inlets with standard drainage inlets will also be completed at appropriate locations. Ditch grading of the existing channels will be needed to provide for positive and uninterrupted flows. Erosion control will be implemented around culverts where the ground is disturbed.

Determination

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

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

The project will not affect FEMA designated floodplains, hazardous materials, recreational facilities, historical architectural properties, other cultural resources, or mineral resources. No change will occur in local and regional air quality, traffic, population, or planned land use. Seismic and soil related hazards will not increase, nor will the ambient noise in the region permanently increase.

The project may have short term minimal effects on water quality, scenic resources, and sensitive plant or animal species; however, project impacts to these resources will be mitigated to a level of insignificance as specified in the mitigation measures contained in the IS. Sensitive biological communities will be avoided to minimize the effect that this project may have on these resources as described in the IS.

_____ _____

Lena R. Ashley Date

Chief, North Region Environmental Services

SUMMARY

Project Description

The California Department of Transportation is proposing to rehabilitate or replace deteriorated culverts and appurtenant structures at 270 locations on State Routes (SR) 128 and 253 in Mendocino County. There are 213 of these culverts crossing SR 128, a two-lane conventional highway from KP 0.29 (PM 0.18), to KP 81.41 (PM 50.59), and 57 of the culverts cross SR 253 from the 128/253 junction, KP 1.59 (PM 0.99) to the south end of Ukiah, KP 27.60 (PM 17.15). Trenchless technologies or jacking methods may be utilized to replace the existing culverts at the following locations, KP 35.08 (PM 21.80) and KP 49.84 (PM 30.97) on SR 128, and KP 10.20 (PM 6.34) and KP 10.67 (PM 6.63) on SR 253. Other proposed work includes replacing or adding downdrains, overside drains, anchor assemblies, rock energy dissipaters, and concrete headwalls/endwalls. Replacement of non-standard drainage inlets (DI) with standard DI will also be completed at appropriate locations. Ditch grading of the existing channels will be needed to provide for positive and uninterrupted flows. Erosion control will be implemented around culverts where the ground is disturbed.

Required Permits and Agency Consultation

Wetland and nonwetland waters are regulated by the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act (CWA). The ACOE regulates the discharge of dredged or fill material into waters of the U.S. The proposed project may result in the discharge of fill material into waters that fall under ACOE jurisdiction. Depending on the circumstances of each culvert replacement, advance notification may be required through the use of the Preconstruction Notification (PCN).

The discharge into Waters of the U.S. will require a water quality certification from the Regional Water Quality Control Board (Board), pursuant to Section 401 of the CWA. Initiation of this process generally involves submittal of application materials to the Board, processing, and receipt of certification with conditions.

Similar to Section 404, work in streambeds must be authorized through an Agreement with California Department of Fish and Game (CDFG) under the Streambed Alteration Agreement. This process is initiated with an application package or Notification. It should be possible to include all of the culvert replacements under a single Notification and Agreement.

The Coastal Zone Management Act of 1972 (CZMA) is the primary federal law enacted to preserve and protect coastal resources. The CZMA sets up a program under which coastal States are encouraged to develop coastal management programs. States with an approved coastal management plan are able to review

federal permits and activities to determine if they are consistent with the State's management plan. Sections of the project occur within the coastal zone and will thus require a permit from the Mendocino County Coastal Commission.

Threatened, endangered, and special status species are protected under the Federal Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act, under jurisdiction of the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Agency Fisheries Department, respectively. The proposed project may affect several species under this category, therefore, Section 7 consultations with FWS and NOAA Fisheries have been initiated. A Biological Opinion was received from NOAA Fisheries on January 4, 2005.

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CHAPTER 1 – PROPOSED PROJECT

Purpose and Need

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to replace or rehabilitate several culverts on State Routes (SR) 128 and 253 in southwestern Mendocino County. SR 128 begins at the junction of SR 1, at the mouth of the Navarro River, just south of the town of Albion. The highway extends in an easterly direction, paralleling the Navarro River, then turns southeasterly through the Anderson Valley to the Sonoma County line. SR 253 begins at SR 128 in the Anderson Valley, south of Boonville, extends in a northeasterly direction over Pine Ridge, and terminates at U.S. 101 just south of Ukiah (Figure 1).

The culverts proposed for rehabilitation are deteriorating and have reached their maximum useful service life. The purpose of this project is to prevent highway damage due to potential culvert failure and to maintain the overall safety of the traveling public on these routes. Corrosion has penetrated the walls of many of the culverts, and holes and heavy deposits of rust may be seen along the inverts of the pipes. With this occurring, the flow of water is directed through the holes and can cause further scour and erosion in the area surrounding the culverts. The pipes may collapse under the roadway, causing the roadway to settle and creating cracks and holes in the surface that could result in unsafe road conditions and increased maintenance costs. Furthermore, environmental damage may occur as a result of fill and/or road surface materials from the damaged roadway flowing into nearby streams. In addition, other problems exist at the culvert locations including:

- Corroded or damaged culverts (i.e., rusty, perforated, bent, separated at the joints and inverts of the pipes)
- Inadequate culvert length
- Inadequate or absent end treatments (i.e., headwall, endwall, rock energy dissipaters)
- Nonstandard pipe diameters (450 mm [17.7 in] or smaller)
- Lack of downdrains, overside drains, etc.

While the purpose of the project is to prevent highway damage due to potential culvert failure and increase safety of the traveling public on SR 128 and SR 253, additional benefits of the project are:

- Reduction in ongoing maintenance and replacement costs

- Reduction in risk of environmental damage from roadway failure

The project is included in the District Drainage System of the Roadway Preservation Program (see Project Report, Attachment J). SR 128 and 253 are functionally classified as Rural Minor Arterials and are therefore eligible for Federal participation from the National Highway Funds. The proposed project is scheduled for construction in the 2007/2008 Fiscal Year.

Project Description

Build Alternative

Caltrans and FHWA propose to rehabilitate or replace deteriorated culverts and install standard drainage inlet and outlet structures at 213 locations on SR 128 and 57 locations on SR 253. The proposed project is located on SR 128, a two-lane conventional highway, from KP 0.29 (PM 0.18) to KP 81.41 (PM 50.59); and SR 253, a two-lane conventional highway, from KP 1.59 (PM 0.99) to KP 27.60 (PM 17.15). Trenchless technologies or jacking methods may be utilized to replace the existing culverts at the following locations, KP 35.08 (PM 21.80) and KP 49.84 (PM 30.97) on SR 128, and KP 10.20 (PM 6.34) and KP 10.67 (PM 6.63) on SR 253. Other proposed work includes replacing or adding downdrains, overside drains, anchor assemblies, rock energy dissipaters, and concrete headwalls/endwalls. Replacement of non-standard drainage inlets with standard drainage inlets will also be done at appropriate locations. Ditch grading of the existing channels will be needed to provide for positive and uninterrupted flows, and erosion control will be implemented around culverts where the ground is disturbed. See Figures 2a to 2e for drainage plans and profiles. To rehabilitate or replace culverts, the following techniques will be implemented:

- Replacement of culverts and associated structural elements (headwall and/or endwall).
- At some sites, new drainage inlets (metal or concrete) will be installed.
- Rock energy dissipaters will be necessary at some culvert outlets to stabilize the outlet area and to minimize erosion. Rock energy dissipaters are currently proposed at about 50 of the 270 locations.
- Trenchless technologies or jacking methods will be utilized at some locations if the depth of the culvert below the road surface is too great for excavation or if the work would result in unacceptable traffic delays (see Figure 3a and 3b for examples of culverts requiring this technique).
- Minor grading may occur at various locations when deemed necessary to prevent water buildup at inlets and/or outlets.

- Temporary erosion control will be included to prevent construction material from entering the existing watercourses during construction. Permanent erosion control measures such as hydroseeding, revegetation, and/or using native material, will be included for all disturbed areas, and rock energy dissipaters will be constructed at outlets where needed. Caltrans will implement Best Management Practices (BMPs) as a part of this project.
- Minor vegetation removal may be performed at various locations to improve water flow. At some inlets/outlets, tree removal may be necessary if they are deemed unstable at the time of inlet/outlet removal or incompatible with construction access needs.
- Paving of the invert is proposed at approximately 10 locations. This may be done if the culvert is in generally good condition except at the culvert bottom.
- Plastic Pipe or high-density polyethylene (HDPE) plastic pipe liners will be considered at some locations. The plastic pipe section of liner will be joined together by one of several methods available, inserted into the existing culvert, and then bolted and grouted into place. This supports the following beneficial criteria:
    - Trenching of the highway is avoided, with little or no traffic interference.
    - Sheeting, shoring and bracing is avoided.
    - Minimal use of traffic control will result in significant cost savings.
    - Construction time and inconvenience to the traveling public is reduced.
    - Potential utility conflicts are minimal.
    - Facilities have adequate capacity once lined.

The proposed build alternative is described in the project description in the preceding paragraphs. This project has a build alternative and a “No Build” alternative. Rehabilitation of the existing culverts is the preferred alternative for the following reasons:

- The culverts proposed for rehabilitation are deteriorating and have reached their maximum useful service life.
- Some culverts have a history of plugging up at the inlet due to inadequate pipe size. Others have a history of silt depositing along the entire length of the culvert.
- Cracks appearing in the road directly over the culvert suggest erosion of fine sediment materials around the pipe in the base material.
- Nonstandard diameter culverts need to be upgraded to a minimum size of 600 mm (23.6 in) to decrease instances of flooding and pipe plugging at inlet.

Fish Passage Culverts

Men 128 – KP 32.43 (PM 20.15) Unnamed Creek. Proposed work at this site is limited to invert paving and minor improvements to the existing concrete apron at the outlet to prevent further erosion of the adjacent banks and channel. A temporary access road will not be necessary.

Men 128 – KP 35.08 (PM 21.80) Clow Creek. Proposed work at this site consists of replacing the existing 1.5 m (5 ft) diameter corrugated steel pipe with 3.0 m (10 ft) diameter welded steel pipe. The new pipe will be jacked under SR 128 from the outlet side. The existing culvert will be removed once the new culvert is installed. Gravel at an approximate gradation of 7.6 cm (3 in) or less will be imported to place in the culvert bottom proportionate to what is currently upstream and downstream. A 20 m (65 ft) square area will be required to stage equipment in the outlet channel, and a temporary access road will be constructed down the road embankment west of the existing culvert.

Men 128 – KP 44.32 (PM 27.54) Graveyard Creek. Proposed work at this site consists of retrofitting the existing 2.1 m (6.5 ft) diameter corrugated steel pipe. Retrofits will consist of removal of 9.5 m (31.1 ft) of the culvert at the inlet and construction of a new concrete headwall. The section of the channel where the culvert is removed will be re-graded to natural contours. Two concrete fish weirs will be constructed in the outlet channel. In addition, a roughened channel bottom will be installed in the existing corrugated steel pipe. Temporary access roads will be required at both the inlet and outlet. The access roads will be constructed down the road embankment east and west of the existing culvert, respectively.

Men 128 – KP 59.95 (PM 36.63) Lost Creek. Proposed work at this site consists of retrofitting the existing 2.4 m (7.9 ft) square reinforced concrete box. Retrofits will include invert paving and installation of five concrete weirs on the bottom of the concrete box. In addition, a concrete fishway consisting of six weirs will be constructed in the outlet channel starting at the edge of the existing concrete apron. A temporary access road will be required at the outlet to construct the fishway. The access road will be constructed on the west side of the channel from an existing gravel road that connects to SR 128.

Men 128 – KP 64.18 (PM 39.88) John Hiatt Creek. Proposed work at this site consists of retrofitting the existing 2.1 m (6.5 ft) diameter corrugated steel pipe. Retrofits will include installation of a roughened channel bottom in the existing pipe and construction of three concrete weirs in the outlet channel. Approximately 32 m^2 (345 ft^2) of quarter ton rock slope protection and light rock slope protection will be placed on the banks at the outlet. A temporary access road will be required at the outlet to construct the weirs. The access road will be constructed on the SR 128 embankment west of the existing culvert.

Men 128 – KP 79.92 (PM 49.66) Edwards Creek. Proposed work at this site consists of replacing the existing 1.2 m (4 ft) and 1.5 m (5 ft) diameter corrugated steel pipes with a 4.3 m by 2 m (14 ft x 6.5 ft) double reinforced concrete box. Three inch minus cobble will be imported to place in the culvert bottom. New concrete headwall and endwalls will be constructed and approximately 24 m^2 (260 ft^2) of light rock slope protection will be placed on the banks at the inlet. A temporary access road will not be required as the site is accessible from the highway.

The following are general measures that will apply to the six fish passage culverts along SR 128. See Figures 4a and 4b for examples of culverts requiring fish passage.

- Instream work and work on the banks of the perennial anadromous fish-bearing streams will be conducted between June 15 and October 15.
- Riparian areas outside the designated work areas will be designated as Environmentally Sensitive Areas (ESA) and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
- Dewatering, if necessary, will consist of using sandbags or equivalent method to construct a temporary cofferdam upstream of the work area at the inlet, and downstream of the work area at the outlet. Following construction of the cofferdams, a gravity siphon hose system will be installed to transport upstream flows through the work areas to the channel downstream of the work area. If necessary, a pump will be used to convey flows through the hose.
- Water for dust abatement, if necessary, will be acquired from an offsite source. No drafting will be permitted.
- Measures consistent with the current Caltrans Construction Site Best Management Practices (BMPs) Manual, including the Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf) will be implemented to minimize effects to anadromous fish habitat (e.g., siltation) during construction.
- Graded or otherwise bare areas resulting from construction activities will be revegetated using native species. At least 6 months prior to the start of project construction, Caltrans will prepare detailed construction drawings and specifications for implementation of the revegetation effort. Appendix G contains the revegetation strategy for temporary impacts to riparian vegetation during construction.

The "No Build" Alternative

The "No Build" alternative would not implement any of the culvert improvements included in the proposed project. The no-build alternative could result in highway failure and unsafe road conditions for the traveling public as the pipes may collapse under the roadway, causing the roadway to settle and creating cracks and holes in the surface. Routine and necessary maintenance of deteriorating and inadequate culverts would continue on SR 128 and SR 253 with the "No Build" alternative.

Selection of an Alternative

After the public circulation period, all comments will be considered, and Caltrans and FHWA will select an alternative and make the final determination of the project's effect on the environment. In accordance with CEQA, if no unmitigable significant adverse impacts are identified, Caltrans will prepare a Negative Declaration (ND). Similarly, if FHWA determines the action does not significantly impact the environment, FHWA will issue a Finding of No Significant Impact (FONSI) in accordance with NEPA.

Permits and Approvals Needed

The following permits, reviews, and approvals have been conducted for project construction:

Section 404, Clean Water Act - ACOE

Wetland and nonwetland waters are regulated by the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Clean Water Act (CWA). The ACOE regulates the discharge of dredged or fill material into Waters of the U.S. The proposed project may result in the discharge of fill material into wetland and nonwetland waters that fall under ACOE jurisdiction.

Depending on the circumstances of each culvert replacement, advance notification may be required through the use of the Preconstruction Notification (PCN).

Section 401 Water Quality Certification - Regional Water Quality Control Board

The discharge into Waters of the U.S. will require a water quality certification from the Regional Water Quality Control Board (Board), pursuant to Section 401 of the CWA. Initiation of this process generally involves submittal of application materials to the Board, processing, and receipt of certification with conditions.

Section 1602 Streambed Alteration Agreement - CDFG

Similar to Section 404, work in streambeds must be authorized through an Agreement with California Department of Fish and Game (CDFG). This process is

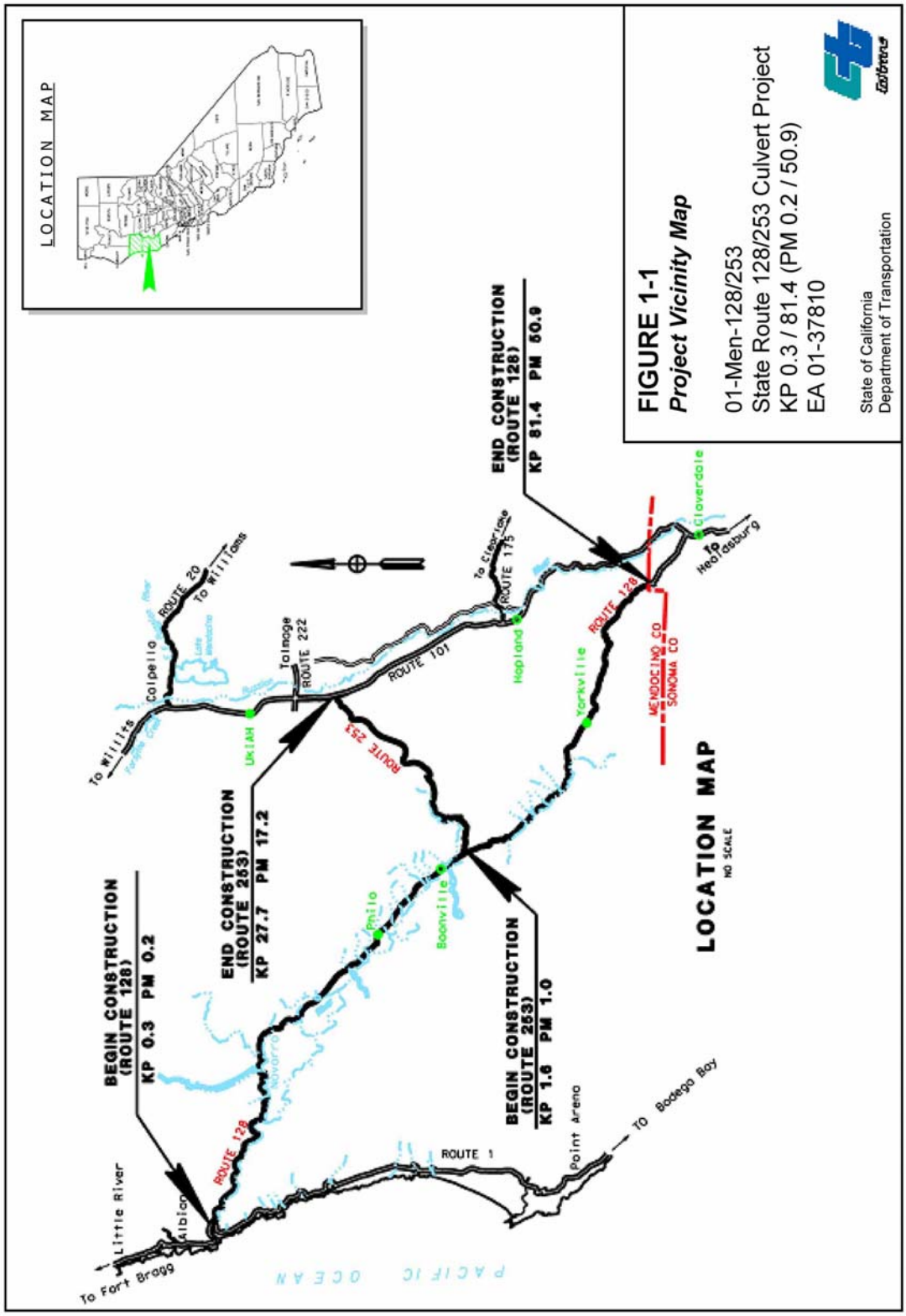
initiated with an application package or Notification. It should be possible to include all of the culvert replacements under a single Notification and Agreement.

Coastal Zone Management Act of 1972 - CZMA

The Coastal Zone Management Act of 1972 (CZMA) is the primary federal law enacted to preserve and protect coastal resources. The CZMA sets up a program under which coastal states are encouraged to develop coastal management programs. States with an approved coastal management plan are able to review federal permits and activities to determine if they are consistent with the state's management plan. Sections of the project occur within the coastal zone and will thus require a permit from the Mendocino County Coastal Commission.

