COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
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TOM BURNS, PLANNING DIRECTOR

NOTICE OF ENVIRONMENTAL REVIEW PERIOD

SANTA CRUZ COUNTY

APPLICANT: **Steve Wiesner of SC County Department of Public Works**

APPLICATION NO.: **08-0074**

APN: **Eureka Canyon Rd. @ 4.8 & 5.24 Post Miles**

The *Environmental Coordinator* has reviewed the Initial Study for your application and made the following preliminary determination:

__XX__ Negative Declaration
(Your project will not have a significant impact on the environment.)

__XX__ Mitigations will be attached to the Negative Declaration.

_____ No mitigations will be attached.

_____ Environmental Impact Report
(Your project may have a significant effect on the environment. An EIR must be prepared to address the potential impacts.)

As part of the environmental review process required by the California Environmental Quality Act (CEQA), this is your opportunity to respond to the preliminary determination before it is finalized. Please contact Matt Johnston, Environmental Coordinator at (831) 454-3201, if you wish to comment on the preliminary determination. Written comments will be received until 5:00 p.m. on the last day of the review period.

Review Period Ends: **May 14, 2008**

Bob Loveland
Staff Planner

Phone: **454-3163**

Date: **April 8, 2008**

4.0 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Impacts and Corresponding Mitigation Measures for the Shingle Mill Gulch Fish Passage Improvement Project		
Impact	**Mitigation Measures**	**Schedule**
Potential impacts to S-CCC *steelhead.* *Approximately* 6,200 ft^2 of designated critical habitat would be temporarily disturbed as a result of dewatering.	**BIO-1**. Implement protection and minimizations measures listed in Appendix A of the Biotic Assessment by Swanson Hydrology, 12/12/2007 (Attachment 7).	Pre-Construction, Construction, Post-Construction
Potential impacts to California red-legged frog (CRLF).	**BIO-2a. Pre-construction Surveys.** A pre-construction survey for CRLF shall be conducted within the project site within 48 hours before construction begins. The pre-construction survey will include one night survey within 48 hours prior to construction. If CRLF are found on the site the USFWS shall be notified promptly. No construction related activities will begin until either the frog(s) are allowed to leave the site naturally or the USFWS advises that the frog(s) be moved to a designated location by a qualified biologist. **BIO-2b. Construction worker education/Tail-gate talk.** Before construction is allowed to commence all on-site workers will be required to participate in a brief presentation describing the biological and cultural resources of the project area. Workers will be educated on the importance of biological resource conservation and shown images of sensitive species such as CRLF known to occur in the project area. Workers will be directed to cease work if sensitive species are observed and to notify the Biological Monitor. **BIO-2c. Biological Monitor**. If CRLF are found during pre-construction surveys and after the frog(s) have left the site, or been relocated, a qualified biologist will survey the site prior to work each day to ensure no CRLF are on the site. The biologist will have the authority to halt construction work if a CRLF is observed.	Pre-Construction and Construction if Biological Monitor is needed.
Potential impacts to San Francisco dusky-footed woodrat.	**BIO-3. Pre-construction Surveys/Nest relocation.** A pre-construction survey for woodrat nests will be conducted within the project site within 48 hours before construction begins. If woodrat nests are found on the site in areas that would be disturbed by construction the California Department of Fish and Game (CDFG) will be notified. If the nest cannot be avoided during construction, they would be relocated to suitable habitat. No construction-related activities will begin until the woodrats nests are relocated by a qualified biologist.	Pre-Construction

Impacts and Corresponding Mitigation Measures for the Shingle Mill Gulch Fish Passage Improvement Project		
Impact	**Mitigation Measures**	**Schedule**
Removal of trees and native vegetation. Removal of up to 4 big leaf maples at PM 4.8 and 1 tanoak at PM 5.24. Disturbance of native vegetation in construction access areas and along streambanks.	**BIO-4.** If any native trees are removed as a result of implementing the project they will be replaced, in-kind, at a 3:1 ratio and maintained for 3 years after construction. Areas of native vegetation that area disturbed will be replanted with locally appropriate native tree, shrub and herbaceous species.	Construction, Post-Construction
Potential release of *hazardous materials.* Implementing the project will require use of heavy equipment in the riparian area and equipment may operate in the bed and banks of the channel. This could increase the risk of release of hazardous materials (e.g., fuel, hydraulic fluids) into the environment.	**HAZ-1.** The project Spill Prevention and Containment Plan (Attachment 6) will be implemented to reduce the potential of a release of hazardous materials (e.g., fuel, hydraulic fluids) and prepare for the unlikely event of a fuel or oil spill. The headwalls for the new culvert will be poured in place and will be isolated from the live stream for 30 days if feasible. If not feasible, a concrete sealant approved by California Department of Fish & Game will be applied prior to any contact between the live stream and the fresh concrete. All concrete cleanup will take place in the staging area and will be done according to standard Best Management Practices (BMP's) regarding concrete work.	Construction
Temporary increase in noise. Construction activities could produce noise exceeding the County General Plan threshold of an hourly average of 50 Leq during the day.	**NOS-1.** Construction activities will be restricted to the hours of 8 AM through 5 PM, Monday through Friday when the residents are frequently absent. The local residents will be contacted prior to the initiation of construction and be provided a schedule of construction activities.	Construction
Potential impacts to emergency access. Eureka Canyon Road may need to be closed for up to 30 minutes on four separate occasions for replacement of the culvert at PM 5.24 culvert	**TRANS-1.** The County Department of Public Works, construction contractors and emergency response personnel will prepare an Emergency Response Plan to ensure so that proper equipment and personnel are staged in appropriate areas so that emergency services are not disrupted.	Emergency Response Plan prepared prior to Construction; implemented during Construction
Cumulative impacts of multiple projects in the Corralitos Creek watershed. As many as two other fish passage improvement projects may be implemented in one calendar year.	**CU-1.** Implement NMFS' recommendations, if any, to reduce cumulative impacts of multiple projects.	Construction

Environmental Review
Initial Study

Application Number: 08-0074

Date: March 28, 2008

Staff Planner: Bob Loveland

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: County of Santa Cruz (Department of Public Works)

APN: Eureka Canyon Rd. @ Post Mile 4.8 & Post Mile 5.24

CONTACT: Steve Wiesner (831) 454-2160

SUPERVISORAL DISTRICT: 2nd (Ellen Pirie)

LOCATION: The first project site is located within the county right-of-way near Post Mile Marker 4.8 and 1502 Eureka Canyon Road. The second project site is located within the county right-of-way at Post Mile Marker 5.24 (Attachment 1).

SUMMARY PROJECT DESCRIPTION:
The project includes fish passage improvements on Shingle Mill Gulch at two crossings of Eureka Canyon Road. At the Post Mile (PM) 4.8 crossing the existing culvert would be retrofitted to improve fish passage. At PM 5.24 the existing 6-foot corrugated metal pipe would be replaced with a box culvert. Shingle Mill Gulch in the project area is known to support a population of South-Central California Coast steelhead (*Oncorhynchus mykiss*). Construction will be completed between August 1 and October 15 during the low-flow season and outside of the salmonid spawning period. During construction, flow will be diverted in order to maintain aquatic life movement.

ALL OF THE FOLLOWING POTENTIAL ENVIRONMENTAL IMPACTS ARE EVALUATED IN THIS INITIAL STUDY. CATEGORIES THAT ARE MARKED HAVE BEEN ANALYZED IN GREATER DETAIL BASED ON PROJECT SPECIFIC INFORMATION.

X	Geology/Soils	X	Noise
____	Hydrology/Water Supply/Water Quality	____	Air Quality
X	Biological Resources	____	Public Services & Utilities
____	Energy & Natural Resources	____	Land Use, Population & Housing
____	Visual Resources & Aesthetics	____	Cumulative Impacts

X Cultural Resources	___ Growth Inducement
___ Hazards & Hazardous Materials	X Mandatory Findings of Significance
X Transportation/Traffic	

DISCRETIONARY APPROVAL(S) BEING CONSIDERED

___ General Plan Amendment	___ Grading Permit
___ Land Division	X Riparian Exception
___ Rezoning	___ Other:
___ Development Permit	___
___ Coastal Development Permit	___

NON-LOCAL APPROVALS
Other agencies that must issue permits or authorizations:

Army Corps of Engineers
California Department of Fish & Game
National Marine Fisheries

ENVIRONMENTAL REVIEW ACTION
On the basis of this Initial Study and supporting documents:

___ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

X I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the attached mitigation measures have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

___ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Matthew Johnston

4/10/08
Date

For Claudia Slater
Environmental Coordinator

II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS:

Parcel Size: Not Applicable
Existing Land Use: Public right-of way and riparian area
Vegetation: Redwood forest
Slope in area affected by project: ___ 0 - 30% _X_ 31 – 100%
Nearby Watercourse: Shingle Mill Gulch, a tributary to Corralitos Creek
Distance To: The two project locations are within the stream channel.

ENVIRONMENTAL RESOURCES AND CONSTRAINTS

Groundwater Supply: No
Water Supply Watershed: Yes
Groundwater Recharge: No
Timber or Mineral: Timber
Agricultural Resource: No
Biologically Sensitive Habitat: Yes
Fire Hazard: No
Floodplain:
Erosion: Yes
Landslide: Yes
Liquefaction: No
Fault Zone: Yes
Scenic Corridor: No
Historic: No
Archaeology: No
Noise Constraint: No
Electric Power Lines: Yes
Solar Access: No
Solar Orientation: Multiple aspects
Hazardous Materials: No

SERVICES

Fire Protection: Pajaro Fire District
School District: Pajaro Valley Unified
Sewage Disposal: None
Drainage District: Zone 7
Project Access: Eureka Canyon Road
Water Supply: Not Applicable

PLANNING POLICIES

Zone District: RA, SU, TP
General Plan: R-M
Special Designation: Not Applicable

Urban Services Line:	___ Inside	_X_ Outside
Coastal Zone:	___ Inside	_X_ Outside

PROJECT SETTING AND BACKGROUND:

The project areas are located within county rights-of-way along Eureka Canyon Road near Post Mile Markers 4.8 and 5.24 (Attachment 1). Shingle Mill Gulch in the project area is known to support a population of South-Central California Coast (S-CCC) steelhead (*Oncorhynchus mykiss*) and is designated critical habitat (70 FR 52488) for the S-CCC steelhead. Shingle Mill Gulch at the project sites is a high gradient, boulder-dominated stream flowing through dense second growth redwood (*Sequoia sempervirens*) forest.

A County-wide stream crossing inventory and evaluation conducted in 2004 determined that the PM 4.8 culvert failed to meet passage criteria for all species of adult salmonids and all age classes of juveniles (Ross Taylor & Associates, 2004). The PM 5.24 culvert is extremely undersized (i.e., overtops in less than a 10-year storm flow) and is in poor condition. The PM 5.24 culvert meets adult fish passage criteria but fails to pass juveniles, primarily because of high velocities (Ross Taylor & Associates, 2004). The County proposes to retrofit the PM 4.8 culvert and replace the PM 5.24 culvert to improve fish passage at the crossing under all expected flow conditions. Construction would be completed between August 1 and October 15 during the low-flow season and outside of the salmonid spawning period. During construction, flow will be diverted in order to maintain aquatic life movement.

DETAILED PROJECT DESCRIPTION:

Culvert Retrofit at Post Mile 4.8

The existing culvert at PM 4.8 consists of a corrugated metal arch on concrete footings with a 36-inch high drop at the outlet of the culvert. The culvert slopes at 1% and is partly filled with coarse sediment. Flow exiting the culvert spills over a 36-inch high drop, onto a concrete pad poured in the channel, and then drops 2 feet into a small pool. The concrete pad was poured to protect the culvert outlet from scour and undercutting. A rock riffle downstream of the culvert controls the water levels in the pool. The slope from the culvert outlet to the downstream riffle crest is about 10%. Fish passage is limited by the drops at the culvert outlet and at the end of the concrete apron approximately 25 feet downstream of the culvert.

Improved fish passage at the culvert would be achieved by constructing a series of rock vortex weirs downstream of the culvert and notching the concrete sill at the outlet. The rock weirs are designed as grade control structures that would act as a series of step pools. A total of three weirs would be constructed with approximately 10-15 feet of horizontal run between their crests and a vertical drop of 1 foot to the downstream crest. Pool depths would be approximately 2 to 2.5 feet (Attachment 2). The concrete apron near the culvert outlet would be removed and replaced with a rock weir. A small concrete sill (12 feet across the channel and 1 foot high) would be constructed downstream of the culvert outlet on top of an existing boulder. The concrete sill is necessary to maintain a maximum vertical drop of 1 foot to the upstream and downstream grade control features. Rock instead of concrete could be used for this application, but this would significantly limit pool depth because rock placement requires more area to be filled. A 3-foot wide by 7-inch deep notch would be cut into the concrete sill at the culvert outlet.

