

CHAPTER 3.0

PROJECT DESCRIPTION

3.1. OVERVIEW

The Trinity County Department of Transportation is proposing to improve approximately 2.9 km (1.5 miles) of Hyampom Road along Hayfork Creek in central Trinity County, California (see Figures 1 and 2 in Appendix A). The proposed project is necessary to enhance safety and maintain the roadway in order to prevent traffic disruption due to slope failure and localized flooding. The proposed project will be funded from the State Transportation Improvement Program (STIP) using state and federal funds managed by the California Department of Transportation (Caltrans) Office of Local Assistance.

Deficiencies along Hyampom Road, which is the only all-weather access to the community of Hyampom, have included rock failures at existing cut slope locations, localized embankment slope failures suggesting slope movement, tight-radius curves that do not meet current design standards, insufficient and inconsistent lane and shoulder widths, and flooding of the existing road at the eastern end of the project. The Hayfork Nine Mile Bridge, which was constructed by the U.S. Forest Service (USFS) in 1948, is too narrow to meet current design standards.

3.2. PROJECT LOCATION

The proposed project extends from Post Mile 6.8 to Post Mile 8.3 on Hyampom Road, approximately 11 km (7 miles) west of Hayfork and approximately 19 km (12 miles) east of Hyampom, along Hayfork Creek (see Figures 1 and 2 in Appendix A). The project area can be found on the Halfway Ridge 7.5 Minute USGS Quadrangle Map, in Section 30 of Range 12 West Township 32 North. The project is entirely within the Shasta-Trinity National Forest. In the project area, Hayfork Creek forms the boundary between two Management Areas of the Shasta-Trinity National Forest: the Hayfork Creek Adaptive Management Area (Area 17) north of Hayfork Creek, Indian Valley/Rattlesnake Adaptive Management Area (Area 19) south of Hayfork Creek.

This segment of Hyampom Road runs along the north side of Hayfork Creek for most of its length, until it crosses the creek on Nine Mile Bridge near the western terminus of the project at approximately Post Mile 8.0. James Creek flows into Hayfork Creek near the eastern terminus of the project, at approximately Post Mile 7.0. The general project vicinity consists of densely forested steep terrain sloping toward Hayfork Creek.

3.3. PROJECT BACKGROUND

Hyampom Road has long been the only County road providing year-round access to Hyampom. Other U.S. Forest Service resource roads provide seasonal access from Hayfork, State Route (SR) 36 to the south, and SR 299 to the north, but these roads are not maintained in winter, and normally receive heavy snowfall. Hyampom Road once served as a stagecoach route between Hayfork and Hyampom. The Nine Mile Bridge was constructed by the U.S. Forest Service in 1948. Hyampom Road served the timber industry for many years, providing access to Forest Service and private timberlands, and a route to transport finished lumber from sawmills in Hyampom. Placer and lode gold mining activity and aggregate mining were also common, particularly in the early 20th century.

Hyampom Road is cut through steep slopes and slope failures have caused frequent road slipouts and closures and required extensive and frequent repairs. In addition, the annual freezing and thawing action, resource truck use and gradual wear and tear have lead to degradation of the road condition. Maintenance has been ongoing, but major reconstruction and minor realignment are needed to bring the aging resource road to current safety standards, and to maintain sufficient width for two-way traffic. In the steepest sections, the road is already reduced to only one lane, and roadway width continues to be lost continuously to erosion of the vertical rock bluffs and pockets of decomposed rock in this area.

With the decline of timber harvest and mining in the late 20th century, Hyampom Road currently experiences diminished use. Average daily trips counted in fall of 1998 were 1024 near Hayfork, 155 near Nine Mile Bridge, and 212 near Hyampom. Nevertheless, the road continues to serve the community of Hyampom as the only year round public access. The community depends on this route daily for mail, access to Hayfork High School, medical and emergency vehicle access and routine access to Hayfork and points beyond, especially in the winter. Hyampom is the home of the Bar 717 Ranch, which hosts camp activities for children and teenagers at various times of year. A new vineyard is now producing wine for sale commercially, and at least one resort is under development in the Hyampom Valley. .

Recognizing that routine maintenance alone would not be sufficient to maintain a safe and adequate width for two-way traffic, and that complete loss of both lanes would be eventually inevitable, the Trinity County Department of Transportation sought funding to perform the major reconstruction and rehabilitation that would be necessary to keep the road open.