Section 7 of the Endangered Species Act

Section 7 of the Endangered Species Act requires federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species and to consult with U.S. Fish and Wildlife Species (FWS) and /or the National Marine Fisheries Service (NMFS) when a federal action may affect a listed endangered or threatened species to insure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. This process is initiated by the federal agency after determining the action may affect a listed species, and a conference with FWS and/or NMFS is held when a federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. Consultations have been initiated with FWS and NMFS as part of this project.


LOCATION MAP
FIGURE 1-1
Project Vicinity Map
01-Men-128/253
State Route 128/253 Culvert Project
KP 0.3 / 81.4 (PM 0.2 / 50.9)
EA 01-37810
State of California
Department of Transportation
LOCATION MAP
NO SCALE
BEGIN CONSTRUCTION (ROUTE 128) KP 0.3 PM 0.2
END CONSTRUCTION (ROUTE 253) KP 27.7 PM 17.2
BEGIN CONSTRUCTION (ROUTE 253) KP 1.6 PM 1.0
END CONSTRUCTION (ROUTE 128) KP 81.4 PM 50.9
ROUTE 1
ROUTE 101
ROUTE 128
ROUTE 253
ROUTE 20
ROUTE 222
ROUTE 175
To Fort Bragg
To Willits
To Bodega Bay
To Healdsburg
Little River
Albion
Philo
Boonville
Yorkville
Hopland
Ukiah
Talmage
Colpelo
Cloverdale
Point Arena
MENDOCINO CO
SONOMA CO
PACIFIC OCEAN

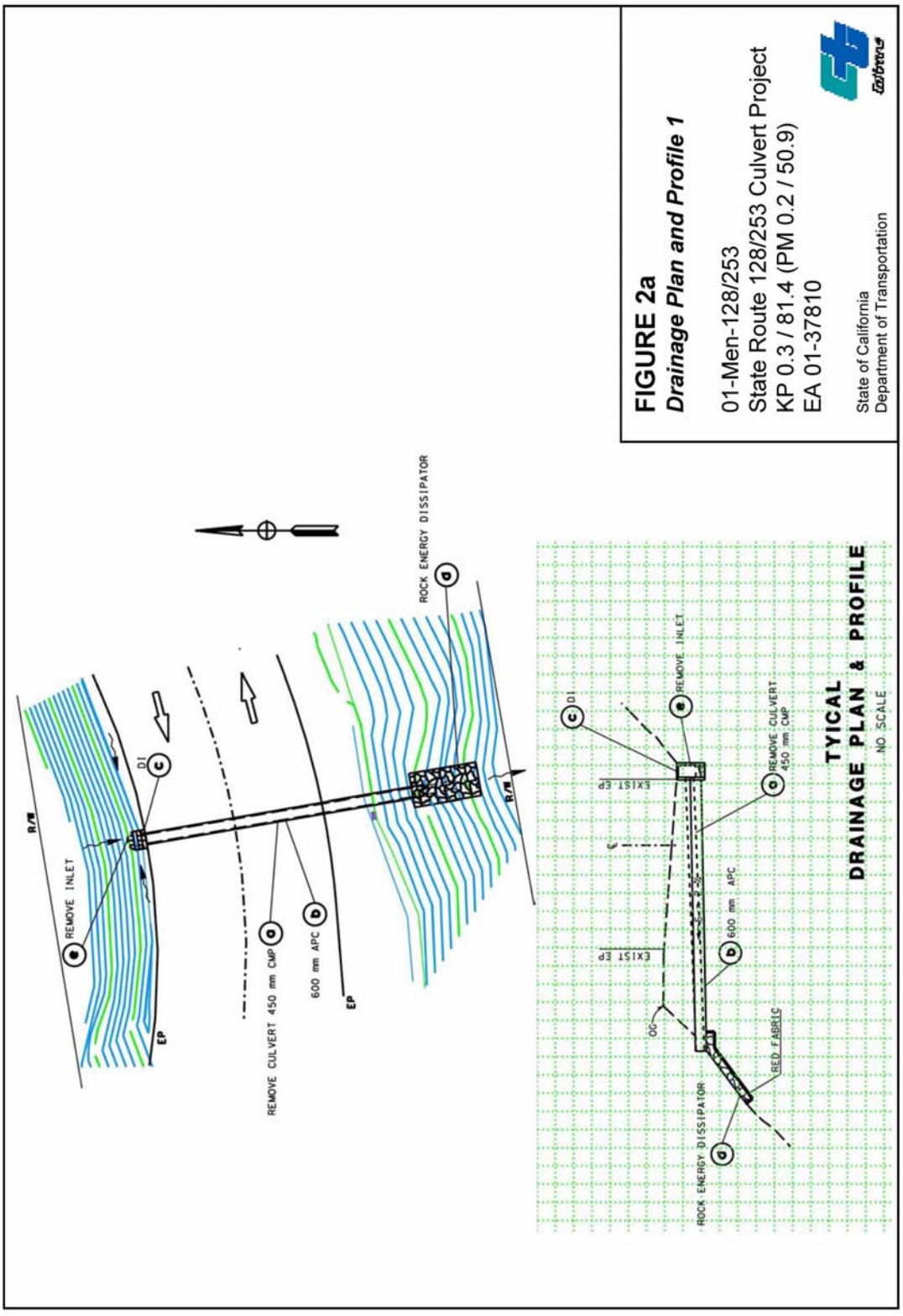


FIGURE 2a
Drainage Plan and Profile 1
01-Men-128/253
State Route 128/253 Culvert Project
KP 0.3 / 81.4 (PM 0.2 / 50.9)
EA 01-37810
State of California
Department of Transportation
ROCK ENERGY DISSIPATOR
REMOVE INLET
DI
REMOVE CULVERT 450 mm CMP
600 mm APC
EP
R/W
TYICAL
DRAINAGE PLAN & PROFILE
NO SCALE
EXIST EP
RED FABRIC

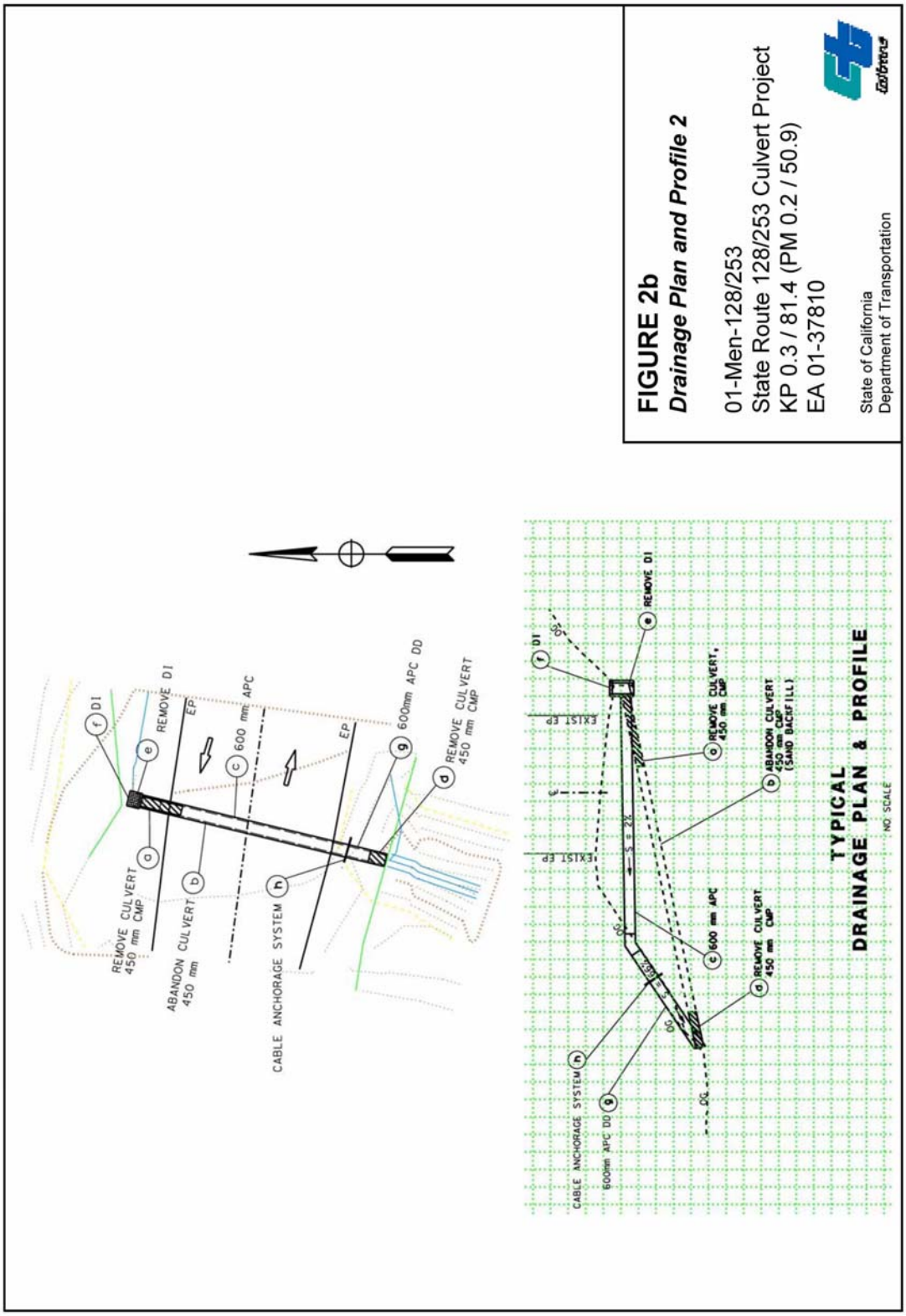


FIGURE 2b
Drainage Plan and Profile 2
01-Men-128/253
State Route 128/253 Culvert Project
KP 0.3 / 81.4 (PM 0.2 / 50.9)
EA 01-37810
State of California
Department of Transportation
TYPICAL
DRAINAGE PLAN & PROFILE
NO SCALE
REMOVE CULVERT 450 mm CMP
ABANDON CULVERT 450 mm
CABLE ANCHORAGE SYSTEM
600 mm APC
600mm APC DD
REMOVE CULVERT 450 mm CMP
REMOVE DI
EP
DI
EXIST EP
ABANDON CULVERT 450 mm CMP (SAND BACKFILL)
REMOVE CULVERT 450 mm CMP
REMOVE CULVERT 450 mm CMP
600 mm APC
REMOVE CULVERT 450 mm CMP
CABLE ANCHORAGE SYSTEM
600mm APC DD

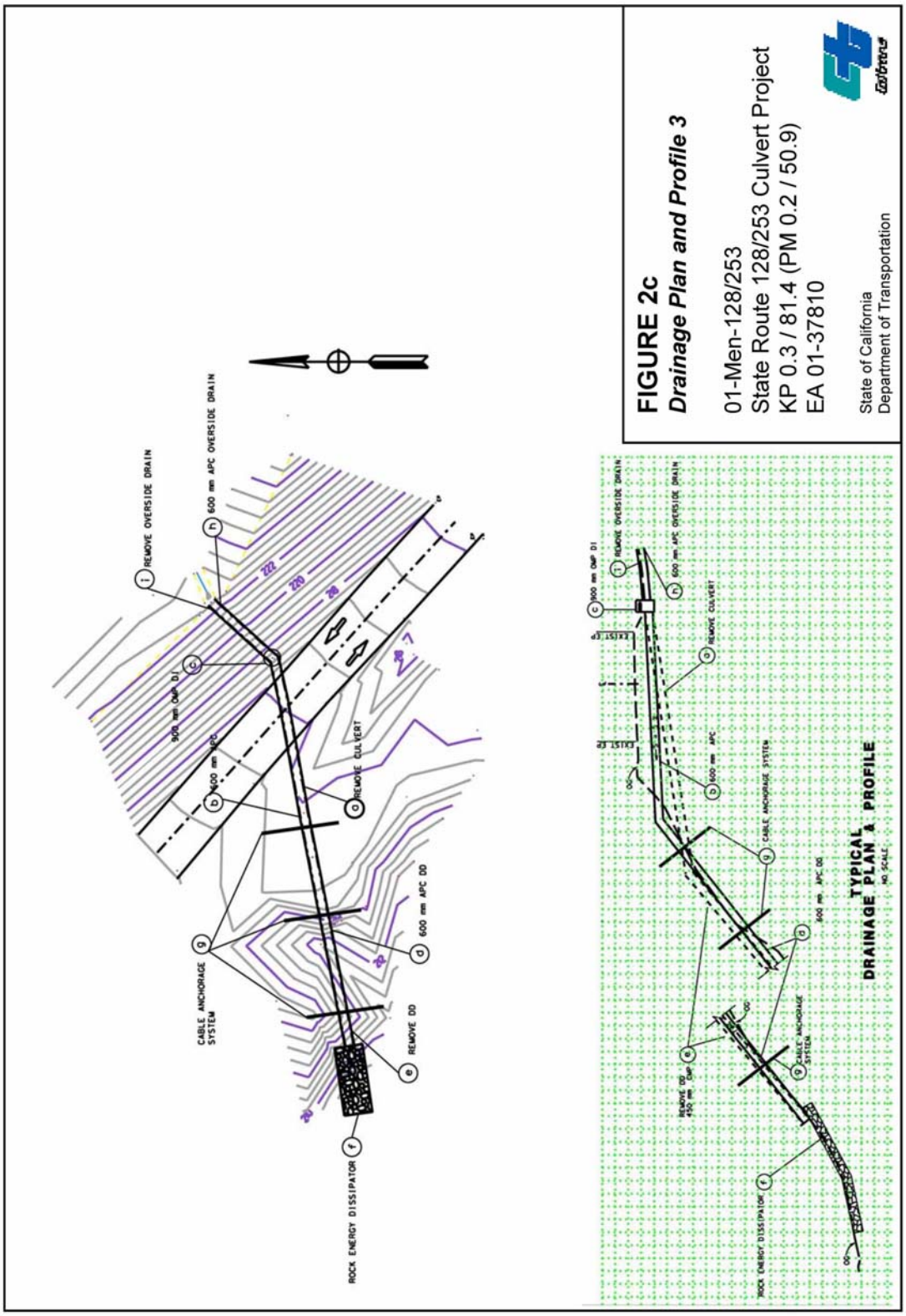


FIGURE 2c
Drainage Plan and Profile 3
01-Men-128/253
State Route 128/253 Culvert Project
KP 0.3 / 81.4 (PM 0.2 / 50.9)
EA 01-37810
State of California
Department of Transportation
TYPICAL
DRAINAGE PLAN & PROFILE
NO SCALE
REMOVE OVERSIDE DRAIN
600 mm APC OVERSIDE DRAIN
900 mm CMP DI
600 mm APC
REMOVE CULVERT
CABLE ANCHORAGE SYSTEM
600 mm APC DD
REMOVE DD
ROCK ENERGY DISSIPATOR
EXIST EP
EXIST CP
222
220
218
216
214
212
210
208
206
204
202
200

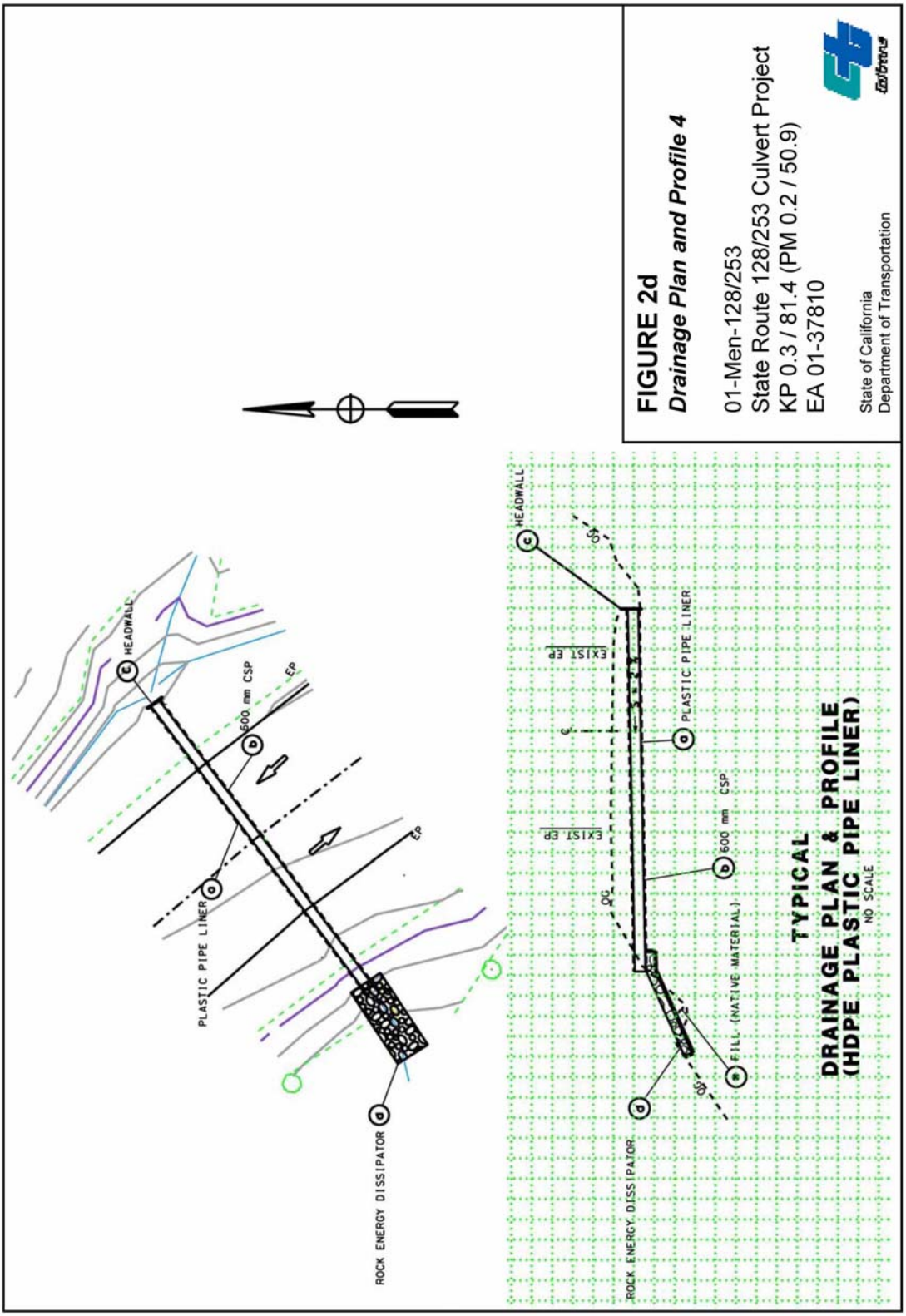


FIGURE 2d
Drainage Plan and Profile 4
01-Men-128/253
State Route 128/253 Culvert Project
KP 0.3 / 81.4 (PM 0.2 / 50.9)
EA 01-37810
State of California
Department of Transportation
HEADWALL
600 mm CSP
EP
PLASTIC PIPE LINER
ROCK ENERGY DISSIPATOR
EXIST EP
PLASTIC PIPE LINER
600 mm CSP
FILL (NATIVE MATERIAL)
TYPICAL
DRAINAGE PLAN & PROFILE
(HDPE PLASTIC PIPE LINER)
NO SCALE