Implementing the proposed project would require demolition of portions of the existing culvert; excavation of concrete fill, bed and bank material; placement of rock and concrete in the channel; and temporary dewatering during construction. A temporary access point would be established along the right bank of Shingle Mill Gulch immediately downstream of the culvert. By using a long reach excavator, it is likely that

the contractor could perform most of the excavation and rock placement from the right stream bank. An alternate access point may be established on the left bank if necessary. Construction would involve use of a track excavator/backhoe operating along roadway and channel bank. Limited use of equipment may be required in the bed of the channel. Notching of the concrete sill would be accomplished with a concrete saw. Any debris generated during construction would be removed from the channel. The weirs would be constructed of 1 to 2 ton (2 to 3.7 feet in diameter) quarry rock. The total volume of rock placed in the channel would be approximately 150 cubic yards. To the extent practical, voids within the rock would be filled with native streambed sand and gravel. Approximately 0.5 cubic yards of concrete would be used to construct the new sill downstream of the culvert outlet.
The channel would be dewatered during construction. The dewatering system would cover approximately 175 feet of channel beginning upstream of the culvert and extending about 120 feet downstream of the culvert. Dewatering activities would comply with protocols established by the National Marine Fisheries Service (NMFS) to minimize the impacts of these actions. The primary construction staging area would be located on the north side of the roadway approximately 60 feet west of the project site. The sequence of construction activities would be as follows:

installation of appropriate best management practices (BMPs); tree pruning/removal
fish relocation (in accordance with NMFS procedures)
dewatering plan (Attachment 5)
excavation for construction of rock weirs and scour protection
demolition of existing fill (i.e., the concrete apron and notching the sill)
placement of rock weirs and scour protection
construction of concrete sill and scour protection
installation of erosion protection and native seed
removal of dewatering system
revegetation with container stock (Attachment 4)

Culvert Replacement at Post Mile 5.24

The existing culvert at PM 5.24 consists of a 6-foot diameter corrugated metal pipe (CMP) with a mortared stone wingwall and an unmortared stone retaining wall on the upstream side, and a board-molded concrete headwall on the downstream end. The culvert is 33 feet long and set at a slope of approximately 3.5%. There is a concrete extension at the downstream end that drops about 1 foot into the channel bottom. The bottom of the culvert is punctured and the culvert is set at a poor angle, discharging directly into the right bank of the creek downstream of the crossing. The banks upstream and downstream of the culvert show obvious signs of erosion. Tailwater levels at the culvert outlet are maintained by a boulder riffle approximately 25 feet downstream of the outlet. The channel slopes at approximately 5% for a distance of about 70 feet downstream of the riffle crest. Downstream of this point the stream steepens and slopes

range from 7 to 10%. For a distance of 100 feet upstream of the culvert the channel slopes at about 4%.
Improved fish passage at the PM 5.24 crossing would be achieved by replacing the existing culvert with a 12-foot wide by 9-foot high (internal dimensions) by 57-foot long concrete box culvert. The new culvert would be significantly longer than the existing one because it would be oriented inline with the open channel, as opposed to the existing condition where the culvert crosses under the road nearly perpendicular to the natural flow line. The culvert bottom would be set approximately 4 feet below the existing channel invert and backfilled with a 3-foot layer of native substrate (i.e., gravel and cobble). The native substrate material would create a natural streambed, thereby re-establishing aquatic habitat continuity in the channel. A 1-foot deep by 3-foot wide low flow channel would be inset within the backfilled substrate. Baffles would be placed in the culvert to trap and maintain substrate within the culvert bed. These baffles would extend perpendicular across the culvert and be spaced approximately 7 feet on-center. The baffles would be 2 feet high and 1 foot in width. Two wingwalls, one upstream and one downstream, would transition the culvert to the steep channel banks. The upstream wingwall would extend 18 feet along the right bank and the downstream wingwall would extend 9 feet along the left bank. Large rock that ranges from 2 to 3 feet in diameter would be placed at the culvert inlet and outlet and along the wingwalls to prevent scour (Attachment 3). Soil fill would be placed between the culvert and roadway. The soil fill areas would be revegetated with locally appropriate native species. The culvert replacement would require removal of existing pavement for approximately 60 feet along Eureka Canyon Road.
Implementing the proposed project would require removal of the existing culvert and associated structures, excavation of bed and bank material, placement of the new box culvert, placement of rock for scour protection and temporary dewatering during construction. Construction would involve use of a 55-ton crane and a track excavator/backhoe operating along the roadway. Limited use of equipment may be required in the bed of the channel. Any debris generated during construction would be removed from the channel. The sequence of construction activities would be as follows:

installation of appropriate BMPs; tree pruning/removal
fish relocation (in accordance with NMFS procedures)
dewatering plan (Attachment 5)
establishment of staging area
removal of the existing culvert and associated structures (wingwalls, retaining wall, pavement, etc.)
excavation for box culvert
placement of pre-cast box culvert
construction of concrete wingwalls
placement of soil backfill, native substrate and rock scour protection
re-surfacing of roadway
removal of dewatering system
revegetation with container stock (Attachment 4)
erosion control plan

The culvert would be constructed of pre-cast concrete. Approximately 10 cubic yards of concrete would be used to construct culvert wingwalls. Quarry rock (1 to 2 ton, 2 to 3 feet in diameter) would be placed in the channel to protect the culvert and banks from scour. The total volume of rock placed in the channel would be approximately 55 cubic yards. Soil would be placed as backfill around the culvert to meet adjacent grades. These areas would be planted with locally appropriate native species.
The construction staging area would be located on the north side of the roadway above and below the project site. Temporary access would be established along the right bank of Shingle Mill Gulch immediately upstream of the culvert. The channel would be dewatered during construction. The dewatering system would cover a total of 150 feet of channel, beginning approximately 60 feet upstream of the existing culvert and extending about 50 feet downstream of the culvert. Dewatering activities would comply with protocols established by the NMFS to minimize the impacts of these actions. Construction of the proposed project is anticipated to take 45 calendar days. All non-revegetation associated earthmoving activities would occur between June 15 and October 15. If work begins prior to August 1 a pre-construction survey for nesting migratory bird species would be completed within 200 feet of the project area. If nesting birds are detected, then construction would begin after August 1 or when the nesting birds have fledged. Revegetation activities would be completed by November 15.

I. AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

DISCUSSION:

a, b, and d) No impact. The project will not directly impact any public scenic resources, as designated in the County's General Plan (1994), or obstruct any public views of these visual resources. Neither the stream nor the road are designated a state scenic resource. Eureka Canyon Road is designated as a County scenic road in the County General Plan (1994). The project will not create a new source of light or glare.

c) Less than significant impact. Heavy equipment will be operating in and around the riparian zone and streambed for approximately 6 to 8 weeks. The effect on aesthetics will be temporary and will be visible from the County right-of-way on Eureka Canyon Road, the Johnson property, City of Watsonville property and the Koinonia Conference Grounds. Rock weirs at PM 4.8 are designed to have a natural appearance, and the corrugated cylindrical culvert at PM 5.24 will be replaced with a box culvert filled with native streambed material. Soils disturbed by equipment access and/or construction will be revegetated with native plant species. The results of the project will be beneficial to the aesthetics of the project area.

II. 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:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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?	☐	☐	☐	☒

DISCUSSION:

a, b, and c) No impact. The project site is not currently being used for agriculture and no agricultural uses are proposed for the site or surrounding vicinity. No prime, unique or important farmland will be impacted and there will be no conflicts with existing zoning for agricultural use or a Williamson Act contract.

III. 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:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
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)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

DISCUSSION:

a, b) Less than significant impact. The North Central Coast Air Basin does not meet state standards for ozone and inhalable particulate matter (PM_{10}) (MBUAPCD, 2006). The regional pollutants of concern that would be emitted by the project are ozone precursors (Volatile Organic Compounds [VOCs] and nitrogen oxides [NOx]) and fugitive dust (PM_{10}). Ozone precursors and PM_{10} would be emitted by onsite construction equipment and haul trucks delivering and removing materials from the project sites. Onsite mechanized construction equipment would include one crane, one excavator and one bobcat. Approximately 40 truck trips with a roundtrip distance of approximately 40 miles would be required to deliver imported materials and remove construction debris from the sites. Construction projects using typical construction equipment such as dump trucks, scrappers, bulldozers, compactors and front-end loaders which temporarily emit precursors of ozone [i.e.,volatile organic compounds (VOC) or oxides of nitrogen (NO_x)],

nitrogen (NO_x)], are accommodated in the emission inventories of State- and federally-required air plans and would not have a significant impact on the attainment and maintenance of ozone standards. Project construction may result in a short-term, localized decrease in air quality due to generation of small amounts of dust. Standard dust control BMPs (e.g., periodic watering) are incorporated into the project, so air quality impacts associated with construction will be at a less than significant level.

c) Less than significant impact. Currently, the project region is non-attainment under state air quality standards for ozone and particulate matter. Due to the small scale of the project, there are no anticipated cumulative effects on the levels of these pollutants.

d) Less than significant impact. Construction may result in a short-term, localized decrease in air quality due to generation of dust. The only known sensitive receptors are the residents on the Paul Johnson property at the PM 4.8 site. Construction will occur between 8 AM and 5 PM, Monday through Friday when the residents are frequently absent (See *XI, Noise*). Standard dust control BMPs are also incorporated into the project, so air quality impacts associated with construction will be at a less than significant level.

e) Less than significant impact. The project would have less than significant impacts for the construction period, and would not create long-term objectionable odors.

IV. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
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?	☐	☒	☐	☐
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, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
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?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐

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?	☐	☐	☐	☒

DISCUSSION:

a) Less than significant impact with mitigation. The project occurs in designated critical habitat for S-CCC steelhead, which are listed as threatened under the federal ESA. The purpose of the project is to enhance fish passage and improve habitat conditions for S-CCC steelhead. The project may have temporary adverse impacts on steelhead during de-watering of the stream for construction. The NMFS has developed protection and minimization measures to mitigate impacts to S-CCC steelhead during construction of fisheries restoration projects (Appendix A). These protection and minimization measures are part of a programmatic Biological Opinion (NMFS, 2006) that authorizes "take" of listed salmonid species, including S-CCC steelhead, during implementation of fisheries restoration projects. Implementing these protection and minimization measures (**BIO-1**) will reduce the project impacts to S-CCC steelhead to a less than significant level.

A Biotic Assessment (Swanson Hydrology & Geomorphology, 2007) has been prepared for the project which evaluates the potential for special status (i.e., threatened, endangered, candidate, species of concern, etc.) plants and wildlife species to occur within the vicinity of the project site. The analysis determined that in addition to S-CCC steelhead the following special status species have the potential to occur at the project site:

- California red-legged frog (*Rana draytonii*), federally threatened
- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), state species of special concern

California red-legged frog (CRLF) was federally listed as threatened throughout its California range in 1996 and the USFWS published a final designation of critical habitat for the CRLF in 2006 (USFWS, 1996; USFWS, 2006). There is no designated critical habitat in the project area. California red-legged frogs are known to occur approximately 4.5 miles northeast of the project sites. There is no suitable breeding habitat in the project area. California red-legged frog may occasionally occur as transients within the project area. No frogs were identified on site during field surveys. During a site visit in April 2007 Michelle Leicester, a fisheries biologist with the California Department of Fish and Game, noted that the site does not provide good habitat for CRLF because the stream is steep and there is limited ponded water (pers. comm. Leicester, 2007). California red-legged frogs may use the site intermittently, or rarely, and based on the time of year the work is to be done, the small disturbance area, and the reasonably short duration of work, it is unlikely CRLF will be present on the site. Mitigation measures (**BIO-2**) will be implemented to reduce the potential for impacts to CRLF to a less than significant level.

The San Francisco dusky-footed woodrat is a state species of special concern found in central California from south of San Francisco Bay to Monterey Bay (Matocq, 2002). In the Santa Cruz Mountains they are associated with Douglas fir, tanoak, manzanita, coast redwood, and willow plant communities. Woodrat houses are usually a little over a meter in diameter and made of forest litter including sticks and leaves (Bankie and Moskal, 2007). No woodrat houses were observed in the project area during the field surveys. Woodrats may build houses in the uplands adjacent to the stream. Mitigation measures (**BIO-3**) will be implemented to reduce the potential for impacts to the dusky-footed woodrat to a less than significant level.

b, e) Less than significant impact with mitigation. The project sites are within the riparian corridor and sensitive habitat as defined in the Santa Cruz County Code Sections 16.30 and 16.32, respectively; and within the jurisdiction of the California Department of Fish and Game's Stream and Lake Bed Alteration Program (Section 1600). The proposed project will result in temporary disturbance of riparian and aquatic habitat by heavy equipment accessing and working in the site. Up to 300 square feet of sensitive habitat may be disturbed at PM 4.8 and 200 square feet of sensitive habitat at PM 5.24. Riparian and sensitive habitat disturbed during construction will be revegetated with locally appropriate native species. The project proposes to remove as many as 4 big leaf maple trees at PM4.8 and 1 tanoak at PM 5.24. If any native trees are removed as a result of implementing the project they will be replaced, in-kind, at a 3:1 ratio and maintained for 3 years after construction (**BIO-4**). Seed, mulch and/or biodegradable erosion control fabric would be applied to all disturbed areas adjacent to the stream that may be subject to erosion (See *VI, Geology and Soils*).

c) Less than significant impact. The project would dewater up to 6,154 square feet of potential jurisdictional non-wetland waters of the U.S. (3,755 square feet at PM 4.8 and 2,399 square feet at PM 5.24). Dewatering activities would include discharge of temporary fill (e.g., sand bags) to create coffer dams. Dewatering activities would be conducted in accordance with protection and minimization measures described in Appendix A and are therefore not likely to result in significant adverse impacts to waters of the U.S.