This project, to rehabilitate and widen 1.5 miles of Hyampom Road and Nine Mile Bridge, was programmed by the Trinity County Transportation Commission in the 1998 State Transportation Improvement Program (STIP). The STIP provides a combination of State and Federal Transportation funds, derived primarily from fuels taxes, for congestion relief and road rehabilitation projects.

Additional funding was programmed in the following STIP cycle, in 2000, for rehabilitation, curve corrections and widening of the segment of Hyampom Road that is outside the National Forest, from the intersection with SR 3 in Hayfork to the Forest Boundary at Post Mile 3.7. State transportation funds were obtained for this project. Trinity County Department of Transportation performed an Environmental Initial Study for that project, as required by CEQA, and the Trinity County Planning Commission approved a Negative Declaration of Environmental Impact in a public hearing on September 13, 2001. Trinity County Department of Transportation is now performing design and acquiring right-of-way for that project, with construction anticipated in the summer of 2004.

Further recognizing that there would not be sufficient funds in the STIP to undertake the major realignment and reconstruction necessary to provide two travel lanes through the vertical rock bluffs at Post Mile 10.7 to 14.3, or straighten the tight-radius curves and repair chronic slope failures through the steeper sections of the road, the Trinity County Department of Transportation sought assistance from the Federal Highway Administration through the Public Lands Highway Program for Forest Highways. Forest Highways are defined in the Federal Highway Act of 1921 as “Those forest roads which serve the national forests and also serve the communities within and adjacent to the national forests.” This program is funded from the Federal Trust Fund, mostly derived from gasoline taxes. The program is administered by the Federal Highway Administration’s Federal Lands Highway Divisions in cooperation with the U.S. Forest Service and the local road or highway agency (Trinity County) as a “Tri-agency” group. On March 5, 2002, Trinity County entered into an agreement with the Federal Highway Administration’s Central Federal Lands Highway Division (CFLHD) and Shasta-Trinity National Forest to perform resurfacing, restoration, rehabilitation and reconstruction of Hyampom Road Segments 2 (Post Mile 3.7 to 6.5), Segment 4 (Post Mile 8.3 to 10.7) and Segment 5 (Post Mile 10.7 to 14.3), with the remaining Segments 1 and 3 to be rehabilitated by Trinity County through the previously programmed STIP projects. Trinity County will provide \$2,000,000 of future STIP funds to match the estimated \$18,500,000 FHWA expenditure.

In order to meet required STIP funding deadlines, this project (Post Mile 6.8 to 8.3) must proceed ahead of the CFLHD project. Environmental studies for the CFLHD project are underway, but will not be completed for another year. Impacts of the CFLHD project can be qualitatively discussed at this time, but cannot be precisely quantified. Because these projects are separate projects on separate schedules and administered through separate programs, the effects of the CFLHD project are treated as cumulative effects of a reasonably foreseeable project. The specific environmental effects of the CFLHD project will be disclosed in an Environmental Assessment being prepared by CFLHD pursuant to the National Environmental Policy Act (NEPA) which will be supplemented to comply with CEQA and circulated as a CEQA document pursuant to CEQA Guidelines Sections 15221 and 15225(a).

3.4. PROJECT OBJECTIVES

Deficiencies along Hyampom Road include slope failures and rock falls at existing cut slope locations, localized embankment slope failures suggesting slope movement, tight-radius curves that do not meet current design standards, insufficient lane and shoulder widths, and flooding of the existing road at the eastern end of the project. The Hayfork Nine Mile Bridge, which was constructed by the U.S. Forest Service (USFS) in 1948, is too narrow to meet current design standards and will be widened.

Hyampom Road is a key part of the local transportation system in that it is the only year-round publicly maintained access to the community of Hyampom. The objectives of the proposed project are to:

- Reduce traffic disruption due to slope failure and localized flooding.
- Protect water quality by reducing erosion and sedimentation, and preventing flooding of the roadway.
- Enhance traffic safety along Hyampom Road and the Nine Mile Bridge.
- Provide a public roadway that meets current design standards
- Reduce maintenance requirements

3.5. ALTERNATIVES TO THE PROPOSED PROJECT

The range of reasonable alternatives for the proposed Hyampom Road Improvements Project would include the following:

No Project Alternative: The road would remain in its present alignment, elevation and width. Ongoing maintenance by Trinity County would continue, but no improvements would be made.

Alternative A: The Proposed Project to perform rehabilitation, minor realignment and widening of Hyampom Road and Nine-Mile Bridge as described in detail in Section 3.6, following. The Proposed Project is the alternative preferred by the County Department of Transportation and Transportation Commission.