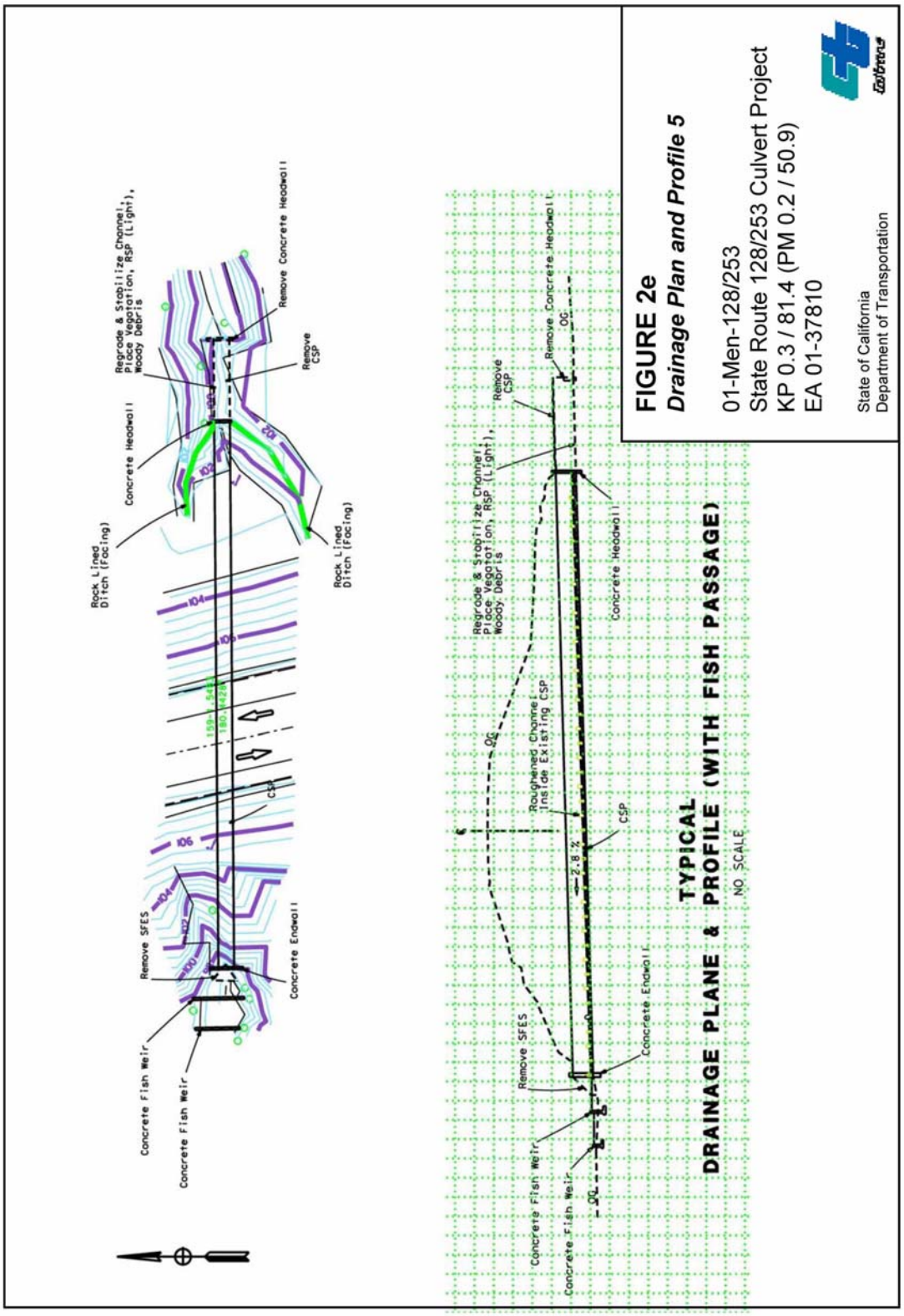
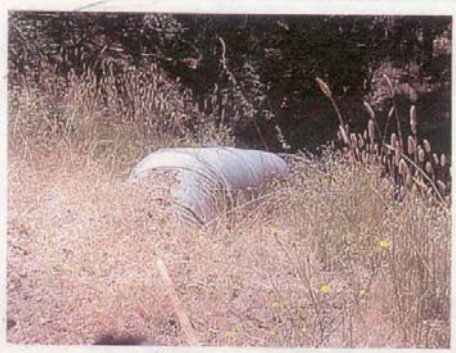


FIGURE 2e
Drainage Plan and Profile 5
01-Men-128/253
State Route 128/253 Culvert Project
KP 0.3 / 81.4 (PM 0.2 / 50.9)
EA 01-37810
State of California
Department of Transportation
TYPICAL
DRAINAGE PLANE & PROFILE (WITH FISH PASSAGE)
NO SCALE
Regrade & Stabilize Channel, Place Vegetation, RSP (Light), Woody Debris
Remove Concrete Headwall
Remove CSP
Concrete Headwall
Rock Lined Ditch (Facing)
Rock Lined Ditch (Facing)
Remove SFES
Concrete Endwall
Concrete Fish Weir
Concrete Fish Weir
Roughened Channel Inside Existing CSP
CSP
OC
2.8 %

Figure 3a Example of a culvert requiring trenchless technologies or jacking methods

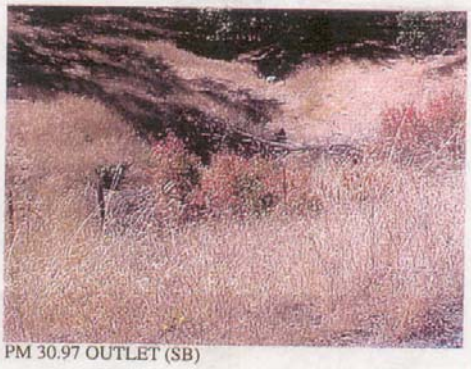


PM 6.30 OUTLET (WB)

PM 6.30 OUTLET (WB)

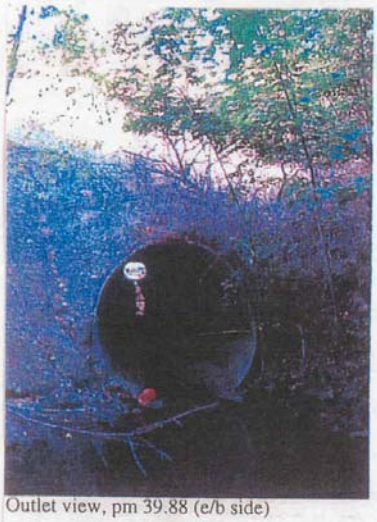
Figure 3b Example of a culvert requiring trenchless technologies or jacking methods

PM 30.97 OUTLET (SB)



PM 30.97 OUTLET (SB)

Figure 4a Example of a culvert requiring fish passage



Outlet view, pm 39.88 (e/b side)

Inlet view, pm 39.88, w/shotcrete

Figure 4b Example of a culvert requiring fish passage

PM 49.66 OUTLET (WB)

PM 49.66 INLET (EB)

CHAPTER 2 - AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND AVOIDANCE, MINIMIZATION &/OR MITIGATION MEASURES

Human Environment

Land Use

Existing and Future Land Use

The project area is largely within the Anderson Valley, a rural, agricultural area between U.S. 101 and the Mendocino coast. SR 253 terminates in Ukiah, the only incorporated city in the area. The unincorporated communities along these routes include Boonville (located near the junction of SR 128 and SR 253), Philo, Navarro, and Yorkville. Outside of the communities, the area is rural and agricultural production dominates the landscape. The Anderson Valley has long been known for its wines, and vineyards are visible along portions of SR 128.

Land use along SR 128 between the coast and Navarro is predominantly timber preserve, with stands of redwoods the dominant feature visible from the road. Between Navarro and Boonville, the road runs through a rich agricultural area where the predominant land use is large land holdings (16 hectare [40 ac] minimum) and grazing. East of Boonville, along both SR 128 and SR 253, the land is well suited to grazing and is designated for use as rangeland.

Consistency with State, Regional, and Local Plans

The project is consistent with state, regional and local plans. Portions of the project fall under the jurisdiction of the Coastal Zone Management Act of 1972 (CZMA), the primary federal law enacted to preserve and protect coastal resources. The CZMA sets up a program under which coastal states are encouraged to develop coastal management programs. States with an approved coastal management plan are able to review federal permits and activities to determine if they are consistent with the state's management plan.

California has developed a coastal zone management plan and has enacted its own law, the California Coastal Act of 1976, to protect the coastline. The policies established by the California Coastal Act are similar to those for the CZMA; they include the protection and expansion of public access and recreation, the protection, enhancement and restoration of environmentally sensitive areas, protection of agricultural lands, the protection of scenic beauty, and the protection of property and life from coastal hazards. The California Coastal Commission is responsible for implementation and oversight under the California Coastal Act.

Just as the federal CZMA delegates power to coastal states to develop their own coastal management plans, the California Coastal Act delegates power to local governments to enact their own local coastal programs (LCPs). LCPs determine the short- and long-term use of coastal resources in their jurisdiction consistent with the California Coastal Act goals.

Parks and Recreation

Department of Transportation Act "Section 4(f)" [49 USC 303] and the Federal-Aid Highway Act [23 USC 138] require that all administrations under the US Department of Transportation (USDOT) and the Federal Highway Administration, respectively, preserve and protect certain types of resources when approving transportation projects. The two laws are essentially identical and the Section 4(f) evaluation serves to comply with both for Federal-Aid highway projects. Section 4(f) applies whenever a federal (USDOT) action involves the use of a publicly owned park, recreation area, wildlife or waterfowl refuge, or land from a historic site. Such land may be used for Federal Aid highway projects only if there is no feasible and prudent alternative and all possible planning has been taken to avoid the use of a 4(f) property or to minimize harm to any 4(f) property affected by the project. Each project proposal must include a 4(f) avoidance alternative.

Sections of the proposed project are located with the Navarro River Redwoods State Park. As it approaches the coast, SR 128 runs along the Navarro River and through Navarro River Redwoods State Park. The park is about 16.30 km (10.13 mi) long, with redwood growth close to the roadway on both the north and south side of the road. Park facilities adjacent to SR 128 include the Paul M. Dimmick Campground, and two other State Parks, Hendy Woods and Mailliard Redwoods, are accessed by way of SR 128 but are not located on the highway. A total of 67 culvert locations occur within the state park boundaries from KP 3.20 to 19.5 (PM 1.99 to 12.12).

The proposed project would have no long-term or permanent impacts on quality of life, land use, recreation, or commerce in this region. No work will be conducted outside of Caltrans right of way; therefore, there will be no impacts to the state park and Section 4(f) is not applicable. Consequently, there is no further discussion regarding these resources in this document.

Farmlands/Timberlands

As part of the scoping and environmental analysis conducted for the project, this environmental resource was considered but no potential for adverse impacts to these resources were identified. Consequently, there is no further discussion regarding impacts to these resources in this document.

Utilities/Emergency Services

The California Highway Patrol and the Mendocino County Sheriff provide law enforcement services in the project area. Fire protection and paramedic services within the project area are provided by the Anderson Valley Fire Department and the California Department of Forestry and Fire Protection. Although traffic delays will occur and traffic patterns will be temporarily disrupted during construction activities, the proposed project will improve operational safety. Provisions in the final Caltrans Transportation Management Plan (TMP) will address concerns regarding circulation and access during the construction period.

The proposed project indicates that staged construction will be necessary to complete the work. The TMP calls for traffic control (including lane closures) not to exceed 1 km (0.62 mi). The final TMP will be produced prior to the construction phase and is expected to allow for the adequate passage of emergency service vehicles in and around the construction zone, as well as to allow for minimum disruption to the traveling public. In addition, Caltrans will implement an early public awareness campaign to inform the public of the proposed construction detours.

Where property owners have utilized state highway culverts to supply segmented parcels with water or electricity, temporary disruptions of the utility are unavoidable. Owners of utilities using culverts will be encouraged to apply for an encroachment permit whether or not the proposed project is constructed. If the project is constructed and property owners provide an encroachment permit and a conduit, Caltrans may create a separate conduit in which the owner may place the utility during culvert replacement.

Traffic and Transportation/Pedestrian & Bicycle Facilities

FHWA directs that full consideration should be given to the safe accommodation of pedestrians and bicyclists during the development of federal-aid highway projects (23 CFR 652, Pedestrian and Bicycle Accommodations and Projects). It further directs that the special needs of the elderly and the disabled must be considered in all federal-aid projects that include pedestrian facilities. When current or anticipated pedestrian and/or bicycle traffic presents a potential conflict with motor vehicle traffic, every effort must be made to minimize the detrimental effects on all highway users who share the facility.

Construction of the proposed project would require temporary restrictions of roadways to a single lane. These closures would likely occur during the summer months, when recreational traffic is at its peak in this area. Table 1, taken from the Transportation Management Plan for this project, shows the maximum closure length at each of the culvert sites for six highway segments. Restriction of roadways to a single lane would have minimal impacts on local and regional traffic. Lane restrictions may result in delays during culvert replacement. Typically, delays as a

result of one-way traffic control are not longer than 15 minutes. Given the rural nature of the project area, delays would be less than 15 minutes for most vehicles, particularly those making short trips during non-peak hours.

Table 1: Peak Hour and Peak Monthly ADT Volumes

Route	Kilopost	Postmile	Culvert Location No.	Peak Traffic Volume (2002)		Maximum Length of Closure
				Peak Hour	Monthly ADT	
128	0.0 / 18.77	0.0 / 11.67	0-56	300	2,750	1500 m (4900 ft)
128	18.77 / R43.19	11.67 / R26.84	57-131	550	5,000	300 m (1000 ft)
128	R43.19 / 45.69	R26.84 / 28.40	132-133	740	6,000	300 m (1000 ft)
128	45.69 / 47.59	28.4 / 29.58	No work	1,000	7,400	No work
128	47.59 / 81.90	29.50 / 50.9	134- 213	270	2,700	1500 m (4900 ft)
253	0.0 / 27.64	0.0 / 17.18	218-270	260	2,900	1500 m (4900 ft)

Source: Caltrans Traffic Management Plan, Culverts Rehabilitation Project

Temporary one-way traffic control may result in vehicle delays of up to 15 minutes at each culvert replacement site. In addition, construction at each location would be brief, lasting less than two days. The brevity and mobility of road closures would ensure that individual closures have minimal impact on residents and businesses in this area.

Because of the large number of culverts to be replaced, the project may involve up to two closures on each of the two highways involved. For the majority of vehicles, this means the possibility of half hour delays en-route to destinations between U.S. 101 and the coast. A small number of vehicles, such as mail and other delivery trucks, may encounter up to four access-controlled sites along the two highways during the peak of construction. This scenario is extremely unlikely given the limited work hours, the use of a 8 km (5 mi) gap between work sites, and advance public notice through the Public Information Office.

The locations of delays would shift on a daily basis as culverts are removed and replaced along SR 253 and SR 128. It is unlikely that traffic control will be required for more than 1.5 days at some locations. The brief duration of these closures ensures that the inconvenience associated with closures would be felt equally by residents and businesses throughout the project area, and that no portion of the project area would be affected for very long.

The TMP prepared for this project recommends that a number of conditions be placed on construction in order to minimize traffic delays and their impact. These include:

- The full width of the traveled way shall be open for use by public traffic from the preceding Friday to the following Monday for special events occurring in Boonville (actual dates should be verified prior to the anticipated construction season), including the Mendocino Fair and Apple Show – third weekend in September, and the Woolgrower's Barbecue and Sheep Dog Trials – fourth weekend in July.
- The full width of the traveled way shall be open for use by public traffic on Saturdays, Sundays, designated legal holidays and the day preceding designated legal holidays, after 3:00 p.m. on Fridays and when construction operations are not actively in progress. If a legal holiday falls on a Monday the full width of the traveled way shall be open on the preceding Friday.
- When construction operations are not actively in progress, the full width of the traveled way shall remain open for public traffic at all times.
- Upon receipt of notice that the traveled way for a direction of travel will be narrowed to less than 4.42 m (14.5 ft), the Resident Engineer shall promptly notify the District Permits Engineer.
- The District Public Information Officer, (707) 445-6444, should be contacted two weeks in advance of the start of construction.
- Any emergency service agency whose ability to respond to incidents may be affected by any lane closure must be notified prior to that closure.
- Where available, a minimum of one paved traffic lane, not less than 3.6 m (11.8 ft) wide and a 1.2 m (3.9 m) shoulder, shall be open for use by public traffic at all times. Otherwise, a minimum of one paved lane, not less than 3.0 m (9.8 ft) wide and a 0.6 m (2.0 ft) shoulder, shall be provided at all times.
- Concurrent lane closures shall be allowed within the project limits subject to the following conditions:
    - No more than two lane closures can occur on a state route corridor (i.e. two on SR 128 and two on SR 253), and the cumulative traffic delay through the corridor does not exceed 30 minutes.
    - Closures shall be separated by at least 8 km (5 mi).
- Pedestrians and bicyclists shall be safely accommodated through the work zone at all times.
- Access to side roads and residences shall be maintained at all times. When work or traffic queues extend through an intersection, additional traffic control and flagging will be required at the intersection.

- If congestion or delays exceed original estimates due to unforeseen events, such as work-zone collision, higher than predicted traffic demand, or delayed closures, the contractor and the Resident Engineer shall use all appropriate resources to restore or minimize effects on traffic. These contingencies should include:
    - Calling for the California Highway Patrol (CHP) or other emergency personnel in the event of a work-zone collision.
    - Picking up the lane closure as soon as it is safe to do so to mitigate significant delay.
    - Assigning personnel to work end-of-queue protection.

Significant traffic impacts are not anticipated provided that the foregoing recommendations are incorporated into the project. In accordance with Deputy Directive-60, District Lane Closure Review Committee approval is not required for projects whose anticipated traffic may delay owners utilizing state highway culverts to supply segmented parcels with water or electricity, therefore, temporary disruptions of the utility are likely to be unavoidable. Deputy Directive 60, Transportation Management Plan, establishes procedures to minimize motorist delays without compromising public or worker safety when implementing projects (CDOT, 2000).

Visual/Aesthetics

NEPA establishes that the federal government uses all practicable means to ensure all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings [42 U.S.C. 4331(b)(2)]. To further emphasize this point, FHWA, in its implementation of NEPA [23 U.S.C. 109(h)], directs that final decisions regarding projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

Likewise, CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state “with…enjoyment of aesthetic, natural, scenic and historic environmental qualities.” [CA Public Resources Code Section 21001(b)]

Motorists traveling along these rural highways have views of both open grassy, oak studded hills and forested areas. The proposed project, being at or close to the highways, will not affect the visual quality for the motorist. Vegetation removal is minimal, and the understory plants will quickly grow back. None of the work proposed should cause a visual impact for residents.

During the Project Report and Environmental design phase, proposed down drains should be reviewed by District Landscape Architect to determine if any down drains over 300 mm (11.8 in) in diameter require a dark coating to minimize glare.

Cultural Resources

The National Historic Preservation Act (NHPA), as amended, sets forth national policy and procedures regarding "historic properties" -- that is, districts, sites, buildings, structures and objects included in or eligible for the National Register of Historic Places. Section 106 of NHPA requires federal agencies to consider the effects of their undertakings on such properties, following regulations issued by the Advisory Council on Historic Preservation (36 CFR 800).

The Native American Graves Protection and Repatriation Act (NAGPRA) addresses the rights of lineal descendants, Indian tribes, and Native Hawaiian organizations to Native American human remains and certain cultural items with which they are affiliated, and directs federal agencies and federally assisted museums to identify and repatriate the cultural affiliation of Native American human remains and related cultural items in holdings or collections under their possession or control.

The Archaeological Resources Protection Act (ARPA) protects archaeological resources on land owned by the United States or Indian tribes. ARPA requires that a permit be obtained before excavation of an archaeological resource on such land can take place.

Under California law, cultural resources are protected by the California Environmental Quality Act (CEQA) as well as Public Resources Code Section 5024.1, which established the California Register of Historic Places. Section 5024.5 requires state agencies to provide notice to, and to confer with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historic resources.

This project will receive federal funding and is, therefore, subject to review under the January 2004 Programmatic Agreement (PA) Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the State Historic Preservation Office, and Caltrans Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California.

In accordance with Stipulation VII and Attachment 2 of the PA, a review of the proposed project has been conducted to assess its potential to affect historic properties.

This project falls under Stipulation VII of the PA, and is a “screened undertaking,” as identified in Attachment 2, Class 12 of the PA, “culvert replacement.” The

conclusions reached as a result of this study were based on the following information.