The project would result in discharge of fill material (i.e., concrete, rock, channel substrate, soil) to potential jurisdictional non-wetland waters of the U.S. The project would also re-contour portions of the channel bed and banks. The project will not result in conversion of waters to wetlands or waters to uplands. The project is expected to have beneficial effects on fish passage and aquatic habitat continuity, therefore no mitigation is proposed.

d) Less than significant impact with mitigation. The proposed project will require the temporary dewatering of the stream. Dewatering is necessary to complete various aspects of construction and to minimize potential impacts from release of sediment and other materials that may be deleterious to the stream environment. The resultant channel improvements will be beneficial to aquatic life movement.

f) No impact. The project does not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

V. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

DISCUSSION:

a) No impact. The two culverts were identified in a Phase I archaeological investigation (Pacific Legacy, November 2007) as having potential historic significance due to age and possible association with a Civilian Conservation Corps camp located north of the project area. The consultant recommended that further archaeological study be completed to comply with the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA). The recommendation to complete further analysis on the historic status of the two culverts was completed by Painter Preservation & Planning. The report concluded that the culverts are not historically significant and are not historic resources.

b, c, d) No impact. A Native American consultation and a cultural resource archival record search were conducted for the project area (Pacific Legacy, 2007). The record search and sacred lands search failed to reveal the presence of any previously documented prehistoric, historic or ethnographic resources within the project area. An archaeological survey of the property did not result in the identification of any significant cultural resources surrounding the culverts. It is unlikely that any archaeological or paleontological resources will be disturbed in the area, however, pursuant to Section 16.40.040 of the Santa Cruz County Code, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the sheriff-coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archeological report shall be prepared and

that the remains are not of recent origin, a full archeological report shall be prepared and representatives of the local Native California Indian group shall be contacted. Disturbance shall not resume until the significance of the archeological resource is determined and appropriate mitigations to preserve the resource on the site are established.

VI. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒

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 waste water?	☐	☐	☐	☒

DISCUSSION:

a)

i, ii, and iii) Less than significant impact. The proposed project is located within a California Fault Zone delineated by the Alquist-Priolo Earthquake Fault Zoning Act, Special Publication 42, due its proximity to several active faults including the San Andreas Fault. Consequently, the project may be subject to moderate to severe seismic ground shaking during the anticipated life of the project. However, all of Santa Cruz County is subject to significant seismic events and the construction of the project poses no additional threat to the structural stability of the culvert, road, or surrounding areas. The project will be engineered to minimize damage related to seismic shaking.

iv) Less than significant impact. Historically, there have been occurrences of landslides in the project vicinity; however, project construction will occur during the dry season when landslides are uncommon. The culverts and structures will be designed and constructed to withstand to the possible occurrence of a landslide event.

b) Less than significant impact. The streambanks and soils in the project area are prone to erosion. Appropriate soil erosion and sediment control BMPs such as silt fences and straw wattles will be used and maintained during construction and are part of the project design. Following construction native seed, mulch and/or biodegradable erosion control fabric would be applied to all disturbed areas that may be subject to erosion including streambanks, access routes and staging areas (**GEO-1**).

c) Less than significant impact. The project is located in an area of unstable soil (*Lompico-Felton* complex) that is prone to landslides. However, the project would not create potentially unstable soils.

d) No impact. The Soil Survey for Santa Cruz County maps soils in the project area as *Lompico-Felton complex*, with soil textures typically loam or sandy loam in a coarse rock matrix. These soils are unlikely to behave as expansive soils.

e) No impact. The project would not generate any wastewater, therefore the ability of the soils to support wastewater disposal is not applicable.

VII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
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?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
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?	☐	☐	☐	☒

DISCUSSION:

a) No impact. No materials hazardous to the public or the environment would be transported, used, or disposed of, with the exception of oil and fuel for construction equipment.

b) Less than significant impact with mitigation. Implementing the project would require use of heavy equipment in the riparian area and equipment may operate in the bed and banks of the channel. To reduce the potential of an accidental release of hazardous materials (e.g., fuel, hydraulic fluids) a Spill Prevention and Containment Plan (**HAZ-1**) (Attachment 6) would be implemented to prepare for the unlikely event of a fuel or oil spill. By implementing the Spill Prevention and Containment Plan the potential impact to the environment will be less than significant.

All concrete clean-up will take place in the staging area and will be done according to standard Best Management Practices (BMP's) regarding concrete work.

c) No impact. The proposed project is not located within one quarter-mile of an existing or proposed school.

d) No impact. The proposed project site is not included on the list of hazardous sites in Santa Cruz County compiled pursuant to the specified code.

e) No impact. The proposed project is not located in the vicinity of an airport land use plan or a public airport.

f) No impact. The proposed project is not located in the vicinity of a private airport.

g) Less than significant impact. Eureka Canyon Road may need to be closed for up to 30 minutes on four separate occasions for replacement of the culvert at PM 5.24. In order to mitigate for the potential disruption in emergency service access the County will prepare an emergency response plan to ensure that proper equipment and personnel are staged in appropriate areas so that emergency services are not disrupted (See *XV. Transportation/Traffic*).

h) No impact. The project design incorporates all applicable fire safety code requirements and will include fire protection devices as required by the local fire agency, thus it would not expose people or structures to a significant risk of loss, injury or death involving wildland fires.

VIII. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
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)?	☐	☐	☐	☒
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 which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern 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 which would result in flooding on- or off-site?	☐	☐	☒	☐
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?	☐	☐	☒	☐

f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
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*?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

DISCUSSION:

a, f) Less than significant impact. Water quality certification will be obtained from the Regional Water Quality Control Board prior to project construction. Direct impacts to water quality such as sedimentation and increased turbidity will be minimized by dewatering and diverting the stream during construction. 150 ft of Shingle Mill Gulch will be diverted at PM 4.8, while 175 ft will be dewatered at PM 5.24. A sediment management plan will be developed using appropriate soil erosion and sediment control BMPs such as use of silt fences and straw wattles. Following construction native seed, mulch and/or biodegradable erosion control fabric would be applied to all disturbed areas that may be subject to erosion (See *VI, Geology and Soils*).

b) No impact. The project would not deplete groundwater supplies or interfere with groundwater recharge.

c, d, and e) Less than significant impact – The project will not create or contribute runoff water. The alignment of the stream will not be altered at PM 4.8; however, grade control will be added in the form of rock weirs to improve fish passage. This will not result in substantial erosion or changes in flood conveyance.

At PM 5.24 the new culvert would be significantly increase the flood conveyance capacity at the crossing. The existing culvert has a capacity of approximately 250 cfs. The 2-year and 10-year recurrence peak flows are estimated to be 195 and 505 cfs, respectively (nhc, 2007). The new culvert is expected to have a conveyance capacity of 700 cfs. The new culvert would be oriented

inline with the open channel, as opposed to the existing condition were the culvert crosses under the road nearly perpendicular to the natural flow line. These changes in conveyance capacity and alignment are considered beneficial impacts.

At both locations, the project will temporarily dewater and alter the course of the stream during construction. This will minimize potential impacts from erosion and sedimentation as construction can be conducted in a dry streambed. BMPs will be used to minimize erosion and siltation during construction.

g) No impact. The project does not involve placing housing within the 100-year flood hazard area.

h) No impact. The new and modified culvert and channel structures will be placed within the 100-year flood area and will act to control grade and improve fish passage. This will not significantly impede flood flows nor re-direct them.

i) No impact. The project will not increase exposure of people or property to flooding.

j) No impact. No impact is anticipated due to seiche, tsunami or mudflow.

IX. LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

DISCUSSION:

a) No impact. The proposed project will not result in the physical division of an established community.

b) No impact. The proposed project will not alter the land use of the project site, and thus will not conflict with any policies adopted for the purpose of avoiding or mitigating an environmental effect.

c) No impact. The proposed project will not conflict with any habitat conservation plan or natural community conservation plan.

X. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

DISCUSSION:

a and b) No impact. The proposed project would not result in the loss of availability of known mineral resource or loss of availability of a locally important mineral resource recovery site.

XI. NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
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 expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
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?	☐	☐	☐	☒

DISCUSSION:

a, b and d) Less than significant impact with mitigation. There will be a temporary increase in noise in the project vicinity due to construction activities (e.g., operation of heavy equipment) which may exceed the County General Plan threshold of an hourly average of 50 Leq during the

day. The only known noise receptors that maybe affected at levels that exceed the County threshold are the residents on the Paul Johnson property at the PM 4.8 site. This impact will be mitigated by restricting the hours of operation to 8 AM through 5 PM, Monday through Friday (**NOS-1**) when the residents are frequently absent. The local residents will be contacted prior to the initiation of construction and be provided a schedule of construction activities.

Noise generated during construction will increase the ambient noise levels for adjoining areas. Given the limited duration of construction this impact it is considered to be less than significant.

c) No impact. There will be no permanent increase in ambient noise levels.

e and f) No impact. The project is not located within the vicinity of an airport.

XII. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

DISCUSSION:

a, b, and c) No impact. The fish passage enhancement would not induce population growth in the area or displace existing housing or people.

XIII. PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project 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?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

DISCUSSION:

a, b, c, d, and e) No impact. The project would not create the need for new or altered government facilities associated with fire and police protection, schools, and parks.

XIV. RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project 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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

DISCUSSION:

a and b) No impact. The project would not create or expand any recreational facilities, and it would not induce increased recreational activity in the project vicinity.

XV. TRANSPORTATION / TRAFFIC

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which 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)?	☐	☐	☒	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
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?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☒	☐	☐
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

DISCUSSION:

a) Less than significant impact. The results of the project itself will not cause a foreseeable increase in traffic substantial to the existing traffic load and capacity of Eureka Canyon Road. Temporary additional use by construction workers and haul trucks would occur. This would range from approximately 3 to 10 additional trips per day. This impact is considered less than significant.

During construction at PM 5.24 traffic on will be limited to a single-lane. Traffic control will include flag persons above and below the crossing. The single lane traffic control may cause short delays, but due to the relatively low amount of traffic on Eureka Canyon Road, delays are anticipated to be minor and result in a less than significant impact.

b) No impact. During construction, access will be maintained, and the minor increase in traffic would not reduce the level of service on Eureka Canyon Road. See response to **a)** above.

c) No impact. The project will not result in a change in air traffic patterns.

d) No impact. The proposed project will comply with current road requirements to prevent potential hazards to motorists, bicyclists, and/or pedestrians.

e) *Less than significant impact with mitigation*. Eureka Canyon Road may need to be closed for up to 30 minutes on four separate occasions for replacement of the culvert at PM 5.24. It is unlikely that a closure event would coincide with an emergency given the relatively light population density and recreational use in areas above the PM 5.24 crossing. In order to mitigate for the potential disruption in emergency service access, first responders and residents will be given 24 hours notice of the road closures. The County Department of Public Works, construction contractors and emergency response personnel will prepare an emergency response plan to ensure so that proper equipment and personnel are staged in appropriate areas so that emergency services are not disrupted (**TRANS-1**).

f) No impact. The project will not result in a reduction of parking capacity.

g) No impact. The project will not result in a conflict with adopted policies, plans, or programs supporting alternative transportation.

XVI. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in 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?	☐	☐	☒	☐

DISCUSSION:

a, b, c, d, and e) No impact. The project would not generate any wastewater, so there are no applicable wastewater treatment requirements. No new or expanded water supply, treatment, or storm water drainage facilities would be required for the project.

f and g) Less than significant impact. A maximum of 450 cubic yards of toxin-free fill material such as concrete, base rock and asphalt will be excavated from both project sites. The materials will be transported to the aggregate recycling facilities of the Buena Vista Landfill in Watsonville, CA, or Cabrillo Sand & Gravel which readily process construction and demolition solid waste. Recycling reusable materials will minimize the amount of material deposited into the landfill and assure the project complies with federal, California and Santa Cruz County statutes and regulations.