Alternative B: Hyampom Road would be relocated to a more stable alignment. This new alignment would be in a new location, essentially requiring construction of a new road.

Alternative C: The design speed would be increased to 50 km/h, 30 mph. This alternative would require a wider, straighter road than what exists today, or what is proposed as the preferred alternative.

Analysis of the impacts of these alternatives is presented in Chapter 5.

3.6. PROPOSED PROJECT

3.6.1. PROJECT COMPONENTS

The following improvements along approximately 2.9 km (1.8 miles) of Hyampom Road are proposed as part of the project:

- Realignment of tight radius curves to achieve a 40 kilometers per hour (km/h; 25 miles per hour, mi/h) design speed.
- Widening of Hyampom Road to two 3.35-meter (11-foot) lanes with 0.6-meter (two-foot) paved shoulders, including roadway excavation and embankment and installation of new asphalt concrete pavement. Excavations into inboard slopes and/or fill onto outboard slopes will be required to achieve the desired width. Fills up to 9 meters (30 feet) high at slopes of 1 vertical to 1.5 horizontal, and cuts up to 18 meters (60 feet) high at slopes of 1 to 1 are anticipated.
- Raising the profile of the existing road for approximately 1 km (0.6 mile) at the eastern end of the project to correct flooding problems.
- Widening the deck of the Nine-Mile Bridge to 8.39 meters (27.5 feet). The clear distance from face of rail to face of rail will be 7.9 meters (26 feet), which will be the same as the distance from shoulder edge to shoulder edge, consisting of two 3.35-meter (11-foot) lanes and two 0.61-meter (2-foot) shoulders. This widening includes the addition of a new steel girder and augmenting the pier walls and foundations. This work will require excavation within the creek bed for augmenting the pier walls.
- Rehabilitating the existing bridge, including the replacement of the barrier rail, refinishing the bridge deck and repainting the existing steelwork.
- Stabilizing the new and existing embankment slopes through the placement of rock slope protection and retaining wall systems.
- Constructing a single-span bridge to replace the culvert at James Creek. This bridge will likely be prefabricated with cast-in-place concrete abutments. Piers will not be necessary for the new bridge and the abutments will be located outside of the Ordinary High Water Mark. The bridge crossing will accommodate the 50-year flow with a minimum two feet of clearance for debris or the 100-year flow, whichever is greater. The existing culvert will be left in place during construction and can be used as a one-lane detour for controlled traffic.
- Replacement of two other culverts currently in place along Hyampom Road, which accommodate ephemeral drainages. A diverted drainage at Post Mile 7.3 (KP 11.7) will be returned to its drainage of origin. New culverts would be designed to accommodate 100-year flows, and fitted with downspouts and/or outlet protection to prevent erosion of fill slopes.
- Constructing a walkway access to the Eight Mile Trail (located just east of the Nine Mile Bridge) for hikers. Sufficient fill will be placed to realign the road towards the creek and improve the alignment of the approach road to the bridge. The trailhead will be relocated

slightly as the new widened shoulder will provide for a safer tail access. The area that is now currently unofficially used for parking for access to the trailhead will remain in its current location, as will access to the parking area.

3.6.2. RIGHT OF WAY

The proposed Hyampom Road Project is entirely within the Shasta-Trinity National Forest. The existing roadway is located within an existing Federal Department of Transportation (DOT) easement, which extends 20 meters (66 feet) each side of the existing roadway centerline. No major roadway or bridge relocation will occur as part of the project, but some new right-of-way will be required in order to perform the minor realignments and road widening, and/or to accommodate a larger fill prism. Additional areas of USFS property will be needed temporary to provide for contractor staging areas and to perform mitigation activities. Temporary or permanent use of the USFS property outside of the existing easement will require a Special Use Permit or easement from the United States Department of Agriculture (USDA), USFS, or a revised DOT easement. A Special Use Permit will be requested for both the temporary and permanent uses associated with this project. When the CFLHD project is complete, the entire corridor (excluding temporary use areas) will be included in a revised DOT easement.

3.6.3. CONSTRUCTION METHODS

Construction will include clearing and grubbing, grading to construct roadway excavations and embankments, placement of rock slope protection, construction of retaining walls, drainage, erosion control, subgrade preparation, aggregate base, asphalt concrete, signing and striping, and bridge widening and rehabilitation which will include sanding and painting.