- Information provided by the Caltrans Design Unit including, but not limited to, the Environmental Study Request, aerial photographs depicting the locations of the culverts to be upgraded, culvert design plans and profiles, a table listing the culverts to be upgraded and the proposed method of replacement or repair (see attachments), and 1960 as-built plans for SR 253.
- Information gathered during conversations with California State Parks archaeologists.
- Information provided as a result of a record search conducted by the Northwest Information Center (NWIC).
- Information provided by the Native American Heritage Commission (NAHC) and Native American groups or individuals identified by the NAHC.
- Requests for information were also sent to groups concerned with local historic cultural resources. No responses were received.
- Information was gathered during visual or pedestrian surveys of each culvert location by a PQS-Lead Surveyor.

A review of as-built plans for SR 253 resulted in the identification of six cultural resources, including a toll road, ranch complexes and residences. These resources were located during pedestrian surveys of the culvert locations and all but one was found to be located outside of the project area. Therefore, it was determined that there exists no potential to affect those resources. Consultation with Gail St. John, Caltrans PQS Principal Architectural Historian, resulted in the conclusion that culvert work near the remaining resource located along SR 253 has no potential to affect cultural resources due to its location approximately 36.6 m (120 ft) west of the resource.

The NWIC identified 92 studies, which resulted in the identification of 23 cultural resources within 0.4 km (0.25 mi) of the project boundaries. Five of the resources are located in the vicinity of culverts scheduled for replacement or upgrade. Four are located along SR 128. The fifth resource is located along SR 253. None of the resources were located during pedestrian surveys. However, the proximity of the culverts to the resources as they were delineated by the NWIC, was given careful consideration. Therefore, there is no potential to affect these resources.

Conversations with a California State Parks archaeologist resulted in the identification of one additional cultural resource located near culverts in the vicinity of Philo on SR 128. Due to its distance from the culverts, it was determined that there is no potential to affect the resource.

The NAHC indicted that no sacred sites were known to exist within the project boundaries. Responses received from both the Sherwood Rancheria in Willits California and the Guidiville Indian Rancheria in Talmage California indicted that no cultural resources associated with Native American populations within the project boundaries were known to exist.

In accordance with the Programmatic Agreement, this undertaking is determined to be a screened undertaking with no potential to affect historic properties. The undertaking is "exempt from further review or consultation under Section 106." This documents compliance with the agreed upon historic preservation procedures. No further cultural resource studies are required unless project plans change to include work not currently identified in the project description or to include additional areas not identified in current project plans.

Physical Environment

Hydrology and Floodplain

Executive Order 11988 (Floodplain Management) directs all federal agencies to refrain from conducting, supporting, or allowing actions in floodplains unless it is the only practicable alternative. FHWA requirements for compliance are outlined in 23 CFR 650 Subpart A.

The 100-year floodplain is defined as "the area subject to flooding by a flood or tide having a one percent chance of being exceeded in any given year." An encroachment is defined as "an action within the limits of the 100-year floodplain."

SR 128 up to approximate KP 1.6 (PM 11.0) is well within the floodplain of the Navarro River and experiences periodic flooding. During the 1997 flood event, the river was 3 m (10 ft) or more above the roadway in some sections. As the river receded, it deposited sediment and debris in the outlet channels. Because the roadway in many locations is actually at the same elevation or maybe even slightly lower than the adjacent floodplain between the road and the river, it was necessary for Caltrans to excavate a channel from the culvert outlets to the Navarro River. All culverts in this project have been field reviewed and analyzed. Approximately 85 of the 270 total facilities in this project, between PM 0.40 and PM 12.12 on SR 128, are within Zone A designated FEMA Floodplains. As currently proposed, none of the work would create an objectionable increase in backwater. Based on all work proposed to date, no increase in backwater will be created such that private properties, structures, or the roadway prism is placed at risk.

The project is proposing to rehabilitate approximately 270 culverts on SR 128 and SR 253, 67 of which are within the Navarro River Redwoods State Park. Of those 67, there are 16 culverts that have previously required excavation of material (sediment

and woody debris along their outlet channels). These 16 culverts will be replaced with large oversized culverts and concrete backfill will be used to raise the flowlines as high as possible, which will help minimize impacts. The culverts generally carry little annual through drainage. Siltation arises when floodwaters recede and the inboard side of the highway has trapped water that cannot flow under the road and to the river. With larger and higher culverts, there will be more cross-sectional area available for drainage even if the channels become filled with sediment and debris.

Water Quality and Storm Water Runoff

The primary federal law regulating Water Quality is the Clean Water Act. Section 401 of the Act requires a water quality certification from the State Board or Regional Board when a project: 1) requires a federal license or permit (a Section 404 permit is the most common federal permit for Department projects), and 2) will result in a discharge to waters of the United States.

Section 402 of the Act establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant (except dredge or fill material) into waters of the United States. To ensure compliance with Clean Water Act Section 402 the State Water Resources Control Board (SWRCB) has issued a NPDES Statewide Storm Water Permit to regulate storm water discharges from Department facilities. The permit regulates storm water discharges from Caltrans right-of-way both during and after construction, as well as from existing facilities and operations.

In addition, the SWRCB has issued a construction general permit for most construction activities covering greater than 0.40 ha (1 ac), that are part of a Common Plan of Development exceeding 2.02 ha (5 ac) or that have the potential to significantly impair water quality. Some construction activities may require an individual construction permit. Caltrans projects that are subject to the construction general permit require a Storm Water Pollution Prevention Plan (SWPPP), while all other projects require a Water Pollution Control Program (WPCP). Subject to Caltrans review and approval, the contractor prepares both the SWPPP and the WPCP. The WPCP and SWPPP identify construction activities that may cause pollutants in storm water and propose measures to control these pollutants.

As part of the scoping and environmental analysis conducted for the project, this environmental resource was considered but no potential for adverse impacts was identified. Please see the biology section for more information about water quality. Consequently, there is no further discussion regarding this resource in this document.

Geology/Soils/Topography

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects "outstanding examples of major geological features." Topographic and geologic features are also protected under CEQA. There would be no issues related to seismicity in the construction and operation of the proposed project.

As part of the scoping and environmental analysis conducted for the project, this environmental resource was considered but no potential for adverse impacts was identified. Consequently, there is no further discussion regarding these resources in this document.

Hazardous Materials

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use. None of the proposed culvert locations are listed on the 1998 Hazardous Waste and Substance Site List as stated in the Initial Site Assessment Memorandum dated February 25, 2002.

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for "cradle to grave" regulation of hazardous wastes.

In addition to the acts listed above, Executive Order 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

Data from the California Division of Mines & Geology indicate the presence of serpentine rock along both SR 128 and SR 253. The North Region Hazardous Waste Office sampled culvert locations for potential asbestos-containing serpentine. Naturally occurring asbestos was detected within the project limits in 10 of 172

samples taken (from 0.25% to 1.50% chrysotile). The positive asbestos samples were isolated to three areas: SR 128 between KP 47.6 and 49.6 (PM 29.58 and 30.82), SR 128 between KP 79.7 and 78.7 (PM 45.91 and 48.89), and SR 253 between KP 0.0 and 1.6 (PM 0.0 and 0.99).

The construction contractor shall prepare a site-specific health and safety plan prior to construction activities. The health and safety plan will address safety issues resulting from construction personnel working in areas containing naturally occurring asbestos. Specifically, the plan will include identification of worker safety hazards, training for job personnel, personal protective gear, air monitoring requirements, dust suppression measures for removing and transporting rock material, and an emergency response plan. The health and safety plan shall conform to Title 8, California Code of Regulations, Construction Safety Orders, Section 1529, and "Asbestos."

If it becomes necessary to transport material containing naturally occurring asbestos, the construction contractor will abide by the following for soil transport:

- The construction contractor will abide by California Air Resources Board regulations for transport and disposal of asbestos-containing material. The contractor will be responsible for safe transport of this material in a manner that minimizes dust generated from the rock material. Restrictions placed on this material include disposal at a facility permitted to accept such material. The person(s) accepting the asbestos-containing material will accept and agree to the following warning: *"Warning! This material may contain asbestos. It is unlawful to use this material for surfacing or any application in which it would remain exposed and subject to possible disturbances. Extreme care should be taken when handing this material to minimize the generation of dust."*

Air Quality

The Clean Air Act as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3) and particulate matter that is 10 microns in diameter or smaller (PM_{10}).

As part of the scoping and environmental analysis conducted for the project, this environmental resource was considered but no potential for adverse impacts was identified. The project is a non-capacity increasing project, and therefore no local or regional air quality impacts are anticipated. Consequently, there is no further discussion regarding this resource in this document.

Noise

NEPA and CEQA provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthful environment.

As part of the scoping and environmental analysis conducted for the project, this environmental resource was considered but no potential for adverse impacts was identified. This project is not interpreted as a Type I project as defined by Caltrans' "Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects" (1998). Consequently, there is no further discussion regarding this resource in this document.

A Type I project is defined by 23 CFR 772 as follows: A proposed Federal or Federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway, which significantly changes either the horizontal or vertical alignment, or increases the number of through traffic lanes.

Biological Environment

Natural Communities

This section discusses natural communities and focuses on biological communities, not individual plant or animal species. The general topography in the project vicinity is characterized by steep and very steep northwest-trending ridges dissected by perennial streams and rivers. The topography along SR 128 and SR 253 within the project limits is characterized by gently sloping, low elevation river valleys with moderately steep intervening ridges. Elevations range from less than 15 m (50 ft) mean sea level (MSL) at the west end of SR 128 to over 600 m (1,980 ft) MSL where SR 253 crosses Pine Ridge between the Anderson and Russian River Valleys. The majority of the project area is below 150 m (500 ft) in elevation.

Climate in the project area is mild with cool rainy winters and warm dry summers. Inland areas are significantly warmer during summer than coastal areas. Average annual minimum and maximum temperatures in Pt. Arena on the coast range from 7.16 to 16.6 °C (44.9 to 61.8 °F), while average annual minimum and maximum temperatures in Ukiah range from 6.4 to 23.3 °C (43.6 to 73.9 °F). The average annual July maximum temperatures for these same locations are 18.6 to 33.9 °C (65.5 °F and 93.1 °F), respectively. Average annual precipitation ranges from 84.2 cm (37.09 in) at Ukiah to 103.83 cm (40.88 in) at Pt. Arena. Although the "rainy season" is generally considered October through May, most of the rainfall occurs between the beginning of November and end of March

A number of plant communities characterize the project area, including Northern Coastal Scrub, California Bay Forest, Alluvial Redwood Forest/Upland Redwood Forest, Mixed Evergreen Forest, Mixed North Slope Cismontane Woodland, Upland Douglas Fir Forest, Red Alder Riparian Forest, North Coast Riparian Scrub, Vernal Marsh, Pasture/Nonnative Grassland, Vineyard/Orchard, and Ruderal/Disturbed. The primary community types are described in the Natural Environment Study (NES) and are presented in order of geographic distribution from west to east (coastal to interior). Community descriptions are generally according to Holland (1986).

Because the project area includes road shoulders and other disturbed area along highways, much of the understory is primarily dominated by nonnative, ruderal species. The composition of this weedy understory is generally consistent throughout the project area, regardless of the overstory community type. These ruderal species are often the dominant plants in the vicinity of culvert inlets and outlets. Common elements of this weedy understory include horsetail (*Equisetum* sp.), quaking grass (*Briza* sp.), common velvet grass (*Holcus lanatus*), wild oat (*Avena* sp.), brome (*Bromus* sp.), annual fescue (*Vulpia myuros*), yellow star-thistle (*Centaurea solstitialis*), hedgehog dogtail (*Cynosurus echinatus*), bur chervil (*Anthriscus caucalis*), plantain (*Plantago* sp.), sweet pea (*Lathyrus latifolius*), clover (*Trifolium* spp.), vetch (*Vicia* sp.), Queen Anne's lace (*Daucus carota*), and others.

In wetter areas, Himalaya blackberry (*Rubus discolor*), reed canary grass (*Phalaris arundinacea*), annual beard grass (*Polypogon monspeliensis*), nutsedge (*Cyperus* sp.), pennyroyal (*Mentha pulegium*), birdsfoot trefoil (*Lotus coriniculatus*), dallis grass (*Paspalum dilatatum*), sweetclover (*Melilotus* sp.), bull thistle *(Cirsium vulgare*), and dock (*Rumex* sp.) are common.

Wetlands and Other Waters

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Clean Water Act (CWA) (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The CWA regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Other waters include navigable waters, interstate waters, territorial seas and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (water-loving) vegetation, wetland hydrology, and hydric soils (soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Section 404 of the CWA establishes a regulatory program that provides that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the Nation’s waters

would be significantly degraded. The Section 404 permit program is run by the U.S. Army Corps of Engineers (ACOE) with oversight by the Environmental Protection Agency (EPA).

The Executive Order for the Protection of Wetlands (E.O. 11990) also regulates the activities of federal agencies with regard to wetlands. Essentially, this executive order states that a federal agency, such as FHWA, cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds: 1) that there is no practicable alternative to the construction, and 2) the proposed project includes all practicable measures to minimize harm.

At the state level, wetlands and waters are regulated primarily by the Department of Fish and Game (CDFG) and the Regional Water Quality Control Boards (Board). In certain circumstances, the Coastal Commission may also be involved. Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of the ACOE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from the CDFG.

The Boards were established under the Porter-Cologne Water Quality Control Act to oversee water quality. The Board also issues water quality certifications in compliance with Section 401 of the Clean Water Act. Please see the Water Quality section for additional details.

Many of the culverts in the project area convey natural streams, while others convey man-made drainages that are tributary to natural streams. All of the streams in the project area drain to the Navarro or Russian Rivers, which both flow into the Pacific Ocean. Consequently, all potential jurisdictional waters in the project area are part of a tributary system to navigable waters of the U.S. Natural drainages associated with the culverts in the project area range from large perennial streams and rivers to small, ephemeral drainages.

The majority of the project area falls within the Navarro River watershed. The watershed begins southwest of the community of Yorkville, at the southern end of Mendocino County, and generally follows SR 128 northwest through Anderson Valley. Rancheria Creek is the primary tributary in the southern portion of the watershed. Rancheria Creek meanders toward the north, joining with Anderson Creek near Philo to form the Navarro River. The main stem of the Navarro River continues northward, joining the North Fork Navarro River about 9 river miles inland

from the coast. The North Fork Navarro River, which is divided into north and south branches, drains the area to the east of the community of Navarro. Other main tributaries in the watershed include Mill Creek and Indian Creek. The Navarro River continues northward, emptying into the Pacific Ocean just south of the community of Albion.

The southernmost and easternmost portions of the project area fall within the Russian River watershed. Robinson Creek, which is crossed by SR 253 just southwest of Ukiah; Dry Creek, which parallels SR 128 south of Yorkville; and Edwards Creek, which flows under SR 128 just north of Cloverdale, are the primary Russian River tributaries within the project area. The Russian River flows south past Healdsburg, then turns west, and empties into the ocean at Jenner.

Wetlands are defined as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for a life in saturated soil conditions.”

Potential wetlands or nonwetland waters are present at 135 of the 270 sites examined. At each of these 135 sites, indicators of wetlands (e.g. hydrophytic vegetation) or natural stream flow were observed. Drainages associated with these culverts range from large perennial streams and rivers to small, ephemeral drainages. It is assumed that all wetlands and nonwetland waters present within the project site at each culvert will be impacted. A summary of impacts to potential wetlands and nonwetland waters is presented in Table 2 below.

Table 2: Potential ACOE Jurisdictional Waters in the Project Area

Location	Number of Culverts with Potential Jurisdictional Waters	Area Meeting Corps Wetland Criteria		Area Meeting Corps Nonwetland Criteria		Total Area Meeting Corps Jurisdictional Criteria	
		m^2	Ac	m^2	Ac	m^2	ac
SR-128 Culverts	103	1821	0.45	890	0.22	2711	0.67
SR- 253 Culverts	32	202	0.05	324	0.08	526	0.13
Total	135	2023	0.50	1214	0.30	3237	0.80

Waters subject to regulation by the State under California Fish and Game Code include many of the same areas regulated by the ACOE. For purposes of the delineation, waters subject to CDFG jurisdiction include natural drainages conveyed

by culverts as well as associated riparian habitat falling within the limits of work at each culvert location. Local drainage ditches constructed solely for the purpose of conveying roadside runoff under the highway were not considered subject to CDFG jurisdiction. CDFG waters were identified at 146 sites. It is assumed that all CDFG waters present within the project site will be impacted. A summary of impacts to CDFG jurisdictional waters is presented in Table 3 below.

Table 3: Potential CDFG Jurisdictional Waters in the Project Area

Location	Number of Culverts with Potential Jurisdictional Waters	Total Area Meeting CDFG Jurisdictional Criteria	
		(m^2)	(ac)
SR-128 Culverts	114	4370	1.08
SR-253 Culverts	32	486	0.12
Total	146	4856	1.20

Avoidance and Minimization Measures

Mitigation is required for temporary and permanent impacts to both ACOE 404 wetlands and CDFG 1602 resources. By carefully reviewing proposed work at each culvert location and altering design where feasible, impacts to these resources have been minimized or avoided. It is also proposed to mitigate on-site and in-kind by planting both wetland and riparian vegetation (as applicable) within ACOE and CDFG jurisdictions within limits of our right of way at locations where such resources are being adversely impacted and that will not impair ongoing maintenance activities. Mitigation areas will include both temporarily impacted and un-impacted areas within agency jurisdictions within the limits of our right of way where feasible and practicable in a manner and to an extent adversely impacted jurisdictional areas are restored or replaced at a ratio of at least 1:1. Details about the types of vegetation to be used, locations of culverts requiring mitigation, and specific areas both upstream and downstream to be planted will be presented in the applications for the required North Coast Regional Water Quality Control Board 401 Permit, ACOE 404 Permit, Coastal Development permits, and CDFG 1602 Agreement.

Plant Species

Much of the understory around the culverts is dominated by nonnative (primarily), ruderal species. The project will not remove any large trees, and the impacts will be focused in the understory surrounding the culverts. Based on the approximate limits of work established by Caltrans, the proposed project will result in a maximum

combined total impact area (excluding the road surface) of approximately 13 ha (32 ac). The impact area at each culvert averages 0.05 ha (0.12 ac), and ranges from 0.01 ha (0.03 ac) to 0.20 ha (0.48 ac) across the project site. Because the project area includes road shoulders and other disturbed area along highways, and the impact areas are small, impacts to plant communities will be minimal.

Vegetation in the project area was characterized in accordance with the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), as appropriate. An inventory was taken of all wildlife and plant species observed; a comprehensive species list is contained in Appendix C of the NES.

Leafy-Stemmed Mitrewort

Leafy-stemmed mitrewort (*Mitella caulescens*) is a perennial species that is found in meadows, moist, swampy ground, and in moist, shady woods. This species occurs in broadleafed upland forest, lower montane coniferous forest, meadows and seeps, and north coast coniferous forest. Leafy-stemmed mitrewort has no federal or State status, but is a California Native Plant Society (CNPS) List 2 plant, which provides regulatory protection.

Leafy-stemmed mitrewort was observed growing at two of the culvert locations along SR 128 (KP 3.20 and 3.27 [PM 1.99 and 2.03]). At both locations, this species was growing along the road shoulder near the culvert outlet on the south side of the highway.

Direct temporary effects to this species will occur through temporary removal of portions of the populations and associated topsoil. Implementation of the avoidance and minimization measures listed below will minimize impacts to this species.

The proposed project will result in minimal direct temporary impacts to leafy-stemmed mitrewort. Project impacts are short-term and minimal habitat degradation will occur; therefore, no compensatory measures are needed or proposed. However, due to the temporary nature of impacts, the proposed project is not expected to contribute to cumulative effects to this species.

Avoidance and Minimization Measures

1. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as Environmental Sensitive Areas (ESA) and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
2. Vegetation removal along SR 128 at KP 3.20 and 3.27 (PM 1.99 and 2.03) shall be limited to the minimum necessary to accomplish culvert rehabilitation, and

shall include only riparian and understory growth in the immediate vicinity of the culverts.