M. Non-Local Approvals

Does the project require approval of federal, state, or regional agencies? Yes X No ____

N. Mandatory Findings of Significance

1. Does the project 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, substantially reduce the number or restrict the range of a rare or endangered plant, animal, or natural community, or eliminate important examples of the major periods of California history or prehistory? Yes ____ No X

2. Does the project have the potential to achieve short term, to the disadvantage of long term environmental goals? (A short term impact on the environment is one which occurs in a relatively brief, definitive period of time while long term impacts endure well into the future) Yes ____ No X

3. Does the project 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, and the effects of reasonably foreseeable future projects which have entered the Environmental Review stage)? Yes ____ No X

4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? Yes ____ No X

Mandatory Findings of Significance (cont.)

Discussion:

a) Less than significant impact. *Implementing* the proposed project would have a beneficial impact on aquatic habitat continuity and critical habitat for S-CCC steelhead. The project would have some temporary adverse impacts associated with construction. Environmental protection measures have been incorporated directly into the project description and as mitigation. With these measures the project is not likely 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) Less than significant impact with mitigation. As many as two other fish passage improvement projects may be implemented in the Corralitos Creek watershed in 2008. These projects include:

Corralitos Creek at Eureka Canyon Road PM 2.95: A culvert retrofit requiring approximately 175 feet of dewatering; and

Corralitos Creek Fisheries Enhancement Project: A fish ladder and diversion intake upgrade requiring approximately 450 feet of dewatering;

While all of these projects are designed to benefit S-CCC steelhead, the cumulative short-term impacts of implementing the projects may be significant. NMFS is currently reviewing these projects individually and cumulatively and may make recommendations or establish conditions for implementing these projects. Cumulative impacts of the projects may be mitigated through coordination and sequencing of the construction schedules to minimize the amount of stream dewatered at one time. The project will adhere to NMFS' recommendations, if any, for minimizing the cumulative impacts of these projects (**CU-1**).

c) Less than significant impact. The project will not cause substantial adverse effects on human beings, either directly or indirectly.

TECHNICAL REVIEW CHECKLIST

	REQUIRED	COMPLETED*	N/A
Agricultural Policy Advisory Commission (APAC) Review	_____	_____	____
Archaeological Review Completed by: Painter Preservation & Planning	_____	Yes	____
Biotic Report/Assessment Biotic Assessment completed by: Swanson Hydrology & Geomorphology	_____	Yes	____
Geologic Hazards Assessment (GHA)	_____	_____	____
Geologic Report	_____	_____	____
Geotechnical (Soils) Report	_____	_____	____
Riparian Pre-Site	_____	_____	____
Septic Lot Check	_____	_____	____
Other:			

Attachments:

1. Location Map
2. Project Site Plan for PM 4.8
3. Project Site Plan for PM 5.24

4A. Dewatering Plan for PM 4.8

4B. Dewatering Plan for PM 5.24

5. Revegetation & Success Criteria
6. Spill Prevention & Response Plan
7. Appendix A of the Biotic Assessment cited below

Other technical reports or information sources used in preparation of this Initial Study

1. Historic Resources "Draft Report" (Shingle Mill Gulch Fish Passage Improvement Project) prepared by Painter Preservation & Planning, dated March 31, 2007.
2. Biotic Assessment prepared by Swanson Hydrology & Geomorphology, dated December 12, 2007 (On review at the Santa Cruz County Planning Department).
3. Biological Opinion completed on June 21, 2006 by the National Marine Fisheries Service (NMFS) and on review at the Santa Cruz County Planning Department.

5.0 REFERENCES

Bankie, H.R. and S.M. Moskal, 2007. Habitat preferences of the dusky-footed woodrat on the UCSC upper campus. Accessed online at: http://mnhc.ucsc.edu/Images/Mammals/woodrat_paper.pdf

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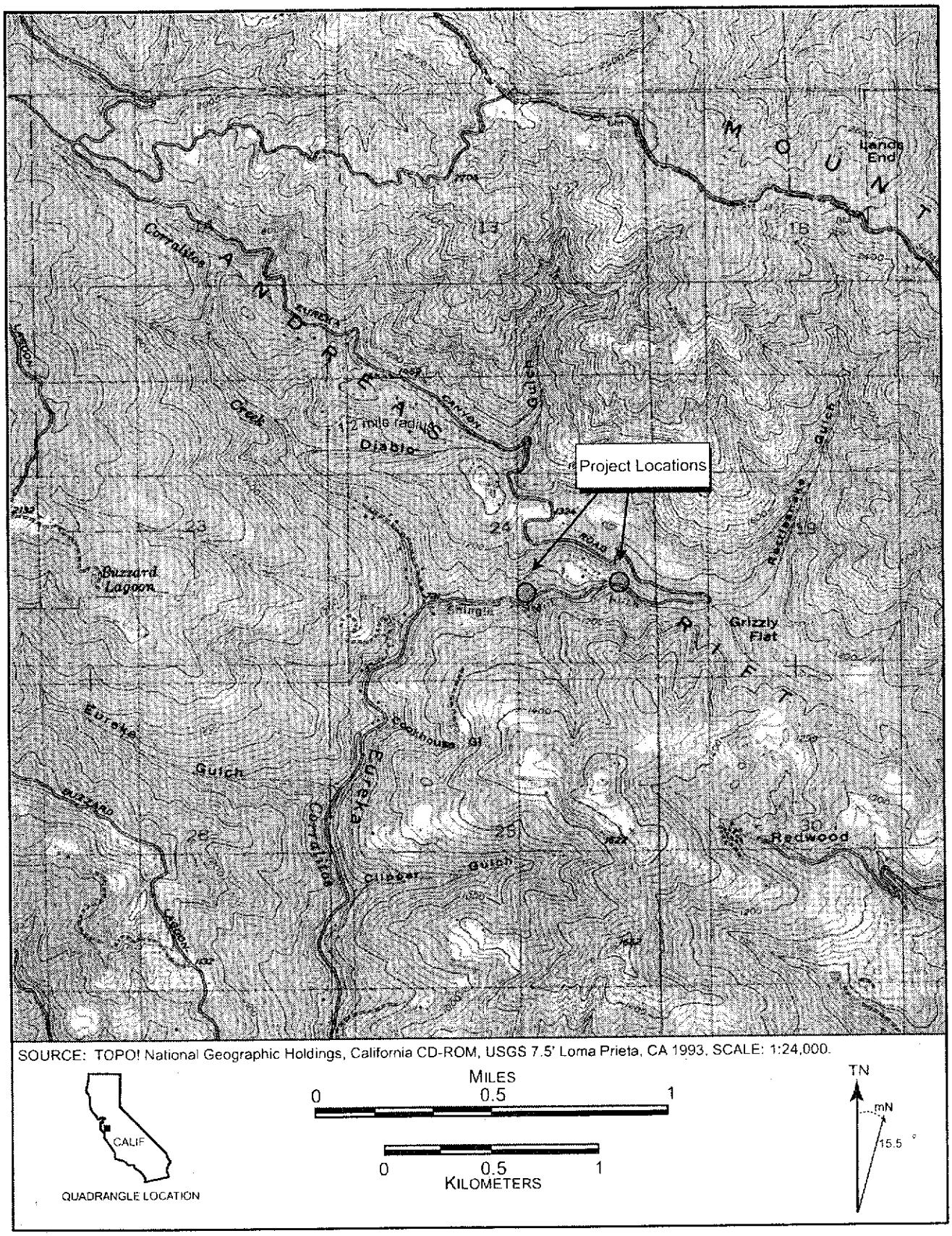
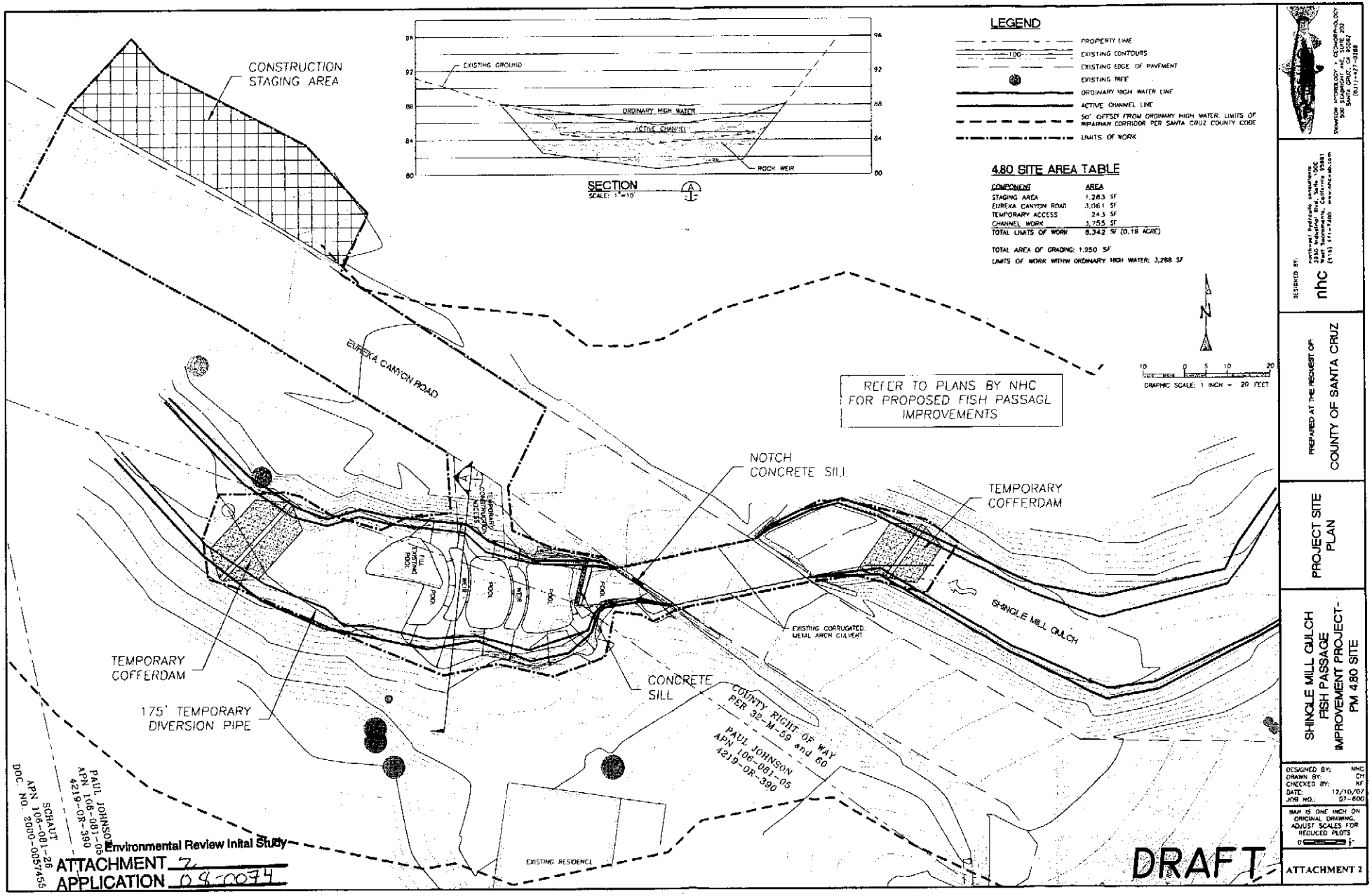


Project Location Map.