3.6.4. CONSTRUCTION SPECIFICATIONS

Project design, and the preparation of Plans, Specifications and other Contract documents will be the responsibility of Trinity County Department of Transportation (TCDOT). Construction work will be performed by a contractor selected by the TCDOT as the lowest responsible bidder. The exact number of construction workers will be determined by the Contractor and will depend to a large extent on the construction schedule. Between 25 and 45 individuals are expected to be working on the project at one time, depending on the activities being performed. The County or its contractor will obtain all required licenses, permits and approvals necessary for performance of the work. The contractor will be required to comply with all applicable occupational health and safety standards, rules, and regulations. Additionally, specific requirements or restrictions upon construction activities will be implemented in accordance with mitigation measures included in this document, and any additional conditions of the various required permits. These mitigation measures, conditions and restrictions will be included in the construction specifications, and shall become part of the contract between the Contractor and TCDOT. A resident

engineer from TCDOT will be on site to observe all construction activities, and will enforce the mitigation measures along with the other contract compliance provisions.

3.6.5. CONSTRUCTION SCHEDULE

Construction activities are expected to take two construction seasons, beginning in the spring and ending in the fall of the following year. Earth moving construction activities will not take place during the winter months (approximately mid-November through April 30, depending on weather). However, some work on structures such as pile driving or drilling and pouring concrete in drill holes for retaining walls may continue, weather permitting. Earth moving would resume in upland areas, (outside of the Ordinary High Water) in the spring after the threat of major storms has past (approximately May 1), based on long-range whether forecasts. Construction within the Ordinary High Water line would not resume until June 15.

The current schedule anticipates that construction would begin in spring of 2005, and be completed in the fall of 2006. This is subject to change due to possible delays in funding or project development. On a daily basis, construction will take place between the hours of 7 a.m. and 7 p.m. There will be no need for nighttime construction. Occasional work on Saturdays or holidays may be necessary, but no work would occur on Sundays.

3.6.6. ROAD CLOSURES

A pilot car may be used to control one-way traffic whenever at least one lane of Hyampom Road can be open to traffic. However, it will be necessary to completely close Hyampom Road to traffic at times. During these times, the road will be completely closed from approximately 8 a.m. to 11 a.m.; from 11:30 a.m. to 12:30 p.m.; from 1 p.m. to 3:30 p.m.; and from 4:00 p.m. to 5:15 p.m. during the school year. When school is not in session, the road may be closed for more extended periods in the afternoon, from 1:00 p.m. to 5:00 p.m. During the brief periods when the road is open during the day, traffic will be controlled by pilot cars on a single travel lane through the construction site. This schedule is based on accommodating the current school bus and mail carrier schedules, and may be revised if the school bus or mail carrier schedules change.

3.6.7. CONSTRUCTION STAGING AREAS

Four possible construction staging areas will be used for the project, as shown in Figure 3 I Appendix A. The first will be located to the west of the Nine-Mile Bridge near the western end of the project adjacent to Station 108. The second will be located to the southeast of the Nine-Mile Bridge in the large flat area south of the roadway at the base of the slope near Station 110 (i.e., in the existing Eight Mile Trail parking area). The third will be located near the middle of the project adjacent to Station 116 along the existing road opposite a large cut where the road will be realigned up-slope. The fourth will be located in two adjacent existing cleared areas near the eastern end of the project between Stations 128+20 and

129+40. Staging areas would be used for parking and materials and equipment storage, and an office trailer for construction management activities. Construction workers will not camp in the staging areas, but will probably reside in temporary accommodations in Hayfork or Hyampom, or in designated USFS campgrounds.

3.6.8. CONSTRUCTION EQUIPMENT AND VEHICLES

Specific construction equipment and vehicles to be used at the project site will largely be determined by the construction contractor. Equipment expected to be used may include pick-up trucks, dump trucks, graders, backhoes, excavators, bulldozers, compactors, water trucks, truck-mounted drills and pile drivers, concrete delivery trucks, asphalt concrete paving machines, rollers, and service vehicles.

3.6.9. DISPOSAL OF EXCAVATED MATERIAL

Project design will endeavor to achieve balanced cut and fill so that disposal of excavated material will not be required. If necessary, the construction contractor will be responsible for disposing of excess excavated materials at appropriate disposal sites approved by the County and/or USFS. Areas identified as staging areas for this project may be ultimately used for spoils disposal, if necessary. Permanent spoils disposal areas will be stabilized with erosion control methods similar to those included in this document for fill slopes, including compaction and seeding with grasses. If fill material needs to be imported, it will be obtained from commercial sources that are in compliance with the California Surface Mining and Reclamation Act (SMARA).