3. When possible, impacts to leafy-stemmed mitrewort populations shall be avoided. If impacts cannot be avoided, the leafy-stemmed mitrewort populations and topsoil shall be salvaged and stockpiled during construction. Topsoil shall be replaced immediately following construction.
4. The contractor shall clearly flag or stake the topsoil salvage areas prior to construction. Prior to commencement of topsoil salvaging, a qualified biologist shall approve the flagged topsoil salvage areas. A qualified biologist shall be present during the salvage of these materials and shall approve locations and methods of removal and stockpiling.
5. The salvaged topsoil shall be stockpiled adjacent to the construction area in a weed-free location approved by the qualified biologist. The topsoil stockpiles shall not exceed 0.9 m (3 ft) in height and shall be placed on a weed-free surface. The topsoil stockpiles shall be clearly defined to prevent contamination with other soils and damage or removal prior to replacement.

North Coast Semaphore Grass

North Coast semaphore grass is a federal species of concern, State threatened, and a CNPS List 1B plant. This plant is a perennial herb that occurs in wet, grassy, areas in broadleafed upland forest, meadows, seeps, and north coast coniferous forest.

Suitable habitat for this species is present in the project area, and a small population of this plant was identified in the project area. This population was found at KP 19.59 (PM 12.17) along SR 253 at the edge of the proposed work area along the fenceline for the Esterlina Vineyard. This occurrence is listed in the California Natural Diversity Database (CNDDB), and was confirmed by LSA biologists during focused plant surveys.

Based on the current extent of the north coast semaphore grass population, impacts to this species will be avoided with implementation of the avoidance and minimization measures listed below. Because this species will not be impacted by the proposed project, no compensatory mitigation measures are proposed.

Avoidance and Minimization Measures

1. Preconstruction surveys shall be conducted by a qualified biologist during the blooming period for this species (April-June) in the year preceding project construction. The qualified biologist will map the extent of the north coast semaphore grass population.
2. During construction at KP 19.59 (PM 12.17) along SR 253, measures shall be implemented to prevent encroachment into the adjacent north coast semaphore

grass population. The limits of the population shall be designated as an ESA and shall be clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.

Animal Species

The U.S. Fish and Wildlife Service (FWS) and CDFG share regulatory responsibility for the protection of special-status species. “Special-status” species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species Section in this document for detailed information regarding these species.

This section of the document discusses all the other special-status species, including CDFG fully protected species and species of special concern, and FWS candidate species.

Due to the relatively undeveloped and open nature of the project site, many wildlife species are likely to move through the area. Wildlife expected to occur in and around the project site primarily include birds and mammals, but it is expected that fish, frogs and possibly turtles utilize the aquatic resources in the project area. Thirty-one of the culverts are located along creeks in riparian areas, which often serve as movement corridors for wildlife. In addition, six of the culvert sites convey streams that support or potentially support anadromous salmonids (i.e., a fish passage site).

Special Status Wildlife Species

Table 4 lists species that were determined to have potential to occur within the project area based on specific habitat requirements and surveys of the project area. If a species is known to occur in the project area, or could potentially occur but presence/absence surveys were not conducted, an in-depth discussion is provided for each species in Sections 5.3 and 5.4 of the Natural Environment Study.

Table 4: Special Status Species Potentially Occurring in the Study Area

Scientific Name	Common Name	Status	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Mammals					
Arborimus pomo	Red tree vole	FSC; CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Corynorhinus townsendii pallescens	Pale big-eared bat	FSC; CSC	Y	U	Suitable foraging habitat present in the project area, but no roost sites are located at the culvert sites.
Martes pennanti pacifica	Pacific fisher	FSC; CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Birds					
Accipiter gentilis	Northern goshawk	FSC; CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Brachyramphus marmoratus	Marbled murrelet	FT; SE	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Charadrius alexandrinus nivosus	Western snowy plover	FT; CSC	Y	U	There is no suitable nesting habitat within the project area and the closest documented nesting area is approximately 16 miles north of the project. Suitable foraging habitat is present in the project area.
Dendroica petechia brewsteri	Yellow warbler	CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Haliaeetus leococephalus	Bald eagle	FT; SE	Y	Y	There is at least one record of nesting bald eagles from the project vicinity and foraging has been observed in the Navarro River; potential presence is presumed within areas of suitable habitat. See discussion on the following pages.
Icteria virens	Yellow-breasted chat	CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Pandion haliaetus	Osprey	CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Pelecanus occidentalis	Brown pelican	FE; SE	Y	U	This species may forage in the Navarro estuary within the project area. See discussion on the following pages.
Progne subis	Purple martin	CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Strix occidentalis caurina	Northern spotted owl	FT	Y	U	The northern spotted owl is presumed present in the portion of the project area west of Anderson Valley based on past records and availability of suitable habitat for nesting, roosting, and foraging. Based on available habitat, the northern spotted owl could occur in the vicinity of up to 70 culvert sites.
Reptiles					
Clemmys marmorata marmorata	Northwestern pond turtle	FSC; CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Amphibians					
Rana boylii	Foothill yellow-legged frog	FSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.

Scientific Name	Common Name	Status	Habitat Present (Y/N)	Species Present (Y/N/U)	Rationale
Fish					
Eucyclogobius newberryi	Tidewater goby	FE; CSC	Y	Y	Presumed present in the project area. See discussion on the following pages.
Lavinia symmetricus navaroensis	Navarro roach	CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Oncorhynchus kisutch	Central California Coast coho salmon	FT	Y	Y	Suitable habitat present in the project area. See discussion on the following pages.
Oncorhynchus mykiss irideus	Northern California ESU steelhead	FT; CSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Oncorhynchus mykiss irideus	Central California Coast ESU steelhead	FT	Y	Y	Presumed present in the project area.
Oncorhynchus tshawytscha	California coastal chinook salmon	FT	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Invertebrates					
Helminthoglypta arrosa pomoensis	Pomo bronze shoulderband	FSC	Y	U	Suitable habitat present in the project area. See discussion on the following pages.
Abbreviations: FSC: Federal Species of Concern; FT: Federal Threatened Species; FE: Federal Endangered Species; CSC: California Species of Concern; ST: State Threatened Species; SE: State Endangered Species; U: unknown.					

Red Tree Vole

The red tree vole (*Arborimus pomo*) is a federal and California species of concern. It inhabits Douglas fir, redwood, and montane hardwood-conifer forests from the north coast fog belt near the Oregon border to Sonoma County. This species lives in the tree canopy, generally in large trees, and feeds on the needles, buds, and tender bark of twigs of Douglas fir, grand fir, and western hemlock.

Potential habitat for red tree vole occurs at several of the culvert sites nearer to the coast along SR 128. This species could be present in the project area, but no surveys were conducted. This species requires dense stands of trees, and is unlikely to inhabit trees adjacent to the highway.

Project impacts are short-term and no habitat loss or degradation will occur; therefore, no compensatory measures are needed or proposed. The project is not expected to contribute incrementally to cumulative effects on the red tree vole. However, implementation of the avoidance and minimization measures listed below shall prevent impacts to the red tree vole.

Avoidance and Minimization Measures

1. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15.2 cm (6 in) diameter at breast height (dbh) shall be removed.

2. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope or equivalent prior to beginning construction.
3. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than two hours total) at any given site and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.
4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Pale Big-Eared Bat

The pale big-eared bat (*Corynorhinus townsendii pallescens*) lives in a wide variety of habitats, but is most common in mesic sites. This species roosts in caves, tunnels, mines, buildings, and other structures free from human disturbance. The pale big-eared bat is a federal and State species of concern.

No suitable roosting sites are located at any of the culvert sites, but this species could forage in the project area. No suitable roost sites for the pale big-eared bat will be removed by the project. Since all work will be conducted during daylight hours, the project will not impact bats that may forage in the project area.

The project will not contribute incrementally to cumulative effects on the pale big-eared bat. Since the pale big-eared bat will not be impacted by the proposed project, no compensatory measures are needed or proposed. However, the following avoidance and minimization measures should be followed.

Avoidance and Minimization Measures

1. Measures shall be implemented at each culvert site to prevent encroachment into adjacent natural areas. All naturally vegetated areas outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
2. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Pacific Fisher

The Pacific fisher (*Martes pennanti pacifica*) is a federal and State species of concern. This species inhabits intermediate to large-tree stages of coniferous forests

and deciduous-riparian areas with high percent canopy closure. The Pacific fisher utilizes cavities, snags, logs, and rocky areas for cover and denning.

There is suitable habitat for this species in the project area, but it is unlikely that den sites would be located in close proximity to the culvert sites due to the high level of disturbance at the road edge.

Project impacts are short-term and no habitat loss or degradation will occur; therefore, no compensatory measures are needed or proposed. With implementation of avoidance and minimization measures as listed below, the project is not expected to impact the pacific fisher. Nor will the project contribute incrementally to cumulative effects on the pacific fisher.

Avoidance and Minimization Measures

1. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15.24 cm (6 in) dbh shall be removed for the project.
2. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.
4. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than 2 hours total) at any given site, and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.

Northern Goshawk

The northern goshawk (*Accipiter gentilis*) is a federal species and State species of concern. This species nests in many of the mountain ranges in California including the North Coast Ranges, the Sierra Nevada, Klamath, Cascade, and Warner Mountains, and prefers middle and higher elevations. The northern goshawk nests in coniferous forest, usually on north slopes near water, and is extremely defensive of nesting territory.

Suitable habitat is present in the project area, although it is not optimal. It is unlikely that this species nests in the vicinity of the culvert sites due to the proximity of the road. Northern goshawks are extremely defensive of their nesting area and would

have been detected during habitat and plant surveys if they were nesting in the project area.

No habitat suitable for the northern goshawk will be removed by the project, but project-related noise could potentially affect this species if birds are present and noise levels substantially exceed ambient conditions. No compensatory measures are needed or proposed. The project will not contribute incrementally to cumulative effects on the northern goshawk. However the following avoidance and minimizations measures shall be followed.

Avoidance and Minimization Measures

1. A preconstruction survey shall be conducted by a qualified biologist no more than 2 weeks prior to the start of construction. If an active goshawk nest is discovered in the vicinity of a culvert project, work at that location shall be deferred until the end of the nesting season (September 15) or until a qualified biologist confirms that the young have fledged or are otherwise no longer present.
2. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. Jackhammers or similar machinery that produce high intensity sounds shall only be used for short duration (less than 2 hours total) at any given site, and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.
4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed. Project impacts are short-term and no habitat loss or degradation will occur.

Marbled Murrelet

The marbled murrelet (*Brachyramphus marmoratus marmoratus*), is federally listed as threatened in Washington, Oregon, and California. It is also a State endangered species. The nesting range of the species extends to central California (Monterey Bay), and some birds winter in southern California. The murrelet is a small sea-bird that spends most of its life in the nearshore marine environment, but returns inland to nest and roost in low-elevation old growth or mature forests, or other forest types that contain remnant large trees, primarily within the marine fog belt region near the coast. A variety of tree species are used including coast redwood, Douglas fir, western red cedar, western hemlock and Sitka spruce. Most nesting areas are within

40 km (25 mi) of the coast; the farthest inland that nests have been found ranges from about 56 to 84 km (35 to 52 mi).

Although there are no CNDDB records for marbled murrelets in Mendocino County, offshore sightings indicate that murrelets are nesting in the County. The western portion of the project area (west of Philo), along the Navarro River, supports some remaining stands of old growth forest that could be utilized by this species for nesting and roosting. Suitable habitat for murrelets reportedly occurs at Paul Dimmick Campground on SR 128 near PM 9 (Rene Pasquinelli, Navarro River Redwoods State Park, pers. comm.). Suitable nest trees (generally greater than 81.3 cm [32 in] dbh) are available and the forest is dense with an overlapping canopy. CDFG research from 1997-1998 concluded that Navarro River Redwoods State Park, Hendy Woods Sate Park, Montgomery Woods State Reserve, and Mailliard Redwoods State Reserve all provide suitable nesting habitat for marbled murrelets (E. Burkett, CDFG, pers. comm.). Research also indicates that murrelets may utilize roadways, logging roads, rivers, and streams as movement corridors between the coast and nest sites, resting in small patches of old growth forest (Esther Burkett, CDFG, pers. comm.).

Within the project vicinity, critical habitat units for the marbled murrelet have been designated at Hendy Woods State Park, located west of Philo, and Mailliard Redwoods State Reserve, located southwest of Ornbaun Valley. The northeast boundary of Hendy Woods State Park is parallel to and about 366 m (1,200 ft) southwest of SR 128 at the closest point. Suitable murrelet habitat is located on the northeast-facing slope above the project area. Mailliard Redwoods State Reserve is about 3.2 km (2 mi) southwest of SR 128. The project will not contribute incrementally to cumulative effects on the marbled murrelet. Project impacts are short-term and no habitat loss or degradation will occur. No compensatory measures are needed or proposed. However, the following avoidance and minimizations measures shall be followed.

Avoidance and Minimization Measures

1. To minimize disturbance during the more critical early part of the marbled murrelet breeding season, no work shall be performed along SR 128 at the 70 locations between and including PM 1.94 and 12.12 prior to July 9 each year.
2. During the marbled murrelet nesting period, March 24-September 15, all work involving loud equipment (e.g., jackhammers) performed along SR 128 at the 70 locations between and including KP 3.12 and 19.5 (PM 1.94 and 12.12) shall be limited to the hours between 10:00 am and 4:00 pm, when murrelets are less likely to be in the project area.
3. If an active murrelet nest is discovered in the vicinity of a culvert project, work at that location shall be deferred until the end of the nesting season (September 15)

or until a qualified biologist confirms that the young have fledged or are otherwise no longer present.

4. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15.2 cm (6 in) dbh shall be removed for the project.
5. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
6. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than two hours total) at any given site, and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.
7. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.
8. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

Western Snowy Plover

The pacific coast population of the western snowy plover (*Charadrius alexandrinus nivosus*) is federally listed as threatened, and is a State species of concern. The pacific coast population is defined as those individuals that nest adjacent to or near tidal waters, and includes all nesting colonies on the mainland coast, peninsulas, offshore islands, adjacent bays, and estuaries. This species nests on coastal beaches primarily from southern Washington to southern Baja California, Mexico, with the majority of nesting birds found in California. Preferred coastal nesting habitats include sand spits, unvegetated beach strands, open areas around estuaries, dune-backed beaches, beaches at river mouths, and sand spits. Other less common nesting habitats include salt pans, coastal dredged spoil disposal sites, dry salt ponds, and salt pond levees. Snowy plovers breed in loose colonies ranging from 2 to more than 300 adult birds. Snowy plovers winter on the coast, primarily from Bodega Bay southward.

There is one CNDDB record for the western snowy plover from Mendocino County. This is a 1978 record for a nesting colony at MacKerricher Dunes, about 3 miles north of Fort Bragg. Local biologists report that this species has not been observed in the project area and is limited to MacKerricher Dunes (Rene Pasquinelli, Navarro River Redwoods State Park, pers. Comm.; Robert Douglas, Mendocino Redwood Lumber Company, pers. comm.). The Navarro River estuary, which is about 25.7 km (16 mi) south of Fort Bragg, appears to provide suitable foraging habitat for plovers, although the most suitable areas are west of the project limits where there is less riparian cover. It is possible that plovers could nest on beaches near the Navarro River estuary and occasionally forage along the riverbanks near the westernmost culvert locations. The absence of records or sightings from this area indicates use of the project area is unlikely.

The culvert rehabilitation project is not expected to have any effect on nesting activity of snowy plovers. There is no suitable nesting habitat within the project area and the closest documented nesting area is about 25.7 km (16 mi) north of the project. Work at the westernmost culvert sites could affect foraging activity should birds be present during construction. Potential impacts include temporary displacement from foraging areas or temporary degradation of foraging habitat. The latter will be minimized through application of Caltrans BMPs. The project will not contribute incrementally to cumulative effects on the western snowy plover. No compensatory measures are needed or proposed for this species. However the following avoidance and minimizations measures shall be followed.

Avoidance and Minimization Measures

The following measure has been incorporated into the project to minimize potential effects to the western snowy plover:

1. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf). Construction BMPs minimize potential effects upon species by minimizing sedimentation entering the Navarro River.

Yellow Warbler and Yellow-Breasted Chat

The yellow warbler (*Dendroica petechia brewsteri*) and yellow-breasted chat (*Icteria virens*) are State species of concern, but have no federal status. These two songbird species inhabit riparian habitats. The yellow warbler prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging. The yellow-breasted chat nests in dense riparian vegetation consisting of willows, blackberry and wild grape.

Surveys were not conducted for yellow warbler or yellow-breasted chat. Suitable nesting habitat for yellow warbler and yellow-breasted chat is present at 31 of the culvert sites, but it is unlikely that these species nest in the vicinity of the culvert sites due to the proximity of the road.

With implementation of the avoidance and minimization measures listed below, the culvert rehabilitation project is not expected to have any effect on nesting activity of yellow warblers or yellow-breasted chats. The project will not contribute incrementally to cumulative effects on the yellow warbler or the yellow-breasted chat.

Avoidance and Minimization Measures

1. A preconstruction survey shall be conducted at the culverts with suitable nesting habitat by a qualified biologist no more than 2 weeks prior to the start of construction. If nesting birds are identified in the project area, CDFG shall be contacted and a work window may be implemented for portions of the project (i.e., depending on the proximity to the nest).
2. All construction will be conducted during daylight hours.

Bald Eagle

In 1967, the bald eagle (*Haliaeetus leucocephalus*) was federally listed as endangered in the lower 48 states. FWS reclassified this species as threatened in the lower 48 states in 1995. In 1999, FWS proposed to remove this species from the List of Endangered and Threatened Wildlife. No final ruling has been issued regarding the species' federal status. The bald eagle is a State endangered species.

Bald eagles winter throughout most of California at lakes, reservoirs, river systems, and some rangelands and coastal wetlands. The breeding range is primarily in mountainous habitats near reservoirs, lakes, and rivers, mainly in the northern two-thirds of the state, in the Central Coast Range, and on Santa Catalina Island.

The CNDDB (2002) includes one record of nesting bald eagles in Mendocino County in 2000. This is from Ornbaun Valley, in the southern portion of the project area. Although the immediate project area does not include habitats typically preferred by bald eagles, the species has been observed foraging along the Navarro River (Robert Douglas, Mendocino Redwood Lumber Company, pers. comm.). The nesting record for Ornbaun Valley, and foraging activity along the Navarro River, indicate that suitable habitat does occur in the project vicinity, and the presence of this species within the project area cannot be ruled out. Potential presence is inferred within areas of suitable habitat.

The culvert rehabilitation project will not remove or degrade any suitable habitat for the bald eagle, and potential effects to this species are limited to construction-related effects (i.e., noise, water quality degradation). Given the bald eagle's tendency for nest sites free from disturbance, it is highly unlikely that eagles would nest anywhere

near State highways where the ambient noise level and degree of disturbance are relatively high.

Although the majority of project-related noise will be similar in volume, duration, and pattern to the range of ambient noise levels currently occurring from traffic along SR 128, occasional activities (e.g., backup alarms, pavement cutting, jackhammers) may produce sounds that fall outside the normal ambient condition.

No habitat suitable for nesting, resting, or foraging by the bald eagle will be removed by the project, but project-related noise could potentially affect these activities if birds are present and noise levels substantially exceed ambient conditions. Nesting has not been observed within the immediate project area and is unlikely to occur; however, foraging has been observed along the Navarro River, and this activity (as opposed to nesting/resting) is more likely to be affected by the project. Since noise and/or water quality degradation could affect foraging activities, the culvert replacement project may affect this species. The short-term nature of the projects and proximity to existing noise sources will reduce the likelihood of any noise-related effects to bald eagles. No compensatory measures are needed or proposed for this species. With inclusion of the avoidance and minimization measures described below that will reduce the potential effects on foraging activities, the project is not expected to adversely affect the bald eagle. Nor will the project contribute incrementally to cumulative effects on the bald eagle.