Shingle Mill Gulch Fish Passage Project
Santa Cruz County, California
2007

Environmental Review Inital Study
ATTACHMENT 1
APPLICATION 08-0074



SWANSON HYDROLOGY & GEOMORPHOLOGY
SOQUEL, CA 95073
SANTA CRUZ, CA 95062
(831)-427-0288

DESIGNED BY: nhc
northwest hydraulic consultants
3950 Industrial Blvd., Suite 100
West Sacramento, California 95691
(916) 371-7480 www.nhcweb.com

PREPARED AT THE REQUEST OF: COUNTY OF SANTA CRUZ

PROJECT SITE PLAN

SHINGLE MILL GULCH FISH PASSAGE IMPROVEMENT PROJECT - PM 4.80 SITE

DESIGNED BY:	NHC
DRAWN BY:	CH
CHECKED BY:	KF
DATE:	12/10/07
JOB NO.:	07-800

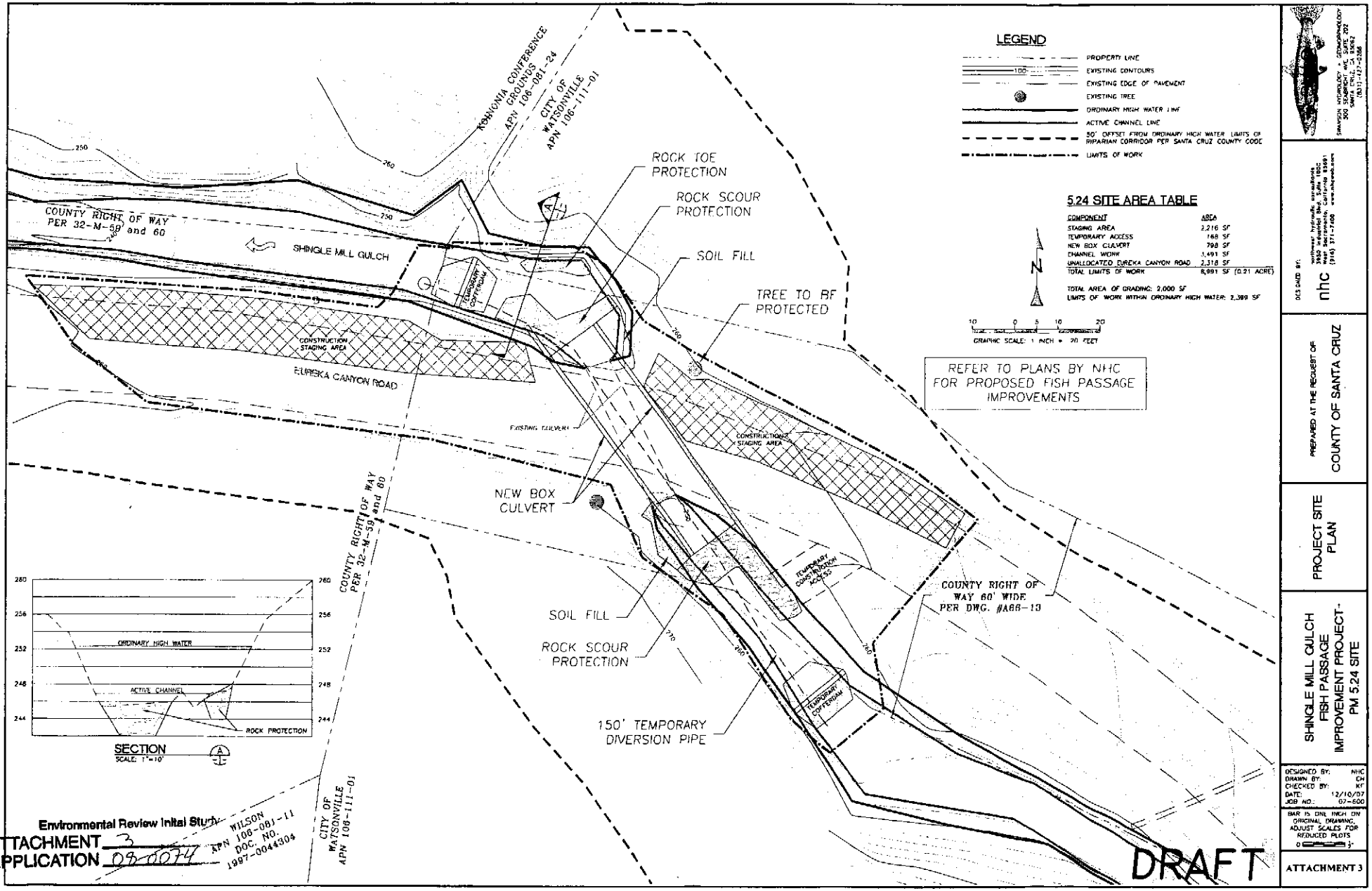
BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

ATTACHMENT 2

SCHAUT APN 106-081-26 DOC. NO. 2000-0057455

PAUL JOHNSON APN 106-081-05 4219-OR-390

Environmental Review Inital Study
ATTACHMENT 2
APPLICATION 09-0074



Environmental Review Initial Study
ATTACHMENT 3
APPLICATION 09-0074

SHINGLE MILL GULCH FISH PASSAGE IMPROVEMENT PROJECT - PM 5.24 SITE

PROJECT SITE PLAN

PREPARED AT THE REQUEST OF COUNTY OF SANTA CRUZ

DESIGNED BY: NHC
DRAWN BY: CH
CHECKED BY: KF
DATE: 12/10/07
JOB NO.: 07-600

BAR IS ONE INCH ON ORIGINAL DRAWING. ADJUST SCALES FOR REDUCED PLOTS

ATTACHMENT 3

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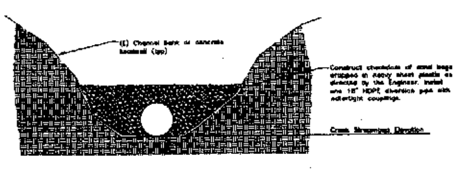
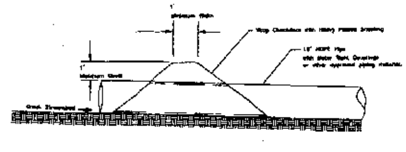


STREAM DIVERSION DETAIL

NOT TO SCALE



STREAM DIVERSION CROSS SECTION DETAIL

NOT TO SCALE

NOTES:

1. ELEVATION CONTOURS SHOWN ON THIS SHEET WERE DEVELOPED FROM A TOPOGRAPHIC SURVEY CONDUCTED AUGUST, 2007 BY ROBERT L. DEWITT AND ASSOCIATES, USING TRADITIONAL GROUND SURVEY METHODS AND EQUIPMENT. THE CONTOURS SHOWN ACCURATELY REPRESENT THE GENERAL GROUND SURFACE BUT THE DATA DOES NOT MEET NATIONAL MAP ACCURACY STANDARDS, AS DEFINED BY THE USGS. IN LOCALIZED AREAS THE GROUND ELEVATIONS SHOWN MAY VARY SLIGHTLY FROM THOSE SHOWN BY THE CONTOURS.

2. ELEVATIONS SHOWN ARE ON PROJECT SPECIFIC DATUMS. THERE IS NO CONVERSION AVAILABLE FOR COMMON VERTICAL DATUMS. ASSUMED ELEVATION OF 100.00 FEET ON TOP OF CONCRETE WINGWALL/ABUTMENT AT EASTERLY END OF UPSTREAM SIDE OF CREEK CROSSING AS SHOWN HEREON (SHT. 1).

3. THE BASIS OF BEARINGS IS S81°41'58"W BETWEEN MONUMENTS FOUND AS SHOWN HEREON AND AS CACULATED FROM RECORD DATA AS SHOWN ON THOSE CERTAIN RECORD OF SURVEY MAPS FILED IN VOLUME 32 OF MAPS, AT PAGES 59 AND 60, SANTA CRUZ COUNTY SURVEYOR'S OFFICE.

4. EXISTING GROUND ELEVATIONS WITHIN THE CHANNEL ARE SUSCEPTIBLE TO CHANGE DURING TIMES OF HIGH FLOWS. THE EXISTING CONDITIONS SHOWN ON THESE PLANS REPRESENT THE CONDITIONS ON JAN 13, 2004 WHEN THE TOPOGRAPHIC SURVEY WAS PERFORMED. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXISTING CONDITIONS AT THE TIME OF CONSTRUCTION.

5. AT LEAST ONE LANE OF EUREKA CANYON ROAD SHALL REMAIN OPEN FOR TRAVEL BY THE PUBLIC AT ALL TIMES DURING CONSTRUCTION. ONE LANE MAY BE CLOSED TO TRAFFIC AT THE CONTRACTOR'S DISCRETION TO ACCOMMODATE CONSTRUCTION ACTIVITIES, DELIVERY OF MATERIALS, AND STAGING OF EQUIPMENT. ANY LANE CLOSURES AND ALL PROJECT SITE TRAFFIC CONTROL SHALL CONFORM TO SECTION 12 OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS.

6. THE CONSTRUCTION BASELINE SHOWN WAS COMPUTED USING THE COORDINATE SYSTEM ESTABLISHED BY CP-1 AND CP-2. THE CONSTRUCTION BASELINE IS NOT MONUMENTED IN THE FIELD. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING AND PROTECTION OF THE CONTROL POINTS.

7. THIS DEWATERING PLAN IS TO BE IMPLEMENTED BY THE CONTRACTOR WHEN WATER IS FLOWING IN THE CREEK BETWEEN JULY 1ST AND OCTOBER 15ST; THESE ARE THE BASIC REQUIREMENTS NECESSARY FOR THE CONTRACTOR'S SITE DEWATERING PLAN AS SPECIFIED IN THE SPECIAL PROVISIONS.

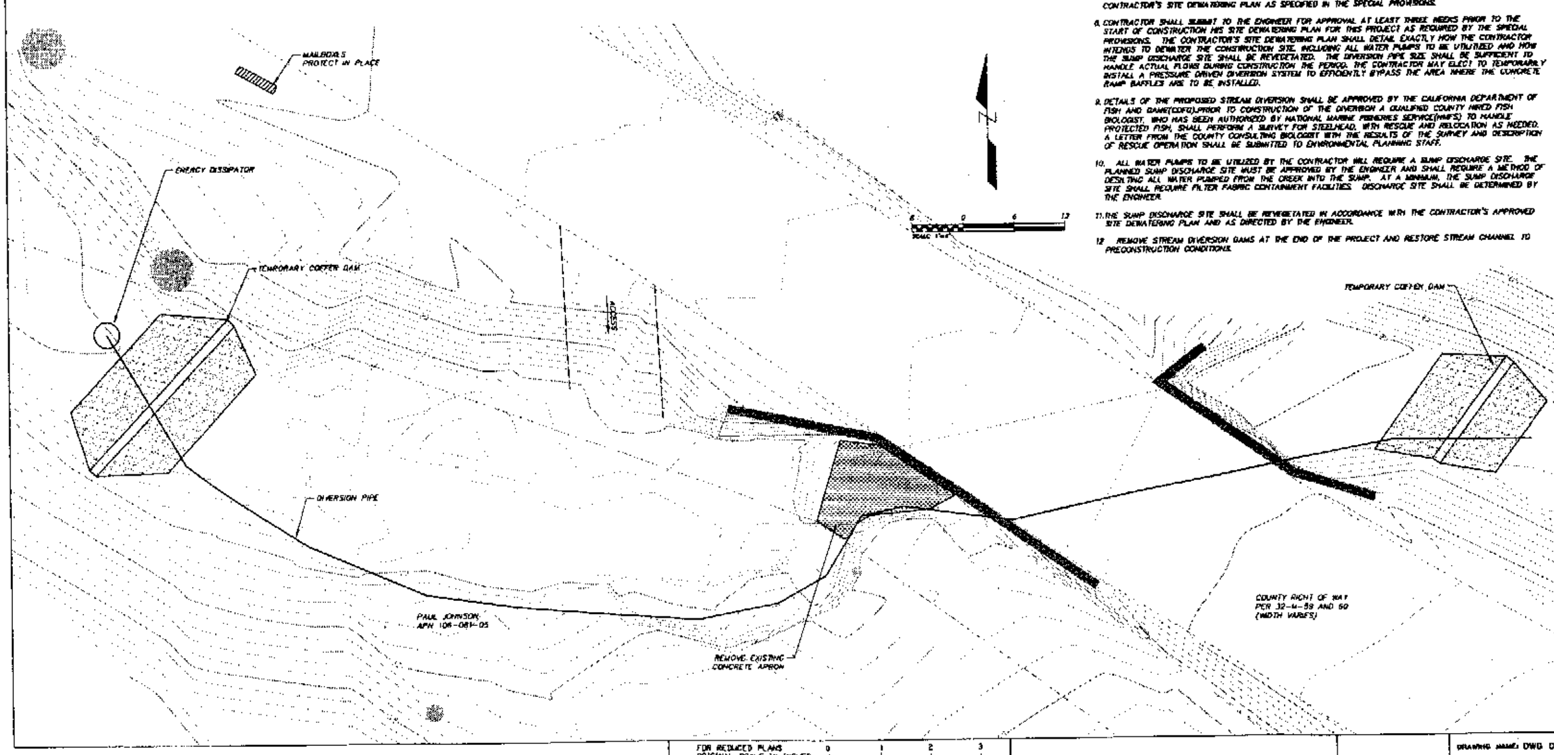
8. CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL AT LEAST THREE WEEKS PRIOR TO THE START OF CONSTRUCTION HIS SITE DEWATERING PLAN FOR THIS PROJECT AS REQUIRED BY THE SPECIAL PROVISIONS. THE CONTRACTOR'S SITE DEWATERING PLAN SHALL DETAIL EXACTLY HOW THE CONTRACTOR INTENDS TO DEWATER THE CONSTRUCTION SITE, INCLUDING ALL WATER PUMPS TO BE UTILIZED AND HOW THE SUMP DISCHARGE SITE SHALL BE REVEGETATED. THE DIVERSION PIPE SIZE SHALL BE SUFFICIENT TO HANDLE ACTUAL FLOWS DURING CONSTRUCTION THE PERIOD. THE CONTRACTOR MAY ELECT TO TEMPORARILY INSTALL A PRESSURE DRIVEN DIVERSION SYSTEM TO EFFICIENTLY BYPASS THE AREA WHERE THE CONCRETE RAMP BAFFLES ARE TO BE INSTALLED.