3.6.10. OTHER CONSTRUCTION WASTE

Debris from the construction site or from other activities associated with the proposed construction activities will be kept out of Hayfork Creek and associated drainages. All debris will be disposed of off-site at a landfill or recycling facility. Liquid construction waste will also be disposed of off site in accordance with *Waste Management and Materials Pollution Control Best Management Practices found in the Caltrans Construction Site Best Management Practices Manual* (Caltrans November 2000). Petroleum-based compounds will be contained and removed to an officially designated landfill authorized to accept that type of waste. Waste water from concrete work and other construction activities will not be allowed to drain into Hayfork Creek or any associated drainage channels. (See *Concrete*, below). The Project Specifications will contain requirements for the handling, storage, and cleanup of an accidental spill of hazardous materials, including petroleum-based products, cement, or other construction pollutants.

3.6.11. BRIDGE WIDENING

The Nine Mile Bridge over Hayfork Creek will be widened as part of this project. This work will require addition of a new steel girder and augmenting the pier walls and foundations. One of the existing bridge piers is outside of the low flow channel of Hayfork Creek. The other is in, or near the low flow channel, depending on the amount of water in the Creek. To extend the bridge piers to support the new girder, an excavation must be dug in the creek bed adjacent to the bridge piers. Forms will be built in the excavation, and concrete will be poured into the forms to extend the pier footing. The pier extension will be constructed on top of the new footing extension.

If the pier footing is within the low flow channel, flow will be diverted away from the pier before starting the excavation. Complete diversion or dewatering of Hayfork Creek will not be necessary. A cofferdam or dike will be placed a few feet out around the pier. The cofferdam will not be a driven pile wall, but may be formed by sandbags and plastic sheeting or an “aqua dam” (a plastic tube filled with water). The cofferdam will isolate the excavation and wet cement from the live stream. If necessary, the cofferdam will be sealed with tremie concrete placed under water within the isolated area. Once the cofferdam is in place and the area around the pier is sealed from the live stream, the water within the cofferdam will be pumped out to an upland disposal area, where it will percolate back into the soil without being entrained in stormwater or redeposited in the creek or tributary drainages. Once the concrete work is complete and the concrete is dried, any accumulated groundwater in the excavation will again be pumped out to the upland area, and any accumulated sediment within the cofferdam will be removed by excavator or shovel and disposed of as solid waste. The cofferdam will then be removed.

3.6.12. CONCRETE HANDLING

Concrete casting for the structure would be done in tightly sealed forms to prevent any releases to Hayfork or James Creek. Precast structural elements would be placed on the site using cranes. No cement will be allowed to contact the live stream. Any water that does come in contact with wet concrete, such as groundwater in footing excavations isolated from the live stream, will not be allowed to enter the creek. It will be pumped to a truck for disposal or treatment, or it may be discharged to a sediment stilling basin located outside of the ordinary high water mark, in an area where it will percolate back into the soil without being entrained in stormwater or redeposited in the creek or tributary drainages. If concrete application tools or mixing equipment is washed out on site, a temporary washout area will be constructed on permeable ground at least 100 feet away from any stream. It would consist of a basin constructed of plywood or sandbags and covered with plastic sheeting. Upon completion of the concrete work, the water in the basin would be released by dropping one side of the basin. The water would be allowed to percolate into the soil. The solids would remain in the plastic and would be removed and disposed of at a landfill or incorporated into construction fill within the project limits.

3.6.13. BRIDGE SANDING AND PAINTING

The Contractor will be required to abide by the County's standard specifications for sanding and painting of bridges, which include the following provisions:

“Any work that disturbs the existing paint system will expose workers to health hazards and will (1) produce debris containing heavy metal in amounts that exceed the thresholds established in Titles 8 and 22 of the California Code of Regulations or (2) produce toxic fumes when heated. All debris produced when the existing paint system is disturbed shall be contained.

DEBRIS CONTAINMENT AND COLLECTION PROGRAM. Prior to starting work, the Contractor shall submit to the Engineer a debris containment and collection program for debris produced when the existing paint system is disturbed in accordance with the provisions in Section 5-1.02, “Plans and Working Drawings,” of the Standard Specifications. The program shall identify materials, equipment and methods to be used when the existing paint system is disturbed and shall include working drawings of any containment system, loads applied to the bridge by any containment structure, and provisions for ventilation and air movement for visibility and worker safety.