Avoidance and Minimization Measures

1. To minimize potential effects to foraging bald eagles during the nesting season, no work shall be performed along SR 128 between and including KP 3.12 and 19.5 (PM 1.94 and 12.12) between February 1 and July 9.
2. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf). Construction BMPs minimize potential effects upon species by minimizing sedimentation entering the Navarro River.

Osprey

The osprey (*Pandion haliaetus*) is a State species of concern and has no federal status. This species nests in large trees near ocean shores, bays, freshwater lakes, rivers, and large streams and requires open, clear water for foraging.

The CNDDB reports one record of an osprey nest on the west bank of the Navarro River near SR 128 at KP 5.46 (PM 3.39) from 1985. There is suitable nesting habitat near many of the culvert sites, and osprey could occur in these areas.

No habitat suitable for nesting, resting, or foraging by the osprey will be removed by the project, but project-related noise could potentially affect these activities if birds are present and noise levels substantially exceed ambient conditions.

Increased turbidity in the Navarro River associated with construction activities could affect osprey foraging activities. With the proposed measures (BMPs) to control erosion and minimize turbidity, there should be no adverse effect on osprey foraging due to degraded water quality conditions. No compensatory measures are needed or proposed for this species. With inclusion of the avoidance and minimization measures described below, the project is not expected to impact the osprey, nor will the project contribute incrementally to cumulative effects on osprey.

Avoidance and Minimization Measures

1. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15 cm (6 in) dbh shall be removed for the project.
2. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than 2 hours total) at any given site and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.
4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.
5. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf). Construction BMPs minimize potential effects upon species by minimizing sedimentation entering the Navarro River.

California Brown Pelican

The California brown pelican (*Pelecanus occidentalis californicus*) is one of six recognized subspecies of brown pelican, and is federally and State listed as endangered. Pelicans are colonial nesters and nest on islands free from mammalian predators. Nesting is restricted to islands in the Gulf of California and along the outer

coast from Baja California to West Anacapa and Santa Barbara Islands in Southern California. Non-breeding California brown pelicans range northward along the Pacific Coast from the Gulf of California to Washington and southern British Columbia. Roosting sites provide important resting habitat for breeding and non-breeding birds. Important roosting sites include offshore rocks and islands, river mouths with sand bars, breakwaters, pilings, and jetties along the Pacific Coast and San Francisco Bay.

Although there are no records of brown pelicans in the project area, and they do not breed in this area, the species is wide ranging and pelicans may occur in the project vicinity outside of the breeding season. The Navarro River estuary provides foraging opportunities for pelicans and it is possible that this opportunistic feeder could occasionally forage there outside of the breeding season.

Brown pelicans are an opportunistic species, known to forage in a variety of artificial and highly impacted situations in proximity to intense human activity. It is not expected that noise or human activity associated with the proposed culvert repairs will adversely affect pelicans should they be in the area during construction.

Increased turbidity in the Navarro River associated with construction activities could affect pelican foraging activities in the estuary. No compensatory measures are needed or proposed for this species. With the proposed measures (BMPs) to control erosion and minimize turbidity, there should be no adverse affect on pelican foraging due to degraded water quality conditions. Nor will the project contribute incrementally to cumulative effects on the California brown pelican.

Avoidance and Minimization Efforts

1. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf). Construction BMPs minimize potential effects upon species by minimizing sedimentation entering the Navarro River.

Purple Martin

The purple martin (*Progne subis*) is a State species of concern, but has no federal status. This species uses valley foothill and montane hardwood, valley foothill and montane hardwood-conifer, and riparian habitats. The purple martin also utilizes coniferous forests, including closed-cone pine-cypress, ponderosa pine, Douglas fir, and redwood. This species often nests in old, tall, isolated trees or snags near a water source, and occasionally nests in residential areas.

Suitable nesting habitat for purple martins is present at many of the culvert sites. Surveys were not conducted for this species, but it could nest in the project area.

With implementation of the avoidance and minimization measures listed below, the culvert rehabilitation project is not expected to have any effect on nesting activity of purple martins. The project will not contribute incrementally to cumulative effects on the purple martin.

Avoidance and Minimization Measures

1. A preconstruction survey shall be conducted by a qualified biologist no more than two weeks prior to the start of construction. If nesting birds are identified in the project area, CDFG shall be contacted and a work window may be implemented for portions of the project (i.e., depending on the proximity to the nest).
2. All construction will be conducted during daylight hours.

Northern Spotted Owl

The northern spotted owl (*Strix occidentalis caurina*) is federally listed as threatened; but it has no State status. This owl is an uncommon, permanent resident of heavily forested areas, preferring old growth forest or mixed stands of old growth and mature trees with multi-storied, high canopy cover. Douglas fir, mixed conifer, and coast redwood forest are most commonly used habitat types in California. Northern spotted owls will also use younger forests with characteristics (e.g., multistoried canopy, dense cover) of old growth habitat. Northern spotted owls occur in the coast ranges of Washington, Oregon, and California from southwestern British Columbia south to San Francisco Bay.

There are numerous CNDDB records for northern spotted owls from the project vicinity. Most of the recent records were compiled by Mendocino Redwood Lumber Company. Portions of the project area, particularly along the western end of SR 128 between the coast and Anderson Valley, support remaining stands of old growth forest likely utilized by northern spotted owls. According to information obtained from Mendocino Redwood Lumber Company, there are ten unique northern spotted owl territories within 2.4 km (1.5 mi) of SR 128 between Boonville and the mouth of the Navarro River. Six of these territories had verified reproductive success as recently as 2001. Over 70 sightings of northern spotted owls have been made in this area during the past 3 years. The northern spotted owl is presumed present in the portion of the project area west of Anderson Valley based on past records and availability of suitable habitat for nesting, roosting, and foraging. Based on available habitat, the northern spotted owl could occur in the vicinity of up to 70 culvert sites.

There are no known owl territories associated with SR 253 between Ukiah and Boonville.

Within the project vicinity, critical habitat unit CA-61 has been designated for northern spotted owl. This 1457-hectare (3,600-acre) unit is located approximately 6.4 km (4 mi) north of the west end of SR 253. There are no other critical habitat

units in the vicinity of the project. The project will not contribute incrementally to cumulative effects on the northern spotted owl. Project impacts are short-term and no habitat loss or degradation will occur; therefore, no compensatory measures are needed or proposed.

Avoidance and Minimization Measures

1. No work shall be performed along SR 128 at the 70 locations between and including KP 3.12 and 19.5 (PM 1.94 and 12.12) during the most critical northern spotted owl nesting period, February 1 - July 9.
2. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15 cm (6 in) dbh shall be removed for the project.
3. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
4. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than 2 hours total) at any given site and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.
5. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.
6. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

Northwestern Pond Turtle

The northwestern pond turtle (*Clemmys marmorata marmorata*) is a federal and State species of concern. This species occurs in permanent or nearly permanent bodies of water in a variety of habitats including ponds, marshes, rivers, and irrigation ditches. Suitable habitat must contain basking sites and adjacent upland habitat for egg-laying, usually sandy banks or open grassland.

Suitable habitat for northwestern pond turtle is present at four of the culvert sites. Surveys were not conducted for this species, but it could occur in the project area.

With implementation of the avoidance and minimization measures listed below, the project is not expected to impact the northwestern pond turtle, nor will the project contribute incrementally to cumulative effects on the northwestern pond turtle. No compensatory measures are needed or proposed for the northwestern pond turtle.

Avoidance and Minimization Measures

1. All culvert locations with suitable northwestern pond turtle habitat will be surveyed prior to construction. These culvert locations are located along SR 128 at PM 18.15 (KP 29.21), PM 21.07 (KP 33.91), PM 21.80 (KP 35.08), and PM 49.66 (KP 79.92). If any western pond turtles are detected in the project site, they will be relocated outside of the work boundaries.
2. Riparian areas outside the designated work areas will be designated as ESAs and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).
4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Foothill Yellow-Legged Frog

The foothill yellow-legged frog (*Rana boylii*) is a federal and State species of concern. This species inhabits partially shaded, shallow streams and riffles with a rocky substrate in a variety of habitats including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow types. Foothill yellow-legged frogs require at least some cobble-sized substrate for egg laying.

Suitable habitat for foothill yellow-legged frog is present at 17 of the culvert sites. Surveys were not conducted for this species, but it could occur in the project area. With implementation of the avoidance and minimization measures listed below, the project is not expected to impact the foothill yellow-legged frog. Nor will the project contribute incrementally to cumulative effects on the foothill yellow-legged frog. No compensatory measures are needed or proposed for the foothill yellow-legged frog.

Avoidance and Minimization Measures

1. All culvert locations with suitable habitat will be surveyed prior to construction. If any foothill yellow-legged frogs are detected in the project site, they will be relocated outside of the work boundaries.

2. Riparian areas outside the designated work areas will be designated as ESAs and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).
4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Tidewater Goby

The tidewater goby (*Eucyclogobius newberryi*) is federally listed as endangered and is a California species of concern. This species is endemic to California, where it is restricted to coastal, brackish-water habitats. However, no critical habitat for the tidewater goby has been designated in Mendocino County (U.S. Fish and Wildlife Service, 2000). Historically, the goby was discontinuously distributed from Del Norte to San Diego County. Tidewater gobies complete all life stages in shallow (< 1 m [3.3 ft]), brackish water habitats. Gobies occur in the upper reaches of tidal bays and in coastal lagoons formed at the mouths of rivers and streams. In streams, tidewater gobies inhabit slow moving areas, away from the main current, among submerged and submergent vegetation. Although a wide range of salinities can be tolerated, tidewater gobies are primarily found where salinities are less than 10 parts per thousand (ppt). Populations have also been found in ponded freshwater habitats inland from the coast. Tidewater gobies lack a marine life stage; however, they can tolerate high salinities of the marine environment, which may allow them to recolonize a site after flood events.

The presence of tidewater goby in the Navarro River estuary is inferred. This conclusion is based on previous records from the vicinity (upcoast and downcoast) and presence of suitable habitat. Assuming a potential upstream migration of about 4 km (2.5 miles), 18 culvert sites at the western end of the project occur within the range of the tidewater goby.

Potential impacts to the tidewater goby are limited to water quality degradation resulting from erosion and increased sedimentation in the Navarro River. No work is proposed in the live stream channel within the goby's range, so there will be no direct take of the species or loss of habitat. The potential for water quality impacts would be greatest at six sites within the potential range of the goby where the existing culverts discharge onto the bank of the Navarro River and work would be conducted along the river bank; these sites are at KP 1.06 (PM 0.66), KP 0.71 (PM 1.14), KP 1.17 (PM 0.73), KP 1.27 (PM 0.79), KP 1.32 (KP 0.82), and KP 4.96 (KP 3.08). This work

may include minor grading, vegetation clearing, placement of rock energy dissipaters (currently proposed at one site), and similar activities. The work at each site will be of short duration, and the potential for adverse effects on water quality will be minimized through scheduling of this work outside of the rainy season and application of appropriate BMPs.

The project will not contribute incrementally to cumulative effects on the tidewater goby. No compensatory measures are needed or proposed for the tidewater goby.

Avoidance and Minimization Measures

1. No work shall be conducted within the live stream of the Navarro River within the range of the tidewater goby (KP 0.29 to 3.12/PM 0.18 to 1.94).
2. No work shall be conducted during the rainy season, approximately October 1 through April 30, at sites within the range of the tidewater goby (KP 0.29 to 3.12/PM 0.18 to 1.94).
3. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

Navarro Roach

The Navarro roach (*Lavinia symmetricus navaroensis*) is a California species of concern; it has no federal status. This fish species is a habitat generalist and is found in warm intermittent streams as well as cold, well-aerated streams. The Navarro roach could occur at several of the culvert sites, and is known from the Navarro River.

Potential impacts to the Navarro roach are limited to water quality degradation resulting from erosion and increased sedimentation. The work at each site will be of short duration, and the potential for adverse effects on water quality will be minimized through scheduling of this work outside of the rainy season and application of appropriate BMPs. The project will not contribute incrementally to cumulative effects on the Navarro roach. With implementation of the avoidance and minimization measures listed below, no compensatory measures are proposed.

Avoidance and Minimization Measures

1. Work in non-fish bearing streams (i.e., intermittent or ephemeral streams) will be conducted when the channel is dry. In the event of sudden thunderstorms or other unusual rain events, temporary dewatering (using sandbags or bladders) may be used to avoid siltation of the channel.
2. Riparian areas outside the designated work areas will be designated as ESAs and clearly indicated as such on project construction plans. Project specifications

will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.

3. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the SWPPP and WPCP Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) will be implemented to minimize effects to anadromous fish habitat (e.g., siltation, etc.) during construction.

Central California Coast Coho Salmon, Central California Coast Steelhead, Northern California Steelhead, and California Coastal Chinook Salmon

Salmonids in general require clean, cold, well-oxygenated streams for spawning. Spawning streams must have a substrate of gravel or small cobble to provide safe incubation sites for the eggs.

The proposed project will result in direct permanent effects to Central California Coast (CCC) coho salmon, CCC steelhead, and Northern California (NC) steelhead through loss of Critical Habitat/Essential Fish Habitat (EFH) totaling 0.022 ha (0.05 ac). Permanent habitat loss will occur during placement of rock slope protection (RSP), totaling 0.006 ha (0.015 ac). Direct permanent effects to Critical Habitat/EFH will also occur during construction of fish weirs and fishways, totaling 0.016 ha (0.04 ac). The proposed project will result in direct permanent effects to California Coastal (CC) chinook salmon through loss of Critical Habitat/EFH totaling 0.002 ha (0.005 ac) during the placement of RSP.

Direct temporary effects to CCC coho salmon, CCC steelhead, NC steelhead, and CC chinook will occur through temporary removal/disturbance of Critical Habitat/EFH as a result of construction activities (e.g., staging areas, access roads, etc.). The proposed project will remove approximately 0.21 ha (0.52 ac) of CCC coho salmon Critical Habitat/EFH, 0.11 ha (0.28 ac) of CCC steelhead Critical Habitat, 0.18 ha (0.45 ac) of NC steelhead Critical Habitat, and 0.03 ha (0.07 ac) of CC chinook Critical Habitat/EFH. Temporary habitat impacts will occur during removal of the existing culverts and installation of the new culverts, grading for temporary access, and minor grading to facilitate drainage.

With implementation of the avoidance and minimization measures listed below, the proposed project will not result in indirect effects to CCC coho salmon, CCC steelhead, NC steelhead, or CC chinook.

Although the proposed project will result in permanent and temporary effects to CCC coho salmon, CCC steelhead, and CC chinook salmon, the project will result in a net benefit for these species and their Critical Habitat/EFH. The net benefit is due to replacement or retrofitting of five culverts that potentially provide fish passage. These

repairs will improve fish passage conditions at these sites. The proposed replacement or retrofit will result in decreased velocity, increased water depth, and increased flow area for all life stages of anadromous fish potentially occurring at these sites.

Non-federal activities in the region that affect anadromous fish include local agency (e.g., Mendocino County) road projects, timber harvesting, and vineyard development and operation. These activities affect fish either directly (e.g., stream encroachment during construction) or indirectly (e.g., habitat removal and degradation, increased siltation and urban runoff, etc.). Although construction activities will result in minimal direct permanent and temporary effects through removal or disturbance of Critical Habitat/EFH, the project will result in net beneficial effects to CCC coho salmon, CCC steelhead, and NC steelhead due to improved fish passage conditions through five of the culverts. The proposed project will result in minimal direct and temporary effects to CC chinook Critical Habitat/EFH. All Critical Habitat/EFH temporarily removed during construction will be revegetated using native species. Consequently, the proposed project will not result in substantial cumulative effects to CCC coho salmon, CCC steelhead, NC steelhead, or CC chinook salmon.

The National Oceanic and Atmospheric Administration (NOAA) Fisheries issued a Biological Opinion for the project on January 4, 2005.

Avoidance and Minimization Measures

1. In-stream work and work on the banks of perennial anadromous fish-bearing streams will be conducted between June 15 and October 15.
2. Work in non-fish bearing streams (i.e., intermittent or ephemeral streams) will be conducted when the channel is dry. In the event of sudden thunderstorms or other unusual rain event, temporary dewatering (using sandbags or bladders) may be used to avoid siltation of the channel.
3. Dewatering, if necessary, will consist of using sandbags or equivalent method to construct a temporary cofferdam upstream of the work area at the inlet, and downstream of the work area at the outlet. Following construction of the cofferdams, a gravity siphon hose system will be installed to transport upstream flows through the work area to the channel downstream of the work area. If necessary, a pump will be used to convey flows through the hose.
4. Riparian areas outside the designated work areas will be designated as ESAs and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.

5. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the SWPPP and WPCP Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) will be implemented to minimize effects to anadromous fish habitat (e.g., siltation, etc.) during construction.
6. Water for dust abatement (if necessary) will be acquired from an off-site source. No drafting will be permitted.
7. For those sites located in the redwood forest (i.e., along the Navarro River and North Fork Navarro River), impacts are primarily limited to minor grading of mostly unvegetated understory areas that are covered by a thick layer of duff. At these sites, the duff within the proposed work area will be collected and stockpiled prior to the start of work, and then re-spread on the graded/bare areas following construction. Provided sufficient duff is available to cover all graded/bare areas, no compensatory measures is proposed at these sites.
8. With the exception of item 7 above, graded or otherwise bare areas resulting from construction activities will be revegetated using native species. At least six months prior to the start of project construction, Caltrans will prepare detailed construction drawings and specifications for implementation of the revegetation effort. The guidelines in Appendix G have been prepared to outline the revegetation strategy to be implemented by Caltrans for temporary impacts to riparian vegetation during construction.
9. The proposed work will improve fish passage conditions at five sites, as described in Chapter 1, Project Description, Fish Passage Culverts. In addition, direct effects due to permanent loss of Critical Habitat/EFH from placement of RSP will be minimal, and temporary effects to Critical Habitat/EFH from construction activities will be avoided and/or minimized per the measures described previously in 1-8. Consequently, no compensatory measures are proposed.

Pomo Bronze Shoulderband

The pomo bronze shoulderband is a snail species that is found near the coast in heavily timbered redwood canyons of Mendocino County. This species has no State status, but is a federal species of concern. Surveys were not conducted for the pomo bronze shoulderband. Suitable habitat is present at some of the culvert locations on SR 128, and this species could occur within the project site.

The proposed project may impact the pomo bronze shoulderband. Project construction may directly impact individuals of this species if they are present in the construction area. Direct impacts to this species may also include loss of potential habitat.

The proposed project may result in minimal direct permanent and temporary effects through removal of potential pomo bronze shoulderband habitat. All areas of suitable habitat that are temporarily impacted during construction will be revegetated using native species. Consequently, the proposed project will not result in substantial cumulative effects to pomo bronze shoulderband. Project impacts are short-term and minimal habitat loss or degradation will occur. No compensatory measures are needed or proposed.

Avoidance and Minimization Measures

1. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
2. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the SWPPP and WPCP Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) will be implemented to minimize effects to anadromous fish habitat (e.g., siltation, etc.) during construction.
3. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Invasive Species

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States. The order defines invasive species as "any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health." Federal Highway Administration guidance issued August 10, 1999 directs the use of the state's noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

In compliance with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from FHWA, the landscaping and erosion control included in the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

CHAPTER 3 – COMMENTS AND COORDINATION

Early and continuing coordination with the general public and appropriate public agencies is an essential part of the environmental process to determine the scope of environmental documentation, the level of analysis, potential impacts and mitigation measures and related environmental requirements. Agency consultation and public participation for this project has been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and formal and informal consultation with resource agencies. This chapter summarizes the results of Caltrans efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

The IS/EA will be circulated for public and agency comment for 30 days. In addition, a notice will be sent to allow the public to request a public meeting. If comments are received on the IS/EA during the public availability period and/or at the public meeting, the IS/EA will be modified to reflect all substantive comments and responses to comments. Comments and responses to comments will be included in this chapter in the final IS/EA.