9. DETAILS OF THE PROPOSED STREAM DIVERSION SHALL BE APPROVED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME(CDFG),PRIOR TO CONSTRUCTION OF THE DIVERSION A QUALIFIED COUNTY HIRED FISH BIOLOGIST, WHO HAS BEEN AUTHORIZED BY NATIONAL MARINE FISHERIES SERVICE(NMFS) TO HANDLE PROTECTED FISH, SHALL PERFORM A SURVEY FOR STEELHEAD, WITH RESCUE AND RELOCATION AS NEEDED. A LETTER FROM THE COUNTY CONSULTING BIOLOGIST WITH THE RESULTS OF THE SURVEY AND DESCRIPTION OF RESCUE OPERATION SHALL BE SUBMITTED TO ENVIRONMENTAL PLANNING STAFF.

10. ALL WATER PUMPS TO BE UTILIZED BY THE CONTRACTOR WILL REQUIRE A SUMP DISCHARGE SITE. THE PLANNED SUMP DISCHARGE SITE MUST BE APPROVED BY THE ENGINEER AND SHALL REQUIRE A METHOD OF DESILTING ALL WATER PUMPED FROM THE CREEK INTO THE SUMP. AT A MINIMUM, THE SUMP DISCHARGE SITE SHALL REQUIRE FILTER FABRIC CONTAINMENT FACILITIES. DISCHARGE SITE SHALL BE DETERMINED BY THE ENGINEER.

11. THE SUMP DISCHARGE SITE SHALL BE REVEGETATED IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED SITE DEWATERING PLAN AND AS DIRECTED BY THE ENGINEER.

12. REMOVE STREAM DIVERSION DAMS AT THE END OF THE PROJECT AND RESTORE STREAM CHANNEL TO PRECONSTRUCTION CONDITIONS.



FOR REDUCED PLANS ORIGINAL SCALE IN INCHES 0 1 2 3

DRAWING NAME: DWG 01-PM48

DATE	REVISION	BY

COUNTY OF SANTA CRUZ - DEPARTMENT OF PUBLIC WORKS

EUREKA CANYON ROAD CULVERT AT PM 4.80
SALMONID PASSAGE IMPROVEMENT

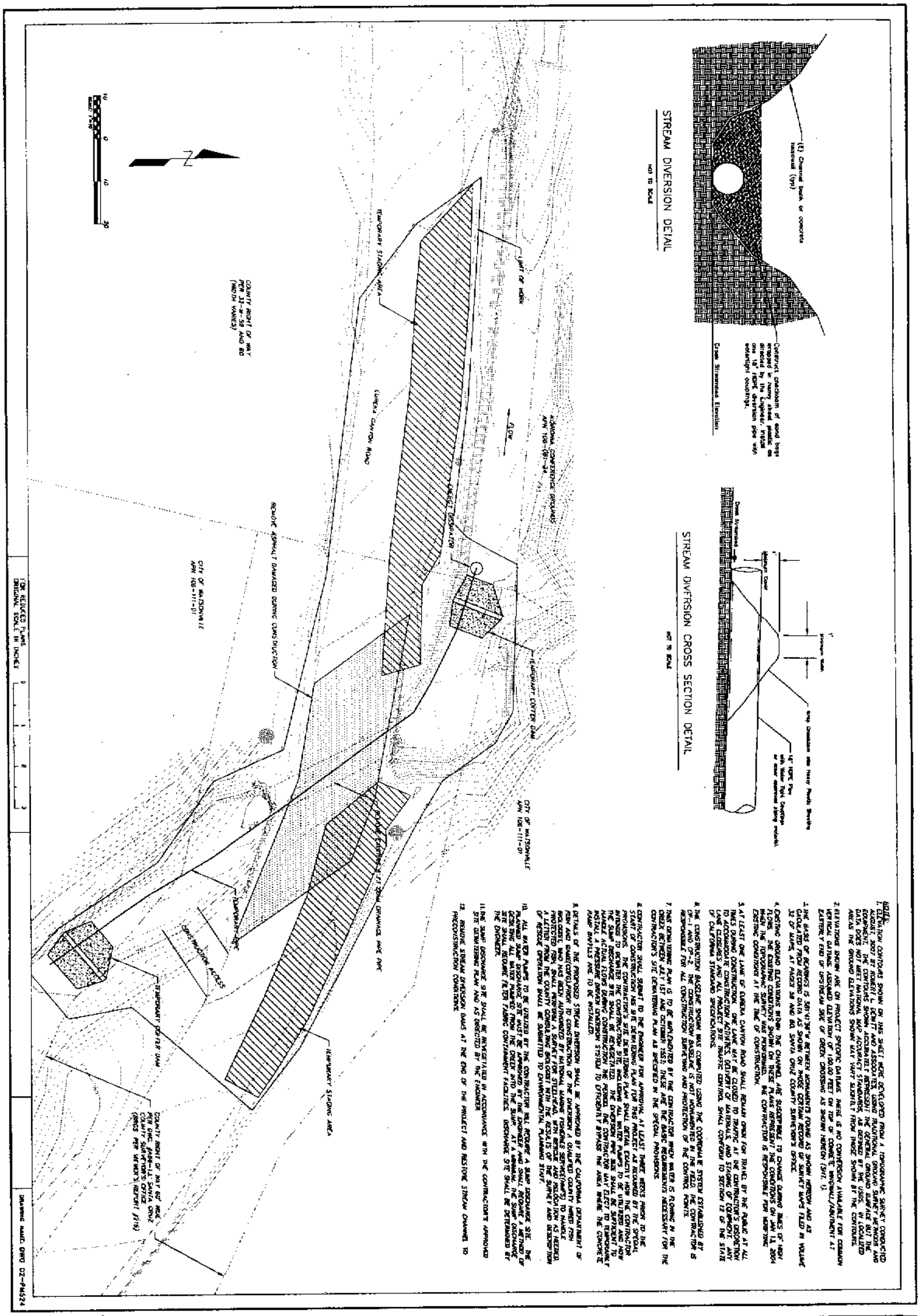
ACCESS/DEMOLITION/DEWATERING SHEET

PROJECT ENGINEER

nhc northwest hydraulic consultants, West Sacramento, California, (916) 371-7400

DRAWN: ts
CHECKED: ljh
DATE: 7JAN08
SCALE: Varies
JOB NO. 50473
SHEET 3 of 6

Environmental Review Inital Study
ATTACHMENT 4, 1 of 2
APPLICATION 08-0074



Environmental Review Initial Study
ATTACHMENT 4, 2 of 2
APPLICATION 08-0074

DRAWN: TB	CHECKED: IJP	DATE: 7 JAN 08	
COUNTY OF SANTA CRUZ – DEPARTMENT OF PUBLIC WORKS		PROJECT ENGINEER	
EUREKA CANYON ROAD CULVERT AT PM 5.24 SALMONID PASSAGE IMPROVEMENT ACCESS/DEMOLITION/DEWATERING PLAN		nhc northwest hydraulic consultants	

DATE	REVISION	BY

H. Measures to Minimize Loss or Disturbance of Riparian Vegetation

Measures to minimize loss or disturbance to riparian vegetation are described below. The revegetation and success criteria that will be adhered to for projects implemented under this Program that result in disturbance to riparian vegetation are also described below.

1. Minimizing Disturbance

   a. Retain as many trees and brush as feasible, emphasizing shade producing and bank stabilizing trees and brush.

   b. Use project designs and access points that minimize riparian disturbance without affecting less stable areas, which may increase the risk of channel instability.

   c. Prior to construction, determine locations and equipment access points that minimize riparian disturbance. Avoid entering unstable areas.

   d. Decompact disturbed soils at project completion as the heavy equipment exits the construction area. At the completion of the project, soil compaction that is not an integral element of the design of a crossing shall be decompacted.

   e. If riparian vegetation is to be removed with chainsaws, consider using saws that operate with vegetable-based bar oil.

2. Revegetation and Success Criteria

   a. Any stream bank area left barren of vegetation as a result of the implementation or maintenance of the restoration practices shall be restored to a natural state by seeding, replanting, or other agreed upon means (including natural recruitment) with native trees, shrubs, and/or grasses prior to November 15 of the project year. Barren areas shall typically be planted with a combination of willow stakes, native shrubs and trees and/or erosion control grass mixes.

   b. Native plant species shall be used for revegetation of disturbed and compacted areas. The species used shall be specific to the project vicinity or the region of the state where the project is located, and comprised of a diverse community structure (plantings shall include both woody and herbaceous species).

   c. For projects where re-vegetation is implemented to compensate for riparian vegetation impacted by project construction, a re-vegetation monitoring report will be required after five years to document success. Success is defined as 80 percent (%) survival of plantings or 80% ground cover for broadcast planting of seed after a period of three years. If revegetation efforts will be passive (*i.e.*, natural regeneration), success will be defined as total cover of woody and herbaceous material equal to or greater than pre-project conditions. If at the end of three years, the vegetation has not successfully been re-established, the applicant will be responsible for replacement planting, additional watering, weeding, invasive exotic eradication, or any other practice, to achieve these requirements. If success is not achieved within the first five years, the project applicant will need to prepare a follow-up report in an additional five years. This requirement will proceed in five year increments until success is achieved.

Spill Prevention and Response Plan

1. **Prohibition of Storage of Heavy Equipment Fuel, Oil and Hydraulic Fluid.** No fuel, oils, or hydraulic fluid may be stored within the 100 feet of the stream channel. Fuel, oils, or hydraulic fluid may be stored in weatherproof containers, which are not in direct contact with the ground, in the designated staging area.

2. **Prohibition of Refueling and Servicing Heavy Equipment within the Stream Area.** No refueling or servicing of heavy equipment shall be performed within 100 feet of the stream channel. All refueling or servicing of heavy equipment must be performed in the designated staging area.

3. **Parking and Storage of Equipment.** All motorized equipment shall be parked overnight and on weekends and other periods of shutdown in the staging area.

4. **Operation and Refueling of Dewatering Pumps.** Place pumps in flat areas away from stream channel. Refuel pumps away from stream channel. Sorbent pads must be installed underneath pumps when refueling.

5. ***Prohibition of* Use of Leaking Equipment.** The site engineer, California Department of Fish and Game staff, or National Marine Fisheries Service Staff, at its discretion, may prohibit the operation of any equipment that is leaking fuel, oil, or hydraulic fluid. No contract time adjustment shall be made for equipment not allowed to operate. Contractor may not resume operation of repaired equipment until its use is authorized in writing by the reporting agency or site engineer.

6. **Spill Cache.** Contractor shall store within the designated staging area a spill cache consisting of sorbent pads approved by the California Department of Fish and Game and National Marine Fisheries Service with a total surface area of at least 500 square feet. No construction operations are allowed until the spill cache is on site. The spill cache must be stored in a weatherproof container. Any used sorbent materials must be replaced within 10 days. California Department of Fish and Game or National Marine Fisheries Service staff may shut down operations if the spill cache is not replenished within 10 days. All used sorbent materials may not be stored within the project area, and must be disposed in accordance with all Federal, state, and local laws and regulations.

7. **Spill Notification.** Any spill of fuel or lubricants must be reported immediately to the California Department of Fish and Game and National Marine Fisheries Service , either by reporting to the on-site Inspector, or by calling the California Department of Fish and Game and National Marine Fisheries Service. In the event of a spill call Jonathan Ambrose of the National Marine Fisheries Service at 707-575-6091 and other numbers listed on the permits.

8. **Spill Response**. Contractor shall cease all operations and devote all on-site personnel to the containment and clean up of any spill until such time as all reasonable measures have been taken.

SHINGLE MILL GULCH
FISH PASSAGE IMPROVEMENT

BIOTIC ASSESSMENT
APPENDIX A

PROTECTION & MINIMIZATION MEASURES

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Appendix 1

Protection and Minimization Measures as Described in the Biological Assessment

The following protection and minimization measures, as they apply to a particular project, shall be incorporated into the project descriptions for individual projects authorized under this programmatic fisheries restoration project (Program).

A. General Protection Measures

1. Work shall not begin until the U.S. Army Corps of Engineers (Corps) has notified the permittee that the requirements of the Endangered Species Act (ESA) have been satisfied and that the activity is authorized.

2. The general construction season will be from June 15 to October 15. Restoration, construction, fish relocation, and dewatering activities within any wetted and/or flowing creek channel shall only occur within this window. As such, all non-revegetation-associated earthmoving activities will be complete by October 15. Revegetation outside of the active channel may continue beyond October 15 until November 15, if necessary. Limited earthmoving associated with preparation of the site for revegetation may occur within the October 15 - November 15 timeframe, but only as necessary for revegetation efforts. Work beyond this time frame may be authorized following consultation with and approval of the National Marine Fisheries Service (NMFS) and the California Department of Fish and Game (CDFG) on an individual project basis, provided it could be completed prior to the first significant rainfall event (rainfall event > two inches).

3. Prior to construction, each contractor will be provided with the specific protective measures to be followed during implementation of the project. In addition, a qualified biologist will provide the construction crew with information on the listed species in the project area, the protection afforded the species by the ESA, and guidance on those specific protection measures that must be implemented as part of the project.