If the measures being taken by the Contractor are inadequate to provide for the containment and collection of debris produced when the existing paint system is disturbed, the Engineer will direct the Contractor to revise the operations and the debris containment and collection program. The directions will be in writing and will specify the items of work for which the Contractor's debris containment and collection program are inadequate. No further work shall be performed on the items until the debris containment and collection programs are adequate and, if required, a revised program has been approved for the containment and collection of debris produced when the existing paint system is disturbed.

The Engineer will notify the Contractor of the approval or rejection of any submitted or revised debris containment and collection program within 2 weeks of submittal of the Contractor's program or revised program.

The County will not be liable to the Contractor for failure to approve all or any portion of an originally submitted or revised debris containment and collection program, nor for any delays to the work due to the Contractor's failure to submit acceptable programs.

DEBRIS HANDLING. Temporary storage on the ground of the debris produced when the existing paint system is disturbed will not be permitted. Debris accumulated inside the containment system shall be removed before the end of each work shift. Debris shall be stored in approved leak proof containers and shall be handled in such a manner that no spillage will occur.

Disposal of debris produced when the existing paint system is disturbed shall be performed in accordance with all applicable Federal, State and Local hazardous waste laws. Laws that govern this work include:

1. Heath and Safety Code, Division 20, Chapter 6.5 (California Hazardous Waste Control Act).
2. Title 22; California Code of Regulations, Chapter 30 (Minimum Standard for Management of Hazardous and Extremely Hazardous Materials).
3. Title 8, California Code of Regulations.

WORK AREA MONITORING. The Contractor shall perform work area monitoring of the ambient air and soil in and around the work area at the bridge site to verify the effectiveness of the containment system. The work area monitoring shall consist of collecting, analyzing and reporting of air and soil test results, and recommending any required corrective action when specified exposure levels are exceeded. The work area monitoring shall be carried out under the direction of a Certified Industrial Hygienist. The samples shall be collected at locations designated by the Engineer. The air samples shall be collected at least once per week during work that disturbs the existing paint system. Additional samples may be required by the Engineer if corrective action is recommended by the Industrial Hygienist.

Four soil samples shall be collected prior to the start of work, and four soil samples shall be collected within 36 hours following completion of cleaning operations of existing structural steel.

There shall be no increase in the concentrations of heavy metal in the soil in the area affected when the existing paint system is disturbed. When soil sampling, after completion of work that disturbs the existing paint system, shows an increase in the concentrations of heavy metal, the area affected shall be cleaned and resampled at the Contractor's expense until soil sampling and testing shows concentrations of heavy metal less than or equal to the concentrations collected prior to start of work.

CONTAINMENT SYSTEM. The containment system shall consist of, at the option of the Contractor, (1) a ventilated containment structure, or (2) vacuum shrouded surface preparation equipment and drapes, tarps or other materials, or (3) equivalent containment system. The containment system shall contain all water, resulting debris, and visible dust produced when the existing paint system is disturbed.”

The Specifications contain additional details regarding sampling and analytical methods, standards for the containment systems, and worker safety requirements.

3.6.14. BRIDGE CONSTRUCTION

A single-span bridge will replace the culvert at James Creek. This bridge will likely be a cast-in-place slab with cast-in-place concrete abutments, possibly with steel pile foundations. Piers will not be

necessary for the new bridge and the abutments will be located outside of the Ordinary High Water Mark. Abutments will be constructed by excavating above the Ordinary High Water Mark, constructing forms and pouring concrete. If falsework (scaffolding) is needed to construct the bridge, it will be placed on the tops of the stream banks, rather than in the active channel. The new bridge will be constructed upstream of the existing culvert, and the culvert will remain in place as a detour, so that through traffic and construction equipment will not drive through, or operate in, the stream channel.

3.6.15. RETAINING WALLS AND ROCK SLOPE PROTECTION

Retaining walls and/or rock slope protection will be used to stabilize slopes or prevent erosion or to support the road where steep slopes will not permit typical fill construction. Anticipated locations of retaining walls and/or rock slope protection are indicated on Figure 3 in Appendix A. Retaining walls will be either welded wire walls (cages built of heavy gage wire and filled with soil, can walls (steel pipes driven vertically and filled with soil, sheet pile walls (driven sheet metal) or cast-in-drilled hole piles with timber or steel lagging. Retaining walls will be constructed from the road elevation, which is above the Ordinary High Water Mark of Hayfork Creek.

Rock slope protection is proposed to prevent erosion at a sharp bend in Hayfork Creek near Station 122. The rock slope protection will extend into the Ordinary High Water Mark of Hayfork Creek. This may require an excavator or backhoe to work within the Ordinary High Water channel to place the lower layers of rock. However, the work would be performed during the dry season, and equipment will not operate in the low-flow channel where the live stream will be flowing at that time.