Agency Coordination and Professional Contacts

LSA Associates, Inc. (LSA) met with biologists from the National Oceanic and Atmospheric Agency Fisheries Unit (NOAA Fisheries) and CDFG several times to discuss the potential impacts to anadromous fish. LSA contacted CDFG fisheries biologist Steve Canatta in March 2003, to discuss potential for tidewater goby to occur in the project area. LSA coordinated with CDFG biologist Scott Harris to discuss the potential for anadromous fish to occur at the culvert sites. LSA also contacted CDFG botanist Gene Cooley to discuss potential for special status plants. LSA contacted FWS biologist Ray Bosch (2003) to discuss impacts to tidewater goby, northern spotted owl, marbled murrelet, brown pelican, and snowy plover. LSA also contacted Robert Douglas of Mendocino Redwood Lumber Company (2003) and Renee Pasquinelli of Navarro River – Redwoods State Park to discuss the potential for sensitive species in the project area.

A Biological Assessment was prepared for U.S. Fish and Wildlife Service (FWS) in order to address potential effects to federally listed and proposed species under jurisdiction of FWS.

In addition, Caltrans has consulted with the following: Renee Pasquinelli, Resource Ecologist from State Parks; Sydney Brown, Senior Engineering Geologist from State Parks; and Kris Vyverberg, Engineering Geologist from CDFG.

CHAPTER 4 – LIST OF PREPARERS

This document was prepared by the Caltrans staff, North Region Office of Environmental Management. In addition, LSA prepared biological technical documents for this project. The following staff assisted in the preparation of this document:

Mastri Alvandi, Transportation/Civil Engineer, B.S., Civil Engineering, California State University, Sacramento; 17 years professional experience; Contribution: preparation of the Project Report, assistance in 4F issues with State Parks, coordination with construction on access ramp locations, and assistance in acquisition of permanent and temporary easements.

Michelle D. Beachley, Associate Environmental Planner, B.A. Biological Science and Environmental Studies, M.S., Biological Science in process, California State University, Sacramento; 5 years professional experience. Contribution: preparation of the Initial Study/Environmental Assessment.

Laura Lazzarotto, Landscape Architect, B.A. Landscape Architecture, 22 years professional experience. Contribution: preparation of the Visual Impact Analysis report.

Peter Lewendal, Associate Environmental Planner – Natural Science; BS, Wildlife Management, CSU-Humboldt; 13 years professional experience. Contribution: Consultant review of the NES and BAs.

Aaron Mckeon, Associate Environmental Planner, M.S., Regional Planning, Cornell University; 5 years professional experience. Contribution: preparation of the Community Impact Assessment.

Kendall Schinke, Associate Environmental Planner – Archaeology; B.S. Anthropology; M.A. Anthropology in process, California State University, Sacramento; 10 years archaeological experience in California. Contribution: Historic Property Survey Report.

Benjamin Tam, Transportation Engineer; B.S. Civil Engineering, San Jose State University, 12 years experience preparing Air Quality/Noise Reports. Contribution: preparation of the Air Quality and Noise Reports.

Lee Taubeneck, Sr. Transportation Engineer, M.S., Environmental Engineering, UC Davis; B.A. in Environmental Sciences, University of Virginia, Charlottesville, 20 years professional experience. Contribution: preparation and execution of the roadway/ culvert design workplan, assistance in fish passage and topographical survey task order development, assistance in permits-to-enter, coordination with environmental consultant on work description in B.O.,

assistance in 4F coordination with State Parks, coordination with construction on access ramp locations, and assistance in acquisition of permanent and temporary easements.

Oscar Vasquez, Senior Transportation Engineer., BS in Civil Engineering, University of the Pacific; 18 years professional experience. Contribution: continued project supervision and support.

CHAPTER 5 – DISTRIBUTION LIST

Caltrans and FHWA will circulate the draft CEQA/NEPA document (Initial Study/ Environmental Assessment) to all appropriate parties and agencies, including the following: 1) Responsible agencies, 2) Trustee agencies that have resources affected by the project, and 3) other state and local agencies that have regulatory jurisdiction or that exercise authority over resources that may be affected by the project.

Copies of the document will also made available to the public at local post offices and libraries, including the Mendocino County Libraries in Point Arena and Ukiah; and the U.S. Post Offices in Boonville, Ukiah, Philo, and Point Arena. In addition, a notice will be circulated in the local newspapers offering the public an opportunity for an open house. Copies are also available at the Caltrans District 1, 1656 Union Street, Eureka, CA 95001; and Caltrans District 3 -North Region Environmental Division, Office of Environmental Management at 2389 Gateway Oaks Drive, Suite 100, Sacramento, CA 95833.

Comments received during the initial review period will be incorporated into this document with responses.

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Appendix A – CEQA Checklist

The following California Environmental Quality Act (CEQA) Environmental Significance Checklist is a device that is used to identify and evaluate potential impacts from the proposed activity on physical, biological, social, and economic resources. This checklist is not a NEPA requirement. However, because this project is being funded by state and federal agencies, it is written to comply with CEQA. The words "significant" and "significance" which are used throughout the checklist and subsequent discussions are related to CEQA thresholds only.

One of the basic purposes of the CEQA is to inform government decision makers and the public of impacts from proposed activities, and in particular, those impacts that are either significant or potentially significant. Differences do exist in the way impacts are addressed in CEQA environmental documents, as compared to NEPA environmental documents. While CEQA requires that environmental documents issue a determination of significant or potentially significant impact, NEPA does not. Thus, addressing significant or potentially significant impacts in joint CEQA and NEPA environmental documents can be confusing, especially in those instances when the two laws and implementing regulations have different thresholds of significance.

Under NEPA, an Environmental Assessment (EA) is used to help the Federal agency determine whether an Environmental Impact Statement (EIS) is required by evaluating whether the project will have a significant environmental impact. The EA also discloses the magnitude of the impacts in terms of context and intensity. Once the magnitude of the impacts is disclosed, no judgments or recommendations are made regarding the significance of those impacts.

For the purpose of this joint EA/IS document, determination of significant or potentially significant impacts are made only in the context of CEQA. Although not explicitly identified in this document, impacts in the context of NEPA are assumed to be minimal. Therefore, based upon the results of the technical studies, it has been determined that the appropriate level of NEPA environmental documentation for this project is an Environmental Assessment. Under CEQA, the appropriate level of environmental documentation is an Initial Study.

The technical studies prepared for this environmental analysis (listed in the Table of Contents) are available for review at the Caltrans North Region Environmental Management Office at 2389 Gateway Oaks Drive, Suite 100, Sacramento, CA 95833. Please contact Karen McWilliams at (916) 274-0658 or karen_mcwilliams@dot.ca.gov for more information.

	Potentially Significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
I. **AIR QUALITY –** Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	X
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	X
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	X
II. AESTHETICS – Would the project**:**				
a) Have a substantial adverse effect on a scenic vista?				
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☐	X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	X
III. **AGRICULTURE RESOURCES**: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	X
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	X

	Potentially Significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
IV. BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	X	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	X	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal) through direct removal, filling, hydrological interruption, or other means?	☐	X	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	X	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	X	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	X	☐	☐
V. **CULTURAL RESOURCES** – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	X
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	X
VI. **GEOLOGY AND SOILS** – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	X
ii) Strong seismic ground shaking?	☐	☐	☐	X
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	X
iv) Landslides?	☐	☐	☐	X

	Potentially Significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	X
VII. **HAZARDS AND HAZARDOUS MATERIALS** – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	X	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	X
VIII. **HYDROLOGY AND WATER QUALITY** – Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	X

	Potentially Significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	X
d) Substantially alter existing drainage patterns of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☐	☐	☐	X
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	X
f) Otherwise substantially degrade water quality?	☐	☐	☐	X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	X
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	X
IX. **LAND USE AND PLANNING** – Would the project:				
a) Physically divide an established community?	☐	☐	☐	X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	X
X. **MINERAL RESOURCES** – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	X

	Potentially Significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
XI. **NOISE** – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	X
XII. **POPULATION AND HOUSING** – Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	X
XIII. PUBLIC SERVICES – Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	X
Police protection?	☐	☐	☐	X
Schools?	☐	☐	☐	X
Parks?	☐	☐	☐	X
Other public facilities?	☐	☐	☐	X

	Potentially Significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
XIV. **RECREATION** – Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	X
XV. **TRANSPORTATION/TRAFFIC** – Would the project:				
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?	☐	☐	☐	X
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	X
e) Result in inadequate emergency access?	☐	☐	☐	X
f) Result in inadequate parking capacity?	☐	☐	☐	X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	X
XVI. **UTILITIES AND SERVICE SYSTEMS** – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	X
b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	X
c) Require or result in construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	X
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in	☐	☐	☐	X

	Potentially Significant Impact	Less than significant impact with mitigation	Less than significant impact	No impact
addition to the provider's existing commitments?				
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒
XVII. **MANDATORY FINDINGS OF SIGNIFICANCE** – Does the project:				
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Appendix B – Section 4(f) Evaluation

Section 4(f) of Caltrans of Transportation Act of 1966, codified in federal law at 49 U.S.C. 303, declares that “it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

As part of the scoping and environmental analysis conducted for the project, this environmental resource was considered but no potential for adverse impacts was identified. Although sections of the project area are within the Navarro River Redwoods State Park, no work will be conducted outside of Caltrans right of way. Consequently, there is no further discussion regarding this resource in this document.

Appendix C – Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
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TITLE VI
POLICY STATEMENT

The California Department of Transportation under Title VI of the Civil Rights Act of 1964 and related statutes, ensures that no person in the State of California shall, on the grounds of race, color, national origin, sex, disability, and age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

WILL KEMPTON
Director

Appendix D – Minimization and/or Mitigation Summary

This section includes a summary of minimization and mitigation measures proposed for the project.

Parks and Recreation

The proposed project would have no long-term or permanent impacts on quality of life, land use, recreation, or commerce in this region. No work will be conducted outside of Caltrans right of way; therefore, there will be no impacts to the state park and Section 4(f) is not applicable.

Utilities/Emergency Services

The proposed project indicates that staged construction will be necessary to complete the work. The TMP calls for traffic control (including lane closures) not to exceed 1 km (0.62 mi). The final TMP will be produced prior to the construction phase, and is expected to allow for the adequate passage of emergency service vehicles in and around the construction zone, as well as to allow for minimum disruption to the traveling public. In addition, Caltrans will implement an early public awareness campaign to inform the public of the proposed construction detours.

Where property owners have utilized state highway culverts to supply segmented parcels with water or electricity, temporary disruptions of the utility are unavoidable. Owners of utilities using culverts will be encouraged to apply for an encroachment permit whether or not the proposed project is constructed. If the project is constructed and property owners provide an encroachment permit and a conduit, Caltrans may place the utility in a separate conduit during culvert replacement.

Traffic and Transportation/Pedestrian & Bicycle Facilities

The TMP prepared for this project recommends that a number of conditions be placed on construction in order to minimize traffic delays and their impact. These include:

- The full width of the traveled way shall be open for use by public traffic from the preceding Friday to the following Monday for special events occurring in Boonville (actual dates should be verified prior to the anticipated construction season), including the Mendocino Fair and Apple Show – third weekend in September, and the Woolgrower's Barbecue and Sheep Dog Trials – fourth weekend in July.
- The full width of the traveled way shall be open for use by public traffic on Saturdays, Sundays, designated legal holidays and the day preceding designated legal holidays, after 3:00 p.m. on Fridays and when construction operations are not actively in progress. If a legal holiday falls on a Monday the full width of the traveled way shall be open on the preceding Friday.

- When construction operations are not actively in progress, the full width of the traveled way shall remain open for public traffic at all times.
- Upon receipt of notice that the traveled way for a direction of travel will be narrowed to less than 4.42 m (14.5 ft), the Resident Engineer shall promptly notify the District Permits Engineer.
- The District Public Information Officer, (707) 445-6444, should be contacted two weeks in advance of the start of construction.
- Any emergency service agency whose ability to respond to incidents may be affected by any lane closure must be notified prior to that closure.
- Where available, a minimum of one paved traffic lane, not less than 3.6 m (11.8 ft) wide and a 1.2 m (3.9 m) shoulder, shall be open for use by public traffic at all times. Otherwise, a minimum of one paved lane, not less than 3.0 m (9.8 ft) wide and a 0.6 m (2.0 ft) shoulder, shall be provided at all times.
- Concurrent lane closures shall be allowed within the project limits subject to the following conditions:
    - No more than two lane closures can occur on a state route corridor (i.e. two on SR 128 and two on SR 253), and the cumulative traffic delay through the corridor does not exceed 30 minutes.
    - Closures shall be separated by at least 8 km (5 mi).
- Pedestrians and bicyclists shall be safely accommodated through the work zone at all times.
- Access to side roads and residences shall be maintained at all times. When work or traffic queues extend through an intersection, additional traffic control and flagging will be required at the intersection.
- If congestion or delays exceed original estimates due to unforeseen events, such as work-zone collision, higher than predicted traffic demand, or delayed closures, the contractor and the Resident Engineer shall use all appropriate resources to restore or minimize effects on traffic. These contingencies should include:
    - Calling for CHP or other emergency personnel in the event of a work-zone collision.
    - Picking up the lane closure as soon as it is safe to do so to mitigate significant delay.
    - Assigning personnel to work end-of queue protection.

Significant traffic impacts are not anticipated provided that the foregoing recommendations are incorporated into the project. In accordance with Deputy Directive-60, District Lane Closure Review Committee approval is not required for projects whose anticipated traffic may delay owners utilizing state highway culverts to supply segmented parcels with water or electricity, therefore, temporary disruptions of the utility are likely to be unavoidable.

Visual/Aesthetics

During the Project Report and Environmental design phase, proposed down drains should be reviewed by District Landscape Architect to determine if any down drains over 300 mm (11.8 in) in diameter require a dark coating to minimize glare.

Cultural Resources

In accordance with the Programmatic Agreement, this undertaking is determined to be a screened undertaking with no potential to affect historic properties. The undertaking is "exempt from further review or consultation under Section 106." This documents compliance with the agreed upon historic preservation procedures. No further cultural resource studies are required unless project plans change to include work not currently identified in the project description or to include additional areas not identified in current project plans.

Hazardous Materials

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during project construction.

The construction contractor shall prepare a site-specific health and safety plan prior to construction activities. The health and safety plan should address safety issues resulting from construction personnel working in areas containing naturally occurring asbestos. Specifically, the plan will include identification of worker safety hazards, training for job personnel, personal protective gear, air monitoring requirements, dust suppression measures for removing and transporting rock material, and an emergency response plan. The health and safety plan shall conform to Title 8, California Code of Regulations, Construction Safety Orders, Section 1529, and "Asbestos." (IT Corporation, 2002).

If it becomes necessary to transport material containing naturally occurring asbestos, the construction contractor should follow the following recommendations for soil transport:

- The construction contractor will abide by California Air Resources Board regulations for transport and disposal of asbestos-containing material. The contractor will be responsible for safe transport of this material in a manner that minimizes dust generated from the rock material. Restrictions placed on

this material include disposal at a facility permitted to accept such material. The person(s) accepting the asbestos-containing material will accept and agree to the following warning: *"Warning! This material may contain asbestos. It is unlawful to use this material for surfacing or any application in which it would remain exposed and subject to possible disturbances. Extreme care should be taken when handing this material to minimize the generation of dust."*

Wetlands and Other Waters

Mitigation is required for temporary and permanent impacts to both ACOE 404 wetlands and CDFG 1602 resources. By carefully reviewing proposed work at each culvert location and altering design where feasible, impacts to these resources have been minimized or avoided. It is also proposed to mitigate on-site and in-kind by planting both wetland and riparian vegetation (as applicable) within ACOE and CDFG jurisdictions within limits of our right of way at locations where such resources are being adversely impacted that will not impact ongoing maintenance activities. Mitigation areas will include both temporarily impacted and un-impacted areas within agency jurisdictions within the limits of our right of way where feasible and practicable in a manner and to an extent adversely impacted jurisdictional areas are restored or replaced at a ratio of at least 1:1. Details about the types of vegetation to be used, locations of culverts requiring mitigation, and specific areas both upstream and downstream to be planted will be presented in the applications for the required North Coast Regional Water Quality Control Board 401 Permit, ACOE 404 Permit, Coastal Development permits, and CDFG 1602 Agreement.

Special Status Plant Species

Leafy-Stemmed Mitrewort

The proposed project will result in minimal direct temporary impacts to leafy-stemmed mitrewort. However, due to the temporary nature of impacts, the proposed project is not expected to contribute to cumulative effects to this species. The following minimization and mitigation measures shall be followed.

1. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as Environmental Sensitive Areas (ESA) and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
2. Vegetation removal along SR 128 at KP 3.20 and 3.27 (PM 1.99 and 2.03) shall be limited to the minimum necessary to accomplish culvert

rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts.

3. When possible, impacts to leafy-stemmed mitrewort populations shall be avoided. If impacts cannot be avoided, the leafy-stemmed mitrewort populations and topsoil shall be salvaged and stockpiled during construction. Topsoil shall be replaced immediately following construction.
4. The contractor shall clearly flag or stake the topsoil salvage areas prior to construction. Prior to commencement of topsoil salvaging, a qualified biologist shall approve the flagged topsoil salvage areas. A qualified biologist shall be present during the salvage of these materials and shall approve locations and methods of removal and stockpiling.
5. The salvaged topsoil shall be stockpiled adjacent to the construction area in a weed-free location approved by the qualified biologist. The topsoil stockpiles shall not exceed 0.9 m (3 ft) in height and shall be placed on a weed-free surface. The topsoil stockpiles shall be clearly defined to prevent contamination with other soils and damage or removal prior to replacement.

North Coast Semaphore Grass

Based on the current extent of the north coast semaphore grass population, impacts to this species will be avoided with implementation of the avoidance and minimization measures listed below. Because this species will not be impacted by the proposed project, no compensatory mitigation measures are proposed.

1. Preconstruction surveys shall be conducted by a qualified biologist during the blooming period for this species (April-June) in the year preceding project construction. The qualified biologist will map the extent of the north coast semaphore grass population.
2. During construction at KP 19.59 (PM 12.17) along SR 253, measures shall be implemented to prevent encroachment into the adjacent north coast semaphore grass population. The limits of the population shall be designated as an ESAs and shall be clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.

Special Status Animal Species

Red Tree Vole

With implementation of the avoidance and minimization measures listed below, the project is not expected to impact the red tree vole. Nor will the project contribute incrementally to cumulative effects on the red tree vole.

1. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15.2 cm (6 in) diameter at breast height (dbh) shall be removed.
2. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope or equivalent prior to beginning construction.
3. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than two hours total) at any given site and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.
4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Pale Big-Eared Bat

No suitable roosting sites are located at any of the culvert sites, but this species could forage in the project area. No suitable roost sites for the pale big-eared bat will be removed by the project. Since all work will be conducted during daylight hours, the project will not impact bats that may forage in the project area. The project will not contribute incrementally to cumulative effects on the pale big-eared bat. The following avoidance and minimization measures should be followed.

1. Measures shall be implemented at each culvert site to prevent encroachment into adjacent natural areas. All naturally vegetated areas outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
2. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Pacific Fisher

There is suitable habitat for this species in the project area, but it is unlikely that den sites would be located in close proximity to the culvert sites due to the high level of disturbance at the road edge. With implementation of avoidance and minimization measures as listed below, the project is not expected to impact the pacific fisher. Nor will the project contribute incrementally to cumulative effects on the pacific fisher.

1. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15.24 cm (6 in) dbh shall be removed for the project.
2. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.
4. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than 2 hours total) at any given site, and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.

Northern Goshawk

No habitat suitable for the northern goshawk will be removed by the project, but project-related noise could potentially affect this species if birds are present and noise levels substantially exceed ambient conditions. The project will not contribute incrementally to cumulative effects on the northern goshawk. The following minimization and mitigation measures shall be followed.