4. All adverse aquatic impacts, including temporary impacts, must proceed through a sequencing of impact reduction: avoidance, reduction in size of impact, and compensation (mitigation). Mitigation may be proposed to compensate for the adverse impacts to water of the United States. Mitigation shall generally be in kind, with no net loss of waters of the United States on a per project basis. Mitigation work shall proceed in advance or concurrently with project construction.

5. Construction within 200 feet of established riparian vegetation or other bird nesting habitats shall be avoided during the migratory bird nesting season (February 15 - August 1), to avoid damage or disturbance to nests. If construction must occur during this period, a qualified biologist or individual approved by CDFG will conduct a pre-construction survey for bird nests or nesting activity in the project area. If any active nests or nesting behaviors are found (for native species), an exclusion zone of 75 feet shall be established to protect nesting birds (200 ft for raptors) and maintained until birds have fledged or nest is abandoned. If any listed or

sensitive bird species are identified, CDFG will be notified prior to further action. Take of active bird nests is prohibited under this Program.

6. Poured concrete shall be excluded from the wetted channel for a period of 30 days after it is poured. During that time the poured concrete shall be kept moist, and runoff from the concrete shall not be allowed to enter a live stream. Commercial sealants may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If sealant is used, water shall be excluded from the site until the sealant is dry and fully cured according to the manufacturer's specifications.

7. Herbicides may be applied to control established stands of non-native species including, but not limited to, vinca, ivy, and broom. Herbicides must be applied to those species according to the registered label conditions. Herbicides must be applied directly to plants and may not be spread upon any water. Herbicides will be tinted with a biodegradable dye to facilitate visual control of the spray.

8. Rock used for bank stabilization or to anchor large woody debris (LWD) structures, shall be large and heavy enough to remain stationary under the 100-year median January or February flow event (which ever is greater).

9. If the thalweg of the stream has been altered due to construction activities, efforts will be undertaken to reestablish it to its original configuration. (*Note: Projects that may include activities such the use of willow baffles which may alter the thalweg are allowed under the Program.*)

B. Requirements for Fish Relocation and Dewatering Activities

1. Guidelines for Dewatering:

Project activities authorized under the Program may require fish relocation and/or dewatering activities. Dewatering may not be appropriate for some projects that will result in only minor input of sediment, such as placing logs with hand crews or helicopters, or installing boulder clusters. Adherence to these general guidelines will minimize potential impacts for projects that do require dewatering of a stream/creek:

a. In those specific cases where it is deemed necessary to work in a flowing stream/creek, the work area shall be isolated and all the flowing water shall be temporarily diverted around the work site to maintain downstream flows during construction. Dewatering will likely not be necessary for most LWD enhancement activities.

b. Exclude fish from reentering the work area by blocking the stream channel above and below the work area with fine-meshed net or screens. The bottom of the seine must be completely secured to the channel bed to prevent fish from reentering the work area prior to dewatering. Exclusion screening must be placed in areas of low water velocity to minimize fish impingement. Screens must be checked periodically and cleaned of debris to permit free flow of water. Block net mesh shall be sized to ensure salmonids upstream

or downstream do not enter the areas proposed for dewatering between passes with the electrofisher or seine.

c. Prior to dewatering, determine the best means to bypass flow through the work area to minimize disturbance to the channel and avoid direct mortality of fish and other aquatic vertebrates (as described more fully below under *General Conditions for Fish Capture and Relocation*). The project applicant shall bypass stream flow around the work area and concurrently maintain the stream flow to channel below the construction site.

d. Coordinate project site dewatering with a qualified biologist to perform fish and amphibian relocation activities. The qualified biologist(s) will possess a valid State of California Scientific Collection Permit as issued by CDFG and will be familiar with the life history and identification of listed salmonids and listed amphibians within the action area.

e. Prior to dewatering a construction site, qualified individuals will capture and relocate fish and amphibians to avoid direct mortality and minimize take. This is especially important if listed species are present within the project site.

f. Minimize the length of the dewatered stream channel and duration of dewatering. A maximum of 300 feet (ft) may be dewatered under the Program. Exceeding the 300 ft limit will disqualify the project from inclusion in the Program.

g. Any temporary dam or other artificial obstruction constructed shall only be built from materials such as sandbags or clean gravel which will cause little or no siltation or turbidity. Visqueen shall be placed over sandbags used for construction of cofferdams to minimize water seepage into the construction areas. The visqueen shall be firmly anchored to the streambed to minimize water seepage. Cofferdams and the stream diversion systems shall remain in place and fully functional throughout the construction period.

h. Downstream flows adequate to prevent stranding will be maintained at all times during dewatering activities.

i. When cofferdams with bypass pipes are installed, debris racks will be placed at the bypass pipe inlet. Bypass pipes will be monitored a minimum of two times per day, seven days a week, during the construction period. All accumulated debris shall be removed by the contractor or project applicant.

j. Bypass pipe diameter will be sized to accommodate, at a minimum, twice the summer baseflow.

k. The work area may need to be periodically pumped dry of seepage. Place pumps in flat areas, well away from the stream channel. Secure pumps by tying off to a tree or stake in place to prevent movement by vibration. Refuel in an area well away from the stream channel and place fuel absorbent mats under pump while refueling. Pump intakes shall

adhere to NMFS' *Fish Screening Criteria for Anadromous Salmonids* (NMFS 1997a). Check intake periodically for impingement of fish or amphibians.

l. When pumping is necessary to dewater a work site temporary siltation basin are required to ensure sediment does not re-enter the wetted channel. Screens on pumps will adhere to NMFS' *Fish Screening Criteria for Anadromous Salmonids* (NMFS 1997a).

m. When construction is completed, the flow diversion structure shall be removed as soon as possible in a manner that will allow flow to resume with the least disturbance to the substrate. Cofferdams will be removed so surface elevations of water impounded above the cofferdam will not be reduced at a rate greater than one inch per hour. This will minimize the risk of beaching and stranding of fish as the area upstream becomes dewatered.

C. General Conditions for all Fish Capture and Relocation Activities

Fish relocation and dewatering activities shall only occur between June 15 and October 15 of each year.

1. Overview

All seining, electrofishing, and relocation activities shall be performed by a qualified fisheries biologist. The qualified fisheries biologist shall capture and relocate listed salmonids prior to construction of the water diversion structures (*e.g.,* cofferdams). The qualified fisheries biologist shall document the number of salmonids observed in the affected area, the number and species of salmonids relocated, and the date and time of collection and relocation. The qualified fisheries biologist shall have a minimum of three years field experience in the identification and capture of salmonids, including juvenile salmonids, considered in the biological opinion. The qualified biologist will adhere to the following requirements for capture and transport of salmonids:

a. Determine the most efficient means for capturing fish. Complex stream habitat generally requires the use of electrofishing equipment, whereas in deep pools, fish may be concentrated by pumping-down the pool and then seining or dipnetting fish.

b. Notify NMFS two weeks prior to capture and relocation of salmonids to provide NMFS an opportunity to attend (call Jonathan Ambrose at 707-575-6091 or via email at jonathan.ambrose@noaa.gov).

c. Initial fish relocation efforts will be conducted several days prior to the start of construction. This provides the fisheries biologist an opportunity to return to the work area and perform additional electrofishing passes immediately prior to construction. In many instances, additional fish will be captured that eluded the previous day's efforts.

d. During dewatering, a fisheries biologist will remain at the project work site to net and rescue any additional fish that may have become stranded throughout the dewatering process.

e. In regions of California with high summer water temperatures, perform relocation activities during morning periods.

f. Prior to capturing fish, determine the most appropriate release location(s). Consider the following when selecting release site(s):

i. similar water temperature as capture location;

ii. ample habitat availability prior to release of captured fish; and

iii. low likelihood of fish reentering work site or becoming impinged on exclusion net or screen.

g. Periodically measure air and water temperatures. Cease activities when measured water temperatures exceed 17.8 degree Celsius (°C) (or 18.4°C in areas where coho salmon are not present). Temperatures will be continuously measured at the head-of-riffle tail-of-pool interface during relocation activities.

2. Electrofishing Guidelines

The following methods shall be used if fish are relocated via electrofishing:

a. All electrofishing will be conducted according to NMFS' *Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act*, June 2000.

b. The backpack electrofisher shall be set as follows when capturing fish:

Voltage setting on the electrofisher shall not exceed 300 volts.

	Initial	Maximum
Voltage:	100 Volts	300 Volts
Duration:	500 µs (microseconds)	5 ms (milliseconds)
Frequency:	30 Hertz	70 Hertz;

c. A minimum of three passes with the electrofisher shall be utilized to ensure maximum capture probability of salmonids within the area proposed for dewatering.

d. No electrofishing shall occur if water conductivity is greater than 350 microSiemens per centimeter (µS/cm) or when instream water temperatures exceed 17.8° C (or 18.4° C in areas where coho salmon are not present). Water temperatures shall be measured at the pool/riffle interface. Only direct current (DC) shall be used.

e. A minimum of one assistant shall aid the fisheries biologist by netting stunned fish and other aquatic vertebrates.

3. Seining Guidelines

The following methods shall be used if fish are removed with seines:

a. A minimum of three passes with the seine shall be utilized to ensure maximum capture probability of salmonids within the area.

b. All captured fish shall be processed and released prior to each subsequent pass with the seine.

c. The seine mesh shall be adequately sized to ensure fish are not gilled during capture and relocation activities.

4. Guidelines for Relocation of Salmonids

The following methods shall be used during relocation activities associated with either method of capture (electrofishing or seining):

a. Fish shall not be overcrowded into buckets; allowing approximately six cubic inches per 0+ individual and more for larger/older fish.

b. Every effort shall be made not to mix (including use of separate containers) 0+ (young of the year) salmonids with larger salmonids, or other potential predators, which may consume the smaller salmonids. Have at least two containers and segregate 0+ fish from larger age-classes. Place larger amphibians, such as Pacific-giant salamanders (*Dicamptodon ensatus*), in container with larger fish.

c. Salmonid predators, such as sculpins (*Cottus sp.*) and Pacific-giant salamanders, collected and relocated during electrofishing or seining activities shall not be relocated so as to concentrate them in one area. Particular emphasis shall be placed on avoiding relocation of sculpins and Pacific-giant salamanders into the steelhead and coho salmon relocation pools. To minimize predation on salmonids, these species shall be distributed throughout the wetted portion of the stream so as to not concentrate them in one area.

d. All captured salmonids shall be relocated, preferably upstream, of the proposed construction project and placed in suitable habitat. Captured fish shall be placed into a pool, preferably with a depth of greater than two feet and with available instream cover (undercut banks, complex LWD features).

e. All captured salmonids will be processed and released prior to conducting a subsequent electrofishing or seining pass.

f. All native captured fish will be allowed to recover from electrofishing before being returned to the stream.

g. Minimize handling of salmonids. However, when handling is necessary, always wet hands or nets prior to touching fish. Handlers will not wear DEET-based insect repellants during relocation activities.

h. Temporarily hold fish in cool, shaded, aerated water in a container with a lid. Provide aeration with a battery-powered external bubbler. Protect fish from jostling and noise and do not remove fish from this container until time of release.

i. Place a non-mercury thermometer in holding containers and, if necessary, periodically conduct partial water changes to maintain a stable water temperature. If water temperature reaches or exceeds those allowed by CDFG and NMFS, fish shall be immediately released.

j. If instream temperatures exceed authorized temperature limits, capture and relocation will cease.

k. In areas where aquatic vertebrates are abundant, periodically cease capture, and release at predetermined locations.

l. Visually identify species and estimate year-classes of fish at time of release. Count and record the number of fish captured. Avoid anesthetizing or measuring fish.

m. If more than three percent of the steelhead and Southern Oregon/Northern California Coast (SONCC) Evolutionary Significant Unit (ESU) coho salmon, or one percent of CCC ESU coho captured are killed or injured, the project permittee shall contact NMFS' biologist Jonathan Ambrose by phone immediately at (707) 575-6091. If Mr. Ambrose cannot be reached, the Santa Rosa NMFS Office will be contacted at Federal Relay 1-866-327-8877 ([707] 578-8555). The purpose of the contact is to review the activities resulting in the lethal take and to determine if additional protective measures are required. All steelhead and coho mortalities must be retained, placed in an appropriately sized whirl-pak or zip-lock bag, labeled with the date and time of collection, fork length, location of capture, and frozen as soon as possible. Frozen samples must be retained until specific instructions are provided by NMFS.

D. Measures to Minimize and Avoid Disturbance from Instream Construction

Measures to minimize and avoid disturbance associated with instream habitat restoration construction activities are presented below:

1. If the stream channel is seasonally dry between June 15 and October 15, construction will occur during this dry period.

2. Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering the waters of the State. Any of

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these materials, placed within or where they may enter a stream or lake, by the applicant or any party working under contract, or with permission of the applicant, shall be removed immediately. During project activities, all trash that may attract potential predators of salmonids will be properly contained, removed from the work site, and disposed of daily.