3.6.16. TRAVEL CORRIDOR

Trees will be removed from the construction limits and from the safe recovery zone, which will extend 10 feet from the edge of pavement (where feasible based on topography). Existing trees growing outside of the construction limits and safe recovery zone will not be removed as part of project construction. However, no new upland tree species will be replanted on cut or fill slopes or within 100 feet of the new centerline. Only native shrubs, grasses, and forbs will be planted in this area. Riparian trees removed as part of construction will be replaced in riparian areas.

3.6.17. POLLUTION PREVENTION

The contractor shall implement water pollution control measures that conform to Section 7-1.01G of Caltrans Standard Specifications. Some of these key water pollution control measures are listed below.

- The contractor shall exercise every reasonable precaution to protect Hayfork Creek, James Creek and tributary drainages from pollution with fuels, oils, and other harmful materials, and shall conduct and schedule operations so as to avoid or minimize muddying and silting of Hayfork

Creek or James Creek. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.

- Water pollution control work is intended to provide prevention, control, and abatement of water pollution of Hayfork Creek and James Creek, and shall consist of constructing those facilities which may be shown on the plans, specified herein or in the special provisions, or directed by the engineer.
- The contractor shall provide temporary water pollution control measures, including, but not limited to, dikes, basins, ditches, and application of straw and seed, which become necessary as a result of the contractor's operations. The contractor shall coordinate water pollution control work with all other work done on the contract.
- Before starting any work on the project, the contractor shall submit, for acceptance by the TCDOT engineer, a program to control water pollution effectively during construction of the project. The program shall show the schedule for the erosion control work included in the contract and for all water pollution control measures that the contractor proposes to implement in connection with construction of the project to minimize the effects of the operations on adjacent streams and other bodies of water. The contractor shall not perform any clearing and grubbing or earthwork on the project, other than that specifically authorized in writing by the engineer, until the program has been accepted.
- If the measures being taken by the contractor are inadequate to control water pollution effectively, the engineer may direct the contractor to revise the operations and the water pollution control program. The directions will be in writing and will specify the items of work for which the contractor's water pollution control measures are inadequate. No further work shall be performed on those items until the water pollution control measures are adequate and, if also required, a revised water pollution control program has been accepted.
- The engineer will notify the contractor of the acceptance or rejection of any submitted or revised water pollution control program in not more than 5 working days.
- Unless otherwise approved by the engineer in writing, the contractor shall not expose a total area of erodible earth material, which may cause water pollution, exceeding 70,000 square meters (m²) for each separate location, operation, or spread of equipment before either temporary or permanent erosion control measures are accomplished.
- Where erosion that will cause water pollution is probable due to the nature of the material or the season of the year, the contractor's operations shall be so scheduled that permanent erosion control features will be installed concurrently with or immediately following grading operations.
- Nothing in the terms of the contract nor in the provisions in this Section 7-1.01G shall relieve the contractor of the responsibility for compliance with Sections 5650 and 12015 of the Fish and Game Code, or other applicable statutes relating to prevention or abatement of water pollution.

- The Contractor shall also conform to the following provisions:
 - Where working areas encroach on live streams, barriers adequate to prevent the flow of muddy water into streams shall be constructed and maintained between working areas and streams, and during construction of the barriers, muddying of streams shall be held to a minimum.
 - Mechanized equipment shall not be operated in the stream channels of the live streams.
 - Water containing mud or silt from aggregate washing or other operations shall be treated by filtration, or retention in a settling pond, or ponds, adequate to prevent muddy water from entering live streams.
 - Oily or greasy substances originating from the Contractor's operations shall not be allowed to enter or be placed where they will later enter a live stream.
 - Portland cement or fresh Portland cement concrete shall not be allowed to enter flowing water of streams.
 - Material derived from roadway work shall not be deposited in a live stream channel where it could be washed away by high stream flows.
 - Where there is possible migration of anadromous fish in streams affected by construction on the project, the Contractor shall conduct work operations so as to allow free passage of the migratory fish.