1. A preconstruction survey shall be conducted by a qualified biologist no more than 2 weeks prior to the start of construction. If an active goshawk nest is discovered in the vicinity of a culvert project, work at that location shall be deferred until the end of the nesting season (September 15) or until a qualified biologist confirms that the young have fledged or are otherwise no longer present.
2. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. Jackhammers or similar machinery that produce high intensity sounds shall only be used for short duration (less than 2 hours total) at any given site, and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.

4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed. Project impacts are short-term and no habitat loss or degradation will occur.

Marbled Murrelet

Within the project vicinity, critical habitat units for the marbled murrelet have been designated at Hendy Woods State Park, located west of Philo, and Mailliard Redwoods State Reserve, located southwest of Ornbaun Valley. The northeast boundary of Hendy Woods State Park is parallel to and about 366 m (1,200 ft) southwest of SR 128 at the closest point. Suitable murrelet habitat is located on the northeast-facing slope above the project area. Mailliard Redwoods State Reserve is about two miles southwest of SR 128. The project will not contribute incrementally to cumulative effects on the marbled murrelet. The following minimization and mitigation measures shall be followed.

1. To minimize disturbance during the more critical early part of the marbled murrelet breeding season, no work shall be performed along SR 128 at the 70 locations between and including PM 1.94 and 12.12 prior to July 9 each year.
2. During the marbled murrelet nesting period, March 24-September 15, all work involving loud equipment (e.g., jackhammers) performed along SR 128 at the 70 locations between and including KP 3.12 and 19.5 (PM 1.94 and 12.12) shall be limited to the hours between 10:00 am and 4:00 pm, when murrelets are less likely to be in the project area.
3. If an active murrelet nest is discovered in the vicinity of a culvert project, work at that location shall be deferred until the end of the nesting season (September 15) or until a qualified biologist confirms that the young have fledged or are otherwise no longer present.
4. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15.2 cm (6 in) dbh shall be removed for the project.
5. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
6. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than two hours total) at any given site,

and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.

7. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.
8. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

Western Snowy Plover

The culvert rehabilitation project is not expected to have any effect on nesting activity of snowy plovers. There is no suitable nesting habitat within the project area and the closest documented nesting area is about 25.7 km (16 mi) north of the project. Work at the westernmost culvert sites could affect foraging activity should birds be present during construction. Potential impacts include temporary displacement from foraging areas or temporary degradation of foraging habitat. The latter will be minimized through application of Caltrans BMPs. The project will not contribute incrementally to cumulative effects on the western snowy plover. The following measures has been incorporated into the project to minimize potential effects to the western snowy plover:

1. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

Yellow Warbler and Yellow-Breasted Chat

With implementation of the avoidance and minimization measures listed below, the culvert rehabilitation project is not expected to have any effect on nesting activity of yellow warblers or yellow-breasted chats. The project will not contribute incrementally to cumulative effects on the yellow warbler or the yellow-breasted chat.

1. A preconstruction survey shall be conducted at the culverts with suitable nesting habitat by a qualified biologist no more than 2 weeks prior to the start of construction. If nesting birds are identified in the project area, CDFG shall be contacted and a work window may be implemented for portions of the project (i.e., depending on the proximity to the nest).
2. All construction will be conducted during daylight hours.

Bald Eagle

No habitat suitable for nesting, resting, or foraging by the bald eagle will be removed by the project, but project-related noise could potentially affect these activities if birds are present and noise levels substantially exceed ambient conditions. Nesting has not been observed within the immediate project area and is unlikely to occur; however, foraging has been observed along the Navarro River, and this activity (as opposed to nesting/resting) is more likely to be affected by the project. Since noise and/or water quality degradation could affect foraging activities, the culvert replacement project may affect this species. The short-term nature of the projects and proximity to existing noise sources will reduce the likelihood of any noise-related effects to bald eagles. With inclusion of the avoidance and minimization measures described above that will reduce the potential effects on foraging activities, the project is not expected to adversely affect the bald eagle. Nor will the project contribute incrementally to cumulative effects on the bald eagle.

1. To minimize potential effects to foraging bald eagles during the nesting season, no work shall be performed along SR 128 between and including KP 3.12 and 19.5 (PM 1.94 and 12.12) between February 1 and July 9.
2. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

Osprey

No habitat suitable for nesting, resting, or foraging by the osprey will be removed by the project, but project-related noise could potentially affect these activities if birds are present and noise levels substantially exceed ambient conditions.

Increased turbidity in the Navarro River associated with construction activities could affect osprey foraging activities. With the proposed measures to control erosion and minimize turbidity (BMPs), there should be no adverse affect on osprey foraging due to degraded water quality conditions. With inclusion of the avoidance and minimization measures described below, the project is not expected to impact the osprey. Nor will the project contribute incrementally to cumulative effects on osprey.

1. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15 cm (6 in) dbh shall be removed for the project.
2. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project

construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.

3. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than 2 hours total) at any given site and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.
4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.
5. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

California Brown Pelican

Increased turbidity in the Navarro River associated with construction activities could affect pelican foraging activities in the estuary. With the proposed measures to control erosion and minimize turbidity (BMPs), there should be no adverse affect on pelican foraging due to degraded water quality conditions. Nor will the project contribute incrementally to cumulative effects on the California brown pelican.

1. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

Purple Martin

With implementation of the avoidance and minimization measures listed below, the culvert rehabilitation project is not expected to have any effect on nesting activity of purple martins. The project will not contribute incrementally to cumulative effects on the purple martin.

1. A preconstruction survey shall be conducted by a qualified biologist no more than two weeks prior to the start of construction. If nesting birds are identified in the project area, CDFG shall be contacted and a work window may be implemented for portions of the project (i.e., depending on the proximity to the nest).
2. All construction will be conducted during daylight hours.

Northern Spotted Owl

There are no known owl territories associated with SR 253 between Ukiah and Boonville. Within the project vicinity, critical habitat unit CA-61 has been designated

for northern spotted owl. This 3,600-acre unit is located approximately 4 miles north of the west end of SR 253. There are no other critical habitat units in the vicinity of the project. The project will not contribute incrementally to cumulative effects on the northern spotted owl. Project impacts are short-term and no habitat loss or degradation will occur; therefore, no compensatory measures are needed or proposed. However, the following minimization and mitigation measures shall be implemented.

1. No work shall be performed along SR 128 at the 70 locations between and including KP 3.12 and 19.5 (PM 1.94 and 12.12) during the most critical northern spotted owl nesting period, February 1 - July 9.
2. Tree removal shall be limited to the minimum necessary to accomplish culvert rehabilitation, and shall include only riparian and understory growth in the immediate vicinity of the culverts. No trees greater than 15 cm (6 in) dbh shall be removed for the project.
3. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
4. Jackhammers or similar machinery that produces high intensity sounds shall only be used for short duration (less than 2 hours total) at any given site and shall only be operated between the hours of 10:00 am and 4:00 pm. No blasting shall be permitted.
5. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.
6. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

Northwestern Pond Turtle

Suitable habitat for northwestern pond turtle is present at four of the culvert sites. Surveys were not conducted for this species, but it could occur in the project area. With implementation of the avoidance and minimization measures listed below, the project is not expected to impact the northwestern pond turtle. Nor will the project contribute incrementally to cumulative effects on the northwestern pond turtle.

1. All culvert locations with suitable northwestern pond turtle habitat will be surveyed prior to construction. These culvert locations are located along SR 128 at PM 18.15 (KP 29.21), PM 21.07 (KP 33.91), PM 21.80 (KP 35.08), and PM 49.66 (KP 79.92). If any western pond turtles are detected in the project site, they will be relocated outside of the work boundaries.
2. Riparian areas outside the designated work areas will be designated as ESAs and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).
4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Foothill Yellow-Legged Frog

Suitable habitat for foothill yellow-legged frog is present at 17 of the culvert sites. Surveys were not conducted for this species, but it could occur in the project area. With implementation of the avoidance and minimization measures listed below, the project is not expected to impact the foothill yellow-legged frog. Nor will the project contribute incrementally to cumulative effects on the foothill yellow-legged frog.

1. All culvert locations with suitable habitat will be surveyed prior to construction. If any foothill yellow-legged frogs are detected in the project site, they will be relocated outside of the work boundaries.
2. Riparian areas outside the designated work areas will be designated as ESAs and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).
4. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Tidewater Goby

The project will not contribute incrementally to cumulative effects on the tidewater goby. The following avoidances and minimization measures shall be followed.

1. No work shall be conducted within the live stream of the Navarro River within the range of the tidewater goby (KP 0.29 to 3.12/PM 0.18 to 1.94).
2. No work shall be conducted during the rainy season, approximately October 1 through April 30, at sites within the range of the tidewater goby (KP 0.29 to 3.12/PM 0.18 to 1.94).
3. All culvert repair/rehabilitation work, including construction area dewatering, shall be accomplished in accordance with the most current Caltrans Construction Site BMPs Manual, including the SWPPP and WPCP Manuals (http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf).

Navarro Roach

Potential impacts to the Navarro roach are limited to water quality degradation resulting from erosion and increased sedimentation. The work at each site will be of short duration, and the potential for adverse effects on water quality will be minimized through scheduling of this work outside of the rainy season and application of appropriate BMPs. The project will not contribute incrementally to cumulative effects on the Navarro roach. The following minimization and mitigation measures shall be followed.

1. Work in non-fish bearing streams (i.e., intermittent or ephemeral streams) will be conducted when the channel is dry. In the event of sudden thunderstorms or other unusual rain event, temporary dewatering (using sandbags or bladders) may be used to avoid siltation of the channel.
2. Riparian areas outside the designated work areas will be designated as ESAs and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
3. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the SWPPP and WPCP Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) will be implemented to minimize effects to anadromous fish habitat (e.g., siltation, etc.) during construction.

Central California Coast Coho Salmon, Central California Coast Steelhead, Northern California Steelhead, and California Coastal Chinook Salmon

With implementation of the avoidance and minimization measures listed below, the proposed project will not result in indirect effects to CCC coho salmon, CCC steelhead, NC steelhead, or CC chinook.

Although the proposed project will result in permanent and temporary effects to CCC coho salmon, CCC steelhead, and CC chinook salmon, the project will result in a net benefit for these species and their Critical Habitat/EFH. The net benefit is due to replacement or retrofitting of five culverts that potentially provide fish passage. These repairs will improve fish passage conditions at these sites. The proposed replacement or retrofit will result in decreased velocity, increased water depth, and increased flow area for all life stages of anadromous fish potentially occurring at these sites.

1. In-stream work and work on the banks of perennial anadromous fish-bearing streams will be conducted between June 15 and October 15.
2. Work in non-fish bearing streams (i.e., intermittent or ephemeral streams) will be conducted when the channel is dry. In the event of sudden thunderstorms or other unusual rain event, temporary dewatering (using sandbags or bladders) may be used to avoid siltation of the channel.
3. Dewatering, if necessary, will consist of using sandbags or equivalent method to construct a temporary cofferdam upstream of the work area at the inlet, and downstream of the work area at the outlet. Following construction of the cofferdams, a gravity siphon hose system will be installed to transport upstream flows through the work area to the channel downstream of the work area. If necessary, a pump will be used to convey flows through the hose.
4. Riparian areas outside the designated work areas will be designated as ESAs and clearly indicated as such on project construction plans. Project specifications will include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
5. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the SWPPP and WPCP Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) will be implemented to minimize effects to anadromous fish habitat (e.g., siltation, etc.) during construction.
6. Water for dust abatement (if necessary) will be acquired from an off-site source. No drafting will be permitted.
7. For those sites located in the redwood forest (i.e., along the Navarro River and North Fork Navarro River), impacts are primarily limited to minor grading of mostly unvegetated understory areas that are covered by a thick layer of duff. At these sites, the duff within the proposed work area will be collected and stockpiled prior to the start of work, and then re-spread on the graded/bare areas following construction. Provided sufficient duff is available

to cover all graded/bare areas, no compensatory measures is proposed at these sites.

8. With the exception of item 7 above, graded or otherwise bare areas resulting from construction activities will be revegetated using native species. At least six months prior to the start of project construction, Caltrans will prepare detailed construction drawings and specifications for implementation of the revegetation effort. The guidelines in Appendix G have been prepared to outline the revegetation strategy to be implemented by Caltrans for temporary impacts to riparian vegetation during construction.
9. The proposed work will improve fish passage conditions at five sites, as described in Chapter 1. In addition, direct effects due to permanent loss of Critical Habitat/EFH from placement of RSP will be minimal, and temporary effects to Critical Habitat/EFH from construction activities will be avoided and/or minimized per the measures in Section 5.5.19.2 of the NES. Consequently, no compensatory measures are proposed.

Pomo Bronze Shoulderband

The proposed project may result in minimal direct permanent and temporary effects through removal of potential pomo bronze shoulderband habitat. All areas of suitable habitat that are temporarily impacted during construction will be revegetated using native species. Consequently, the proposed project will not result in substantial cumulative effects to pomo bronze shoulderband. The following minimization and mitigation measures shall be followed.

1. Measures shall be implemented at each culvert site to prevent encroachment into adjacent forested areas. All forested lands outside the designated work areas shall be designated as ESAs and clearly indicated as such on project construction plans. Project specifications shall include a requirement that ESAs are clearly delineated with brightly colored fencing, rope, or equivalent prior to beginning construction.
2. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the SWPPP and WPCP Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) will be implemented to minimize effects to anadromous fish habitat (e.g., siltation, etc.) during construction.
3. All work shall be performed during daylight hours. No nighttime operations or use of staging lights shall be allowed.

Invasive Species

In compliance with the Executive Order on Invasive Species, E.O. 13112, and subsequent guidance from FHWA, the landscaping and erosion control included in

the project will not use species listed as noxious weeds. In areas of particular sensitivity, extra precautions will be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should an invasion occur.

Appendix E – List of Acronyms

ac	acre
ACOE	U.S. Army Corps of Engineers
ADL	Aerially Deposited Lead
ADT	Average Daily Traffic
APE	Area of Potential Effect
ARPA	Archeological Resource Protection Act
BMP	Best Management Practices
Board	California Regional Water Quality Control Board
Caltrans	California Department of Transportation
CC	California Coastal
CCC	Central California Coast
CDFG	California Department of Fish and Game
CEQ	Council of Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CHP	California Highway Patrol
cm	centimeter(s)
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWA	Clean Water Act
CZMA	Coastal Zone Management Agency
DI	Drainage Inlet
EO	Executive Order
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency

ESA	Environmentally Sensitive Area
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
ft	foot/feet
FWS	U.S. Fish and Wildlife Service
ha	hectare
in	inch
IS/EA	Initial Study/Environmental Assessment
ISA	Initial Site Assessment
km	kilometer(s)
KP	kilometer post
kph	kilometer per hour
LCP	Local Coastal Program
m	meter(s)
mi	mile(s)
mm	millimeter
MND	Mitigated Negative Declaration
MOA	Memorandum of Agreement
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NC	Northern California
NCRWQCB	North Coast Regional Water Quality Control Board
ND	Negative Declaration
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NO_2	Nitrogen oxide
NOA	Naturally Occurring Asbestos

NOAA	National Oceanic and Atmospheric Agency
NOC	Notification of Construction
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
O_3	Ozone
OHWM	Ordinary high water mark
PGR	Preliminary Geotechnical Report
PM	post mile
PM_{10}	Particulate matter less than 10 microns
ppt	Parts per thousand
PRC	California Public Resource Code
PS & E	Plans, Specifications and Estimates
RCRA	Resource Conservation and Recovery Act
RSP	Rock Slope Protection
SHPO	State Historic Preservation Office
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCE	Temporary Construction Easement
TMP	Traffic Management Plan
USC	United States Code
WPCP	Water Pollution Control Plan

Appendix F – List of Technical Studies (bound separately)

Air Quality Memorandum

Cultural Resource Compliance Memorandum

Biological Assessment

Community Impact Assessment

Floodplain Hydraulic Study

Initial Site Assessment

Natural Environment Study Report

Noise Study Memorandum

Preliminary Site Investigation

Preliminary Geotechnical Report

Visual Impact Assessment

Water Quality Assessment

Water Quality Memorandum

Appendix G – Revegetation Guidelines

Prior to any planting or seeding, all exotic plants/weeds will be removed from all areas to be revegetated. Mechanical control methods should be employed, if feasible; however, heavy equipment (e.g., bulldozers, backhoes) should not be used to eradicate exotic plants and weeds. In circumstances where mechanical control is not effective, it will be necessary to utilize systemic herbicides that have been approved by the U.S. Environmental Protection Agency (EPA) for use in aquatic situations (e.g., Rodeo by Monsanto).

Plant materials for the revegetation effort will be locally obtained. The use of locally obtained materials, which are adapted to local conditions, increases the likelihood that revegetation will be successful, and maintains the integrity of the local ecosystem. For widespread herbaceous species (e.g., California poppy) that are more likely to be genetically homogeneous, site specificity is a less important consideration, and stock from commercial sources may be used.

Arrangements will be made well in advance of the start of revegetation to ensure that plant materials are available at the appropriate time. Sufficient time will be allocated for seed collection and contract growing, if necessary (up to 12 months may be required for some woody species).

Appropriate native species (see Table G-1) will be planted and seeded in locations where they are most likely to persist without human assistance after a period of establishment. Most trees and shrubs will be planted from containers or cuttings. Grasses and herbs will be hydroseeded or broadcast seeded and raked into the soil. Trees and shrubs will be planted in random groups to more closely resembled a natural setting and to take advantage of favorable microclimate conditions. Prior to implementation, separate plant palettes and seed mixes will be prepared and will include specific information such as percent purity/germination, application rates, container plant spacing, etc.

During placement of rock slope protection, willow tubes will be inserted between the rocks for cutting installation upon completion of construction.

Planting and seeding will take place following completion of final grading and/or site preparation (e.g., weed removal and respreading of topsoil), preferably between November 15 and December 31, but not before October 15 or after February 1. These periods may be altered based on an assessment of the current and projected weather pattern at the time of installation.

Revegetation areas will be maintained for a minimum of 3 years following installation. In general, maintenance will include any activities required to meet the performance standards set for this revegetation program.

The final success criteria for implementation of this plan will be developed as a goal to determine whether the revegetation effort is successful. Success criteria will include survival and coverage criteria for native vegetation.

The revegetation effort will continue for 3 to 5 years following installation, based on length of time needed for the revegetation to meet the performance standards. Monitoring will include regular site visits to monitor the maintenance activities and annual performance monitoring to collect data and assess the progress of the revegetation effort.

Table G-1: Revegetation Plant Palettes

Scientific Name	Common Name	Container Size
Riparian Areas		
Salix lasiolepis	Arroyo willow	Cutting or D-40
Alnus rubra	Red alder	D-40
Acer macrophyllum	Big leaf maple	D-40
Umbellaria californica	California bay	D-40
Rubus ursinus	California blackberry	D-40
Rubus parviflorus	Thimbleberry	D-40
Urtica diocea	Stinging nettle	Seed
Stachys bullata	Hedgenettle	Seed
Lotus purshianus	Spanish clover	Seed
Lupinus nanus	Lupine	Seed
Lupinus bicolor	Miniature lupine	Seed
Claytonia perfoliata	Miner's lettuce	Seed
Bromus carinatus	California brome	Seed
Hordeum brachyantherum	Meadow barley	Seed
Elymus x triticum	Regreen	Seed
Upland/Cismontane Areas		
Stachys bullata	Hedgenettle	Seed
Lotus purshianus	Spanish clover	Seed
Lupinus nanus	Sky lupine	Seed
Claytonia perfoliata	Minter's lettuce	Seed
Eschscholzia californica	California poppy	Seed
Nassella pulchra	Purple needlegrass	Seed
Bromus carinatus	California brome	Seed
Hordeum brachyantherum	Meadow barley	Seed
Elymus x triticum	Regreen	Seed