3. Where feasible, the construction shall occur from the bank, or on a temporary pad underlain with filter fabric.

4. No mechanized equipment (with internal combustion engines), including internal combustion handtools, will enter wetted channels.

5. Use of heavy equipment (in dewatered channels) shall be avoided in a channel bottom with rocky or cobbled substrate. If access to the work site requires crossing a rocky or cobbled substrate, a rubber tire loader/backhoe is the preferred vehicle. Only after this option has been determined infeasible will the use of tracked vehicles be considered. The amount of time this equipment is stationed, working, or traveling within the creek bed shall be minimized. When heavy equipment is used, woody debris and vegetation on banks and in the channel shall be minimally disturbed if outside of the project's scope.

6. Hydraulic fluids in mechanical equipment working within the stream channel shall not contain organophosphate esters. Vegetable-based hydraulic fluids are preferred.

7. The use or storage of petroleum-powered equipment shall be accomplished in a manner to prevent the potential release of petroleum materials into waters of the State (Fish and Game Code 5650).

8. Areas for fuel storage, refueling, and servicing of construction equipment must be located in an upland location.

9. Prior to use, clean all equipment to remove external oil, grease, dirt, or mud. Wash sites must be located in upland locations so wash water does not flow into the stream channel or adjacent wetlands.

10. All construction equipment must be in good working condition, showing no signs of fuel or oil leaks. Prior to construction, all mechanical equipment shall be thoroughly inspected and evaluated for the potential of fluid leakage. All questionable motor oil, coolant, transmission fluid, and hydraulic fluid hoses, fittings, and seals shall be replaced. The contractor shall document in writing all hoses, fittings, and seals replaced and shall keep this documentation until the completion of operations. All mechanical equipment shall be inspected on a daily basis to ensure there is no motor oil, transmission fluid, hydraulic fluid, or coolant leaks. All leaks shall be repaired in the equipment staging area or other suitable location prior to resumption of construction activity.

11. Oil absorbent and spill containment materials shall be located on site when mechanical equipment is in operation within 100 feet of the proposed watercourse crossings. If a spill occurs, (1) no additional work shall occur in-channel until the mechanical equipment is inspected

by the contractor, and the leak has been repaired, (2) the spill has been contained, and (3) CDFG and NMFS are contacted and have evaluated the impacts of the spill.

E. Measures to Minimize Degradation of Water Quality

Construction or maintenance activities for the projects covered under this Program may result in temporary increases in turbidity levels in the stream. In general, these activities must not result in significant increases in turbidity levels beyond the naturally occurring, background conditions. The following measures would be implemented to reduce the potential for impacts to water quality during and after construction:

1. General Erosion Control during Construction

   a. Isolate the construction area from flowing water until project materials are installed and erosion protection is in place except as provided in Section B. Most large woody debris projects will not require dewatering.

   b. Effective erosion control measures shall be in place at all times during construction. Do not start construction until all temporary erosion control devices (straw bales with sterile, weed-free straw, silt fences, *etc.*) are in place downslope or downstream of project site within the riparian area. The devices shall be properly installed at all locations where the likelihood of sediment input exists. These devices shall be in place during and after construction activities for the purposes of minimizing fine sediment and sediment/water slurry input to flowing water and of detaining sediment-laden water on site. If continued erosion is likely to occur after construction is completed, then appropriate erosion prevention measures shall be implemented and maintained until erosion has subsided.

   c. Sediment shall be removed from sediment controls once it has reached one-third of the exposed height of the control. Whenever straw bales are used, they shall be staked and dug into the ground 12 centimeters (cm) and only sterile, weed free straw shall be utilized. Catch basins shall be maintained so that no more than 15 cm of sediment depth accumulates within traps or sumps.

   d. Sediment-laden water created by construction activity shall be filtered before it leaves the right-of-way or enters the stream network or an aquatic resource area. Silt fences or other detention methods shall be installed as close as possible to culvert outlets to reduce the amount of sediment entering aquatic systems.

   e. The contractor/project applicant is required to inspect and repair/maintain all erosion control practices prior to and after any significant storm event, at 24 hour intervals during extended storm events, and a minimum of every two weeks until all erosion control measures have been completed.

2. Post Construction Erosion Control

a. Immediately after project completion and before close of seasonal work window, stabilize all exposed soil with mulch, seeding, and/or placement of erosion control blankets. Remove all artificial erosion control devices after the project area has fully stabilized. All exposed soil present in and around the project site shall be stabilized within seven days.

b. All bare and/or disturbed slopes (> 10 ft x 10 ft of bare mineral soil) will be treated with erosion control measures such as hay bales, netting, fiber rolls, native mulch/slash, and hydroseed as permanent erosion control measures.

c. Where straw, mulch, or slash is used as erosion control on bare mineral soil, the minimum coverage shall be 95 percent with a minimum depth of two inches.

d. When seeding is used as an erosion control measure, only native seed will be used.

e. Sterile, weed-free straw, free of exotic weeds, is required when hay bales are used as an erosion control measure.

3. Guidelines for Temporary Stockpiling

a. Minimize temporary stockpiling of material. Stockpile excavated material in areas where it cannot enter the stream channel. Prior to start of construction, determine if such sites are available at or near the project location. If nearby sites are unavailable, determine location where material will be deposited. Establish locations to deposit spoils well away from watercourses with the potential to deliver sediment into streams supporting, or historically supporting populations of listed salmonids. Spoils shall be contoured to disperse runoff and stabilized with mulch and (native) vegetation. Use devices such as plastic sheeting held down with rocks or sandbags over stockpiles, silt fences, or berms of hay bales, to minimize movement of exposed or stockpiled soils.

b. If feasible, conserve topsoil for reuse at project location or use in other areas. End haul spoils away from watercourses as soon as possible to minimize potential sediment delivery.

F. Minimizing Potential for Adverse Effects Due to Scour

1. When needed, utilize instream grade control structures to control channel scour, sediment routing, and headwall cutting.

2. If a pipe or structure that empties into a stream is installed, an energy dissipater shall be installed to reduce bed and bank scour.

3. The toe of rock slope protection shall be placed below bed scour to ensure stability.

H. Measures to Minimize Loss or Disturbance of Riparian Vegetation

Measures to minimize loss or disturbance to riparian vegetation are described below. The revegetation and success criteria that will be adhered to for projects implemented under this Program that result in disturbance to riparian vegetation are also described below.

1. Minimizing Disturbance

   a. Retain as many trees and brush as feasible, emphasizing shade producing and bank stabilizing trees and brush.

   b. Use project designs and access points that minimize riparian disturbance without affecting less stable areas, which may increase the risk of channel instability.

   c. Prior to construction, determine locations and equipment access points that minimize riparian disturbance. Avoid entering unstable areas.

   d. Decompact disturbed soils at project completion as the heavy equipment exits the construction area. At the completion of the project, soil compaction that is not an integral element of the design of a crossing shall be decompacted.

   e. If riparian vegetation is to be removed with chainsaws, consider using saws that operate with vegetable-based bar oil.

2. Revegetation and Success Criteria

   a. Any stream bank area left barren of vegetation as a result of the implementation or maintenance of the restoration practices shall be restored to a natural state by seeding, replanting, or other agreed upon means (including natural recruitment) with native trees, shrubs, and/or grasses prior to November 15 of the project year. Barren areas shall typically be planted with a combination of willow stakes, native shrubs and trees and/or erosion control grass mixes.

   b. Native plant species shall be used for revegetation of disturbed and compacted areas. The species used shall be specific to the project vicinity or the region of the state where the project is located, and comprised of a diverse community structure (plantings shall include both woody and herbaceous species).

   c. For projects where re-vegetation is implemented to compensate for riparian vegetation impacted by project construction, a re-vegetation monitoring report will be required after five years to document success. Success is defined as 80 percent (%) survival of plantings or 80% ground cover for broadcast planting of seed after a period of three years. If revegetation efforts will be passive (*i.e.*, natural regeneration), success will be defined as total cover of woody and herbaceous material equal to or greater than pre-project conditions. If at the end of three years, the vegetation has not successfully been re-established, the applicant will be responsible for replacement planting, additional

watering, weeding, invasive exotic eradication, or any other practice, to achieve these requirements. If success is not achieved within the first five years, the project applicant will need to prepare a follow-up report in an additional five years. This requirement will proceed in five year increments until success is achieved.

I. Measures to Minimize Impacts to Non-Surfaced Roads in Project Area

Upon the completion of restoration activities, non-surfaced roads within the riparian zone used for the permitted activity shall be weather proofed according to measures as described in *Handbook for Forest and Ranch Roads* by Weaver and Hagans (1994) of Pacific Watershed Associates and in Part X of the CDFG Restoration Manual entitled "*Upslope Assessment and Restoration Practices*". The following are some of the methods that may be applied to non-surfaced roads impacted by project activities implemented under this Program:

1. Establish waterbreaks (*e.g.*, waterbars and rolling dips) on all seasonal roads, skid trails, paths, and fire breaks by October 15. Do not remove waterbreaks until May 15.

2. Maximum distance for waterbreaks shall not exceed the following standards: (a) for road or trail gradients less than 10%: 100 ft; (b) for road or trail gradients 11-25%: 75 ft; (c) for road or trail gradients 26-50%: 50 ft; (d) for road or trail gradients greater than 50%: 50 ft. Depending on site specific conditions, more frequent intervals may be required to prevent road surface rilling and erosion.

3. Locate waterbreaks to allow water to be discharged onto some form of vegetative cover, slash, rocks, or less erodible material. Do not discharge waterbreaks onto unconsolidated fill.

4. Waterbreaks shall be cut diagonally a minimum of six inches into the firm roadbed, skid trail, or firebreak surface and shall have a continuous firm embankment of at least six inches in height immediately adjacent to the lower edge of the waterbreak cut.

5. The maintenance period for waterbreaks and any other erosion control facilities shall occur after every major storm event for the first year after installation.

6. Rolling-dips are preferred over waterbars. Waterbars shall only be used on unsurfaced roads where winter use (including use by bikes, horses, and hikers) will not occur or in steep areas where rolling dips are not practical.

7. After the first year of installation, erosion control facilities shall be inspected prior to the winter period (October 15) after the first major storm event, and prior to the end of the winter period (May 15).

8. The applicant will establish locations to deposit spoils well away from watercourses with the potential to deliver sediment into streams supporting, or historically supporting, populations of listed salmonids. Spoils shall be contoured to disperse runoff and stabilized with mulch and (native) vegetation.

9. No berms are allowed on the outside of the road edge.

10. No herbicides shall be used on vegetation on inside ditches.

J. Requirements for New Fish Ladders and Fishways

1. New fish ladders/fishways shall be checked (and maintained as necessary) at least two times per week to ensure the pools are free of excess sediment or debris that may impair passage for the life of the ladder.

2. If the fish ladder/fishways becomes damaged or ineffective the project applicant shall, as soon as reasonably possible, repair any damage or modify the ladder (in consultation with NMFS and CDFG engineers/fish passage specialists).

3. Fish ladders/fishways will be checked prior to the adult migration season. All debris and sediment will be removed to ensure the ladder is fully functional according to fish passage design criteria.

4. The final design must be reviewed and approved by a NMFS/CDFG engineers/fish passage specialist. The design must address the following:

   a. species of salmonids present in the river system, as well as magnitude and timing of adult migration;

   b. probable access route to the barrier, including areas where fish will congregate below the obstruction;

   c. extent of spawning and nursery areas and potential salmonid production from both above and below the obstruction;

   d. type and quantity of anticipated transportable debris;

   e. frequency, duration, timing, and magnitude of anticipated flows, especially extreme high and low flows; and

   f. location of other barriers in the stream system, and their possible effects to distribution of salmonids.

5. The ladder shall not exceed 30 feet in height.

6. A maintenance plan for the ladder/fishway must be reviewed and approved by NMFS/CDFG engineers/fish passage specialists and NOAA RC.

7. Adequate access to the ladder/fishway to facilitate necessary maintenance activities during winter high flows and summer low flow periods must be included in the design.

8. Flow patterns must be stable, with no water surges.

9. Flows in and near the ladder/fishway entrance should be sufficient to attract fish at all water levels.

10. Minimum height between pools in fish ladders shall not exceed six inches.

11. New ladders shall be constructed to provide passage conditions suitable for year round bidirectional, adult and juvenile salmonid movement.

12. A debris deflector should be incorporated at the flow intake.

13. The upstream exit must allow fish to easily reach secure resting habitat.

14. Fishways/ladders must be deep enough for the largest known fish in the system.

K. Summer Dam Abutment Removal

1. Summer dam removal will require design review and approval from a NMFS and/or CDFG fish passage specialist prior to project authorization and design review by a qualified geomorphologist.

2. Sediment composition and quantity, and effects of sediment transport must be evaluated by a qualified geomorphologist for all summer dam removal projects.

3. Summer dams with > 400 cubic yards of accumulated sediment behind dam sills are not permitted under the Program.