The proposed project will also comply with Best Management Practices found in the *Caltrans Construction Site Best Management Practices Manual* (Caltrans November 2000), which will be incorporated into the Plans and Specifications. TCDOT or its contractor will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP), in accordance with the National Pollutant Discharge Elimination System (NPDES) program (Section 402[p], Clean Water Act [CWA]). These regulations, which apply to new construction projects disturbing more than 0.4 hectare (1 acre) of earth, are administered by the State Water Resources Control Board (SWRCB) on behalf of the U.S. Environmental Protection Agency (USEPA). Under the program, TCDOT would file a Notice of Intent with the SWRCB to obtain coverage under the General Construction Activity Storm Water Permit prior to construction of the proposed project. The SWRCB and Federal Law (40 CFR Parts 122-124) require that best available technology that is economically achievable (BAT) and best conventional pollutant control technology (BCT) be used to reduce pollutants. The SWPPP, which would include information on runoff, erosion control measures to be employed, any toxic substances to be used during construction activities, and spill prevention and control measures, including, but not limited to, those found in the Caltrans Storm Water Quality Handbooks. A monitoring program would be implemented to evaluate the effectiveness of the measures included in the SWPPP.

Additional water pollution prevention measures are proposed as mitigation measures in Section 4.2 (*Geology, Soils and Seismicity*, Section 4.3 (*Hydrology, Water Quality and Stormwater Runoff*) and Section 4.4 (*Hazards, Hazardous Waste and Materials*).

3.6.18. EROSION CONTROL

Erosion control measures will be taken to aid in erosion control during and after construction. Measures implemented during construction will include practices such as limiting ground disturbing activities to the dry season, use of sediment barriers such as silt fencing, straw bales and wattles, sediment traps and desilting basins, and use of geotextiles, mulch and other temporary ground covers on disturbed areas and stockpiles. Best Management Practices for erosion control, including but not limited to those found in the *Caltrans Construction Site Best management Practices (BMPs) Manual* (Caltrans November 2000) and the Stormwater Pollution Prevention Plan (SWPPP) prepared for this project. Immediately after construction of the proposed project, the right-of-way would be stabilized and revegetated. Erosion control will use either native or non-persistent non-native grasses for quick establishment, followed up with native grasses and forbs. No noxious or invasive weed species would be used. Pesticide spraying is prohibited by County Ordinance on County projects, and will not occur.

Final erosion control will also include permanent structures such as inlet and outlet protection at culverts, rock slope protection, drainage inlet protection, vegetated drainage ditches and swales. New and existing drainage facilities, including channels, swales, culverts, and drop inlets will be sized to handle the anticipated flow from the proposed project. New culverts will be sized to handle a 100-year storm event. Sufficient ditch relief culverts will be placed to avoid diverting flows from their drainage of origin, and to reduce the distance that water flows along the roadside before being discharged, in accordance with the guidelines in the Five Counties Salmon Conservation Program *County Road Maintenance: A Water Quality and Stream Habitat Manual*. (Five Counties 2002)

The roadway will be designed with the use of all-weather (i.e., paved) surfaces and sufficient drainages, which will minimize long-term sediment yield into Hayfork Creek. Rock slope protection and retaining wall systems will be constructed to address the high potential for slope instability and erosion within the project area.

Specific erosion control measures will be developed in the project design phase and specific locations of erosion control devices will be detailed in the project plans and specifications, and in the SWPPP prepared by the contractor and approved by the TCDOT engineer. In addition, the contractor would be required to implement water pollution control measures that are included in Section 7-1.01G of the Caltrans Standard Specifications, as discussed below under “Pollution Prevention.” Additional erosion

control and water pollution prevention measures are proposed as mitigation measures in Section 4.2 (*Geology, Soils and Seismicity*) and Section 4.3 (*Hydrology, Water Quality, Stormwater Runoff*).

3.6.19. WINTERIZATION

Earth moving activities (i.e. grading) will be suspended during the rainy season (typically mid-November to May 1). The project site will be winterized with temporary or permanent erosion control at the end of each construction season (in early November), and most equipment will be removed from the site at that time. Structural work, such as construction of retaining walls outside of the ordinary high water channel of Hayfork and James Creek may continue, weather permitting. Any equipment left on site in the winter will be stored in staging areas that are not subject to inundation. In areas where construction and revegetation is not complete by October 15, interim erosion control, consisting of quick establishing sterile grass seed, mulch and/or geotextiles will be applied to unfinished disturbed areas. Any construction materials or temporary fills would be removed from the Ordinary High Water channel of Hayfork Creek and James Creek as part of winterization. Erosion and sediment control measures will be maintained during the winter suspension period and will be checked within 24 hours of each 1-inch or greater rainfall event, and every 14 calendar days during the winter suspension period or until site stabilization is achieved. Earth moving activities will resume in upland areas in the spring after threat of major storms has past (approximately May 1), based on long-range weather forecasts. Construction in or near surface waters will resume on June 15.